

The image features three black silhouettes of people against a background with a light blue to green gradient and a white geometric pattern of overlapping squares. One person is standing on the right, holding the top of a large black sign. Two other people are in the foreground, jumping or running towards the sign, holding its bottom. The sign contains the text 'The Decision of a Lifetime' in a white, hand-drawn font.

The Decision

of a Lifetime

OTDA
Classroom
Toolkit

Organ and Tissue Donation Awareness Project

The activities described in this report were supported in part by the U.S. Department of Education, the Pennsylvania Department of Education, and Lancaster-Lebanon Intermediate Unit 13. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Department of Education, the Pennsylvania Department of Education, or Lancaster-Lebanon Intermediate Unit 13, and no official endorsement by these agencies should be inferred.

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Survey

We are seeking input regarding instructional implementation of donation and transplantation information. We are asking for 5-10 minutes of your time in completing the following survey to help us monitor implementation throughout Pennsylvania. Return the survey by mail or complete online: <http://www.surveymonkey.com/s/QC87C8T>

Thank you for your time!

- 1) In what school and district do you work?

School:

District:

City, PA:

- 2) Have you taught about organ and tissue donation before in your classroom?

- If your answer is “no,” why do you want to start now?
- If your answer is “yes,” what have you done for instruction and in what class(es)?

- 3) If your answer to the above is “yes”, have you used the OTDA Classroom Toolkit before? What parts have you found most useful?

- 4) If you have NEVER received an OTDA mini grant, did you know that such a thing is available?

- If your answer is “no,” feel free to inquire about the application process.

- 5) If you teach about organ and tissue donation and transplantation, do you measure the impact on your student’s decision making and knowledge (such as a pre-/post-assessment)?

- If your answer is “yes”, feel free to send us a summary of your findings!
- If your answer is “no”, feel free to use the pre-/post-tests in the Organ Donation Technology Assignment or the Quiz included in the Decision of a Lifetime Lesson both in the Lesson Plans section of the toolkit.

Please return your response to:
OTDA Project/IU 13
1020 New Holland Avenue, Lancaster, PA 17601
Melissa_monti@iu13.org
Or go to: <http://www.surveymonkey.com/s/QC87C8T>

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The OTDA Project is not a sole endeavor. There are numerous professionals, organizations and community members who, without their insight, time, and resources, this teacher's toolkit would not have been possible.

Thank you:

Our Pennsylvania Partners

The challenge and vision of getting the message out about the need for organ and tissue donation is an endless and tireless task that incorporates the efforts of many who made the OTDA curriculum a reality. As of October 2010, there are more than 108,000 people on the national waiting list who await a life saving organ. Education plays a major role in creating awareness, but more importantly aids in helping the general public learn the facts of OTDA and help dispel the many myths that may hinder more people in considering organ and tissue donorship. The OTDA Curriculum Framework initially began in 1997 with collaboration between the Pennsylvania Department of Education (PDE) and the Lancaster-Lebanon Intermediate Unit 13 (IU 13). Through the guidance of Sandy Strunk, Ilsa Powell Diller, Lora Zangari, and Rich Barbour at the IU 13, the OTDA Project moved from concept to reality. They were responsible for all facets of this project: reviewing past curriculum on OTDA; surveying student and teacher focus groups on their skills and knowledge of organ and tissue donation development; marketing; recruitment of seven Pennsylvania secondary schools to pilot the OTDA Framework; and providing ongoing professional development and support to those educators in the field who are implementing the OTDA Curriculum Framework. But they did not accomplish these goals alone. Along the way, there has been incredible support from the Pennsylvania Department of Education, Pennsylvania Organ Procurement Organizations (CORE), the Gift of Life Donor Program, the Musculoskeletal Transplant Foundation (formerly PRTB), and the Commonwealth's Organ Donation Advisory Committee. It is, perhaps, only through the education and guidance that the OTDA staff received from these experts that such a comprehensive secondary education component could be developed.

Pennsylvania's Organ Procurement Organizations and Regional Tissue Bank have been major partners in support, expertise and advisement on the OTDA project. The Gift of Life Donor Program, the Center for Organ Recovery & Education (CORE), and MTF (formerly the Pennsylvania Regional Tissue Bank) assisted in numerous capacities, from the first meeting of the Curriculum Advisory Subcommittee in the Summer of 1998 to the January 2001 OTDA Pilot School Kick-Off event, to the present day in assisting in the development of this teachers' OTDA toolkit. The staff at these organizations have willingly and unselfishly given their time and resources to offer tours of their facilities to students, teachers and IU 13 staff, and to provide a hands-on learning experience. In addition, they are generous in providing resources that aid teachers and the OTDA Project in educating secondary education students on the facts of organ and tissue donation as they approach the decision of organ donorship when applying for their driver's license.

Real-Life Stories

Garet Spiese's real-life story of receiving a healthy liver on Mother's Day, May 13, 2001, provides inspiration that organ and tissue donation can be a new lease on life. One generous 17-year-old girl made a decision that saved Garet's life. However, 18 people across the nation die each day waiting for a transplant. Other real-life stories have been written and shared with gracious generosity for this project. Without the giving spirit of both donors and recipients who have shared these stories, the vital impact of this life-and-death issue would remain elusive and abstract. These stories and the people behind them give life to the topic in the same way that these people have given and received the gift of life themselves. Because of this, we are able to lift the critical issues off the one-dimensional page and show the many real facets of the face of organ and tissue donation. With such a low supply of needed organs and tissues, the importance of creating awareness on the need for additional organs and tissues to allow high school students the ability to make informed decisions remains as the core vision behind the OTDA project.

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Acknowledgements (continued)

OTDA Project Team

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The Department of Revenue whose solid stewardship of the Organ Donation Trust Fund provides ongoing funding for our collaborative work across the Commonwealth.

Pennsylvania Department of Transportation, Harrisburg, PA

The Pennsylvania Department of Transportation's statistics on county-by-county donor designation provide valuable, real-world data that can be used in classrooms immediately.

One person at a time, one class at a time, we hope this toolkit will provide Pennsylvania students with the most up-to-date information needed when it comes time to decide whether or not to put the donor designation on their Pennsylvania driver's license or state ID.

Finally, heartfelt thanks to Julie Cunningham of IU 13, and Aimee Graybeal and Marie Zocco, of Class Communications, for their work on this toolkit in the beginning and over the subsequent revisions.

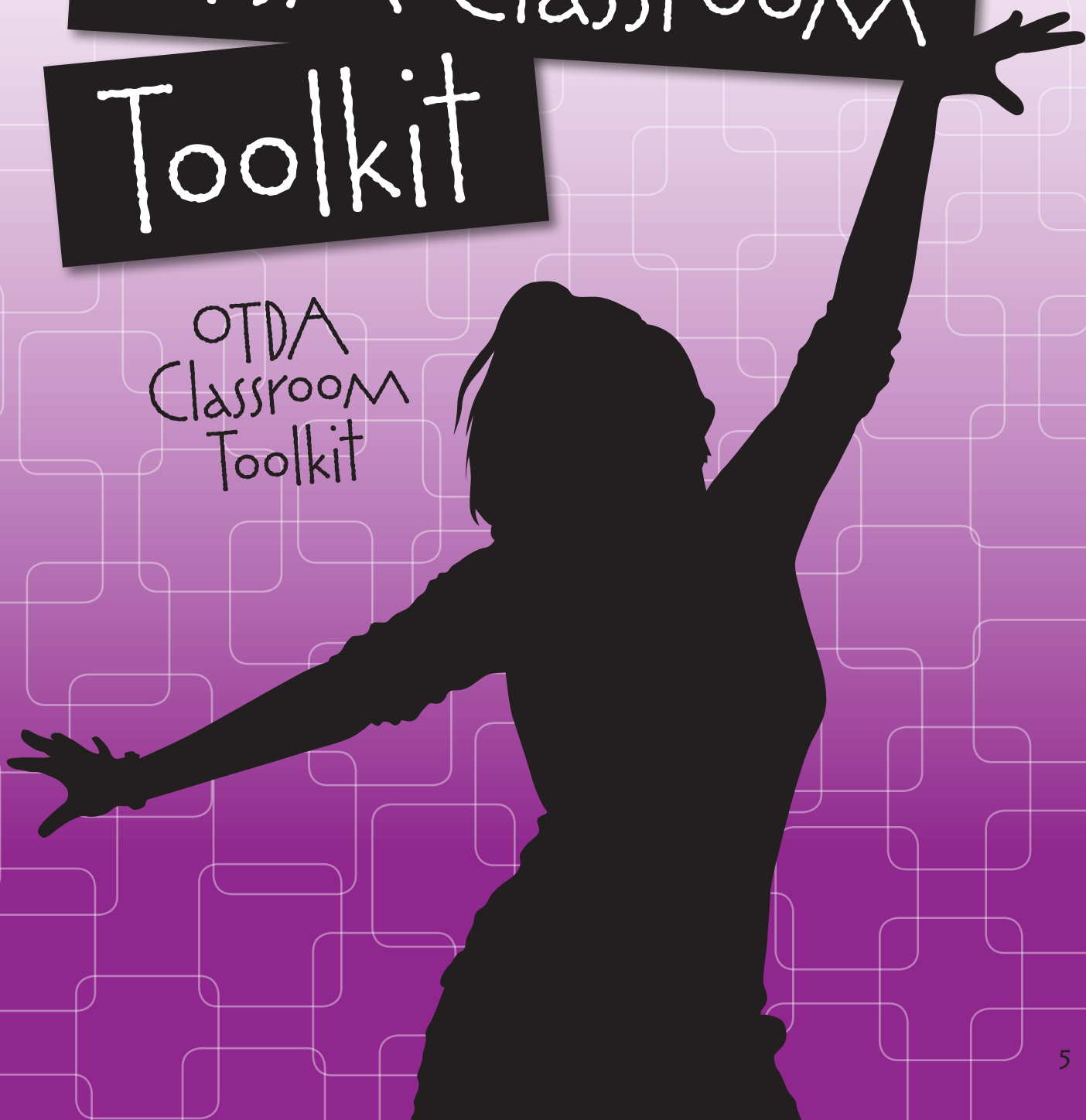


Introduction to the

OTDA Classroom

Toolkit

OTDA
Classroom
Toolkit



Introduction to the Organ and Tissue Donation Awareness Classroom Toolkit

Organ and Tissue Donation Awareness (OTDA) education is an initiative of the Pennsylvania Department of Education (PDE) designed to provide public school students with the knowledge and skills they need to make informed decisions related to organ and tissue donation. The initiative began in 1994 when the state Legislature passed the Governor Casey Act, Act 102, as it is called, stipulates that the Commonwealth makes a comprehensive and collaborative effort toward increasing organ and tissue donation awareness among the citizens of Pennsylvania. To this end, the Departments of Health, Revenue, Transportation, and Education have all undertaken various programs and campaigns related to the increasing need for organ and tissue donation. The two Pennsylvania Organ Procurement Organizations (OPOs) and Musculoskeletal Transplant Foundation (formerly, the Pennsylvania Regional Tissue Bank) have been instrumental in the cross-collaboration. The OTDA Project is an ongoing project of the PDE, and the Lancaster-Lebanon Intermediate Unit 13 (IU 13) has been a subcontracted partner in this initiative since 1996.

The primary mission of the OTDA Project is that awareness of organ and tissue donation will increase in the public schools throughout the Commonwealth. Although the hope is that, as an extension, donor designation will increase among Pennsylvania high school students, the most important aim is that students will be more informed about the issues and, therefore, more capable of making informed decisions when this critical issue touches their lives. Whether it is deciding to have “organ donor” on their driver’s license, discussing this issue with family and friends, researching a paper, or, as is the sad and all-too-frequent reality, facing this issue in their own family when a loved one is critically injured or in need of a transplant, our students of today need information for the decisions they will face tomorrow. It is our responsibility, as educators, to provide the tools our young adults need to make these decisions soundly and with the confident knowledge that they had the resources, information and research skills available to them. The OTDA Classroom Toolkit was designed precisely with that end in mind.

This toolkit is the end result of many years of hard work, research, partnerships and mini grant funding to OTDA Implementation sites. Beginning with three strands of research—OPOs and community stakeholders, Pennsylvania secondary educators, and public high school students—the IU 13 subcontracted By The Numbers, a statistical firm out of State College, PA, to conduct interviews, distribute surveys and facilitate focus groups in an effort to assess current knowledge and desired information on organ and tissue donation within the Pennsylvania education system. The results were then tabulated and interpreted. Based on the extensive research, the OTDA Curriculum Advisory Subcommittee developed a curriculum framework in 1998. The OTDA Curriculum Framework is an interdisciplinary tool designed to assist secondary teachers to implement the content into existing curricula.

After the OTDA Curriculum Framework was developed, seven Pennsylvania high schools piloted the framework with their students. These schools developed lesson plans, created activities and projects, provided feedback, and helped to align the curriculum framework with Pennsylvania’s academic standards. Much of the work done by the pilot schools is included in this

toolkit. Throughout, you will find the schools mentioned, by name, and included in such a way as to provide real-world examples of key elements of the OTDA Project implementation.

During the 2003-04 school year, the Lancaster-Lebanon Intermediate Unit 13 developed the OTDA Toolkit through the ongoing contract with the Pennsylvania Department of Education. It was developed over a significant period of time, and every effort was made to incorporate many real-life stories of donors and recipients, to provide case examples and lesson plans that have been developed and tested by the OTDA pilot schools, and to make the contents user-friendly and comprehensive. The research findings and results of the initial surveys, interviews, and focus groups with stakeholders, teachers, and students were highly informative in our work. In effect, we listened to what the teachers, students, and stakeholders told us they wanted and needed to be included in this toolkit. We also relied heavily on what the students said they already knew, didn’t understand, and wanted to know about organ and tissue donation.

In summary, the purpose of this toolkit is:

- To provide secondary educators with information about OTDA education.
- To assist secondary educators understand the importance of including OTDA education across the curriculum.
- To provide secondary educators with tools they can readily use to implement the OTDA Curriculum Framework.
- To provide both a concrete and web-based format so that teachers can choose the most comfortable and convenient access route to this vital information, and to encourage use of the OTDA listserv as a forum for networking, materials sharing and problem-solving with other Pennsylvania teachers using the OTDA Curriculum Framework.

In the section titled “How to Make the Most of This Toolkit,” you will find details about how each of the sections in this kit will aid you in your teaching. Additionally, there is a Toolkit Glossary designed to explain fundamental terminology you will need to know.

Note: To join our free educator listserv or download a PDF version of the Classroom Toolkit –

- Go to IU13.org
- Click on Student and Parent Pages
- Click on Organ and Tissue Donation Awareness

Viewing the web-based version will allow for easy access to the many related websites for which you will find URLs throughout the following pages.

How to Make the Most of this Toolkit

This toolkit was designed for use by any secondary public school educator within Pennsylvania's public school system. It can be used by a teacher of any discipline and has proven to be especially valuable when used by several teachers in a cross-disciplinary fashion. Because this material lends itself to various disciplines and contexts, it is helpful to have a road map to guide teaching and learning related to organ and tissue donation. It is the intent of the Organ and Tissue Donation Awareness Project to offer secondary teachers a content road map that will be specific enough to guide instruction, but also flexible enough to allow multidisciplinary content implementation.

The OTDA Toolkit is designed to facilitate ease in interpreting and using that road map. Other audiences for this framework might include curriculum coordinators, school administrators, public health educators, community organizations, and families. The adaptable structure of the framework allows users the opportunity to focus not only on topics pertinent to a particular subject area, but also address issues most important to the primary receivers of the information—the students.

The OTDA Curriculum Framework is designed to be a dynamic and flexible tool. The framework wheel is made up of five content domains: Human Experience and Discovery; Biomedical Information; Working with Community Resources; Issues and Considerations; and Critical Thinking and Decision-Making. The Domains are, in turn, divided into relevant subsections, or topic indicators, that relate to the larger content domains. For example, the Biomedical Information Domain provides secondary students with baseline knowledge related to the following topic indicators: anatomy and physiology of organ and tissue donation, transplantation process and the facts and fictions associated with organ and tissue donation awareness. Taken together, these topic indicators make up the entire Biomedical Information content domain.

Lesson plans in any curricular area can be developed within each domain, and lessons can be specifically matched to each topic indicator. There is a great deal of flexibility within the curriculum framework; and there is also significant room for creativity. It is not meant to be a prescribed or mandated curriculum, but rather descriptive of guidelines, parameters, and indicators of success. To that end, the toolkit has been developed to facilitate the implementation of the framework and to guide you through that creative process in a way that is easy to use, highly adaptive, and aligned with the Pennsylvania Academic Standards. In fact, there is a section dedicated to Pennsylvania's Academic Standards, which includes an explanation of how the framework was developed and cross-walked with the standards. You can read case examples of how several Pennsylvania schools have used the framework and how the lessons were aligned with the standards. Additionally, the standards met with each activity are included in each specific lesson plan.

Some of the key subject resources in this toolkit include:

- Frequently Asked Questions (FAQs)
- Myths and Facts
- Statistics
- Religious Perspectives on Donation
- Minorities and Donation
- What is the Difference between Brain Death and Coma?
- Sequence of Events in a Deceased Donation
- Three Types of Donors

The Educator Resources section includes subsections such as:

- Letters to parents and/or guardians
- Related websites, books and videos for further research
- A general subject glossary
- A list of contact information for guest speaker arrangements

These sections are designed to put ready-to-use information and resources at your fingertips. Use these subsections to supplement and enhance your lesson plans. This OTDA Toolkit is a classroom resource guide that will evolve with the research base and expand dramatically as more and more secondary teachers begin to work with this material. Because it is both web-based and concrete, much of this expansion will be in “real time;” the use of the listserv is a nice illustration of this point. The listserv is merely one component of the OTDA website, and though it is not specifically incorporated into the toolkit, we encourage contributions and discussions related to real-world applications of the framework and content areas. As we update the toolkit, we will continue to refresh and update practical activities and case examples of implementation. As you and your colleagues use the toolkit, we encourage you to provide feedback and experiences. This will directly help to evolve the curricular content.



Toolkit Glossary of Terms

Below is a basic overview glossary to help educators begin to use the OTDA Classroom Toolkit. More specific subject terminology is defined in the General Subject Glossary.

Biomedical Information Domain – The goal of the domain is to provide secondary students with the baseline knowledge related to the anatomy and physiology of organ and tissue donation, the organ and tissue donation and transplantation process, and facts and fictions associated with organ and tissue donation awareness.

CORE – Center for Organ Recovery & Education (in Pittsburgh, PA)

Critical Thinking and Decision-Making Domain – The goal of this domain is to assist secondary students in developing and demonstrating the decision-making and problem-solving skills they will need to make an informed decision related to organ and tissue donation.

Curriculum Framework – A group of related domains, each seen as an integral subsection of an overarching topic or area of study. As opposed to a curriculum, which is a group of courses for study, a framework is more easily understood as a rubric of skills and topics that can be taught in a variety of ways. Therefore, a curriculum framework is inherently more flexible and adaptable than a specific curriculum.

Domain – A sphere of activity or interest; a field (e.g. Biomedical Information is a field within the OTDA Framework.).

Framework – A structure for supporting or enclosing something.

GLDP – Gift of Life (in Philadelphia, PA)

Human Experience and Discovery Domain – The goal of the domain is to provide authentic experiences and stories that will allow learners to explore the impact that organ and tissue donation has on the lives of donors, recipients, medical professionals, family, and community members.

Implementation Site (OTDA) – A school site that has been funded through an OTDA mini grant.

Informed Decision – The act of reaching a conclusion or making up one's mind after acquainting oneself with knowledge of a subject.

Initiative – A government or publicly funded project. The OTDA Curriculum Framework Initiative was started in 1997 between two organizations, PDE and IU 13.

Issues and Considerations Domain – The goal of this domain is for secondary students to explore the medical, demographic, social, legal/political and global issues relevant to organ and tissue donation that are pertinent to the learning context.

IU 13 – (Lancaster-Lebanon) Intermediate Unit 13

Listserv – The listserv allows messages to be posted to all that sign up and volunteer an e-mail address.

MTF – Musculoskeletal Transplant Foundation

NKF – National Kidney Foundation

OPO – Organ Procurement Organization

OTDA – Organ and Tissue Donation Awareness Project

OTDA Subcommittee – A group of people committed to a common purpose. The OTDA Subcommittee consisted of people from Gift of Life, CORE, MTF, NKF, community members (including teachers), donor families, and recipients. The purpose of this committee is to review drafted OTDA curriculum and evaluate the progress of OTDA staff in their pursuit toward OTDA Curriculum Framework goal achievement.

PDE – Pennsylvania Department of Education

Pilot Site – A program that is produced as a prototype for consideration for adoption. The OTDA program developed a curriculum framework to be tested at seven secondary schools within Pennsylvania, with hopes of successfully gaining additional high schools to adopt its curriculum content.

Resources – Information that can be used for support or help. The OTDA toolkit gives a teacher resources (e.g. CD-Rom/DVD, sample lesson plans, OTDA facts and myths, etc.).

Toolkit – A set of resources (e.g. sample lesson plans, CD-Rom, OTDA classroom activities, real-life stories, etc.) used to aid a teacher in educating students on specific themes or content.

Topic Indicator – Topic or subject areas that relate to the larger domain content areas. For example, the Biomedical Information Domain provides secondary students with baseline knowledge related to the topic indicators: anatomy and physiology of organ and tissue donation, transplantation process and the facts and fictions associated with organ and tissue donation awareness. Taken together, the topic indicators make up the entire content domain.

Working with Community Resources Domain – The goal of this domain is to make secondary students aware of the many community resources related to organ and tissue donation that are available to them.



PA Partners and Regional Speaker Resources

The following information about our PA partners is invaluable to you as a PA secondary educator who is considering implementing organ and tissue donation education in your classroom. You will no doubt want access to free and easy-to-use materials and guest speakers. The organizations will also be able to provide you with information about classroom activities, assembly services, and field trips. To arrange a guest speaker, contact your regional OPO, the National Kidney Foundation, or MTF directly with the information below.

Greetings from CORE

The Center for Organ Recovery & Education (CORE) is one of the oldest and most innovative organ procurement organizations in the United States. CORE works with 155 hospitals throughout western Pennsylvania, West Virginia, and a small portion of New York to provide the organs, tissue and corneas for transplantation.

In addition to offering families the opportunity to donate, CORE coordinates the surgical recovery efforts and placement of organs and corneas. Since its 1977 inception, the not-for-profit, full service agency has helped provide renewed health to more than 300,000 people through organ, tissue and corneal transplants. Over the years, CORE has achieved many milestones.

One of its most significant accomplishments was the 1991 creation of a formalized educational program tailored to schools. CORE successfully extended the donation message to hundreds of schools and thousands of students throughout its region. The ability to reach the schools would not be such a success without the commitment of educators. The educators have worked closely with CORE to convey the donation message through all disciplines, including health, science, English, driver's education, life skills, and biology classes.

Through OTDA, the donation message will reach beyond the traditional classroom setting. In partnership with educators, CORE will strive to disseminate accurate information on donation and to stress the importance of sharing information on donation with family and friends. What is achieved through the OTDA today will create an integrated educational model for tomorrow. In addition to its educational relevance, it carries with it a responsibility to society and will lead to more lives saved and improved through donation and transplantation.



Center for Organ Recovery & Education

For more info on youth education programs, please contact: Center for Organ Recovery & Education at 800-DONORS-7 ~ 800-366-6777 or visit our website at: www.core.org

PA Partners and Regional Speaker Resources

Gift of Life Donor Program

Educators strive to create a learning experience that will guide, inspire, and motivate young people to step outside of familiar territory and explore ideas that are new and challenging. Introducing organ and tissue donation and transplantation in the classroom provides an opportunity to help students develop life-long lessons, and may even save lives.

Students may know that more than 108,000 patients in the United States and almost 4,700 men, women and children in our region await a life-saving organ transplant. Perhaps, they may have read, that while a majority of Americans support donation, less than half actually makes a decision to donate. Research, however, among high school students, indicates that, while some students possess some knowledge and skills about donation and transplantation, gaps in knowledge and misconceptions about organ and tissue donation appear to be prevalent among students. Teaching about organ and tissue donation is more than understanding numbers on a waiting list, or how long the human heart can remain out of the body before transplant—it's about the human experience—helping to create a sense of social responsibility in young people.

Education and communication is key to increasing awareness and saving lives. As a member of the Pennsylvania Governor's Organ Donation Advisory Board, Gift of Life Donor Program participates with the Lancaster-Lebanon Intermediate Unit 13 and Pennsylvania Department of Education in the Organ and Tissue Donation Awareness Project. Gift of Life provides professional and public education programs and serves as the primary source of information on organ and tissue donation and transplantation in the region.

Gift of Life Donor Program, the region's nonprofit organ and tissue donor program, serves as the link between those who donate and patients awaiting life-saving organ transplants in eastern Pennsylvania, southern New Jersey and Delaware. Founded in 1974, Gift of Life is one of the oldest and largest of 58 organ and tissue procurement organizations in the United States, responsible for recovering and distributing organs and tissues used in life-saving and life-enhancing transplants. Working with the nationwide organ and tissue sharing network run by the United Network for Organ Sharing (UNOS), Gift of Life accesses the registry of men, women and children in the region who are waiting for a life-saving organ transplant when a potential organ becomes available. Gift of Life serves the region's 14 transplant centers, where heart, lung, kidney, liver and pancreas transplants are performed. In addition, Gift of Life coordinates life-enhancing tissue transplants for area residents who are in need of corneas for sight restoration, as well as skin, tissue and bone to repair injuries. Gift of Life Donor Program partners with the region's 150 acute care hospitals to offer families the option of donation. Due to the selfless generosity of those who donate and their families, Gift of Life has coordinated more than 23,000 transplants for patients in the region since 1974.

The success of organ and tissue donation and transplantation would not be possible without the continued relationships that Gift of Life has developed with not only the healthcare community, but also with area businesses, civic and community groups, and schools. Gift of Life works in partnership with educators and schools to raise awareness among young people about the importance of donation and transplantation. Gift of Life Donor Program is committed to promote and provide quality educational programs and recognizes the importance of learning about the facts and human experience in order to prompt discussion about organ and tissue donation. Donation of organs and tissues for transplants occurs when an individual makes a decision to become a donor. Only when people are informed are they able to make such an important, lifesaving decision.



For more information on youth education programs, please contact Gift of Life Donor Program at 800-DONORS-1 (800-366-6771) or visit our website at www.donors1.org.

PA Partners and Regional Speaker Resources

National Kidney Foundation

The National Kidney Foundation, Inc. (NKF) is a nationwide 501(c)(3) non-profit voluntary health organization. Our division, the National Kidney Foundation Serving the Alleghenies, was founded in 1978 by a group of concerned people who wanted to increase awareness of kidney and urinary tract diseases and work toward finding a cure. We are based in Pittsburgh and serve 33 counties in western Pennsylvania and nearly all of West Virginia.

Our mission is to prevent kidney and urinary tract diseases, to improve the health and well-being of individuals and families affected by these diseases and to increase the availability of all organs for transplantation. This mission is supported by six operational goals: 1) supporting research and research training, 2) continuing education of health care professionals, 3) providing patient services and educational programs 4) educating the public, 5) shaping health policy, and 6) fund raising to support the cause. We offer a broad spectrum of initiatives, services and signature programs to achieve our goals, including:

Kidney Early Evaluation Program (KEEP™) – KEEP is a free kidney health screening program designed to raise awareness about kidney disease among high risk individuals and provide testing and educational information, so that kidney disease and its complications can be prevented or delayed.

People Like Us (PLU™) – PLU is a growing movement to empower, educate and enable people with CKD, transplant recipients, donors and family members to become effective advocates to the public, their fellow patients and to government officials on issues related to their health.

Community Walks – Support your local division of the NKF by holding a community walk! Our “Walk in a Box” program provides all the materials you need to have a successful fundraiser in your town.

Kickin’ for Kidneys – This school-based program is a wonderful way to educate students about kidney disease while supporting the NKF. Our staff will provide fun instruction about kidney health and lead a game of kickball to raise funds for our local division.

Casual for Kidneys – Slip into your most comfortable jeans and enjoy Casual for Kidneys at your workplace! Ask your employer to host a Casual for Kidneys fundraiser, an easy, comfy way to contribute to the NKF.

U.S. Transplant Games - The U.S. Transplant Games is a bi-annual four day athletic competition among recipients of organ transplants.

World Kidney Day – The second Thursday of March every year is designated as World Kidney Day. World Kidney Day is an international day of awareness, with the NKF heading up the U.S. effort.



National Kidney Foundation™
Serving the ALLEGHENIES

For more information on the National Kidney Foundation Serving the Alleghenies and its programs, visit www.kidneyall.org or call 800-261-4115.

PA Partners and Regional Speaker Resources

Musculoskeletal Transplant Foundation

The Pennsylvania Regional Tissue Bank (PRTB) was chartered and incorporated in 1978 as a free-standing, non-profit, community based tissue bank. In fact, it was the first community-based tissue bank in the United States. PRTB officially began operations in 1982 when it was housed temporarily in the Scranton State Hospital with administrative offices in the county courthouse annex building. This was also the year PRTB received its first donor, David D'Agostino.

In 1983, a loan was secured to purchase and renovate an old firehouse in South Scranton to house the future home of the tissue bank. PRTB joined the American Association of Tissue Banks in 1984, and a year later moved into the new facility on Cedar Avenue in Scranton. The new facility is dedicated in the name of David D'Agostino, its first donor, in order to commemorate all donors.

Dr. Hans Burchardt, known as a transplant pioneer at the University of Florida College of Medicine, joined the staff as Executive Director in 1985. Also in that year, PRTB was the first tissue bank to institute a long-term tissue-tracking program, which has become a standard that all tissue banks follow today. In 1988, PRTB became the eighth tissue bank to be accredited by the American Association of Tissue Banks (AATB). In 1989, three members of the technical staff at PRTB, namely Jack Connors, Ted Bender and Paul Kostiak, became the first individuals in the state and three of 30 in the country to become Certified Tissue Bank Specialists. This was the inaugural year for this certification test given by the AATB.

PRTB, continuing its sphere of influence, invited the head of the East German Tissue Bank to visit PRTB in 1990, and thus began a long history of the two countries working together. The following year of 1991, PRTB hosted a group of transplant leaders in a forum to begin drafting AATB's Musculoskeletal Technical Manual. PRTB also began working with Japanese officials in providing technical training to Japanese technicians. The next year (1992), the first tissue bank opened in Nagoya, Japan with assistance from PRTB.

By 1993, PRTB merged with the Keystone Skin Bank and relocated the processing to the Scranton facility, where the much-needed skin was provided to burn victims throughout the country. The program continued to expand in the ensuing years: 32 people were employed, and a bio-tech laboratory was added to experimentally transplant human liver cells.

In 1999, the Musculoskeletal Transplant Foundation (MTF) sought to enhance and improve its processing of human tissue capabilities through an alliance with PRTB. A merger was initiated, and both banks worked jointly in producing quality tissue grafts. The result of this merger opened the door for PRTB to build and develop a 28,000 square-foot facility in partnership with MTF and Synthes (a company well known for its service to the musculoskeletal community for metal and plastic implants). PRTB opened the new facility in Jessup, PA on April 3, 2000. Last year, more than 200,000 tissue grafts were transplanted from tissue processed at PRTB and MTF, either saving, enhancing, or improving the quality of life of the recipient.

You may ask why allograft bone or tissue (which is bone or tissue transplanted from the body of one person to another) is used? Usually there are inadequate amounts of available autograft (a person's own bone or soft tissue) and the size and shape of a person's own bone is limited. Allograft bone is commonly used in reconstructive surgery of the hip, knee and long bones, as well as in cases of bone loss due to trauma or tumors. Using allograft tissue from another person eliminates the need for a second operative site to remove autograft bone or tendon, reduces the risk of infection and safeguards against temporary pain or permanent loss of function at or near the secondary site. Thus, the decision to donate a loved one's tissue will most likely reduce the suffering of other individuals, improve the quality of a fellow human being's life, save a life, or provide eyesight, a limb, or a joint.



To set up a guest speaker or a tour at MTF, call 1-800-433-6576 or visit mtf.org.

Donation and

OTDA
Classroom
Toolkit

Transplantation Basics

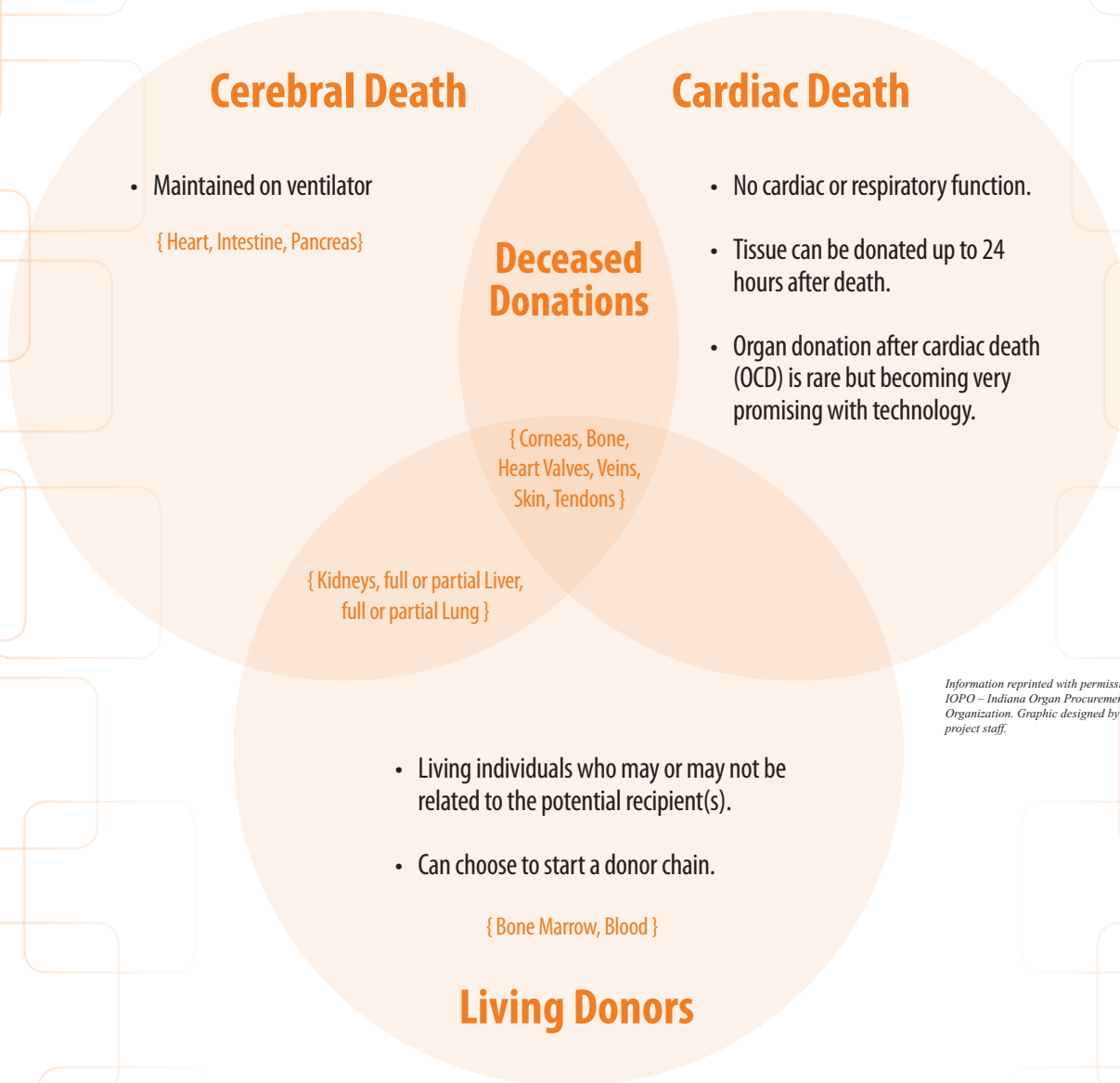


Facts and Myths

There are many myths and misconceptions about donation and transplantation. Many of these myths have contributed to misunderstanding. If you hear a story about donation or transplantation, check it out by contacting a transplant expert in your local community. You will probably find that the story is not true. Here are answers to a few common myths you may have already heard:

Myth	Fact
A man went to a party and woke up the next morning in a bathtub full of ice. One of his kidneys was stolen and for sale on the black market.	There is no documented case of this ever happening. First, it is illegal to buy and sell organs in the United States. Second, due to the complexity of transplantation, piracy is practically impossible. The process of matching donors with recipients, the need for highly skilled medical professional to perform the surgery, and the need for modern medical facilities and support necessary for transplantation make it highly unlikely that this system could be duplicated in secrecy.
Rich and famous people get moved to the top of the waiting list, while “regular” people have to wait a long time for a transplant.	Our national organ allocation and distribution system is blind to wealth or social status. The length of time it takes to receive a transplant is governed by many factors, including blood and tissue type, length of time on the waiting list, severity of illness and other medical criteria. Factors such as race, gender, age, income or celebrity status are never considered.
Many people have legitimate religious reasons not to donate.	All major religions support donation, typically considering it a generous act that is the individual’s choice.
If someone is in an accident and the hospital knows they want to be a donor, the doctors won’t try to save his or her life.	The medical team treating you is separate from the transplant team. The transplant team is not notified until all lifesaving efforts have failed, death has been determined and your family has consented to donation.
A donor’s family has to pay additional expenses.	A donor’s family is never charged for donation.
A history of medical illness or advanced age will automatically eliminate your chance for becoming a donor.	Age limits for organ donation no longer exist, and at the time of death, qualified medical personnel will review medical and social histories to determine donor suitability on a case-by-case basis.
Becoming an organ and tissue donor will leave my body disfigured.	Donated organs and tissues are removed surgically, in a routine operation similar to gallbladder or appendix removal. Donation does not disfigure the body or change the way it looks in any way.
You can sell your organs.	The National Organ Transplant Act makes it ILLEGAL to sell human organs and tissues. Violators are subject to fines and imprisonment. Among the reasons for this rule is the concern of Congress that buying and selling of organs might lead to inequitable access to donor organs, with the wealthy having an unfair advantage.
People can recover from brain death.	It is impossible to recover from brain death.
Organ recipients acquire their donor’s characteristics.	It is scientifically impossible for transplant recipients to acquire their donor’s characteristics. Transplanted organs do not have a memory.

What are the three types of donors?



Information reprinted with permission:
IOPO – Indiana Organ Procurement
Organization. Graphic designed by IU 13
project staff.

Brain Death and Coma - What's the Difference?

Brain Death

All brain tissue is DEAD
NO blood flow to the brain
NO electrical activity in the brain
NO CHANCE OF RECOVERY

Brain death is death.

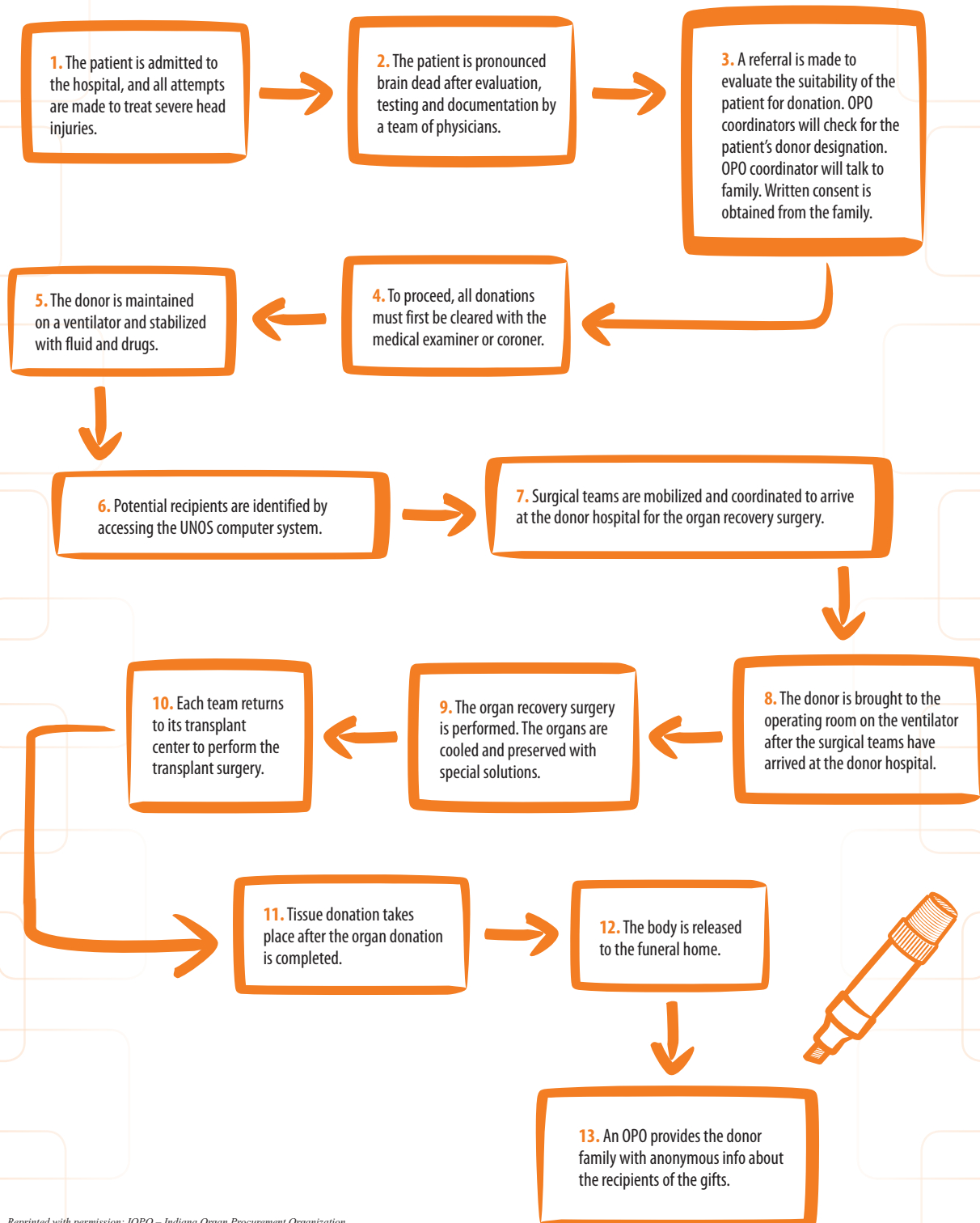
Coma

A PORTION of the brain is INJURED
Brain still receiving blood flow
Electrical activity is present in the brain
Recovery MAY be possible

Reprinted with permission: IOPO – Indiana Organ Procurement Organization

Sequence of Key Activities During a Deceased Donation

The sequence and time frame of the following events will vary depending upon individual circumstances. The entire donation process takes from a few hours to twenty or more hours.



How Does the Waiting List Work?

Submitted by Dwendy Johnson, Gift of Life Donor Program

Hospitals are required by law to notify the local organ procurement organization of the impending death of a patient. The OPO staff will then consider possible medical disqualifications for organ and tissue donation. If none are readily apparent, a trained transplant coordinator will visit the hospital to further evaluate the patient. If the patient is medically suitable, the option for donation is offered to the next of kin. Once the family consents, the coordinators work with the national computerized waiting list at UNOS to match the donated organs with the most appropriate recipient(s) and arrange for the recovery surgery. They also stay with the donor's family and provide support as long as the family wishes. Immediately after the organ(s) are surgically removed from the donor, the OPO staff transports the organs to the transplant centers, where the recipients have been readied for surgery.

Individuals waiting for transplants are listed by the transplant center in their area. Their name then goes into a national computerized waiting list of potential transplant patients in the United States maintained by the United Network for Organ Sharing (UNOS). UNOS heads a 24-hour telephone service to aid in matching donor organs with patients on the national waiting list and to coordinate efforts with transplant centers.

When donor organs become available, the organ procurement organization (such as Gift of Life Donor Program or CORE) provides UNOS with information about the medical characteristics of the donor and specific organs, including medical compatibility between the donor and potential recipient(s) on such characteristics as blood type, weight, and age, as well as the recipients' urgency of need; and length of time on waiting list. Also, preference is generally given to recipients from the same geographic area as the donor, because timing is a critical element in the success of transplants.



Living Donation

Information submitted by Julia Homa and Michelle Christenson, CORE

You can make a difference. Join the ranks of over 50,000 living donors who have donated their kidneys to people facing kidney failure. Since 1959, when the first successful living donor transplant took place in Boston, living donors have been giving the gift of life and making a difference. This tradition has allowed thousands of people to live longer, healthier lives free from the challenging routine of dialysis therapy. Donating a kidney not only helps the person who receives the kidney but also shortens the deceased donor wait list, helping another person get a deceased donor kidney sooner. Also, all living donors are awarded list points for their donation so if they ever need a kidney later in life, they will be at or near the top of the deceased donor list, shortening the wait time for a deceased donor kidney.

Types of Donation

There are three types of living kidney donation:

- Direct donation
- Paired exchanges
- Non-directed donation

Direct Donation

With direct donation, the donor knows the recipient and wants to donate directly to that person. If the donor is compatible with the intended recipient, the donor's kidney can be transplanted directly into the recipient. The problem with direct donation is that, in the majority of the cases, direct donors are incompatible with their intended recipients. Below is an illustration of the three hurdles that direct donors must clear before they can donate their kidney to a specific recipient. If the direct donor is not blood compatible with the recipient or does not pass the cross match tests, the direct donor can still help the recipient through a paired kidney exchange.

Donor is healthy.
(Hurdle #1)



**Donor and Recipient
are blood compatible.**
(Hurdle #2)

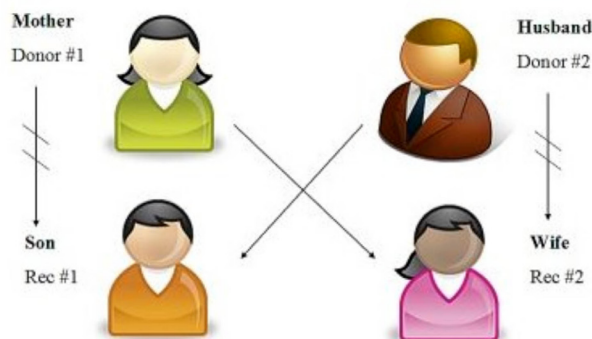


**They pass the
"Cross Match".**
(Hurdle #3)



Paired Kidney Exchanges

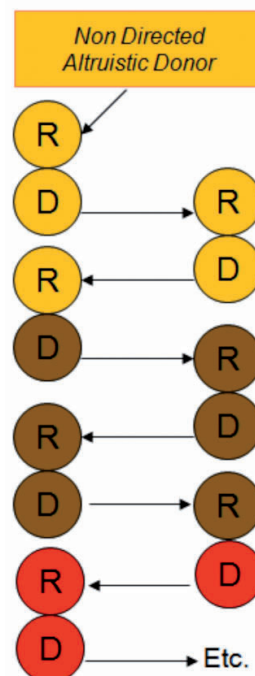
In a kidney exchange, a donor will donate their kidney to another recipient that also has an incompatible donor. In the example to the right, a mother and her son enter into an exchange. The son needs a kidney and his mother wants to donate hers, but they are incompatible. A husband and his wife also enter the Registry in a similar situation; the husband wants to donate to his wife but is incompatible. In this kidney exchange, the mother in the first pair would donate her kidney to the wife of the second pair. The husband in the second pair would donate to the son in the first pair. The transplant operations would take place at the same time with the donors traveling to the recipient's hospital. The first recorded paired exchange was performed in 2000, and since then, this process has been growing in popularity driven by the significant benefits of better matching between donors and recipients. In 2007 the first donor chain (a new form of paired exchange) was started which significantly increases the benefits of paired exchanges.



Non-directed Donation & Donor Chains

In a non-directed donation, the donor does not have a specific recipient identified and donates to a recipient that is a good medical match. The first, non-directed donation occurred in 1999 at Fairview-University Medical Center in Minneapolis, Minnesota, and since this first heroic act, hundreds of people have become non-directed donors and providing life-saving organs for people in need. Most recently, non-directed donors have begun initiating donor chains which have the potential to facilitate thousands of additional living donor transplants at much higher compatibility levels. Donor Chains are a way for one non-directed donor to help dozens of people get transplants instead of just one person. Donor chains are a major breakthrough in living donations and are revolutionizing living donor transplants by eliminating incompatibility as a barrier to donation and providing a way for recipients to find very well matched kidneys much faster than with traditional paired exchange.

Donor chains are initiated by a non-directed donor and fundamentally change the math of paired exchanges, allowing for better donor-recipient matches, providing a way for poorly compatible donors and recipients to improve donor match compatibility. Donor chains have the potential to facilitate highly compatible transplants, in some cases six antigen matches, allowing the transplanted kidney to function longer in the recipient, creating fewer antibodies and allowing the recipient to potentially take lower doses of medications. The first six antigen match between strangers was found in a donor chain by the National Kidney Registry in January of 2008. Many non-directed donors choose to start donor chains because it is a way to help more than one person suffering from kidney failure. One donor chain has the potential to facilitate up to 36 transplants per year. The National Kidney Registry attempts to start donor chains with all non-directed donors that enter the Registry, maximizing the gift-of-life provided by non-directed donors.



Recipient Benefits

Dialysis vs. Transplant

People facing kidney failure who are medically qualified for transplant surgery have two basic options: stay on dialysis or get a transplant. For saving/extending lives, transplantation is superior to long-term dialysis (Reference: New England Journal of Medicine, Volume 341: 1725-1730, December 2, 1999, No. 23). Transplant recipients, on average, live twice as long as patients who stay on dialysis and are not restricted by the challenging routine of dialysis therapy. These and other benefits lead many people to seek transplants.

Deceased Donor vs. Living Donor Transplants

If one chooses to pursue a transplant, he or she will have two options: a deceased donor transplant or a living donor transplant. Kidneys transplanted from living donors are superior because they last nearly twice as long as kidneys transplanted from deceased donors.

The reason that kidneys from living donors last longer has to do with several complex medical issues, including the death process and the amount of time the kidney is “cold” or out of the body, whereas living donor kidneys are removed from a healthy person who is only a few feet away in the next operating room. This provides the best conditions for the transplanted kidney to last as long as possible in the recipient.

Time Matters

Once a person has made the decision to get a transplant, time matters. Studies indicate that the less time the patient is on dialysis, the higher the survival rate of the transplanted kidney (Reference: Effect of Waiting Time on Renal Transplant Outcome, Kidney International. 58(3):1311-1317, September 2000).

In addition, it is now believed that receiving a preemptive transplant and never going on dialysis leads to higher transplant success rates and is best for the patient



Donor Risks

Mortality Rate

Although more than 6,000 living donors in the United States donate their kidneys every year, the procedure is not without risks. The donor surgery has a .03% mortality rate (i.e.: 3 in 10,000). As a point comparison, according to the U.S. Census Bureau, the 2007 infant mortality rate in the United States is .64% (e.g.: 64 in 10,000) indicating that it is about 20 times riskier to be born in the United States than to donate a kidney.

Life Expectancy

Donating a kidney is major surgery but does not appear to reduce a person's life expectancy. Interestingly, people who have donated a kidney outlive the average person. (Reference: Fehrman-Ekholm, Ingela 2,3; Transplantation, 64(7): 976-978, October 15, 1997.) This fact has fueled an ongoing debate over why kidney donors live longer than expected. Some experts believe that it is simply a selection bias since only healthy people can be selected to be living donors. Others argue that the altruistic act of giving the gift of life and the happiness and satisfaction that follows has a positive impact and leads to a healthier and longer life.

Complications

In addition to the mortality rate, living donors face the possibility of post-operative complications such as bleeding, wound infection, fever, etc. Most of the post-operative complications are generally short term and can be addressed with quality medical care.

Recovery Time

The two types of kidney removal procedures, laparoscopic and non-laparoscopic, have very different recovery times. Laparoscopic kidney removal is less invasive and allows the donor to be discharged one or two days after surgery and to return to work in one to four weeks depending on the donor's occupation. Non-laparoscopic surgery has a longer recovery time. When donors register with us they can set a preference as to what type of kidney removal procedure they are willing to undergo. However, the ultimate decision is still up to you in consultation with your healthcare provider.

Related Sites

Donate Life America

www.shareyourlife.org/UnderstandingDonation/LivingDonation.php

Living Donors Online

www.livingdonorsonline.org/general.htm

National Kidney Foundation

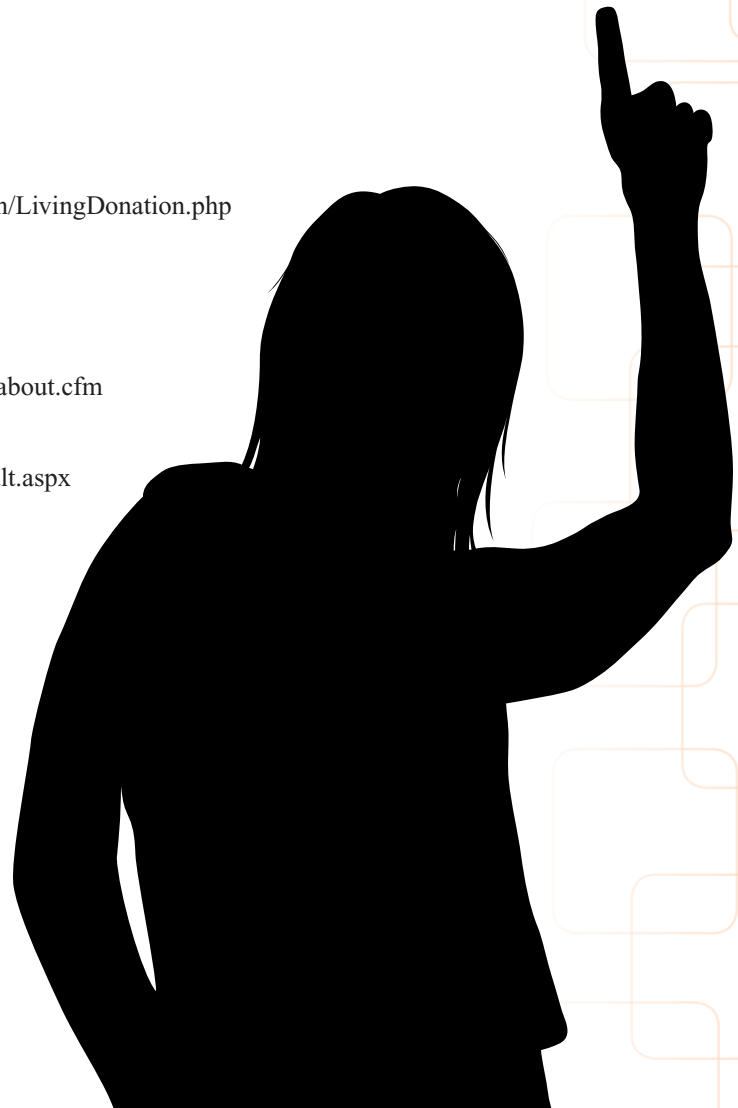
www.kidney.org/transplantation/livingDonors/about.cfm

Transplant Living

www.transplantliving.org/livingdonation/default.aspx

Health Guidelines for Living Donation

www.kidneyregistry.org/health_guidelines.php



Frequently Asked Questions (FAQs)

If I decide to register as an organ donor, will it affect the quality of medical care I receive?

No! Every effort is made to save your life before donation is considered. Donors receive the same high quality care that nondonors receive. Medical personnel must follow very strict guidelines before they can pronounce death and remove the donor's organs and tissues. The first priority for the medical personnel is to save the lives of all patients. Organ and tissue donation is not even discussed until every life-saving option is exhausted and death has been declared or is imminent. The doctors and nurses at the medical center are completely separate from those who work for the organ procurement organization (OPO). Donation occurs as an option when there is nothing more that can be done to save the donor's life.

Who can become a donor and is there an age limit?

Anyone can be a potential organ and tissue donor, from newborns to senior citizens. Eligibility is determined on a case-by-case basis at the time of death and may be affected by medical history, the cause of death and other factors. Persons under 18 years of age must have a parent or guardian's consent.

What organs can be donated?

The heart, lungs, liver, kidneys, pancreas, stomach, and intestines can be donated.

What tissues can be donated?

- Cardiovascular tissue, such as heart valves and saphenous veins.
- Eye tissue, such as corneas and whole eyes.
- Bone tissue, such as ribs, bones of the arm, leg, shoulder, hip, ankle, spine and jaw.
- Connective tissue, such as ligaments, tendons, cartilage and fascia.
- Skin grafts from the front and back of the legs and the chest.

What is the difference between organ and tissue donation?

Most of the time organ donation can only be done on a donor who has been declared brain dead, but whose other organs are kept functioning by sophisticated hospital machinery. Because brain death is not a common occurrence, viable organ donors are rare. Tissue donation can occur even after the heart has ceased beating. Most deaths produce potential tissue donors (depending on the medical history). Organ donors can also be tissue donors.

Can I designate myself a donor before I get a driver's license or can I update my donor status even before my driver's license needs to be renewed?

Yes, you can decide to become a donor and make your wish official on the PA registry at any time. You can register online at www.donatelife-pa.org. *If you are 18, you need parental permission whether you register online or when you get your license.*

Can I choose what is donated?

Yes. On your donor card you can specify what you want to donate, or what you may wish not to donate. You also have the option to choose donation for transplantation and/or for research. It's completely up to you and your family. Share your decision with your family; it will make the process much easier on them if they know your wishes.

What are the benefits of organ donation?

All organ transplants are life saving, except for kidney and pancreas transplants, which are considered to enhance the recipient's quality of life. Kidney transplantation frees the recipient from needing dialysis, and, in many instances, does save or lengthen the life of the patient.

Would my family member feel any pain if his or her organs were donated?

No. The person is dead and no longer feels pain.

Will donation disfigure my body? Can there be an open casket funeral?

Donation does not disfigure the body and does not interfere with funeral plans, including open-casket services. In organ and tissue donation, the body is treated with a great deal of respect and dignity. Donation typically does not delay funeral arrangements.

What do religious groups think about organ and tissue donation?

Most religions throughout the world support organ and tissue donation. If you have concerns about your religion's position, you are encouraged to discuss this with your own religious advisor.

Why should minorities be particularly concerned about organ donation?

Race does not play a part in the allocation of organs. Some diseases of the kidney, heart, lung, pancreas and liver are found more frequently among specific racial or ethnic populations. For example, African Americans, Asians, Pacific Islanders, and Hispanics are three times more likely to suffer from end-stage renal disease than Caucasians. Native Americans are four times more likely than Caucasians to suffer from diabetes.

Successful transplantation often is enhanced by the matching of organs between members of the same ethnic and racial group. For example, an African American patient is often less likely to reject a kidney if it is donated by an individual who is also African American. A shortage of organs donated by minorities can contribute to longer waiting periods for transplants for minorities and potentially death.

For more information on minorities and organ donation and transplantation, contact Minority Organ Tissue Transplantation Education Program (MOTTEP) at 202-865-4888, United Network for Organ Sharing (UNOS) at www.unos.org, or the Department of Health & Human Services at www.organdonor.gov.

Are there any costs to my family for donation?

No! Donor families are only responsible for the emergency care their loved one received prior to brain death and funeral costs. Procurement agencies pay the costs associated with recovery of organs and tissue from donors. Donor families are not responsible for any additional costs.

Can people sell their organs, tissues, or body?

No! The National Organ Transplant Act makes it ILLEGAL to sell human organs and tissues in the United States. Violators are subject to fines and imprisonment.

How are organs and tissues recovered?

Organs are recovered in a sterile operating room, using qualified surgical personnel and protocols. Tissue is often recovered in operating rooms, but can also be recovered in sterile surgical facilities at medical examiners' offices or at some mortuaries. All donations are a precious gift and are treated with respect and dignity. Standard surgical sutures or staples are used to close the incisions, just as with any operation. If needed following tissue donation, prosthetic devices will be used to maintain the body's original form.

Can I change my mind?

Yes. If your donor status is indicated on your driver's license, either change your status when you renew your license or go online to change your status. **You can register (or unregister) at www.donatelife-pa.org. Make sure you tell your family your decision.**

What is done to ensure the transplant recipient's safety?

Every effort is made to ensure the safety of organ and tissue donations. Each donor is meticulously screened for any infectious diseases, and a social history is gathered.

What are the benefits of tissue transplantation?

Tissue transplants enhance the quality of life of the recipient, except for skin, which saves more lives than all tissues and organs combined. Listed below are some the ways tissue is used to help recipients:

- Skin grafts for burn victims
- Fusing of spinal defects to reduce pain
- Replacement of benign cystic bone defects to improve mobility
- Replacement of cancerous bone tumors to prevent amputation
- Straightening and strengthening of spines distorted by scoliosis
- Replacement of hipbones to restore mobility
- Reconstruction of jaw and other bones to restore normal facial appearance
- Restoration of sight and prevention of blindness
- Heart bypass surgery through use of saphenous veins
- Restoration of blood flow through use of saphenous veins
- Replacement of defective heart valves
- Repair damaged ligaments, cartilage and tendons for improved mobility

Can the donor's family receive any feedback after donation?

Yes. The family can request to receive information regarding how the various donated organs or tissues helped recipients.

Can recipients contact the donor's family? And how can the donor family contact the recipients of their loved one's organs?

Recipients of donated organs often want to find out specifics about the person that donated the organ they received. Also, many families that donate their relative's organs wish to know where and to whom the organs went. In general, the identity of the donor and the recipients of the organs is kept confidential to protect the privacy of each party. The regional OPOs coordinate.

What does the recovery process involve?

Only after all lifesaving efforts have been made, is the care of the donor transferred from one medical team to another. Once the decision to donate has been made, an OPO contacts the transplant surgeons who will perform the surgery to recover the organs. An OPO staff member, called a recovery coordinator, accompanies the surgeons to the donor hospital. The recovery coordinator also is responsible for ensuring that the organs are prepared appropriately for transport to the hospital where the transplant will be performed. Once the organs are recovered, the recovery coordinators then will recover the tissue and corneas, if consent has been obtained.

How many people can be helped through donation?

One organ, tissue and corneal donor directly may help between 200 and 400 people, sometimes more, sometimes less. Organs can help others through life-saving transplants. Corneas renew sight, and tissue may help to restore someone's ability to walk, run or move freely without pain.

What is brain death?

Brain death results most often from severe head injuries caused by strokes, motor vehicle accidents, shootings, acute allergic reactions or some illnesses. When the injury or illness permanently cuts the blood and oxygen supply to the brain, the brain stops working. If the brain stops working, the body will stop working and die. Brain death is permanent and irreversible.

How is it decided who receives organs?

Donated organs are given to patients based on the match between the donor and intended recipient's height, weight, and blood type; medical urgency; and time on the waiting list. In spite of another common myth, a person's wealth, age, race and gender do not affect who receives organs.

How else can I help?

You can help by making a contribution to the Governor Robert P. Casey Memorial Organ and Tissue Donation Awareness Trust Fund, which helps support donor awareness and education programs in Pennsylvania. Simply add a dollar to the driver's license fee or car registration renewal fee to help educate others about the importance of organ and tissue donation.

FAQs compiled with IOPO, JRI/Flow, The Gift of Life Donor Program and CORE sources

Religions and Donation

All major religions support organ donation as a humanitarian gift giving life. If you have questions about donation, we encourage you to talk with the leader of your religious community.

Below is a basic summary of some of the key beliefs. More detailed information can be found at http://organdonor.gov/donation/religious_views.htm

AME & AME Zionism

(African Methodist Episcopal) Organ and tissue donation is viewed as an act of neighborly love and charity by these denominations. They encourage all members to support donation as a way of helping others.

Anabaptism (Amish, Brethren, Mennonite)

The Anabaptist religions have no formal position on donation; however, they all support donation as a life-saving act to improve others' lives.

Baptism

Organ and tissue donation is supported as an act of charity. The Baptist Church leaves the decision up to the individual.

Buddhism

Buddhists believe organ and tissue donation is a matter of individual conscience and place a high value on acts of compassion. Reverend Gyomay Masao, president and founder of the Buddhist Temple of Chicago says, "We honor those people who donate their bodies and organs to the advancement of medical science and to saving lives." The importance of letting loved ones know your wishes is stressed.

Catholicism

Catholics view organ and tissue donation as an act of charity and love. Transplants are morally and ethically acceptable to the Vatican. Pope John Paul II has stated, "The Catholic Church would promote the fact that there is a need for organ donors, and Christians should accept this as a challenge to their generosity and fraternal love so long as ethical principles are followed."

Christian Science

The Church of Christian Science does not have a specific position regarding organ donation. The question of organ and tissue donation is an individual decision.

Episcopalian

The Episcopal Church passed a resolution in 1982 that recognizes the life-giving benefits of organ, blood and tissue donation.

Hinduism

According to the Hindu Temple Society of North America, religious law does not prohibit Hindus from donating their organs. This act is an individual's decision.

Islam

The religion of Islam strongly believes in the principle of saving human lives.

Jehovah's Witness

According to the Watch Tower Society, Jehovah's Witnesses believe donation is a matter of individual decision. Jehovah's Witnesses are often assumed to be against donation because of their opposition to blood transfusions. However, this merely means that all blood must be removed from the organs and tissue before being transplanted.

Judaism

All four branches of Judaism (Orthodox, Conservative, Reform and Reconstructionist) support and encourage donation.

The Lutheran Church of America

Lutherans passed a resolution in 1984 stating that donation contributes to the well being of humanity and can be "an expression of sacrificial love for a neighbor in need." They call on "members to consider donating... and to make any necessary family and legal arrangements, including the use of a signed donor card."

Mormonism

(Church of Jesus Christ of Latter-Day Saints)

The Church of Jesus Christ of Latter-Day Saints believes the decision to donate is an individual one made in conjunction with family, medical personnel, and prayer.

Presbyterianism

Presbyterians encourage and support donation. They respect a person's right to make decisions regarding his or her own body.

Protestantism

Protestants encourage and endorse organ donation. The Protestant faith respects an individual's conscience and a person's right to make decisions regarding his or her own body.

Seventh-Day Adventism

Donation and transplantation are strongly encouraged. They have many transplant hospitals, including Loma Linda in California, which specializes in pediatric heart transplants.

Society of Friends (Quakers)

Organ and tissue donation is widely believed to be an individual decision. The Society of Friends does not have an official position on donation.

Unitarianism

Organ and tissue donation is widely supported by Unitarian Universalists. They view it as an act of love and selfless giving.

United Church of Christ

Reverend Jay Lintner, Director, Washington Office of the United Church of Christ Office for Church in Society, states, "United Church of Christ people, churches and agencies are extremely and overwhelmingly supportive of organ sharing."

United Methodist

The United Methodist Church issued a policy statement regarding organ and tissue donation. In it they state, "The United Methodist Church recognizes the life-giving benefits of organ and tissue donation, and thereby encourages all Christians to become organ and tissue donors by signing and carrying donor cards or a driver's license, attesting to their commitment of such organs upon their death to those in need, as a part of their ministry to others in the name of Christ, who gave His life that we might have life in its fullness."

Minorities and Donation

The need for organ transplants and the shortage of donors affects people of all ethnic backgrounds.

Individuals from minority groups should give strong consideration to donation, as transplantation between people who are strong genetic matches is generally more successful. Approximately 25% of all organ donors represent minorities. Minorities make up 46% of the transplant waiting list, broken down as 26% African-Americans, 13% Hispanics, 5% Asians, and 2% identified as other.

Did you know that African-Americans are four times more likely to suffer from high blood pressure, which can lead to end-stage kidney failure and require a transplant? African-Americans make up 30% of the country's dialysis patients and one third of those waiting for kidney transplants.

Did you know that diabetes, a leading cause of kidney failure in the US, is estimated to be four to six times more common in Latinos/Hispanic Americans? This group makes up almost 10% of those waiting for kidney transplants.

Did you know that 38% of Asian Americans suffer from end stage renal (kidney) disease due to diabetes? One cause of end stage renal disease is glomerulonephritis. Asian Americans make up over 6% of patients waiting for kidney transplants and that number is growing each year.

Clearly, certain minority groups are more susceptible to the diseases that lead to the need for organ transplants. Education is essential for these groups to better understand disease prevention and the benefits of organ donation and transplantation.

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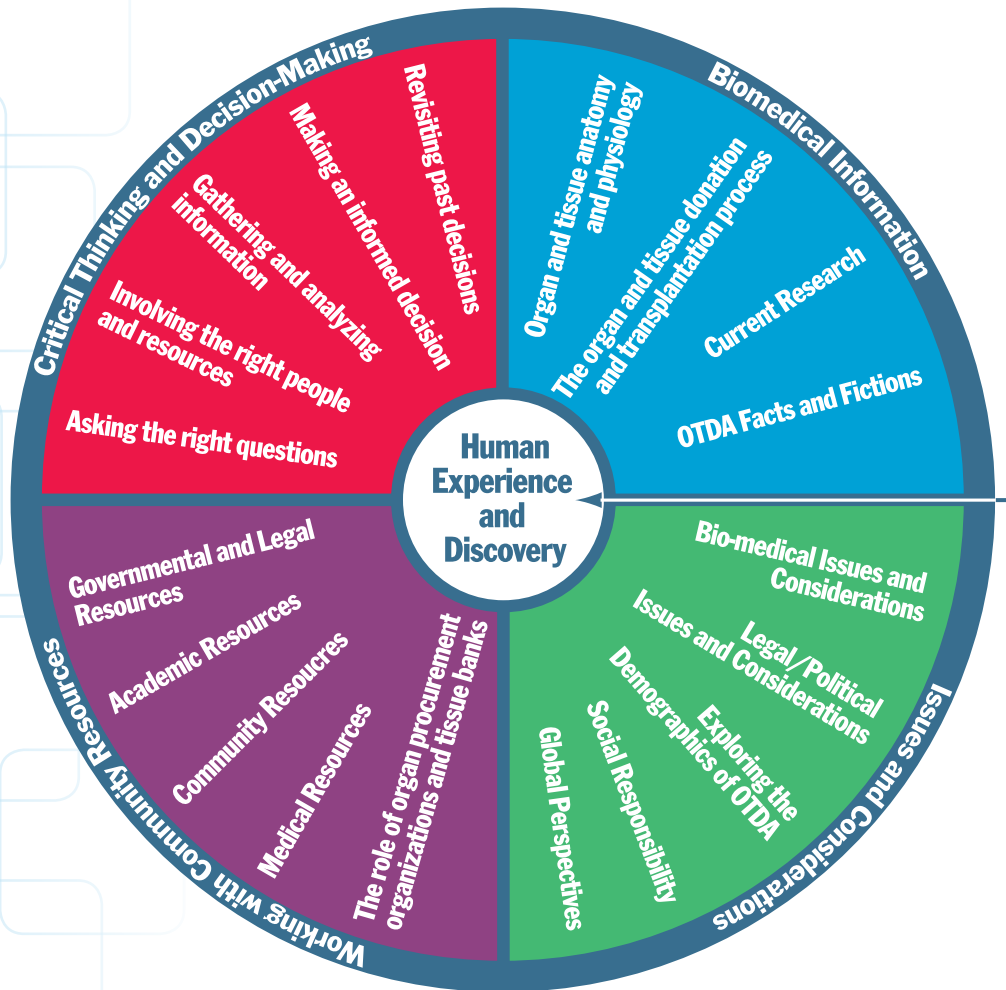


The OTDA Curriculum Framework and the Five Content Domains



OTDA
Classroom
Toolkit

Organ and Tissue Donation Awareness (OTDA) Curriculum Framework



- Donor
- Recipient
- Medical Professionals
- Family
- Friends
- Community



pennsylvania
DEPARTMENT OF EDUCATION

Lancaster-Lebanon
Intermediate Unit 13
iu13
An Education Service Agency

Introduction to the Curriculum Framework

The purpose of the OTDA Curriculum Framework is to aid the implementation of OTDA into high school curricula throughout Pennsylvania so that secondary education students can make informed decisions about organ and tissue donation. The framework provides an organizational structure around which instruction can be planned. The OTDA Curriculum Framework assists educators in determining ways to incorporate a critical topic into existing curricula in a way that addresses the individual needs of their students and community.

The framework was developed with a number of assumptions and beliefs. First and foremost, the curriculum has been designed to organize the knowledge and skills secondary students will need to make an informed decision related to organ and tissue donation. It does not presuppose a “correct” decision. The framework is learner-centered and based on current research. The curriculum framework also is a living document that will evolve with the research base. The framework is multidisciplinary in nature and aligns with Pennsylvania’s K-12 Academic Standards.

The framework has been organized into five content domains. The content domains are knowledge and skill clusters that contain multiple topics related to OTDA and then each content domain includes several topic indicators. These topic indicators provide the teacher with sub-content within the larger domain. The aim is that the content domains can be taught in multiple and flexible ways and that the topic indicators enable teachers to take any of numerous routes to the overarching topic. By breaking down the content domain areas into smaller, more manageable topics, we were able to make discreet connections between all of the various components of an entire domain.

There is, by no means, a right way or a wrong way to teach about organ and tissue donation. Once all of the facts and myths are established, there can be tremendous freedom and creativity with how instruction and learning occur. The topic indicators are ideas for areas of teaching that you may not have thought of or may not have thought to combine into one lesson.

The Five Domains:

1. Human Experience and Discovery
2. Biomedical Information
3. Issues and Considerations
4. Critical Thinking and Decision-Making
5. Working with Community Resources

Audience

The primary audience for the OTDA Curriculum Framework is secondary education teachers and curriculum coordinators. Because this material lends itself to various disciplines and contexts, it is helpful to have a road map to guide teaching and learning related to organ and tissue donation. It is the intent of this project to offer secondary teachers a content road map that will be specific enough to guide instruction, but also be flexible enough to allow multidisciplinary content implementation.

Other audiences for this framework might include school administrators, community organizations and families. The flexible structure of the framework allows users the opportunity to focus not only on topics pertinent to a particular subject area, but also to address issues most important to the primary receivers—the students.

Purpose

The purpose of the OTDA Curriculum Framework is to aid the implementation of OTDA into high school curricula throughout Pennsylvania, so that secondary students can make informed decisions about organ and tissue donation. The framework provides an organizational structure around which instruction can be planned. Additionally, it has been linked to Pennsylvania’s Academic Standards.

The OTDA Curriculum Framework assists educators in determining ways to incorporate a critical topic into existing curricula in a way that addresses the individual needs of their students and community.

Assumptions and Beliefs

This curriculum is based on a number of assumptions and beliefs that should be made explicit.

1. First and foremost, this curriculum framework has been designed to organize the knowledge and skills secondary students will need to make an informed decision related to organ and tissue donation. It does not presuppose a “correct” decision, but rather focuses on helping learners understand the facts of organ and tissue donation, explore the complexity of the issue, and acquire the decision-making skills they will need for this critical life decision.
2. This curriculum framework is learner-centered and based on current research. Information gleaned from student focus groups and teacher surveys has been instrumental in determining the structure and key components of this framework.
3. This curriculum framework is a living document that will evolve with the research base and expand dramatically as more and more secondary teachers begin to work with this material.
4. This curriculum framework is multidisciplinary in nature. While some academic disciplines may have a more obvious connection with the framework than others, it is our belief that the richness of this material lends itself to implementation across multiple academic disciplines.
5. Alignment of this curriculum framework with Pennsylvania’s K-12 Academic Standards will have a significant impact on the implementation of this curriculum framework in Pennsylvania’s secondary schools.

The Five Content Domains

The Human Experience and Discovery Domain

The Human Experience and Discovery Domain is located at the heart of the curriculum framework. All facets of organ and tissue donation occur within the context of human experience and it is the richness of human experience that brings meaning to each of the other content domains. For example, biomedical information is but a collection of facts unless it is presented within the context of an individual human life. Therefore, the goal of the Human Experience and Discovery Domain is to provide authentic experiences and stories that will allow learners to explore the impact that organ and tissue donation has on the lives of donors, recipients, medical professionals, family and community members.

Most, if not all, of the OTDA implementation site schools, such as Woodland Hills High School in Pittsburgh, PA, make use of guest speakers to illustrate certain topics within particular domains. Woodland Hills brought in staff and guest speakers from CORE (Center for Organ Recovery and Education) as part of their visiting speaker program concerning organ donation.

Lehigh Career and Technical Institute in Schnecksville successfully demonstrated that the OTDA Framework could carry out many activities, including those that can add value to the community that falls within the Human Experience and Discovery Domain. Two students won a local community awareness competition in February 2002, moved on to SKILLS USA/VISA State Competition in April 2002 and on April 19, 2002, the students placed 3rd at the Pennsylvania SKILLS USA/VISA competition.

Two additional real-world examples of the Human Experience and Discovery Domain in our implementation site schools are activities such as student assemblies and student-run health fairs. As previously and often stated, the potential activities are endless and the more creative, relevant, and authentic they are, the more far-reaching and impactful the outreach.

The Biomedical Information Domain

The Biomedical Information Domain encompasses all of the knowledge associated with the anatomy and physiology of organ and tissue donation, the donation and transplantation process, and facts and fictions associated with donation. This domain, more than any other, offers secondary students the facts they will need for informed decision-making.

Former OTDA Implementation Site, Ridley School District, had a thorough implementation and sustainability plan using primarily the Biomedical Domain. The following excerpt was taken directly from its 2004-2005 Implementation Site Final Report and provides an excellent picture of what full-scale, yet focused and deep integration can look like.

The OTDA Curriculum Framework was integrated into chapters of study of Human Anatomy and Physiology I that focus on "Cells and Tissues," "Organ Systems of the Body," and "The Heart and Heart Disease." Students took an organ donation pre-quiz before the introduction of the first lesson. Each student in class received an organ donation keychain upon completion of the "quiz."

Collaborative discussion and the use of cooperative education strategies were used to debunk some of myths surrounding organ and tissue donation as students completed Myths Activities from the OTDA Toolkit. The students then learned about organ and tissue rejection and immunosuppressive drugs in the chapter on Cells and Tissues. As a transition from the Cells and Tissue chapter to the Organ Systems of the Body, students saw the "FLOW" video and participated in an introductory discussion on organ transplants. Students reflected on organ transplantation after reading selected articles for homework and wrote reactions to their readings. Upon returning to class, students completed the Organ Transplants Activity from the toolkit.

In Anatomy and Physiology I, student groups chose an organ or tissue that can be transplanted and researched the organ or tissue, developed a PowerPoint presentation, and made a presentation to the class. The PowerPoint presentation included the following: 1) structure and function of the organ or tissue, 2) information on why transplanting the organ or tissue is necessary, 3) how the organ or tissue is "harvested," 4) the number of people waiting for this type of transplant, 5) the number of donors available, 6) how people are put on the "waiting lists" for organ/tissue transplants, 7) how people are prioritized on the "waiting lists" for organ/tissue transplants, 8) whether or not animals have been used for transplant instead of a human organ or tissue, 9) what hospitals in our area do this type of transplant, 10) success rates, 11) the cost of the transplant, and, 12) show the location of the organ or tissue using the teaching torso.

The Denoyer-Geppert human torso was used by groups in their class presentations as well as numerous times during the course of the year to point out an actual organ's size and location in the human body. Students watched the video "Nicholas' Gift" and wrote a reaction paper about what they saw. This was a very moving film, which showed how a family's decision to donate their young son's organs after he was murdered, affected numerous Italians. Nicholas' gift of organ donation left students with the knowledge that a great number of people can be helped by just one person.

The Anatomy and Physiology II class utilized the OTDA framework in the chapter on The Urinary System and concentrated specifically on kidney transplants. As former students of Human Anatomy and Physiology I, they had prior knowledge about the benefits of organ and tissue donation. Class members completed a survey about kidney transplants received an organ donation keychain. They read at least one article and wrote a reaction paper to the article they chose.

Many students said that they had decided to be an organ donor when they received their driver's license. We talked about the misconception that if you have "organ donor" on your driver's license, hospital doctors won't work on you as hard. The differences between brain death, cardiac death and coma were thoroughly explained and understood by the students. We'd like to think that our students now understand that the doctors and nurses who work on you in the emergency room are not part of the organ procurement team in a hospital. We then discussed how it is determined who gets a particular organ or tissue. At the end of the unit, students watched the video John Q, discussed the inaccuracies in the film and completed an assessment for the video.

The Five Content Domains (continued)

The Issues and Considerations Domain

The goal of the Issues and Considerations Domain is for secondary students to explore the medical, demographic, social, legal/political and global issues relevant to organ and tissue donation that are pertinent to the learning context. Selinsgrove Area High School in Selinsgrove, PA, successfully integrated the OTDA Curriculum Framework across several academic disciplines that reached over 300 students during the school year. The business/technology class was particularly successful in illustrating the Legal and Political Issues and Considerations within the Issues and Considerations Domain. The business/technology classes developed a web quest for cross-curriculum application and had students generate pamphlets and other publications used to make bulletin board displays. Students discussed and researched organ and tissue donation in a law class.

One Selinsgrove teacher stated:

"The OTDA grant and framework provided an excellent opportunity to integrate a real-world issue into the classroom. The teachers readily accepted the framework and implemented it into their existing curriculum. The ideas and activities developed by the teachers were extremely well received by the students, and this was evidenced by the quality of the products the students generated and the enthusiasm demonstrated throughout the activities."

The teachers at Woodland Hills High School, a former Implementation Site, taught within the Issues and Considerations Domain by having students debate issues, write policy papers, and conduct presentations in seminar. The following quote is from excerpted from their Final Report and relates to a seminar the students held regarding whether prisoners should be eligible for donation.

"Ten students took leadership roles in the final writing and presentation at the seminar. The actual seminar was a huge success, much better than [we] expected. We planned only one period and ran out of time. We could have easily filled two consecutive periods with discussion questions and debates. In addition to the ten students from the Ethics classes who did the final work, all of the Medquest classes were invited to attend... We only booked a regular classroom and it was standing room only. We had students sitting on bookcases and had to bring in chairs from other rooms. Mr. Frank McSteen, Surgical Research Laboratory Manager from University of Pittsburgh Medical Center was our guest Moderator. Mr. McSteen's lab is in the forefront of transplant research. His lab was the lab in which Dr. Thomas Starzl perfected liver transplantation. The multi-visceral, lung and pancreas transplantation technique have all been perfected in this lab. He was also one of the individuals sited for groundbreaking work on the liver bypass machine, which made liver transplant much more successful... He was extremely impressed with the student's work and said that he showed several doctors at Presbyterian Hospital and the University of Pittsburgh our student's work and it promoted many discussions... The Ethics Symposium curriculum fits the following areas under the OTDA Curriculum Framework, 'Legal/Political Issues and Considerations', 'Social Responsibilities', 'Community Resources', 'Gathering and Analyzing Information,' 'Asking the Right Questions,' 'Making an Informed Decision,' and 'Governmental and Legal Resources.'"

The Issues and Considerations domain is a perfect vehicle for engaging students in the critical thinking, debate, and writing activities necessary for scholarship in the 21st century - and of course, makes great content for student practice on achievement testing. It provides that "hook" that educators clearly desire and need when seeking to get students interested and involved with what they are learning in the classroom.

The Critical Thinking and Decision-Making Domain

The goal of the Critical Thinking and Decision-Making Domain is to assist secondary students in developing and demonstrating the decision-making and problem-solving skills they will need to make an informed decision related to organ and tissue donation. Five skills are addressed in the domain.

Skill	Activity to Reinforce Skill
How to ask the right questions	Articulate existing knowledge about donation. Determine what questions need to be answered in order to make an informed decision about becoming a donor.
Ability to involve the right people and resources	Identify who needs to be included in the decision-making process. Decide which resources are appropriate to answer the questions posed.
Ability to gather and analyze information	Research available resources and compile information on donation while comparing new information with existing knowledge and answering questions.
Share a decision with the important people in one's life.	Reflect on knowledge, thoughts and feelings about organ and tissue donation, examine the choices and make an informed decision. Recognize the value in discussing this decision with other family members.
Revisit past decisions	Re-evaluate decision-making, growth and self-reflection.

The Five Content Domains (continued)

Central High School in Erie, PA successfully illustrated the importance of the Critical Thinking and Decision-Making Domain. Central High School continued work on organ and tissue donation awareness by preparing a short program for fourth grade students in a nearby elementary school. The program, "Recycle Yourself - The Kids in the Central Community," consisted of a variety of activities and group participation to inform the children about organ and tissue donation. Before their students could share information on donation with the elementary students, they had to become experts on the topic. Staff members adjusted their content areas, presenting information that related to organ and tissue donation, so that information could be shared at approximately the same time, for a cross-curricular presentation. The information had to be completed before the students were scheduled to do their presentation at the local elementary school. The team, consisting of 12 teachers, included the efforts of many students. Students, armed with the expertise on the subject of organ and tissue donation, created activities that would aid in explaining donation to younger children. Some concerns for all students was that they did not want to scare the children by making donation a ghoulish thing, and they needed to bring information down to their age and academic level. The presentation was an absolute success. Both Central students and Glenwood Elementary students were very pleased with the presentation. The many planned activities were fun, as well as very informative.

The staff and students at Cambria Heights High School, an Implementation Site in 2005-2006, wrote, directed, acted, and produced a 14-minute film on the Myths and Facts of Organ Donation as well as other considerations for students as they decide whether to have the donor designation added to their driver's licenses. In this project they taught the Biomedical and Critical Thinking and Decision-Making Domains via English, Drama, and Technology classes.

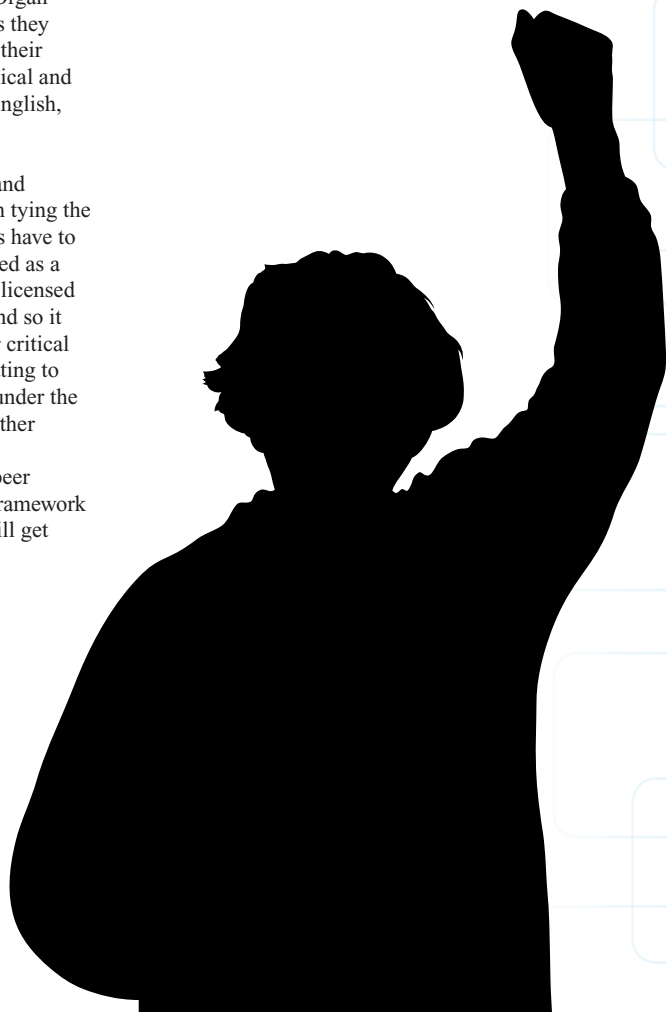
Implementing content related to the Critical Thinking and Decision-making Domain is especially easy to do when tying the classroom instruction into real world decisions students have to make - in particular whether or not to become designated as a donor when they get their driver's license. Becoming a licensed driver is a high point of perhaps most teenagers lives and so it makes sense to engage them around this content. Other critical thinking and decision making topics to consider as relating to being a licensed driver are: distracted driving, driving under the influence of drugs or alcohol, and seat belt usage. Whether students are role playing, writing, analyzing statistics, conducting student-made surveys, or creating peer-to-peer topical media, this domain of the OTDA Curriculum Framework is rich with attention-grabbing content. This domain will get students up and talking!

The Working with Community Resources Domain

The goal of the Working with Community Resources Domain is to make secondary education students aware of the many community resources related to organ and tissue donation that are available to them. There are organizations that dedicate their existence and mission to providing the community (schools, businesses and general public) with education and services related to the national organ transplant waiting list.

In Pennsylvania, there are two such organizations called Organ Procurement Organizations (OPO). The Center for Organ Recovery & Education (CORE) located in Pittsburgh, PA serves western and central Pennsylvania, West Virginia, and a small portion of New York. The Gift of Life Donor Program, headquartered in Philadelphia, PA serves central and eastern Pennsylvania, parts of New Jersey, and Delaware. Each regional OPO can provide materials, activities, assembly services, and guest speakers for free to you and your local team. **You can contact Gift of Life Donor Program at donors1.org and CORE can be reached at core.org.**

Two other partners in Pennsylvania that work with schools - whether by providing service opportunities - such as health fairs and community events - or by hosting field trips are the regional offices of National Kidney Foundation (kidneyall.org) and the Musculoskeletal Transplant Foundation (mtf.org) in Scranton, PA.



How Have

Pennsylvania's

Schools

Used the OTDA

Curriculum

Framework?

OTDA
Classroom
Toolkit

How Have Pennsylvania's Schools Used the OTDA Curriculum Framework?

The OTDA Curriculum Framework has successfully been implemented – to varying degrees – in at least 130 secondary schools in Pennsylvania. Over 33 secondary schools in the Commonwealth have received mini grants to act as OTDA Pilot or Implementation Sites.

These sites have been awarded mini grants as of September 2010:

- Ambridge Area School District, Ambridge;
- Butler County Area Vocational and Technical School, Butler;
- Cambria Heights High School, Patton
- Carlynton High School, Carnegie;
- Central Cambria High School, Ebensburg;
- Central High School, Erie;
- Clearfield County Career and Technical Center, Clearfield;
- Crawford County Area Vocational and Technical School, Meadville;
- Dunmore High School, Dunmore;
- Edison-Fareira High School, Philadelphia;
- Fort LeBoeuf High School, Waterford;
- Garnet Valley High School, Glen Mills;
- George Washington Carver High School for Engineering and Science, Philadelphia;
- Horace Howard Furness High School, Philadelphia;
- Indiana County Career and Technical Center, Indiana;
- Lehigh Career and Technical Institute, Schnecksville;
- Lenape Area Technical High School, Ford City;
- Moshannon Valley Senior High School, Houtzdale;
- North Hills High School, Pittsburgh;
- Penn Cambria High School, Cresson;
- Penn Wood High School, Lansdowne;
- Pittsburgh Science-Technology Academy, Pittsburgh;
- Pleasant Valley School District, Brodheadsville;
- Pocono Mountain School District, Swiftwater;
- Reading High School, Reading;
- Ridley High School, Folsom;
- Selinsgrove Area High School, Selinsgrove;
- Shenandoah Valley High School, Shenandoah;
- Southern Huntingdon County HS, Three Springs;
- Sto-Rox High School, McKees Rocks;
- Susquehanna Township High School, Harrisburg;
- Tri-Valley High School, Hegins;
- Tyrone Area High School, Tyrone;
- West Side Career and Technical Center, Kingston, and
- Woodland Hills High School, Pittsburgh.

All of the above participated as OTDA pilot or implementation sites. The OTDA Framework has been integrated into numerous subjects and courses throughout these and other schools – often in a cross-discipline approach. Across the state, OTDA has been introduced in the following content areas:

- English - creative writing, journalism, research
- Math
- Science - biology, chemistry, anatomy and physiology, and bioethics
- Technology
- Health and physical education - including health occupations, and emergency medicine
- Social Studies - history, civics, contemporary issues, current law, and economics

- Art - graphic design and graffiti
- Business and
- Drivers Education - among other content areas.

In addition, several schools developed an OTDA Committee with one teacher facilitating and with students from various grades participating as members. Another school developed a Future Problem Solving workshop that directly addressed organ and tissue donation issues. Many schools have chosen to implement the OTDA curriculum into multiple academic disciplines; others have chosen to specialize in a single content area.

The following will illustrate how some schools were able to implement OTDA into their existing curricula and address multiple specific OTDA domains in the process. Brief overviews are included for Selinsgrove Area High School, Woodland Hills High School, and Indiana Career and Technical Center. More extensive information is excerpted from the final reports of Lehigh Career and Technical Institute and Tyrone Area High School.

Selinsgrove Area High School successfully integrated activities in the classroom that aligned with multiple academic disciplines that illustrated relevance to the Issues and Considerations and Working with Community Resources Domains. Specifically, faculty of their business and technology courses presented content and activities that addressed the legal and political issues surrounding organ and tissue donation. The business/technology classes developed a web quest for cross-curriculum application and had students generate pamphlets and other publications used to make bulletin board displays. Students then discussed and researched organ and tissue donation in Today's Law class.

Woodland Hills High School successfully aligned activities to incorporate several topic indicator areas within the Working with Community Resources, Biomedical Information, and Human Experience and Discovery Domains. In particular, they organized several field trips to tour facilities that familiarized students with community resources and the role of organ procurement organizations in organ and tissue donor awareness. The school took advantage of professionals in the community via guest speaking engagements to address students on the myths and facts and other areas of organ and tissue donation. They brought in a representative from CORE (Center for Organ Recovery & Education) who spoke to 17 periods of health classes during the first and second semesters during the 2000-01 school year. Tours to CORE and the University of Pittsburgh Medical School allowed students to view cadaver dissections, work with medical students, discuss the latest inroads in organ preservation and medications, and view new research in artificial organs as a “bridge to transplant.”

During the 2009-2010 school year, the team at **Indiana County Career and Technology Center** implemented a highly collaborative and comprehensive approach. With their \$4,900 mini grant award they did a year-long implementation with activities ranging from public health screenings (for which health occupations students volunteered with the National Kidney Foundation taking patient histories, vital signs, and other basic details), school-wide poster contests, PSA creation, and a 22-minute student written, acted, directed, and edited DVD. The lead teacher, Diane Miller, said, “Being a part of the OTDA

Project has been an inspiration for me and an awesome learning experience for my students. Having the opportunity to teach and learn and touch so many students made this one of my best teaching years ever!"

A **Selinsgrove Area High School** teacher said: "Through integration, the (OTDA) framework became a living document and allowed multiple methods of application into the curriculum. This will help ensure the continuation of the framework in future years as compared to an "add on," which is done at the expense of the required curriculum and usually only lasts one time. This approach will also encourage other faculty to begin using the framework in their classrooms. The OTDA grant and framework provided an excellent opportunity to integrate a real-world issue into the classroom. The teachers readily accepted the framework and implemented it into their existing curriculum. The ideas and activities developed by the teachers were extremely well received by the students, and this was evidenced by the quality of the products the students generated and the enthusiasm demonstrated throughout the activities."

Lehigh Career and Technical Institute – Schnecksville, PA

The Lehigh Career and Technical Institute (LCTI) OTDA Committee is made up of one faculty member and 10 students from Grades 10-12. The week of events were scheduled from February 25 through March 1, 2002. During that time, several events were scheduled, which included the following:

1. Jeopardy Game
2. Window Display (designed by Marketing Lab) in the main lobby.
3. Kickoff event was scheduled for February 27. Guest speakers talked about their experiences concerning organ and tissue donation to approximately 750 students.
4. Placemats were designed and put at the student service area and the teachers' restaurant.
5. 1,000 pins were made of the winning design from a pin/poster contest.
6. Lab Crossword Puzzle.
7. Two students won a local Community Awareness competition in February to move on to SKILLS USA/VISA State Competition in April 2002. On April 19, the students placed 3rd at the Pennsylvania SKILLS USA/VISA competition.
8. Three students presented their activities during the Health Occupations Students of America (HOSA) State Conference scheduled April 10-12, 2002. The students placed 3rd for Pennsylvania HOSA Leadership Conference.
9. During HOSA State Conference, a display table was manned by LCTI HOSA students.
10. Health Occupations Lab had a contest for the fastest surgeon using the operation game.
11. LCTI was invited to the Lehigh Valley Hospital 04/22/2002 during their OTDA Week kickoff.

The content on this page has been taken directly from the final report of this OTDA Pilot Site.

A Teacher from Penn Wood High School in Landsdowne, PA writes: "Teachers found it to be remarkably easy to stay on-task and incorporate the OTDA Framework into their existing math curriculum. In the Pennsylvania Academic Standards for Math, the teachers covered: 2.5 Mathematical Problem Solving and Communication—problem-solving strategies, interpreting results; 2.6 Statistics and Data Analysis—collecting and reporting data (e.g. charts, graphs), analyzing data; and 2.7 Probability and Predictions—testing the validity of data, calculating probability to make predictions.

By incorporating these required standards into the OTDA Framework, it eliminates the question, "When will I ever use this?" and makes learning easier for the students because it's directly applicable to something they feel is meaningful."

Tyrone Area High School

Morning announcements that stated OTD facts and statistics, discredited common OTD myths and encouraged students to get informed were read over the public address system during the course of one week. At the same time, the Renaissance homeroom and English 10 students set up an OTDA table during the high school lunch periods to provide OTD information to inquiring minds in the student body.

The following additional activities were undertaken:

- OTDA displays were located outside of the OTDA educators' classrooms.
- An informational video was shown in homeroom during OTDA week.
- Student shared presentations and posters with the sophomore class.
- A sophomore also shared her family's struggles and triumphs concerning her father's sickness, transplant waiting process, heart transplant surgery, and recovery.
- English 10 students were introduced to research paper procedures and terminology (i.e. primary/secondary sources, documentation style, citation procedures, etc.) using OTDA as the subject matter in preparation for the persuasive essay in which they argued why people should or should not donate their tissues and organs, students discussed, analyzed and evaluated the major decisions facing teens today, real and ideal methods of decision-making, and factors that truly do influence decision-making.
- Students took a PSSA reading test on "The Gift of Grace" by Gareth Spiese.
- CORE spoke with English 10, Driver's Education, Health Tech, Psychology and some ninth grade health classes about CORE and the specifics of the donation process.
- A two-time kidney transplant recipient shared his experiences with organ donation.
- A special education teacher, wrote an article about the speakers and the OTDA grant for an issue of The Daily Herald, the Tyrone Area local newspaper.
- The Health Tech I students studied OTD in combination with anatomy and Health Tech II students have OTDA incorporated into their Death and Dying unit.
- Sophomore and junior Driver's Education students learned about religious concerns, myths and facts of organ and tissue donation.
- Ninth grade health students held an in-class debate about organ donation lists and the ethics involved in the transplant waiting process.
- In preparation for the math portion of the PSSA, Grade 11 PSSA Prep, Algebra 2, GTA students calculated, plotted and determined a line-of-best-fit for the people on the heart transplant waiting lists for the years 1991-2000.
- Sixth grade science/health students learned about blood typing (who can give/get different types, the importance of donating, etc.) in addition to organ and tissue donation issues (compatibility, donation procedures, availability of organs, purpose of organ donor cards) through a presentation conducted by the school nurse; the presentation was given during their organ system's unit.
- To sum up all of this information, student reporters wrote two articles for the school newspaper, the Eagle Eye, about the OTDA grant TASHD received and about the OTDA activities that have taken place throughout the school.

The content on this page has been taken directly from the final report of this OTDA Implementation Site.

Possible Career and Technical Education and STEM Implementation Ideas

There are many possible and surprising ways that organ and tissue donation and transplantation information has been implemented in career and technical centers across PA. OTDA Project staff have been learners in this process because of the unique and “out-of-the-box” ways of thinking that have been undertaken by a number of our implementation sites. The following are some of the more creative:

- Health Occupations
- Cosmetology
- Auto-CAD and graphic design
- Auto body and truck driving
- Culinary Arts
- Metal and Graphic Arts

One of the most unique and surely memorable approaches to Career and Tech implementation occurred at **Clearfield County Career and Technical Center**. The following information is excerpted from its final report:

While Clearfield County CTC is a smaller site than some for the schools involved in the OTDA project, Ms. Rhymestine made the best of this project by including her students who are preparing for a career in nursing, in graphic design, in automotive repair and also those in an entrepreneurial class, which assisted all students by creating all of their advertisements and signs for the school. The school is the site of truck driver training for adults in the evenings. They own their own 18 wheel tractor trailers which became the canvas for students as they created a graphic of the Donate Life logo. Once the logistics were worked out, the teacher and the students created a full sized advertisement promoting the concept of organ and tissue donation, including the website to contact for more information. Ms. Rhymestine instructed on the topic to her Health Occupations classes. The entrepreneurial studies classes have designed signs, pamphlets and flyers to promote the education of staff and students at school and in the community. Even the school secretary was the designer and creator of the life-sized figure used in the anatomy classes! Students have also decorated the halls of the school with Fact and Myth statements for all to see.

Due to the significant range of technical careers available in eye, organ, and tissue donation and transplantation, this subject matter makes great content for career pathways and STEM education. In addition to the above content areas, consider the following:

- Warehouse and Inventory
- Clean Room Technology
- Surgical Technology
- Quality Control
- Logistics and other engineering
- Tool and Dye Making

There is a wide network of PA Career and Technical educators available to help craft your implementation and answer your questions about what might work best in your setting.

Joyce Holzhauser, of **Butler County Area Vocational Technical School**, adds encouragement from the field based on their experience:

The OTDA mini-grant has given BCAVTS an opportunity to increase the teaching time spent emphasizing science and math standards in the Health Assistant classroom. Dissecting fetal pigs and identifying body organs and systems highlights the concepts and skills needed for successful completion of anatomy and physiology on the post-secondary level. I am not aware of many high school

students who have had the opportunity to view and open heart surgery or kidney transplant like our students did. This grant enabled our students to understand the application of both technical and academic skills in the healthcare workplace.

OTDA Mini Grant Information

The primary purpose of the OTDA mini grant initiative is to ensure the broadest implementation of the curriculum framework possible. The curriculum framework is multidisciplinary in nature and can be piloted by secondary teachers in any academic discipline. There is no expectation that every classroom will pilot every facet of the curriculum framework; however, it is required that the proposed project is curricular in nature.

Priority is given to first-time applicants; however, new or significantly expanded applications from previously funded programs are considered.

Principles of Practice:

The curriculum framework and classroom toolkit are first generation materials in the Department of Education’s efforts to educate secondary students about organ and tissue donation. As such, it is hoped that implementation sites will:

1. Contribute to the ongoing development of curriculum materials,
2. Begin a substantive conversation related to organ and tissue donation awareness education in Pennsylvania, and
3. Suggest models for best practice in relation to the OTDA Curriculum Framework.
4. Outreach to other school districts to promote the use of OTDA curricular materials and activities – in particular, future mini grant applications.

Selection Criteria:

Implementation sites will be selected based upon the following criteria:

Selection Criteria	Possible Points
• Applicant’s willingness to participate fully in3 all project activities and commitment of key staff.	3
• Description of how the OTDA Curriculum3 Framework will be implemented into the existing curriculum and aligned with PA Academic Standards.	3
• Sustainability- how will the school district ensure3 quality organ and tissue donation awareness education beyond this program year?	3
• Total number of students who will be directly involved.....3	3
• Reasonableness of budget.....3	3
• First time application from submitting district3	3
	18 pts

The total amount funded per school ranges from several hundred dollars to \$5,000 and is dependent on how much total funding is available and how many schools have applied for funding during a given year. For more detailed information on previous awards to schools or to see a prior application, please go the Organ and Tissue Donation Awareness page at IU13.org.

The following items were purchased by staff at **Pleasant Valley School District** to help sustain their curricular implementation long after the funded year:

- Anatomical Models: Eye, Kidney, Respiratory System and Heart, and Liver with Gallbladder model
- Microslides: Skeletal System, Nerve and Muscle Action, and Human Pathology Set
- Tissue Slide Sets: Basic Connective Tissue, Basic Muscle Tissue, and Basic Epithelial Tissue Slide set

LAWRENCE WESS, ED.D.

Dear Fellow Educators,

If you are the leader of a school or in a position to influence children, you know that our commitment to educate must take multiple forms, even more than just academic achievement. Vincent Van Gogh said, *"Your profession is not what brings home your paycheck. Your profession is what you were put on earth to do with such passion and such intensity that it becomes spiritual in calling."* I am writing to you to strongly encourage you to think outside the academic boundaries. Our students and their families may be living with this question or with the need for organ donation as a clear reality for a loved one's existence. An actual experience with organ donation may not have impacted your life yet but it is present in every community and district within the Commonwealth. At the forefront, all of your 15-to-16 year old students will need to personally consider the issue as they prepare to become new drivers. Won't you help to equip our students to make decisions in a well-thought out manner?

The Organ and Tissue Donation Awareness Project may seem outside of the academic achievement race that defines the thinking of today's school leaders. Our students are aware that NBA star, Alonzo Mourning received a kidney transplant in 2003. Are your students aware of the complex issues, technical knowledge, or understanding of the process of organ or tissue donation? Do they have the tools and information with which to discuss this issue with their peers and families?

I challenge you to find that passion and intensity, mentioned by Van Gogh, to endorse, distribute and utilize the Organ and Tissue Donation Awareness Classroom Toolkit. This kit includes the lives and stories of people invested in organ and tissue donation. As educators, we can provide this new and stimulating topic of donation into classroom elements involving language arts, ethical discussions, mathematics samples, science and health-related issues, technology, research and even a direct connection to driver's education, all through the Organ and Tissue Donation Awareness Classroom Toolkit.

Good luck with your own passion and intensity. I have facilitated two school districts with three years of sustained instruction on this topic. I would welcome your sharing of ideas or questions regarding organ and tissue donation instruction. Please feel free to contact me by e-mail (wesslj@verizon.net) with your thoughts or questions. All of our work in education is rewarding but the gift of life through organ and tissue donation rewards the mind and total spirit.

Lawrence Wess, Ed.D.
Retired Superintendent
Currently a PIL facilitator

OTDA and the PA Academic Standards

High school students often question the relevance and authenticity of curricula. “Why must we learn this?” “Why do we have to know that?” Effective teachers encourage and respect these questions. They also recognize that Pennsylvania has strong academic standards that determine what students need to know in order to be able to succeed in the 21st century. The challenge for educators today is to address these standards through ongoing curriculum development, make learning relevant for students of all ages and create an educational environment where students learn how to learn.

Organ and Tissue Donation Awareness (OTDA) crosses academic disciplines, addresses the Pennsylvania Academic Standards and is relevant to all students. OTDA Implementation sites, supported through funding from the Pennsylvania Department of Education (PDE), report that students were highly motivated to learn about organ and tissue donation and, once exposed to this content area, are eager to share their knowledge with others. For example, here is one student’s response from Central High School in Erie, PA, after completing the OTDA studies in her courses:

“I feel that organ and tissue donation is a wonderful thing. I feel that when I die, I won’t need my organs anymore. If I can help someone that is going to die, I will. Some people think that when you are very sick and have to go to the hospital, the doctors will just let you die in order to recover your organs. I know that isn’t true, and I think those people need to be more educated. I think if people were more educated, there would be more organ donors.”

**Lauren, Grade 12
Central High School
Erie, PA**

PSSA Student Reporting Categories

The following Reporting Categories and Assessment Anchor Content Standards may be helpful as you begin to look at integrating OTDA into your already-established curricula. Do keep in mind that the listings below are natural alignment categories; however, your interpretation, adaptation and alignment are only limited by your imagination!

Math

(Student Reporting Category E: Data Analysis and Probability)

M8.E 1.1, 2.1, 3.1, 3.2, 4.1

M11.E 1.1, 2.1, 3.1, 3.2, 4.1

Science

(Student Reporting Categories A: The Nature of Science and B: Biology)

S8.A 1.1, 1.2

S8.B 1.1, 2.2

S11.A 1.1, 1.2, 1.3, 2.1, 2.2

S11.B 1.1, 2.2

Reading

(Student Reporting Categories B: Interpreting and Analyzing Fiction and Nonfiction Text)

S8.B 3.1, 3.2, 3.3

S11.B 3.1, 3.2, 3.3

In their final report as an OTDA Implementation Site, **Ridley High School** described alignment with the following standards:

3.2 Inquiry and Design

3.2.12.A Evaluate the nature of scientific and technological knowledge

3.2.12.B Evaluate experimental information for appropriateness and adherence to relevant scientific processes

3.3 Biological Science

3.3.12.A Explain the relationship between structure and function at all levels of organization

3.3.12.B Analyze the chemical and structural basis of living organisms

3.3.12.C Explain gene inheritance and expression at the molecular level

3.6 Technology Education

3.6.12.A Analyze biotechnologies that relate to propagating, growing, maintaining, adapting, treating, and converting

3.8 Science, Technology, and Human Endeavors

3.8.12.A Synthesize and evaluate the interactions and constraints of science and technology on society

3.8.12.B Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life

3.8.12.C Evaluate the consequences and impacts of scientific and technological solutions

Reading, Writing, and Listening

1.1 Learning To Read Independently

1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading

1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas

1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents

1.2 Critical Reading In All Content Areas

1.2.11.A Understand the meaning of and apply key vocabulary across the various subject areas

1.4 Types of Writing

1.4.11.B Write complex informational pieces

1.4.11.C Write persuasive pieces

1.5 Quality of Writing

1.5.11.A Write with a sharp, distinct focus

1.5.11.B Write using well-developed content appropriate for the topic

1.5.11.D Write with a command of the stylistic aspects of composition

1.5.11.E Revise writing to improve style, word choice, sentence variety and subtlety of meaning after rethinking how questions of purpose, audience and genre have been addressed

1.5.11.F Edit writing using the conventions of language

1.5.11.G Present and/or defend written work for publication when appropriate

1.6.11 Speaking and Listening

1.6.11.A Listen to others

1.6.11.B Listen to selections of literature (fiction and/or nonfiction)

1.6.11.C Speak using skills appropriate to formal speech situations

1.6.11.D Contribute to discussions

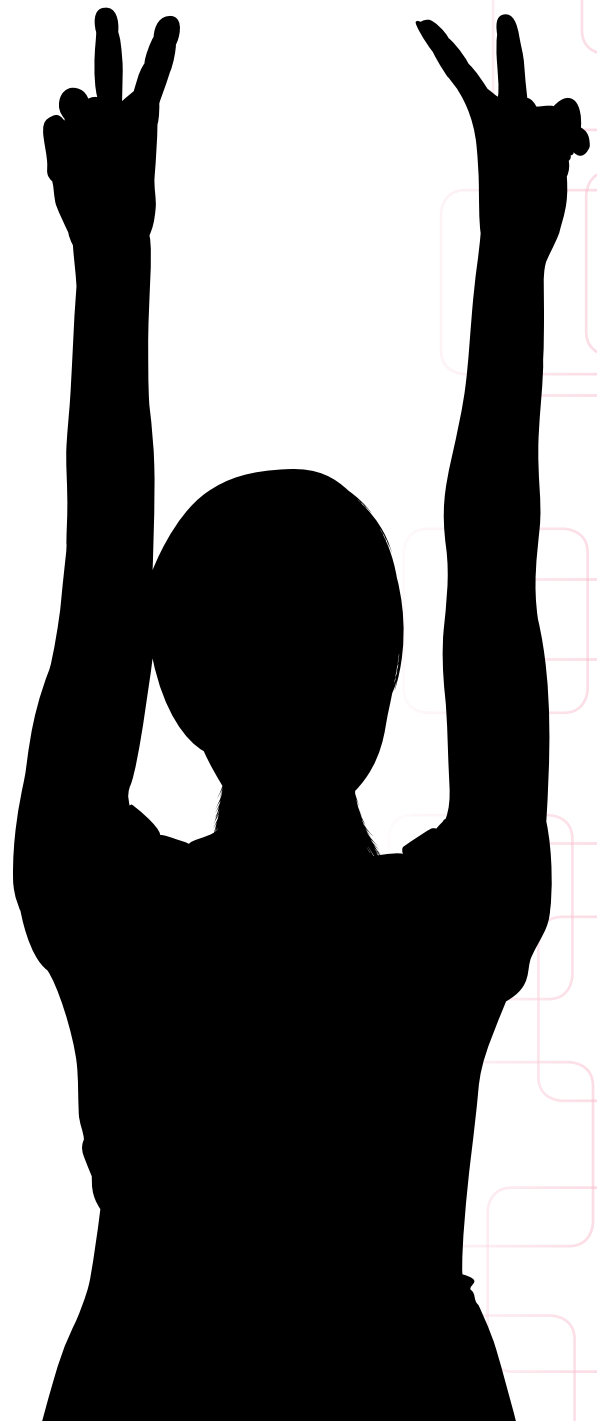
1.6.11.E Participate in small and large group discussions and presentations

1.6.11.F Use media for learning purposes

The OTDA Framework breaks the content into manageable chunks and provides a meaningful context for reading, writing, speaking, listening, math, science, health, research, etc. It is one thing for today's students to learn how to do research as an academic exercise; it's quite another for them to learn how to do research that could, ultimately, result in saving the life of a fellow human being. Learning to do research helps a student meet Pennsylvania's academic standards and also makes the world a better place in which to live. Students recognize and respond to this difference with an enthusiasm that breathes new life into Pennsylvania's academic standards. Organ and Tissue Donation Awareness Education is education at its very best.

Adopt-An-Anchor

In addition, when considering teaching the OTDA content, consider linking it to the PA Adopt-An-Anchor concept. It makes sense to bolster your support of the anchors with material that is relevant and authentic to students and provides real world context to what they are learning within the classroom context. In addition, with more to teach and ever-dwindling days of instruction per subject per year, it is critical to make the most of the time spent. Organ and tissue donation is one subject that students have said they want to know more about! As the OTDA material has already been aligned with the standards, is highly adaptable, and works best if it's team taught, it makes a perfect vehicle for your school's approach to the Adopt-An-Anchor program!



Letter from Pleasant Valley School District

Greetings,

With over 108,000 people waiting for a gift of life Organ Tissue Donation Awareness education is critical. Each day approximately 74 people receive organ transplants while at the same time approximately 20 people are dying each day waiting for a transplant. Why is this happening and what can be done to eliminate the shortage of donated organs?

Education about organ and tissue donation is the answer. We know that individuals who choose to become organ and tissue donors see it as a way to make a difference in the world. They say it feels good to know they can help others. We also know that one donor could save the lives of up to 8 people and improve the lives of up to 70 others. When a simple “yes” can help ensure that every potential transplant recipient has a chance to receive a life-saving organ, or maybe the tissue needed to restore eyesight or the ability to walk, we need to examine the reasons that may be holding back that simple response.

While the decision about organ and tissue donation is personal and is best made after discussion with one’s family, it is important that the decision be based on factual information. As educators we have the opportunity to provide young people with the information they need to have meaningful discussions and make a sound decision regarding organ and issue donation.

Of course the immediate concerns are, “How can we add one more thing to the curriculum?” and “Spending classroom time teaching material that is not tied to the standards will have a negative impact on PSSA scores.” Those concerns are addressed in the Organ Tissue Donation Awareness Project Classroom Toolkit. The toolkit contains many sample lesson plans that have specific references to the State Standards and activities that can be used to supplement the lessons. The toolkit, found at the Student and Parent pages of the IU 13 website (IU13.org), demonstrates how to easily integrate the OTDA content into various curricular areas without increasing the amount of content being taught. Many of our teachers have found a perfect fit with the Adopt an Anchor Program and the OTDA material found in the toolkit.

The students of Pleasant Valley High School have embraced the OTDA program. A Students for Organ Donation Awareness group has been formed. The group has planned a school assembly program and several students have incorporated OTDA into their Graduation Project. Organ Tissue Donation Awareness education has created the momentum and excitement to sustain itself. Our students are gaining the knowledge to help them make an informed and educated decision that can truly save and change lives.

Sincerely,
Christopher J. Fisher
Assistant Superintendent
Pleasant Valley School District

Classroom Activities

and Lesson

Plans

OTDA
Classroom
Toolkit



Myths or Truths Lesson

This lesson plan strives to reinforce the students' learned skills, promote thinking skills and to encourage cooperation through teamwork.

Objectives

1. During completion of this activity, students will apply practical reasoning skills.
2. During completion of this activity, students will discuss the pros and cons of being an organ donor.
3. Upon completion of this activity, students will identify the organs and tissues that can be donated.
4. Upon completion of this activity, students will recognize the "Myths and Truths" of organ donation.

Standards Match

Reading, Writing, Speaking, and Listening

- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.6.11.A Listen to others.
- 1.6.11.D Contribute to discussions.
- 1.6.11.E Participate in small and large group discussions and presentations.

Activity

1. Students will hear a guest speaker from an OPO discuss "Myths and Truths" of donation
2. Students will complete worksheet – Guest Speaker Summary
3. Review Relay – Myth and Truth
4. Real Life Stories – Read and Discuss
5. Word Search – Organ and Tissue Donation (vocabulary review)
6. Group Discussion
7. Quiz

Assessment

Listening skills, class participation, written answers, reading, vocabulary, observation, discussion and a quiz

Materials Needed

1. Guest Speaker Summary Worksheet
2. Real life Story – "Tom's Story" (Example included here, but any example will work.)
3. Organ Donation Quiz
4. Myth or Truth Cards
5. Discussion Questions

Time Needed

2-3 days or longer if desired

Instructions

The following are all worksheets you will need and the Real Life Story – "Tom's Story." Here is the instruction sequence for this unit:

1. Have a guest speaker come to the class to discuss his or her experience with donation. Students will then fill out the guest speaker summary to check and reinforce learning.
2. Students will then read and discuss "Tom's Story" or another Real Life Story.
3. Students will complete the organ and tissue donation quiz.
4. When each student completes the quiz, the whole class plays the Myth or Truth relay game.
5. Complete the Discussion Questions as a wrap-up activity.

Guest Speaker Summary

Name _____ **Date** _____

Name and position of speaker:

In complete sentences, state five or more main points of information presented by the speaker.

I agree with

I disagree with

I was surprised that

I would rate this speaker:

Very
5

Good
4

Fair
3

Okay
2

Poor
1

Comment(s):

Tom's Real Life Story

By Ilene White

One of my favorite singers is Barbara Streisand, and there is a song from her CD, *Higher Ground*, called "Lessons to be Learned." The song contains the line, "Why did the right road take the wrong turn?" I have often thought of that line when I think back to the past several years in my life, which have led to my involvement with organ donation. Up until my husband Tom's sudden illness, in September 1994, I thought our road, our journey, was taking all the right turns.

We both loved what we were doing. I was a fourth grade teacher at Abington Heights School District. Tom had completed an associate's degree at Keystone Junior College, graduating as their Outstanding Weekender Student four months earlier. He had quit his full-time job and was enrolled at the University of Scranton in their secondary education department. We were blessed with two wonderful children and had many plans for the future. When he became suddenly ill with a ruptured cerebral aneurysm, this "right road" began to lose its clear road signs and markings.

During those days when Tom was hospitalized, my children, Matthew and Rachel, and I traveled along without any knowledge of the scenery surrounding us. It seemed not only that the "right road" had taken the wrong turn, but that it had disappeared off the map, at least the map we had planned.

Those who knew Tom knew he was always willing to help others in any way. He had been an active Lions Club member in our community, had coached the kids' soccer teams, and was a regular at Red Cross blood drives. Through his involvement with the Lions Club Eye Banks, we had, on occasion, alluded to organ donation. We both were "card carrying" universal donors since the '80s. But at age 42, I never thought I would be facing that decision. When the doctors explained the severity of Tom's condition to me, my children and I knew it was our wish to donate as much as possible to provide the opportunity for a better life for as many individuals as possible.

Tom had always been in good health, and it was gratifying to know that his heart, liver, kidneys, and corneas could be used for transplantation. When I left the hospital on September 30th, five years ago, I knew in my heart that we had carried out Tom's wishes and have never looked back. Organ donation has helped me to see that the "right road" did not take the "wrong turn." It just took a turn we had not expected. The right road is still continuing for us and for all donor families. And this road has provided a renewal of life for those transplant recipients who are able to live better lives or have received the gift of life for a second chance.

Over a year ago, I had the incredible opportunity to meet the recipient of Tom's liver, Scott Mato, Danville Middle School Principal. He, his wife Shelly, and their three wonderful children have become good friends, and we keep in touch often. Coincidentally, Tom was studying to be a secondary social studies teacher, a job which Scott left to become principal. Our families share a bond which goes beyond words.

Since Tom's death, I have become an outspoken advocate of organ tissue and donation. I am currently the chairperson of the local regional Coalition on Donation in Northeastern Pennsylvania. I am serving on the Board of Directors of the Gift of Life Donor Program. I take every occasion possible to encourage families to sit down together, discuss organ donation, and make the important decision before a tragedy strikes. I have seen firsthand how the end of one life can be the beginning of renewed life for others. In the intervening years since Tom's death, I often spend time reading and reflecting on the importance of living life for today and making better lives for those around me. One passage from the Reform Judaism prayer book ("Gates of Prayer") stands out and provides meaning for me. This passage states, "...to sustain a single human soul is equivalent to sustaining an entire world." With the decision to become an organ donor, an individual is truly giving the greatest gift.

Organ Donation - Quiz

Note to teacher: all answers can be found in toolkit.

Name _____ Date _____

1. What does OPO stand for?

2. List five organs that can be used in transplants.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

3. List three tissues that can be used in a transplant.

- a. _____
- b. _____
- c. _____

4. How many recipients die every 24 hours waiting for organs?

5. A person must be in a hospital on a ventilator and be declared brain dead before organs can be recovered. Explain the process (tests) done to determine if a patient is brain dead.

6. When someone's heart stops instantly, or the individual dies outside the hospital setting, can an individual still donate? If so, what can be donated?

7. How long does a recipient have to take anti-rejection medicine?

8. Three organs can be donated from a live donor. What are they?

a. _____

b. _____

c. _____

9. With one donor, how many people can be saved? _____ Be helped? _____

10. What is the organ in greatest demand?

11. If three recipients all have one month to live and are equally sick, how is the tie broken?

12. Will the family be charged for organ donation?

Myths or Truths Activity

Objectives

1. By completion of this activity, students will have learned skills reinforced.
2. By completion of this activity, students will improve critical thinking skills.
3. By completion of this activity, students will increase cooperation through teamwork.

Materials

1. Two sets of “truth” and “myth” cards
2. A whistle or some other type of quiet signal

Procedure

Divide the class into two equal teams. Have each team place its chairs so that each team member will sit one behind the other, facing the direction of the teacher. Explain the rules and the game procedure.

Game Procedure

1. The last person on each team receives two cards: one that says “truth” and another that says “myth.” The teacher reads a statement about organ and tissue donation. If the statement is a “truth,” then the “truth” card is passed all the way to the front of the team. If the statement is a “myth,” then the “myth” card is passed forward.
2. When the card reaches the front of the team, that person stands and announces the answer. If the answer is correct, the team is awarded one point.
3. If the answer that is given is incorrect, the other team has a chance to give a correct response. If the person can give an accurate reason why the answer is incorrect, that team receives the point for his/her team.
4. Once points have been awarded, all players move one seat forward. The first person goes to the end of the team. Play then continues in the same manner.

Game Rules

1. When passing the “truth” or “myth” card forward, no team member can be skipped.
2. If a teammate feels the wrong card has been passed forward, (s)he may pass the card backwards to receive the other response.
3. When the whistle (or other quiet signal) is blown, all players must be quiet so that everyone can hear the next statement.
4. If a team becomes too rowdy and refuses to follow the game rules, that team will lose points from their score.
5. Show good sportsmanship at all times.

Discussion

Include a few “trick” statements in the game. Talk about why this statement is a “truth” or “myth.” Teamwork and any positive or negative behavior observed during the game can also be discussed.

Discussion Questions (wrap-up activity)

1. What have you learned?
2. How did you feel about organ and tissue donation in the beginning?
3. How do you feel about organ and tissue donation now?
4. Have your feelings changed?
5. Have you discussed organ and tissue donation with your parents? If so, what was their reaction?

Donation and Transplantation Technology Lesson

Lesson Objectives

1. During the activity, students will show Internet researching skills by identifying two websites visited. They must print out information discussing a selected topic dealing with organ and tissue donation, using a given form that shows website and research information.
2. Upon completion, students will display knowledge of a given topic related to organ and tissue donation by creating a PowerPoint presentation containing at least ten slides using concise information paraphrased from Internet research.
3. Upon completion, students will show good organizational skills, correct grammar and spelling, and good sentence structure in a PowerPoint presentation that contains at least ten slides.
4. Upon completion, students will exhibit expertise on their selected topic for organ and tissue donation by presenting their PowerPoint presentation to peers and receiving at least 35 out of 50 points on the evaluation rubric.

Standards Match

Reading, Writing, Speaking and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.D Identify, describe, evaluate, and synthesize the essential ideas in text.
- 1.2.11.B Use and understand a variety of media and evaluate the quality of materials produced.
- 1.5.11.B Write using a well-developed content appropriate for the topic.

Science and Technology

- 3.3.12.A Explain the relationship between structure and function at all levels of organization.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.8.10.C Apply basic computer operations and concepts.
- 3.8.10.D Utilize computer software to solve specific problems.
- 3.8.10.E Apply basic computer communications systems.
- 3.8.12.A Synthesize and evaluate the interactions and constraints of science and technology on society.
- 3.8.12.B Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life.
- 3.8.12.C Evaluate the consequences and impacts of scientific and technological solutions.

Activity

1. Students will be given a pretest on organ and tissue donation.
2. Students will research topics relating to organ and tissue donation on at least two Internet sites on their particular topic.
3. Students will create a PowerPoint presentation on their selected topic relating to organ and tissue donation.
4. Students will present PowerPoint to classmates.
5. Students will complete post-test to measure learning.

Assessment

1. Pre/Post-test
2. PowerPoint Teacher rubric
3. PowerPoint Student Rubric – students can evaluate each other's presentations

Materials Needed

Most materials needed for this lesson plan are included here:

1. Copies of Pre- and Post-tests
2. Computer lab
3. Directions for PowerPoint and scoring rubrics
4. Worksheet with student directions

Time Required

Several weeks of research and preparation. Presentation time dependent on number and allotted length per each presentation.

What Do You Know About Organ And Tissue Donation? - Pre-Test

Note to teacher: all answers can be found in toolkit.

Name _____ **Date** _____

1. How do you become an organ donor?
2. What organs can be used for donation?
3. How are donors and recipients matched?
4. Are there health requirements to become a donor?
5. Have you ever read anything about organ and tissue donation?
6. If you are an organ donor, do you think your organs can be used for transplant?
7. Do you think if you smoke or drink you can become an organ donor?

8. How is organ tissue donation done in other countries?

9. What happens during a transplant?

10. How long can organs be kept for transplant?

11. What does OPO mean?

12. If you are not designated as an organ donor, can your family override your wishes?

13. If your family does not want you to donate your organs, can you still be a donor?

14. Does this topic scare you?

15. Why is it important to understand organ and tissue donation?

Directions for Student Activity

Name _____ Date _____

Instructions:

Select an organ to research and answer the following questions in your paper:

1. What system does this organ/tissue come from and what is its function?
 2. What could cause this organ to fail?
 3. Must this organ be removed from a deceased (brain dead) donor or can it be removed from a person who experienced cardiac death? Can it come from a living donor?
 4. How long is the recovered organ viable after living donation? After brain death?
After cardiac death?
 5. How is the recovery done surgically?
 6. What is done with the organ after it is recovered and prior to implantation into the recipient?
 7. How it is surgically implanted into the recipient (patient)?
 8. What does the donor look like afterward?
2. Research the topic on the Internet and come up with at least two sources for the information. List two of them here:
- A.
- B.
3. Select information that can be presented in concise form for a PowerPoint presentation. You will be creating a 10-slide show. The first will be the title of the presentation and the last will be the conclusion. The eight content slides should contain information that will explain your topic thoroughly and get your ideas out in an interesting presentation. Text and graphics may be used to aid in creating an interesting presentation. The slides have limited area for text, so use text that is right to the point. Select important points to emphasize. The audience of the presentation is your fellow classmates. Save your presentation to your disk.
4. You will show your presentation to the class. Remember, your presentation should not need any verbalization; the slide show should get your point across.
5. Grading will be done by the attached rubric.

Scoring Rubric for PowerPoint Presentation (for students)

Rate each of the following items using the scale below:

5 = Excellent

4 = Good

3 = Fair

2 = Poor

1 = Redo

Points Received

1. Presentation has at least 10 slides
2. Student's picture on the title page with an interesting and creative title.
3. The slide show was interesting to watch.
4. The slide show presented concise information, allowing the observer to get the point.
5. Enough information was presented to make observer become interested.
6. There was appropriate color, graphics and background to make it easy to watch.
7. Transitions from one slide to another were interesting.
8. The text was educationally acceptable.
9. There was no unnecessary information.
10. I enjoyed and learned something from the presentation.



Scoring Rubric for PowerPoint Presentation (for teachers)

	Points Available
Presentation includes a minimum of 10 slides.....	10
Presentation appeals to the audience, uses a variety of layouts, is visually neat, and incorporates subject matter.....	10
Each slide uses text and/or graphics and transitions that communicate and complement content information.....	50
All text contains correct punctuation with no spelling errors.....	30
All slides reflect subject content and build on information as they proceed.	30
Information present shows proof of understanding ideas with emphasis on the most important points.	30
Design shows creativity, use of color and special effects.	30
Last slide shows a concluding statement drawing material together.....	20
Knowledge of the use of PowerPoint was apparent in the show.....	10
Presentation was interesting and enjoyable.	10



What do You Know About Organ and Tissue Donation? - Post-Test

Name _____ **Date** _____

1. How do you become an organ donor?
2. What organs can be used for donation?
3. How are donors and recipients matched?
4. Are there health requirements to become a donor?
5. Have you ever read anything about organ and tissue donation?
6. If you are an organ donor, do you think your organs can be used for transplant?
7. Do you think if you smoke or drink you can become an organ donor?

8. How is organ tissue donation done in other countries?

9. What happens during a transplant?

10. How long can organs be kept for transplant?

11. What does OPO mean?

12. If you are not designated as an organ donor, can your family override your wishes?

13. If your family does not want you to donate your organs, can you still be a donor?

14. Does this topic scare you?

15. Why is it important to understand organ and tissue donation?

Donation and Transplantation Concepts Vocab Lesson

Lesson Objective

Upon completion students will understand the meaning of vocabulary words relating to organ and tissue donation.

Standards Match

Reading, Writing, Speaking and Listening

- 1.1.8.E Establish a reading vocabulary identifying and correctly using new words acquired through the study of their relationships. to other words. Use a dictionary or related reference.
- 1.1.8.F Understand the meaning of and apply key vocabulary across the subject areas.

Activity

1. Students will create flash cards from the glossary of words relating to organ and tissue donation.
2. The teacher will read a definition and students will raise their hands and provide the correct vocabulary word/term to match the definition read by the teacher.
3. For each correct term provided, the instructor will give the students a flash card.

Assessment

Students receiving one to three flash cards receive a 75%.

Students receiving four flash cards receive an 85%.

Students receiving five or more flash cards receive a 100%.

Materials Needed

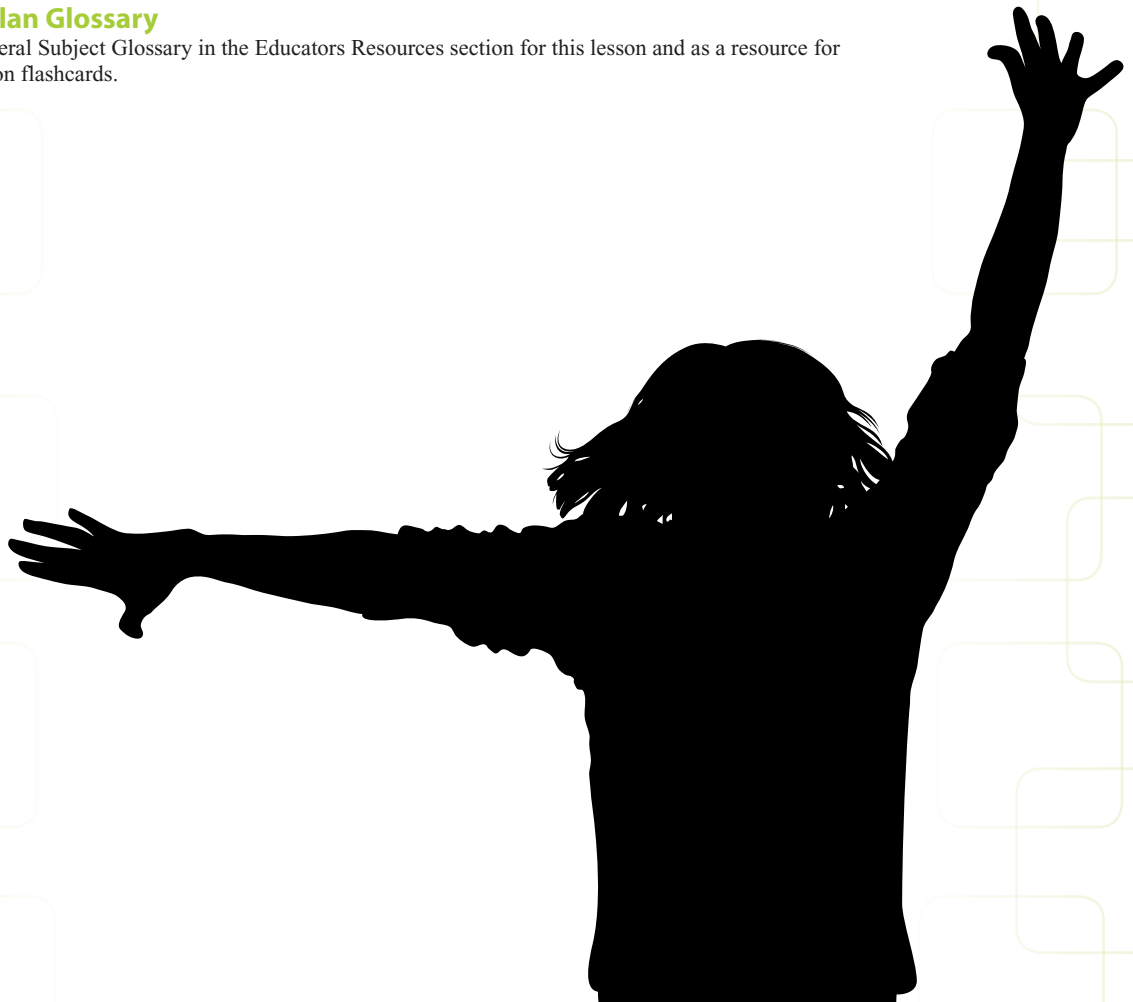
1. Glossary for organ and tissue donation
2. Index cards
3. Magic marker

Time Needed

1-2 days, depending on how it is structured as an activity

Lesson Plan Glossary

Use the General Subject Glossary in the Educators Resources section for this lesson and as a resource for vocabulary on flashcards.



Learning About Living Donation Lesson

This lesson plan strives to reinforce the students' learning skills, promote thinking skills and to encourage cooperation through teamwork. Students will apply practical reasoning skills necessary in the health care setting.

Objectives

1. Students will develop a new awareness of Organ Tissue Donation by reviewing statistical data.
2. After completion of this activity, the students will apply practical reasoning skills of being a living donor or educating family members in becoming living donors.
3. Students will discuss potential medical conditions that would necessitate a living organ donation.
4. The students will identify the organs and tissues that can be donated.
5. Students will identify with the guest speaker who has gone through such a procedure.

Standards Match

Science and Technology

- 3.2.12.A Evaluate the nature of scientific and technological knowledge.
- 3.2.12.B Evaluate experimental information for appropriateness and adherence to relevant scientific processes.
- 3.3.12.A Explain the relationship between structure and function at all levels of organization.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.3.12.C Explain gene inheritance and expression at the molecular level.
- 3.6.12.A Analyze biotechnologies that relate to propagating, growing, maintaining, adapting, treating, and converting.
- 3.8.12.A Synthesize and evaluate the interactions and constraints of science and technology on society.
- 3.8.12.B Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life.
- 3.8.12.C Evaluate the consequences and impacts of scientific and technological solutions.

Reading, Writing, Speaking, and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.2.11.A Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.4.11.B Write complex informational pieces.
- 1.4.11.C Write persuasive pieces.
- 1.6.11.A Listen to others.
- 1.6.11.B Listen to selections of literature (fiction and/or nonfiction).
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.D Contribute to discussions.
- 1.6.11.E Participate in small and large group discussions and presentations.
- 1.6.11.F Use media for learning purposes.

Activity

1. Take the Organ Donation Quiz on page 54. Review answers with instructor.
2. Students will read Toolkit section on Living Donation.
3. Students develop an understanding the specific laboratory test that are necessary by researching each required test through class room resources or world wide web.
4. Students develop an understanding of specific diseases that require living donation by researching specific diseases through class room resources or internet search.
5. Contact OPO to schedule a speaker for the class who has received a living donor organ transplant or donated an organ for surgery.
6. Students to develop three questions each to be asked to the guest speaker.

Assessment

Quiz, assignments for laboratory test, assignments for diseases requiring Living donations, assessment of questions asked by students toward guest speakers.

Materials Needed

1. OTDA Toolkit
2. OPO scheduled guest speaker
3. Resources for Lab Test
4. Resources for diseases and their pathophysiology
5. Developed questions from the students
6. Classroom setting.

Time Needed

3-4 days or longer if desired

Instructions

1. Schedule guest speaker.
2. Have students take quiz, then review answers. Discuss students' experiences with organ/tissue donation.
3. Have students read Living Donation section.
4. Assign research on the laboratory tests identified. Review in class.
5. Assign research on the diseases which may require living donation.
 - Review in class.
 - Develop questions for guest speaker.
6. Guest speaker story and opportunity to answer question.

Organ Transplants – Spare Parts for Broken Hearts

Lesson

This lesson plan strives to reinforce the importance of science in the students' lives. Students will explore why the human body naturally rejects foreign bodies, such as when a new organ or tissue is transplanted. Students will display knowledge on what can be done to help prevent a body's rejection of a new organ. Students will be asked to explore alternative methods for future donation and transplantation (should the trend of organ shortage continue as in the present day).

Objectives

1. Upon completion, students will be able to articulate the importance of science in their personal lives and the lives of family members.
2. Upon completion, students will be able to discuss obstacles and challenges of organ and tissue transplants.

Standards Match

Reading, Writing, Speaking, and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.6.11.A Listen to others.
- 1.6.11.B Listen to selections of literature (fiction and/or nonfiction).
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.D Contribute to formal speech situations.
- 1.6.11.E Participate in small and large group discussions and presentations.
- 1.6.11.F Use media for learning purposes.

Science and Technology

- 3.3.12.A Analyze the relationship between structure and function at all levels of organization.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.8.10.A Analyze the relationship between societal demands and scientific and technological enterprises.
- 3.8.10.B Analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.

Activity

1. Students will read the passage below silently.
2. In a group, students will discuss the passage and answer the questions on the worksheet.
3. The entire class will discuss the passage and correct the worksheets.
4. Students will hand in worksheets for assessment.

Assessment

1. Group interaction
2. Discussion participation
3. Successful completion of worksheet

Materials

1. Topically related passage below
2. Worksheet for reinforcement and assessment

Time Required

- 1 class period – 50 minutes

Have you ever considered the thousands of things that take place in your body? Think of your body as an automobile. Mechanics are always busy replacing this belt or that valve. The brakes, tires, battery and spark plugs are all parts that often need to be changed. When an accident occurs, fenders, doors or a hood may need to be replaced. Auto mechanics go to the local junkyard where usable parts can be recycled from cars that are no longer drivable. Who would have thought that a similar idea could someday be used to save lives? Organ transplants have become quite common in today's medical world. You may have heard of the kidney transplant. This surgery is fairly common. Hearts and lungs have also been transplanted separately and together.

Unfortunately, organ transplants are not always successful. Just as patients who receive blood transfusions must be matched with the donor's blood type, organs also must match. The human immune system, the network in our body that fights infections, is an eternal watchdog that attacks foreign invaders. This is to your advantage when the invader is a virus or bacteria. However, rejection is a process whereby the immune system attacks the transplanted organ because it is foreign to the body. Care must be taken to match the donor organs with the tissues of the person receiving the organ. Drugs are given to turn down the body's immune system and keep rejection from happening. Anti-rejection drugs have greatly increased the success of transplant surgeries by keeping the immune system from attacking the new organ. However, the patient has to take anti-rejection drugs every day of his or her life.

Today, hearts, kidneys, livers and other organs are transplanted. Doctors believe that someday, with more research, certain animals could be raised specifically to supply organs for human transplants. Yet, other exciting ideas are being considered. For example, can one part of the body be used to replace another? Scientists have already constructed a heart for a dog using the muscle taken from the dog's back. Where will technology end? Someday scientists may be able to grow new organs in the laboratory using organ tissue. We may each have our own spare organs on the shelf ready to fix our broken parts!



Organ Transplants – Spare Parts/Broken Hearts Reinforcement Activity

Name _____ Date _____

Answer the following questions.

1. Why would someone need a kidney transplant?
2. What problems can result from organ transplantation?
3. What precautions do doctors take to minimize complications in organ transplants?
4. Why does the body sometimes reject a donated organ?
5. Why is the drug, cyclosporine, given to organ recipients? How does it work?
6. What are two ways in which scientists might some day be able to make more organs available for transplantation?
7. What organs are typically transplanted into humans?

Procedures	Routine	Experimental	Untested
Blood transfusions			
Growing new organs from organ tissue			
Constructing new organs from animal tissue			
Transplanting human kidneys into humans			
Transplanting organs from an animal to a human			
Use of cyclosporine			
Transplanting human livers into humans			
Raising animals specifically for human transplants			
Matching donor and recipient organs			
Transplanting human hearts into humans			

The Decisions of a Lifetime Lesson

This lesson plan strives to reinforce students' need to gain the appropriate knowledge necessary to make an informed decision in relation to organ and tissue donation. Students will understand the decision-making process by going through the steps in making an informed decision. Students will follow the steps needed to make a decision on the issue of organ and tissue donation. Students will also understand reasons for people to decide to sign or not sign the organ donor card and recognize that there are not enough organs available for those who are in need because of the decisions made.

Objectives

1. Upon completion, students will understand the decision-making process by going through the steps in making an informed decision.
2. During the activity, students will follow the steps needed to make a decision on the issue of organ and tissue donation.
3. Upon completion, students will understand reasons for people to decide to sign or not to sign the organ donor card.
4. Upon completion, students will recognize that there are not enough organs available for those who are in need because of the decisions made.

Standards Match

Family and Consumer Sciences

- 11.2.9.A Solve dilemmas using a practical reasoning approach.
- 11.2.12.H Evaluate the effectiveness of using interpersonal communication skills to resolve conflict.

Activity

1. Review the steps in the decision-making process. Using an overhead transparency, discuss decision making and how it relates personally and the effects on society as a whole.
2. Use the decision-making form to evaluate students' feelings about organ and tissue donation.
3. Show how a person really feels about organ donation by supporting their view in The Funny Paper assignment.
4. Create cards before the beginning of class that say, "I need a heart," "I need a liver," "I need a kidney," etc. Other cards will say, "you will be killed in an automobile accident," "you will die of cancer," "you are healthy," etc. At the beginning of the class, give students cards and have them write either "yes" or "no" without answering the question. They will receive one card of each—make sure there are more people needing organs than those available. Discuss with students the lack of people donating and those who die due to the lack of the decision to sign.

Assessment

1. Completion of worksheets
2. Participation rubric (not included)

Materials Needed

1. Resource sheet – decision-making transparency master
2. Decision-making chart – enough for each student or team
3. Cards for organ need activity
4. Decision form – enough for each student
5. The Funny Paper worksheet – enough for each student

Time Required

One week of classroom time (if necessary, the Funny Paper worksheet can be completed as homework).

Decision-Making – Definitions and Examples

1. **Decision-Making** – the cognitive process of making a choice or decision

- Options – choice among alternatives
- Option Glut – system overload that causes stress

2. **Goal Conflicts** – when two goals get in the way of succeeding

- After-school job versus football team
- Your goal and those of family or friends

3. **Value Conflicts** – when two or more values clash, e.g. when what you want and what is right conflict

- Honesty versus loyalty
- Family—home by midnight versus friends—stay out late

4. **Role Conflict** – when you play different roles in different systems

- Social system roles
- Family system roles
- Educational system roles

5. **Types of decisions**

- Social decision – involves considering the similarities and differences among those involved in the decision
- Economics decisions – involves the financial options
- Technical decisions – focuses on the procedure or means to carry out the decision

6. **Time** – considered in decision making

- Society and cultures experience time differently
- Delayed gratification – not looking for the immediate satisfaction

7. **Weighing risks** – cost must be weighed against benefit you anticipate

- Benefit ratio
- Risk analysis

8. **Accepting Responsibility** – Whether positive or negative, one must process the information and accept outcome as a mature adult.

- Excuses – sign of not accepting responsibility
- Rationalization – kind of “cover story” to protect image

9. **Procrastination** – putting things off

- Conflict between standards and performance
- “It doesn’t have to be done perfectly, it just has to get done”

Some examples of decisions to make related to organ and tissue donation:

- Should I sign the donor card or not?
- Effects of donation on my life
- Effects of donation on my family
- Donation as a moral decision
- Effects of donation on society
- I need an organ. How do I get one?
- Donation and my religious belief

Decision-Making Format

1. Problem: (define) Should I become an organ donor and sign the donor card?

2. Facts bearing on the problem

3. List courses of action

A.

B.

C.

4. Discuss courses of action

A.

B.

C.

5. Recommendations (Give ideas of what you think and why.)

The Funny Papers

Name _____ Date _____

Instructions: Now it's your turn. In the four spaces provided, create a cartoon sequence that supports your view on organ and tissue donation. Don't worry if you are not an artist; your drawings can be very simple to get the point across.

1

2

3

4

Quiz: Organ Donation

Are the following statements true or false?

- | | |
|--|------------------|
| 1. Each day, 60 people receive an organ transplant. | True___ False___ |
| 2. Each day, 18 people die waiting for a transplant. | True___ False___ |
| 3. All organ donations in this country go through a local organ procurement agency; you cannot buy or sell an organ. | True___ False___ |
| 4. Organ donation costs the donor's family nothing. | True___ False___ |
| 5. Donated organs are removed surgically in a routine operation and the donor may still have an open casket. | True___ False___ |
| 6. Donors can be in any age range. | True___ False___ |
| 7. Donors may specify which organs and tissues they wish to donate. | True___ False___ |
| 8. The medical team treating the potential donor is completely separate from the medical team that performs the transplant. | True___ False___ |
| 9. An organ procurement organization is not notified until all lifesaving efforts have failed and the donor is declared brain dead. | True___ False___ |
| 10. Information about the donor is released to the recipient only if the donor family requests that it be provided. | True___ False___ |
| 11. Currently, 25 different tissues and organs may be transplanted. | True___ False___ |
| 12. Organ transplant success rates are as high as 95 percent. | True___ False___ |
| 13. Most of the world's religions support organ donation. | True___ False___ |
| 14. Even if the deceased has executed a document indicating that he or she is an organ donor, it does not guarantee that the deceased's wishes will be carried out; the family must agree. | True___ False___ |
| 15. One donor may help more than 70 people in need. | True___ False___ |
| 16. As of September 1, 2010, there were more than 108,000 people registered on the national waiting list for organ transplant. | True___ False___ |
| 17. Polls show that the vast majority of Americans support organ donation, but less than half of all potential organs are donated. | True___ False___ |
| 18. Donors are often people in good health who have suddenly died. | True___ False___ |
| 19. The lack of family consent is a primary reason that there is a shortage of organs for transplant. | True___ False___ |
| 20. In Pennsylvania, you are asked by the Department of Transportation if you want to designate. It is printed in green lettering on the front of the license, below the photo. You can also register at donatelife-pa.org at any time. | True___ False___ |

The 20 statements listed above are all TRUE. Remember to inform your family of your decision to become an organ donor. Their consent, after your death, will be necessary to insure that your wishes are carried out.

Sensing Cellular Identity Lesson (or How Does the Body Recognize What Belongs?)

This lesson plan strives to reinforce the students' understanding of how the body recognizes its own cells and knows to attack foreign cells, and strives to teach students to relate this recognition to the importance of matching donor tissue with recipient tissue in organ transplants. Students will describe the cell membrane, define cell surface markers, and explain the matching process for organ transplants.

Objectives

1. Upon completion, students will understand how the body recognizes its own cells and knows to attack foreign cells.
2. Students will be able articulate the importance of matching donor tissue with recipient tissue in organ transplants.
3. Upon completion, students will be able to describe the cell membrane, define cell surface markers and explain the matching process for organ transplants.

Standards Match

Science and Technology

- 3.2.12.A Evaluate the nature of scientific and technological knowledge.
- 3.3.10.B Describe and explain the chemical and structural basis of living organisms.
- 3.3.12.A Explain the relationship between structure and function at all levels of organization.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.3.12.C Explain gene inheritance and expression at the molecular level.

Reading, Writing, Speaking, and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.2.11.A Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.4.11.B Write complex informational pieces.
- 1.6.11.A Listen to others.
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.D Contribute to discussions.
- 1.6.11.E Participate in small and large group discussions and presentations.
- 1.6.11.F Use media for learning purposes.

Activity

1. Begin by asking the students to participate in the anticipatory set of questions. Discuss.
2. Review cellular structure information found below.
3. Students should complete Activity #1.
4. Students should complete Activity #2.

Assessment

1. Participation in group activity, and ability to explain the point of Activity #1.
2. Logical flow chart with understandable explanations for each step for Activity #2.

Materials Needed

1. Cards with shapes and colors
2. Antibody cards
3. Computers (if available)

Time Needed

1-2 days if desired

Anticipatory Set

1. Assume you are the referee at a football game. How would you know which players belong on the field when the game starts? (Color of the jerseys)
2. If a player didn't have the correct jersey, what would you do? (Get rid of him!)
3. How do you know where the player should be? (By the number on his jersey, certain numbers are allowed to be in certain areas and do certain things.)
4. Relate to the human body. The body must be able to recognize which cells belong to it (good), which cells don't (bad), where the cells should be and which job the cell should be doing.

Information and Directions for Each Step of the Activity

Question: How exactly does the body detect which cells belong?

1. Review the structure of the cell membrane (phospholipid bilayer, proteins embedded in it). The proteins in the cell membrane have several functions. One of these is to act as a cell marker, identifying each cell as belonging to your body. These markers, organized before you were even born, tell your cells where to go and which cells to join. If a cell has a different marker, the body's defenses recognize it as being foreign and attack and destroy it.
2. The uniqueness of an individual's cell surface markers explains why organ donor tissue and recipient tissue must be carefully matched before transplantation. Human beings have complicated defense mechanisms against bacteria, viruses and other foreign materials that enter the body. These defenses make up the immune system. Unfortunately, the immune system cannot differentiate between the disease-causing organisms (bad), and the cells of a lifesaving transplant (good). Both are looked upon by the body as foreign, and the immune system will attack them. This attack by the immune system (rejection of the transplanted organ) is a great problem in organ transplants.
3. Markers are found on white blood cells. Each of us has several genetic markers located on the surface of most of our white blood cells. One of these groups of genetic markers is referred to as the HLA, or Human Leukocyte Antigens (define leukocyte [white blood cell], antigen [genetic marker]). The donor cells have Human Leukocyte Antigens on their cells. The recipient might have an antibody (protein) in his blood serum that will attack and destroy these antigens, and destroy the donor organ's cells.

Activity #1

Students draw a card that has a specific shape and color out of an envelope. At the signal, all students (cells) with the same shape and color on their card cluster together. Other students with the word "donor" on their card join the different groups. Four students receive cards that say "antibody." As the students are in the groups, the antibodies move around the room and remove any "cells" that don't have the correct marker on them. They are "destroyed." "Antibody students" explain what they are looking for and how they recognize "foreign" cells.

1. Tissue typing and other tests determine donor/recipient compatibility. The lab performs a test called "tissue typing," which will identify the individual's HLA. There are many different HLA antigens in the human population, and in order for the transplant to have the best chance for success, the patient and donor HLAs must match as closely as possible.
2. After tissue typing is completed and a potential donor is identified, a test must be performed to determine if there is any immune activity (incompatibility) between the donor and recipient. It is called a "cross match" and is performed by mixing a small amount of the patient's serum with the potential donor's white blood cells.
3. The last test to determine if the donor and the recipient are compatible is the antibody screening. It tells how many Human Leukocyte Antigen antibodies the recipient has. The greater the amount of antibodies, the more of a problem it can be for a successful transplant. It is the role of HLA in discriminating between self and non-self that makes it important in transplantation.

Activity #2

Students will design a flow chart following the steps in selecting an appropriate donor for a recipient of a new heart. Use a computer program if available and explain the theory behind each step.

Senior BioMed Final Assignment

This lesson plan strives to reinforce the students' learned and thinking skills through utilizing research methods of Internet usage, newspaper or magazine articles that relate to donation. Students will research how an organ or tissue functions and results of failure of the organ and tissue. Students will gain knowledge on how the transplant process works and the possible side effects of transplants. This lesson plan will also reinforce the emotional side of donation as students are asked to place themselves in the role of researching a needed organ for transplant for a friend in need of transplantation.

You have discovered that someone you know well needs an organ or tissue donation. They want to know everything about the organ they need and the donation process. You agree to help your friend research the topic. Remember you need to provide accurate, useful information.

Objectives

1. Upon completion of this project, students will be able to describe the function of at least one organ or tissue of their choice to research.
2. Upon completion of this project, students will be able to explain the transplant process and possible side effects for that transplant to his or her classmates.
3. Upon completion of this project, the student will have a written paper in the form of a news article, a pamphlet or a poster presentation.

Standards Match

Science and Technology

- 3.2.12.A Evaluate the nature of scientific and technological knowledge.
- 3.3.10.B Describe and explain the chemical and structural basis of living organisms.
- 3.3.12.A Explain the relationship between structure and function at all levels of organization.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.8.10.A Analyze the relationship between societal demands and scientific and technological enterprises.
- 3.8.10.B Analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- 3.8.10.C Apply basic computer operations and concepts.
- 3.8.10.E Apply basic computer communications systems.

Reading, Writing, Speaking, and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.4.11.B Write complex informational pieces.
- 1.6.11.A Listen to others.
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.D Contribute to discussions.
- 1.6.11.E Participate in small and large group discussions and presentations.
- 1.6.11.F Use media for learning purposes.
- 1.8.11.A Select and refine a topic for research.
- 1.8.11.B Locate information using appropriate strategies.
- 1.8.11.C Organize, summarize, and present the main ideas from research.

Activity

1. Students will choose an organ or tissue to research.
2. Students will research how that organ or tissue functions and implications of system failure.
3. Students will learn the transplant process for the organ or tissue.
4. Students will learn possible side effects of transplants.

Assessment

1. Outline of research
2. The written paper (may take on the following forms):
 - a. a pamphlet with information
 - b. a newspaper or magazine article
 - c. a poster presentation to the class
3. Oral presentation of findings
4. Teamwork skills

Materials

1. Resources for research – Internet, library, etc.
2. Resources for presentation – poster board, markers, PowerPoint, etc.

Time needed

The research phase can last all semester if desired. Presentation time will vary according to number of students and time allotted for presentations.

Senior BioMed Project (student directions – handout)

You have discovered that someone you know well needs an organ or tissue transplant. They want to know everything about the organ they need and the donation process. You agree to help your friend research the topic. Remember, you need to provide accurate, useful information.

For this project you will:

1. Choose an organ or tissue for your research.
2. Research how that organ or tissue functions and result of failure of the organ or tissue.
3. Learn the transplant process for the organ or tissue.
4. Learn possible side effects of transplants.

You should prepare and turn in the following:

1. Outline of research
2. The written paper (may take on the following forms):
 - a. a pamphlet with information
 - b. a newspaper or magazine article
 - c. a poster presentation to the class

Assessment

You will be assessed on your final paper, as well as a brief oral presentation of your findings. For this project, you will work in groups of three. Teamwork will also be assessed.



Senior BioMed Project

(Use the rubric below for scoring student work.)

CATEGORY	4	3	2	1
Quality of Information	Information clearly relates to the main topic. It includes several supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.
Sources	All sources (information and graphics) are accurately documented in the desired format.	All sources (information and graphics) are accurately documented, but a few are not in the desired format.	All sources (information and graphics) are accurately documented, but many are not in the desired format.	Some sources are not accurately documented.
Internet Use	Successfully uses suggested internet links to find information and navigates within these sites easily without assistance.	Usually able to use suggested internet links to find information and navigates within these sites easily without assistance.	Occasionally able to use suggested internet links to find information and navigates within these sites easily without assistance.	Needs assistance or supervision to use suggested internet links and/or to navigate within these sites.
Diagrams & Illustrations	Diagrams and illustrations are neat, accurate and add to the reader's understanding of the topic.	Diagrams and illustrations are accurate and add to the reader's understanding of the topic.	Diagrams and illustrations are neat and accurate and sometimes add to the reader's understanding of the topic.	Diagrams and illustrations are not accurate OR do not add to the reader's understanding of the topic.
Paragraph Construction	All paragraphs include introductory sentence, explanations or details, and concluding sentence.	Most paragraphs include introductory sentence, explanations or details, and concluding sentence.	Paragraphs included related information but were typically not constructed well.	Paragraphing structure was not clear and sentences were not typically related within the paragraphs.
Mechanics	No grammatical, spelling or punctuation errors.	Almost no grammatical, spelling or punctuation errors	A few grammatical spelling, or punctuation errors.	Many grammatical, spelling, or punctuation errors.

The Cost of A Transplant Procedure Lesson

This lesson plan strives to reinforce the economics behind organ and tissue donation. Students will be able to identify the various costs of organ and tissue transplant from procurement and transplantation to long-term care, and to identify the role of supply and demand in determining these costs. Students will also research how a patient may pay for all these incurred costs.

Objectives

- 1) Using technology resources, the students will outline and document in chart form the costs of an organ/tissue transplant in the areas of procurement, transplantation, and long-term care for the patient and for the patient's caregiver.
- 2) Using technology resources, the students will design and complete a chart that defines the step of the transplant procedure, cost, and additional resources possibly available to help defray the cost.
- 3) Using the newly created chart, the student will plug values known from the transplant patient's story into the cost analysis chart.
- 4) Using the information gained during the activities, students will create a local donation and transplant "guide" brochure that outlines the transplant process, gives a cost analysis of the complete process, and introduces local resources that provide additional funding, counseling, or follow-up for the transplant recipient and the transplant recipient's caregiver.
- 5) Utilizing critical thinking skills, the student will write an essay on "Preparing Financially For The Future of a Transplant Recipient- A Caregiver's Guide" using this quote from Mrs. Smith: "He had it in his head for so long that he was dying that he did not know how to live."
- 6) Students will conduct internet research using various websites for information – including:
<http://www.transplantliving.org/beforethetransplant/finance/directory.aspx>

Standards Match

Economics

- 6.2.12.A Analyze the flow of products, resources, and money in a mixed economy.
- 6.2.12.F Identify forces that can change price.
- 6.3.12.A Analyze actions taken as a result of scarcity issues in the regional, national, and international economies.
- 6.3.12.B Evaluate the economic reasoning behind a choice.
- 6.3.12.E Analyze the opportunity cost of decisions by individuals, businesses, communities, and nations.

Family and Consumer Sciences

- 11.1.12.B Analyze the management of financial resources across the lifespan.
- 11.1.12.C Analyze the relationship among factors affecting consumer housing decisions.
- 11.1.12.G Compare the availability, costs, and benefits of accessing public, nonpublic, and for-profit services to assist the family.

Reading, Writing, Speaking, and Listening

- 1.1.11.D Identify, describe, evaluate, and synthesize the essential ideas in text.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.2.11.B Use and understand a variety of media and evaluate the quality of materials produced.
- 1.4.11.B Write complex informational pieces.
- 1.5.11.A Write with a sharp, distinct focus.
- 1.5.11.B Write using well-developed content appropriate for the topic.
- 1.8.11.A Select and refine a topic for research.
- 1.8.11.B Locate information using appropriate strategies.
- 1.8.11.C Organize, summarize, and present the main ideas from research.

Activity

1. Students will read the real life scenario below and will discuss as a whole group.
2. As a class, identify what the students believe are the "good starts" and "missteps" made by the couple pursuing the transplant.
3. In small groups, students will research and document the cost of organ and tissue transplant, specifying the cost of each step in the transplant procedure, including obtaining the organ, transplantation, hospital stay, surgical fees, rehabilitation, long-term care, and drugs/other pharmaceutical needs of the patient over the course of their expected lifetime.
4. Research how the patient pays for all of this. Students will choose from single organ transplant or multi-organ/tissue transplants for the cost analysis.
5. As a small group create a regional users guide for those considering a transplant.
6. As a summary students will write an essay re: the financial considerations of a transplant and possible trouble-shooting. Students will use critical thinking skills to address planning issues.

Assessment

Successful completion of the cost analysis
Participation in group discussion
Participation in group project – a local guide to transplant resources
Successful completion of essay

Materials Needed

1. Internet
2. Medical Journals (possibly)
3. Scenario below

Time Required

1-2 weeks of classroom and homework time

Considering The Cost of a Transplant Procedure

Mr. Smith had been diagnosed with a progressive liver condition that would eventually destroy his liver and end his life. In an attempt to deal with this outcome, Mr. and Mrs. Smith worked with two different doctors following the procedures that could lead to a transplant. Mr. and Mrs. Smith completed the transplant application procedure to be placed on the liver transplant list in Pittsburgh, Chicago, and Milwaukee and then waited. They waited for six years.

The call telling them that a liver was available came unexpectedly one evening. Milwaukee had procured a liver! The call came just as Mrs. Smith had lost most of her hope for her husband's life. He had been hospitalized with liver disease complications for most of the last seven months. His life at home required 24 hour care as the toxins began to destroy his brain functions.

Mrs. Smith had the telephone numbers of every airline flying from Pittsburgh to Chicago or Milwaukee taped on her wall by the telephone. She immediately began the process of calling every carrier to obtain two tickets to Milwaukee within the eight hour transplant time line.

Unfortunately, booking the flight became an impossible task. No flights were available. Desperate for airline transportation, Mrs. Smith contacted Life Flight Stat Medevac. For a pre-payment of \$9000, air transport could be secured. Knowing that her husband was acutely ill and closer to death than any other time in his life, Mrs. Smith agreed to the deal. She utilized her savings and three different credit cards to meet the \$9000 price tag.

An ambulance transported Mr. and Mrs. Smith to the airport. The flight safely delivered them to Milwaukee where another ambulance whisked them to the hospital for the transplant procedure. The procedure was a complete medical success.

Mrs. Smith made the choice to stay with her husband in Milwaukee during the six week transplantation follow-up and rehabilitation. This required great sacrifice on her part. Because Mrs. Smith was employed as a full time teacher, she first exhausted her sick leave for which she was paid. The next step was for her to apply for Family Medical Leave. She received approval for an unpaid leave of absence under the Family Medical Leave Act. Mrs. Smith would be available to help with her husband's recovery and rehabilitation, but she would not have an income. Her medical benefits remained intact and her job would be held open for her.

Mrs. Smith now had to negotiate a deal for herself with a hotel in Milwaukee for the six week rehabilitation period. Her hotel stay, transportation to and from the hospital, and all other living expenses such as food had to be paid from her own pocket. Her children, who were at home, needed food. Her bills at home for phone, cable, heat, water, and even her house payment continued and needed paid.

Mrs. Smith had a tremendous financial burden, but she also had an increasingly healthy husband! Friends, neighbors, and relatives of Mr. and Mrs. Smith held a community benefit to raise funds to help with the living expenses. Mrs. Smith contends that the kindness, compassion, and generosity of others were necessary components of the healing process for her husband and herself.

Mr. Smith continues to recover his health and regain a positive approach to living. Mrs. Smith continues to be by his side. She contends that "he had it in his head for so long that he was dying that he did not know how to live."

Donation and Transplantation Around the World Lesson

This lesson plan strives to reinforce the appreciation of how other nations view and confront the issue of organ and tissue donation. Students will be exposed to the global perspectives on organ and tissue donation. Students will determine through Internet research how other countries handle organ and tissue donation.

Lesson Objectives

Students will determine the organ and tissue donation policies of other countries.
Students will research donation and transplantation practices of other countries
Students will complete a graphic organizer comparing and contrasting practices of two countries.

Standards Match

Civics and Government

- 5.1.12.A Evaluate the major arguments for the necessity for government.
- 5.1.12.B Analyze the source, purpose, and functions of law.
- 5.1.12.J Evaluate the importance of law.

Science and Technology

- 3.8.10.C Apply basic computer operations and concepts.
- 3.8.10.E Apply basic computer communications systems.

Reading, Writing, Speaking, and Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.F Understand the meaning of and apply key vocabulary across the various subject areas.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.4.11.B Write complex informational pieces.
- 1.6.11.A Listen to others.
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.D Contribute to discussions.
- 1.6.11.E Participate in small and large group discussions and presentations.
- 1.6.11.F Use media for learning purposes.
- 1.8.11.A Select and refine a topic for research.
- 1.8.11.B Locate information using appropriate strategies.
- 1.8.11.C Organize, summarize, and present the main ideas from research.

Activity

1. Students will research the United Anatomical Gifts Act (UAGA) and summarize how it governs donation and transplantation policy in the USA.
2. Students will go to the computer lab to research online how other countries handle organ and tissue donation.
3. Each student will choose two countries to explore.
4. Students will complete a compare/contrast graphic organizer for the two countries and will do a final presentation on their findings.

Assessment

Successful completion of the research and presentation assignments

Materials Needed

1. Computer lab – Internet access
2. Final presentation materials – format optional

Time Required

Two weeks of research and homework; presentations dependent on time allowed.

Tissue Anatomy Lesson- Study of anatomy for cosmetology PA State Boards

This lesson plan was submitted by Butler County CTC and can be adapted to another cosmetology setting quite nicely. It demonstrates the creative, out-of-the-box implementation that can occur with this content area.

Lesson Objectives

1. During the activity, students will summarize microscope use skills previously learned in an academic classroom and integrate and upgrade those skills to proficiently identify human tissue and related anatomy as outlined by the PA State Board of Cosmetology for licensure testing.
2. During the activity, students will interpret and apply CORE tissue donation information displayed on the CORE website and from CORE media and publications to personal life experiences.
3. During the activity, students will formulate a cosmetologist's checklist for topical assessment of skin, scalp, and hair anomalies found on clients or identified by clients.
4. During follow-up, students will formulate appropriate language and "conversations" to encourage clients to seek medical assessment of found skin, scalp, and hair anomalies.
5. Upon completion of the activity, students will differentiate healthy and diseased tissue samples.
6. Upon completion of a group discussion and debate, students will formulate safe exposure guidelines for use with clients to identify recommended sun exposure, cosmetic use, and salon chemical processing procedure use.
7. Upon completion of the lessons, students will identify, utilize, and recommend the procedures and products that will maintain and encourage a healthy client.

Standards

Reading, Writing, Speaking, Listening

- 1.1.11.A Locate various texts, media and traditional resources for assigned and independent projects before reading.
- 1.1.11.B Analyze the structure of informational materials explaining how the authors used these to achieve their purposes.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.2.11.B Use and understand a variety of media and evaluate the quality of the material produced.
- 1.4.11.A Write short stories, poems, plays.
- 1.5.11.A Write with a sharp, distinct focus.
- 1.6.11.A Listen to others.
- 1.6.11.C Speak using skills appropriate to formal speech situations.
- 1.6.11.F Use media for learning purposes.
- 1.8.11.A Select and refine a topic for research.
- 1.8.11.B Locate information using appropriate strategies.
- 1.8.11.C Organize, summarize, and present the main ideas from research.
- 3.3.12.A Explain the relationship between structure and function at all levels of organization.

Science and Technology

- 3.1.12 Apply concepts of systems, subsystems, feedback, and control to solve complex technological problems.
- 3.2.10.A Apply knowledge and understanding about the nature of scientific and technological knowledge.
- 3.3.12.B Analyze the chemical and structural basis of living organisms.
- 3.7.10.B Apply appropriate instruments and apparatus to examine a variety of objects and processes.

Career and Work

- 13.1.11.C Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.
- 13.3.11.G Evaluate the impact of lifelong learning on career retention and advancement.

Activities

1. Students will be given an organ and tissue donation pretest (see previous lesson examples).
2. Students will locate and identify the biological and anatomical features potentially affected by cosmetology procedures and services.
3. Students will drill down to the cellular level by microscopically examining and evaluating samples of healthy and unhealthy/diseased tissues and organs.
4. Students will summarize personal life experiences with tissue/organ transplants, the donation process, and existing transplant and donor myths.
5. Students will read and interpret CORE tissue donation information.
6. While in groups, students will write and edit lists of body changes in clients that licensed and trained cosmetologists should recognize and note.
7. Through role playing, cosmetology students will define appropriate and ethical language to be used with clients when cosmetology procedures cannot be safely applied.
8. Cosmetology students will sort and identify healthy and unhealthy/diseased slides of tissue and organ samples.
9. Cosmetology students will list procedures and products recommended to clients on a client record card or in a client data base with additional notes on outcomes.
10. The teacher will contact and obtain services of a volunteer scientist or science teacher to review slide prep techniques with teachers and students. (National Lab Day database: www.nationallabday.org)
11. The volunteer scientist or science teacher will recommend slides and slide prep materials to be purchased by the teacher as necessary.
12. The teacher will prepare power points and/or printed directions on slide prep techniques and the proper use and care of microscopes.
13. The teacher will contact CORE for OTD Awareness flyers, presentation guides, and guest speakers as necessary. (<http://core.org>)
14. An organ and tissue donation post-test will be given to students. Evaluation of the post-test scores will determine if re-instruction is warranted.

Assessment

1. Pre-test and Post-test.
2. Slide-sort test.
3. Posters of proposed client database information cards.
4. Group presentations of suggested ethical language when recommending clients consider obtaining medical care.

Materials

1. Pre-test
2. Post-test
3. Microscopes
4. Slides, prepared/stock and created
5. CORE brochures
6. Cosmetology textbook
7. Computer and projector
8. Teacher created power point
9. Poster paper, markers, or group computer access
10. Slide prep materials and chemicals
11. Speakers (Donors, donor relatives, recipients, etc.)
12. Volunteer scientist/science teacher

Time Required

The research and preparation by the teacher should be undertaken 2- 6 weeks ahead of the scheduled classroom presentation. Classroom presentation time could vary from 1-2 weeks depending on activities selected.

The Science and History of Donation and Transplantation Lesson

Objectives

1. During this activity, students will practice reading non fiction text and will evaluate the “voice” of the piece.
2. Upon completion of this activity, students have completed a list of the medical advances made in the 1950s in the fields of donation and transplantation. Students will also note which technologies are still be implemented in medical practice today.
3. Upon completion of this activity, students will have conducted basic internet research into the automobile and the telephone and will incorporate the basics ideas gleaned into a discussion and an essay.
4. After completing this activity, students will have a completed essay describing their interpretation of the family’s experience in the 1950s compared to a family’s similar experience in today’s world.
5. After completing this activity, students will have completed a timeline of advances made in donation and transplantation since the 1950s.

Standards Match

Reading, Writing, Speaking and Listening

- 1.1.11.D Identify, describe, and evaluate essential ideas in text.
- 1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
- 1.2.11.B Use and understand a variety of media and evaluate the quality of materials produced.
- 1.4.11.B Write complex informational pieces.
- 1.4.11.C Write persuasive pieces.
- 1.5.11.A Write with a sharp, distinct focus.
- 1.5.11.B Write using a well-developed content appropriate for the topic.
- 1.8.11.A Select and refine a topic for research.
- 1.8.11.B Locate information using appropriate strategies.

History

- 8.1.9.A Analyze chronological thinking.
- 8.1.9.B Analyze and interpret historical sources.

Science and Technology

- 3.1.10.E Describe patterns of change in nature, physical systems, and man made systems.
- 3.2.10.A Apply knowledge and understanding about the nature of scientific and technological knowledge.
- 3.8.10.A Analyze the relationship between societal demands and scientific and technological enterprises.
- 3.8.10.B Analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- 3.8.10.C Apply basic computer operations and concepts.

Activity

1. Have students read the real life story included in this lesson.
2. Ask students to read the included activity directions. When all students are done reading, engage discussion on what images they have of the era described – automobiles, telephone, family life, values.
3. Students will work in pairs to do brief internet search on images from the 1950s to support or contrast their assumptions.
4. Show the DVD from the U.S. Dept. of Health and Human Services “The Science of Miracles” and ask students to list the medical advances made in the 1950s/60s versus in the 1970s-1990s.
5. After completing the film, students should work with their partner to complete a timeline showing the medical developments.
6. Students then write a summarizing essay comparing what the real life story narrator’s family experienced compared to what the situation would be like in today’s world.

Assessment

Successful participation in discussion of story.
Ability to successfully list medical advances and completed timeline.
Submission of completed essay.

Materials Needed

1. Copies of real life story
2. Internet access
3. Copy of The Science of Miracles DVD (www.organdonor.gov or 1-888-ASK-HRSA) FREE!

Time Needed

1-2 class periods

Joyce's Real Life Story

Many of the stories in this Toolkit center on recent organ and tissue transplants and donations. I would like to share with you an early episode of a tissue and fluid transplant that occurred near the beginning of the history of organ and tissue transplants and donations.

This is a story pieced together from oral histories and from faded and tattered typewritten letters written by my caring and exceptional doctors. This is a story I was shielded from until I found and read one of those faded and tattered letters as a 10 year old. Imagine my surprise as I found that I almost died as an infant but was saved by bone marrow transplants, stem cell research and transplants, and blood transfusions.

I was born in November 1952, the child of Betty and JC. I was a happy and healthy child until I was about six months old. At that time, I developed severe anemia. The problem became increasingly acute and I was diagnosed with a form of childhood leukemia. The doctors and hospital in New Castle, PA, continued to do what they could to treat the disease, but the disease caused me to languish.

My mother had a brother who was just beginning medical school at the University of Pennsylvania and she turned to him for help. There were no cell phones in 1953 and making a long-distance telephone call from New Castle to Philadelphia attested to the seriousness of my illness. My Uncle John was working in a research lab at Children's Hospital of Philadelphia to supplement the funds necessary for medical school. That lab is where he received the frantic phone call from my mother telling him that the doctors had indicated that my disease was terminal.

While my uncle was on the phone with my mother, the doctor in charge of the research overheard a part of the conversation. This doctor instructed my uncle to tell my parents to pack me on ice and get me to Philadelphia so he and his research team could try to help me. This doctor and his team were involved with blood disorders, early stem cell research, and bone marrow transplants.

My fever was high and the fear of further damage to my organs was real. Placing me in a cool container of ice for a few minutes a couple of times each hour would reduce my temperature and hopefully help me survive the trip to Philly. During the 1950s a trip to Philadelphia would take at least nine hours by car. My parents packed me up with a cooler full of ice for the trip and began a stressful drive to the east.

We arrived in Philadelphia and I was immediately admitted to Children's Hospital of Philadelphia. While extensive blood testing was taking place with me, my parents' blood was also being tested. Over the next few months, I received numerous blood transfusions from very generous donors not related to me. The transfusions kept me alive and stabilized me so bone marrow transplants could take place. The research was also able to isolate some stem cells that were present in my dad's blood system. The next step of the treatment included both bone marrow transplants and the transfer of my dad's stem cells into my little body.

I recovered fully and am now approaching my 58th birthday. I have not suffered any further medical complications resulting from my early illness other than a tendency to be anemic.

I do not have all of the details regarding the amazing research that saved my life. My mother could never talk about the events that saved me. My father honored her wishes and did not discuss it with me, either. I suppose the details are not important. I was given life, and I wish to thank all of those known and unknown doctors, donors, and generous individuals who have made my life possible.

Joyce's Real Life Story

Student Activity Directions:

Take some time and look for pictures on the Internet of automobiles common to the early 1950s, the long-distance telephone system of that era and the Pennsylvania Turnpike of the '50s and a picture of American culture will begin to emerge. Factor in the post-World War II family and religious values, which you can also research on the internet. The acceptance of science and technology had taken a leap forward due to WWII, but many U.S. citizens, including my parents, still viewed many breakthroughs as “miracles.”

Research the advances made in organ and tissue donation from 1949-1960. Compare and contrast the timeline and depth of these advances with those made from 1960-1980 and/or those made from 1980 to the present in an essay. Include research and interpretation of the belief system and cultural grounding of the average U.S. citizen in 1950.



Real Life

Stories

OTDA
Classroom
Toolkit





The Gift of Grace

By Gareth Spiese

In the summer of 2000, a 17-year-old girl I never knew made a decision that would save my life. Because of her selfless gift, she shall be called “Grace.”

Long before Grace was born, when I was just 13 years old, my active adolescence was abruptly interrupted by a rare liver disorder (eventually diagnosed as autoimmune hepatitis). One day, I was a representative in student government, a singer in school and church choirs, a cheerleader, and an above average student. The next, I was confined to a hospital bed, forbidden

to get up except to walk a few feet to the bathroom. Doctors advised my young parents to prepare my three siblings for my imminent death before week’s end.

Miraculously, with the help of medicine, the encouragement and support of family and friends, the power of God, and my own stubborn determination, I survived. Life was uncertain throughout my teen and early adult years, so I savored each day. Taking care of the illness, but focusing on living, I was blessed with sufficient health and energy to act onstage, work part-time and volunteer as an usher and house manager for various Lancaster theaters.

By 1997 my liver had given all it could. Doctors pronounced me in end-stage liver disease, and I was placed on the UNOS national waiting list for a liver transplant. Before this, I knew as much about transplant and organ and tissue donation as a baker knows about astro-physics. I quickly learned that the cost of surgery and medications required for survival was enormous. I also learned that the number of potential organ donors is infinitesimal compared to the number of those waiting for transplant.

I was issued a pager dedicated solely to receiving the phone call that would summon me to the hospital for this life-saving operation. Gradually, my body was breaking down. In the years waiting for a matching donor, I developed diabetes, cataracts, and a chronic leg wound which began as a little scratch. With such unpredictable health, I was forced to leave my job and could no longer volunteer in the theater.

Waiting for that phone call, day-by-day, I prepared for the upcoming financial challenge. I gathered a collection of friends from my theater and church life to form a fundraising committee, “Garet’s Hope.” We proceeded to hold events, such as concerts, plays, and yard sales. Our efforts were supported not only by people who had known me for many years from my stage performance and other activities, but also by those, strangers to me, who were moved to help. For many, a “Garet’s Hope” event was their first exposure to transplant and the need for organ/tissue donation. “Garet’s Hope” then had a two-fold mission: 1) to raise funds for the transplant process, and 2) to raise awareness for organ and tissue donation.

Meanwhile, on a summer morning in 2000, Grace was learning too. She sat with her dad in the Maryland DMV driver’s testing facility. As she completed the required forms to obtain her driver’s license, she came upon the question: “Do you wish to indicate that you are an organ donor?” Grace asked her dad what that meant. He briefly explained to her that if she should happen to die in an accident, doctors could give her organs for transplant to a very ill person. “But don’t worry, Sugar,” he added quickly, “you won’t ever have to think about that.”

A year later, after a freak accident playing with friends, Grace lay in a hospital bed as her parents stood helplessly by. Her breathing and circulation was supported only by machines which occupied the tiny room. During the week that her parents hoped against hope, they looked through some of Grace’s

personal effects. Only then did they notice her driver's license. Below the photo of their lovely blonde, blue-eyed daughter was printed in bold letters: ORGAN DONOR. Unbeknownst to them, their precious Grace, in her usual, generous spirit, had made this important commitment. In their love for her, they honored her wishes.

On Mother's Day, May 13, 2001, I received the life-saving gift of a healthy liver that had belonged to this vibrant, giving teenager. On the dawn of each new morning, I give thanks as I think of her. At this writing, nine years have passed since I received this priceless gift from Grace. Now, instead of short, shaky walks down hospital corridors, my husband, Steve, and I enjoy long hikes through the woods surrounding our Lancaster County home. We spend occasional afternoons playing golf or mowing the lawn ... all impossible feats for me in the challenging years prior to transplant. In light of the fact that doctors initially warned that I would not live to celebrate my 16th birthday, commemorating my 60th birthday this year (2010) was quite an event! My brother and sister and friend joined me at Sam Lewis State Park to fly kites. It was glorious!

Grace's gift keeps on giving. Now, I am privileged to work as support staff in our state-funded OTDA education project. My experience has moved a close friend to help an infant in our community who was very ill and needed a new liver. My friend heard about this in the news, and, because she had learned about organ donation through my need, stepped up and made a living donation (partial liver), which saved the child's life. She now has a close relationship with this family, who were strangers to her before she gave of herself so the infant could live.

I have also made acquaintance with my local post-office clerk, who, upon noticing that one of her customers was feeling poorly, asked the everyday question, "How are you?" The customer replied that she was on dialysis, which was no longer working for her. She needed a new kidney. Right then and there, the clerk exclaimed, "Well, I can give you one of mine!" After tests proved that, miraculously, the two were medically matched, the post-office clerk gave her "customer," turned friend, a new lease on life in February 2006. Subsequently, I have shared my experience with both of these ladies. We all feel like sisters through the similar adversities we have survived.

Likewise, your own exposure to the OTDA project may have a "domino effect." Mention what you are learning to family or friends and you may, even without knowing it, help to give the gift of life!

David D'Agostino – Pennsylvania's First Tissue Donor

Submitted by Eddie and Evelyn D'Agostino, David's parents

David D'Agostino was born on June 14, 1959. He died at age 23, only a few short weeks after telling his parents and his wife that if he died before they did, he wanted to be an organ and tissue donor. Sadly, on October 30, 1982, his life ended in a tragic accident and he became the first donor for the PA Regional Tissue Bank and the state of Pennsylvania's first tissue donor.

At the time of his death, David was married to his wife Tina and they had a two-and-a-half year old daughter, Smia. Very little was known about donation—especially tissue donation—in 1982. David received his inspiration to become a donor because his mother signed an eye donor card and from a lecture he attended at graduate school at the University of Scranton; that lecture was on organ and tissue donation.

David's deep compassion for his fellow man and his burning desire to help others provided him with the foresight to make a commitment to and tell others he loved about organ and tissue donation. As is so true of all donors, whether they donate a heart, kidney, heart valves, bone, skin, or corneas or anything else, their good name will be carried forth by family and friends and their legacy will continue through their gift of life to others. With this, love, life, and their final wishes can go forward!

After knowing that he is at peace with God in Heaven, it was saying “Yes!” to David on that day that has been his family's greatest comfort.





My Thoughts – Daryl Dancy

Several years ago, if you were to tell me that I would go into kidney failure, be hospitalized on three separate occasions as a result, and be diagnosed with another major disease during this period, I would not have believed you.

If you were to tell me that a total stranger would donate one of his kidneys to me without any hesitation, I would have laughed in your face.

This is, however, exactly what transpired - and this is my story.

At the age of 17, I was diagnosed with a chronic kidney disease. According to the treating physician, I was expected to go into renal failure within two to 10 years and would need dialysis treatments to sustain life. In the summer of 2005, my kidneys began failing. You cannot fully understand the true impact of renal failure until it happens to you. I developed a metallic taste in my mouth and gradually began losing my appetite. It eventually got to the point where I ate not because I was hungry but because it was what I was supposed to do. During the ensuing months, my condition continued to deteriorate, and in addition to my appetite loss, I developed severe neuropathy in my legs and became exhausted simply by speaking.

On March 21, 2006, I began dialysis treatments. Approximately one year into treatment, something remarkable occurred while attending a Sunday worship service. I was seated in the front row by the usher, which really wasn't out of the ordinary. On this particular Sunday, however, I got the inescapable feeling that something was about to happen.

Following a sermon by a visiting minister, my pastor called me before the congregants and said, "You are not alone in this." At that time, all male members of the congregation were called forward and began praying around me. I began crying uncontrollably and after this cleansing of sorts, I gathered my things and started to leave the sanctuary. As I did so, I turned to see a man and his wife standing before me. He looked me in the eyes and said, "God told me to tell you that I have your kidney."

A little over a year had passed since that promise was made, and the summer of 2007 proved to be the most difficult season of my life. I was hospitalized three times and nearly lost my life to Systemic Lupus. I wondered if the promise would be fulfilled. The summer of 2008, however, proved to be a year unlike any other. ***I finally received my kidney from that same gentleman that stepped forward, and the promise was fulfilled.*** I have new appreciation for life and a new found love for God. The world needs to know what it means to get your life back!



A Donor Story - Zachary Sweitzer

By Missy Sweitzer, mother

On October 19, 1988, our lives were changed forever. We were blessed with the first of our three children, Zachary Daniel Sweitzer. He was an energetic and passionate boy who grew up to be a compassionate young man with a great desire to help others. He was a talented athlete, a dedicated volunteer firefighter, and an amazing son and friend.

Our lives were changed forever once again on November 27, 2008, Thanksgiving morning. We received a phone call that our son was involved in an accident. We didn't know what to expect when we got to the hospital, but nothing could have prepared us for what we were about to see. He was admitted to the trauma ICU at York Hospital with closed head trauma. He had been ejected when an underage, DUI driver hit his truck. He was on his way home to celebrate Thanksgiving with our family.

The surgeon explained they were going to attempt to alleviate the pressure that was building in his brain. Zac survived the surgery but he would never regain consciousness. Never again would we see his beautiful brown eyes. Never again would we hear him say "I love you." We never gave up hope or stopped praying for a miracle but there came a time when we knew that our boy was gone. There's something that a parent experiences when their child dies...something that really can't be explained or described...but a part of you is gone...forever...and you feel it in your deepest being.

Zac made the decision to be an organ donor when he got his driver's license, a decision for which later we would always be grateful. We informed the nursing staff that if we were faced with a decision, Zac was a donor and would want to help as many people as he could. We met our transplant coordinator, who explained the transplant process to us. Never once did we feel pressured or that the decision was not ours to make. But after hearing the story of a mom who got to hear her son's heart beating in another man's chest, we knew that Zac's decision was right. We never really thought about organ donation, other than deciding to be one, and now we found ourselves as a donor family. Even though we have never met or heard from any of his recipients, we feel as though his six recipients have become a part of our family. We think about them and pray for them all the time.

In life, Zac's mission was helping others...and in his death, that legacy continues. And we're still praying that someday we get to hear Zac's heart of gold beating in another man's chest.

A Recipient's Real Life Story

Story reprinted with permission of the author.

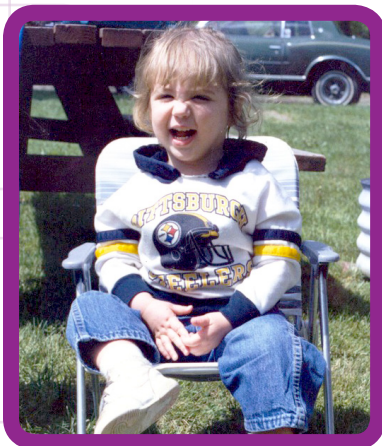
I was born and raised in Pennsylvania, and attended Catholic grade school and high school in Bucks County. I had no significant medical problems as an adolescent, and did very well in school. In 1978, I graduated from Temple University, Summa Cum Laude, PhiBeta Kappa, with a BA in history. I went on to Villanova Law School, graduating in 1981. I worked as an Associate Attorney at the firm of Sidkoff, Pincus, and Green, P.C. and made partner in five years. I married in 1984 and have two children, Natalie, born December 4, 1986, and Jimmy, born July 6, 1990. In 1996, I was found to be suffering from liver disease, in particular, cirrhosis of the liver. Many different procedures were attempted to stop the bleeding in my stomach, which was a direct result of the scarring in my liver. I was literally bleeding to death internally and I was in need of weekly blood transfusions. My family and I were terribly frightened by my grave condition.

Although never before on a transplant list, I was transferred to Einstein Medical Center from ICU at Doylestown Hospital and went to the top of the list. After only three and a half weeks, I received a liver transplant on August 5, 1999. At that time, very little was offered in the field of rehabilitation for transplant recipients. While still suffering from complications from the transplant, I began educating myself in the fields of fitness and health. Once the main complications from the transplant surgery had been rectified, I joined a health club and worked with a trainer to rehabilitate myself physically.

Through the Gift of Life Program, I tried to contact the donor family that had saved my life. My letter has never been answered. I wish that I could thank them personally for my second chance at life, which has allowed me to be a true "Mom" to my children. In June 2002, I participated in the Transplant Olympic Games in Florida as a member of the Philadelphia Team. I won the silver medal in the 100-meter sprint and a bronze medal in three-on-three basketball. The Transplant Games highlight the need for organ donations and celebrate the lives that have been saved by transplantation. A special ceremony commemorates the donors and their families.

My newfound interest in fitness led me to return to Temple in the fall of 2002 in order to earn the credits necessary to become certified in Pennsylvania as a Health and Physical Education teacher. As a teacher, I would like to highlight the skills necessary for children to maintain their good health and to teach the pressing need for organ donations. My children are my first candidates for this education, but I would like to make a career in health education. Since the fall of 2001, I have been employed as an Emergency Substitute Teacher with the Central Bucks School District. I am a volunteer with the Family Services Buddy Program in Bucks County where I provide emotional and social support to individuals suffering from AIDS. I am a member of the Board of the Bucks County Council on Alcoholism and Drug Dependence, and the Chair of the Act 106 Committee of Pro-Act, a nationally recognized recovery program in Pennsylvania. In October 2002, I won an award from the School of Public Health of Boston University School of Medicine for the work on Substance Abuse Treatment that my committee has done in Harrisburg, Pennsylvania.

I feel that transplant education would be an excellent addition to every school health curriculum. Children could hear the remarkable stories of lives saved by transplantation and experience some of the wonder of this medical miracle. Students would also find examples of selfless sacrifice for the betterment of others, sometimes a complete stranger to the donor and donor family.



The Importance of Saying YES to Organ Donation

By Elizabeth Wertz Evans, Mother

Amanda was only 14 years old when her life was snuffed out due to medical errors in her care. It was a heartbreaking experience for our immediate, as well as extended families. There was nothing we could do to change the outcome for her. However, there was something we could do to prevent other families from feeling the pain of loss due to the death of a loved one. On November 10, 2001, we donated Amanda's organs so that other

people could live and be healthy. The donation of her organs gave our family a great deal of comfort. Knowing that this awful tragedy could in some way help others was very important to us.

- A 12-year-old girl from Michigan received her liver.
- A 33-year-old man from South Carolina received her right kidney.
- A 36-year-old man from Southwestern Pennsylvania received her left kidney, pancreas, and bone marrow.
- Two women received her corneas: 79-year-old woman and an 84-year-old woman from New Jersey.

After the recipient of Amanda's liver and our family expressed an interest to know each other, CORE (Center for Organ Recovery and Education) arranged for us to meet. On July 10, 2009, we had the incredible privilege of meeting Dayna, who is now 21 years old. She was 12 when she received Amanda's liver. It is difficult to describe the number of emotions we experienced that day although I surely felt Amanda's love when I hugged Dayna for the first time. Dayna is a wonderful young lady who is bright, healthy and full of life because of Amanda's gift. We are blessed to now know her and her family. Amanda brought us all together, and we continue to be a part of each other's lives.



Waiting for the Gift of Life in PA!

This is four year old Tonio Crisostomo, son of Ambi and Amanda Crisostomo, of Lackawanna County. Tonio, who was diagnosed with hypoplastic left heart syndrome, has been undergoing treatments at Children's Hospital in Philadelphia. He has been awaiting a heart transplant for over 1 year. A true little boy, Tonio is a big fan of the movie "Ghost Rider" and motorcycles. When and where a heart becomes available depends on whether another family will say "Yes" to donation.

Jeff Harold's Transplant Story

Submitted by Jeff Harold, recipient

My hero is a 19 year old I will never meet. The greatest tribute I can give him is to educate others on the importance of organ donation. This is my story. I tell it to help others and to honor the memory of the brave young man who saved my life.

In high school I was a normal kid, having fun with friends, playing on the school soccer and basketball teams, and serving as class president. But in 1999, when I was 15 years old, I started to feel tired and classmates started commenting about my “eyes looking yellow” (an indication of jaundice caused by a high bilirubin level.) After a series of tests and finally a liver biopsy, I was diagnosed with autoimmune hepatitis, a condition in which the body, for unknown reasons, thinks of the liver as a foreign object and begins attacking it. Unfortunately with liver disease you often don't see any symptoms until the disease is pretty far along. In my case, cirrhosis (scarring) had already developed in my liver. I was put on anti-rejection medications and things were fine for six years.

But in July of 2005, when I was 21 years old and about to enter my senior year of college at Robert Morris University, I experienced a sudden and rapid deterioration in health. I became extremely jaundiced (yellow) and fatigued, sleeping 20 hours a day. My body was cold, even in the summer heat. I wore hoodies and sweat clothes in an attempt to get warm. The itching of my skin from the progressing jaundice was relentless and caused me to scratch my skin until I drew blood. I had no appetite and lost 35 pounds in six weeks. My 5'11" frame shrunk from 185 pounds to 149 pounds. My liver was failing. All this happened while my family was preparing for the August wedding of my oldest brother, who had asked me and my other brother to serve as his best men. As wedding plans progressed, so did the deterioration of my body. I was dying and needed a liver transplant.

We were referred to a team of doctors at Cleveland Clinic to be evaluated for transplant. After a series of tests, my name was placed on the national list for those awaiting organ transplant... just two days before my brother's wedding.

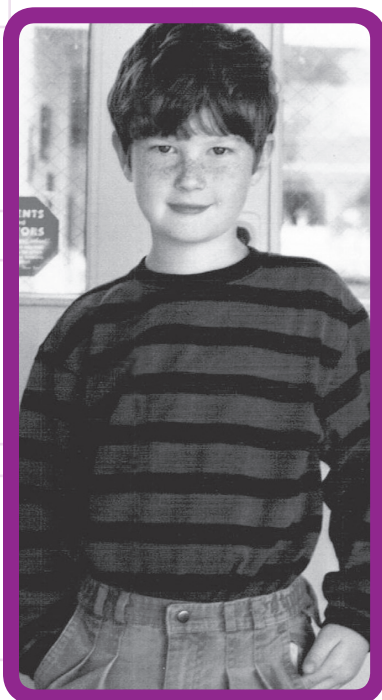
My goal was to make it to my brother's wedding to perform my duties as best man. Thankfully, I was able to stand by my brother during the wedding ceremony. And then, amazingly, as the wedding party was riding to the reception, the call came from Cleveland Clinic. They had a liver. I was in shock. Nobody thought it would happen so soon. My brother and his new wife held me in their arms as we all cried. As soon as we reached the reception hall, my parents, my girlfriend and I rushed to Cleveland Clinic. It was a very surreal and emotional day.

After a successful seven hour surgery, I received my new liver. Almost immediately I began to feel better. I was out of the ICU after only one day and out of the hospital after six days. Since recovering from my transplant, I was able to complete my bachelor and master degrees and am currently working as a technical business analyst. I was also able to attend another important wedding...my own, in September 2007 to the wonderful girl who stood by me through it all.

I never expected, at such a young age, to be so close to death. Because someone had the courage and compassion to say “yes” to organ donation, I'm alive today. My surgical scar will always be a reminder of the 19 year old who gave me a new chance at life. Anything good that I do in my life is thanks to him and his family. My donor is my hero and I will never forget that.

It could have been much different. Approximately 108,000 people in this country are waiting for organs, and nearly 20 of them die each day. My message is simply: become educated about organ donation. Don't believe the myths. You can't take your organs with you, and there are people dying as they wait for transplants. Too often people don't think about it until it's too late. It's just sad more people don't give the gift of life.

I often think that everybody wants to make an impact on the world. Well, it can be as simple as putting ‘organ donor’ on a license.



The Story of Nicholas Green – A Boy Who Saved Thousands of Lives

Submitted by Reg Green, father

Nicholas Green was a bright, imaginative and truthful seven year-old California boy who longed to do noble deeds to change the world. But Nicholas was shot during an attempted robbery while on vacation with his family in Italy and all the dreams of a young idealist seemed to have died too. I am his father and, although he was killed in 1994, I still think of him many times every day, feeling the sadness of not being able to watch him grow up or ever to hear him say again “Goodnight, daddy.”

But, as it turned out, Nicholas is not remembered just by his family and friends. Instead, millions of people around the world have heard of him. Many, who never met him, feel they know him and are still being influenced by what happened to him. That is because his mother and I decided, when he died, that in some way we could give his future to others. We could do that by donating his organs. We didn’t know who they would go to but we knew they would be among the sickest people in Italy.

As it turned out, one was a 15 year-old boy who had five operations on his heart, all of which had failed. By this time he was almost too weak to walk to the door of his apartment. Another was a diabetic who was going blind, could no longer walk without help and had been repeatedly in comas. Two were young teenagers with kidney disease, who for years had spent four hours a day, three days a week, in hospitals hooked up to machines that cleaned their blood, never able to go far from home, and aware that they might not live long enough to become adults. Two others were going blind – a mother who had never seen her baby’s face clearly and a father who could no longer watch his children play games. Finally, there was a vivacious nineteen year-old, who was dying of liver failure the night Nicholas died: her brother had died of a liver disease, her mother was dead too, the family was gathering at the hospital to await what seemed like the inevitable end. Nicholas’ organs – his pure heart, his kidneys and liver, pancreas cells and corneas – were transplanted into these seven Italians. Now, all these years later, all seven are in the mainstream of life, although without a transplant two would be blind and most, if not all, the others dead.

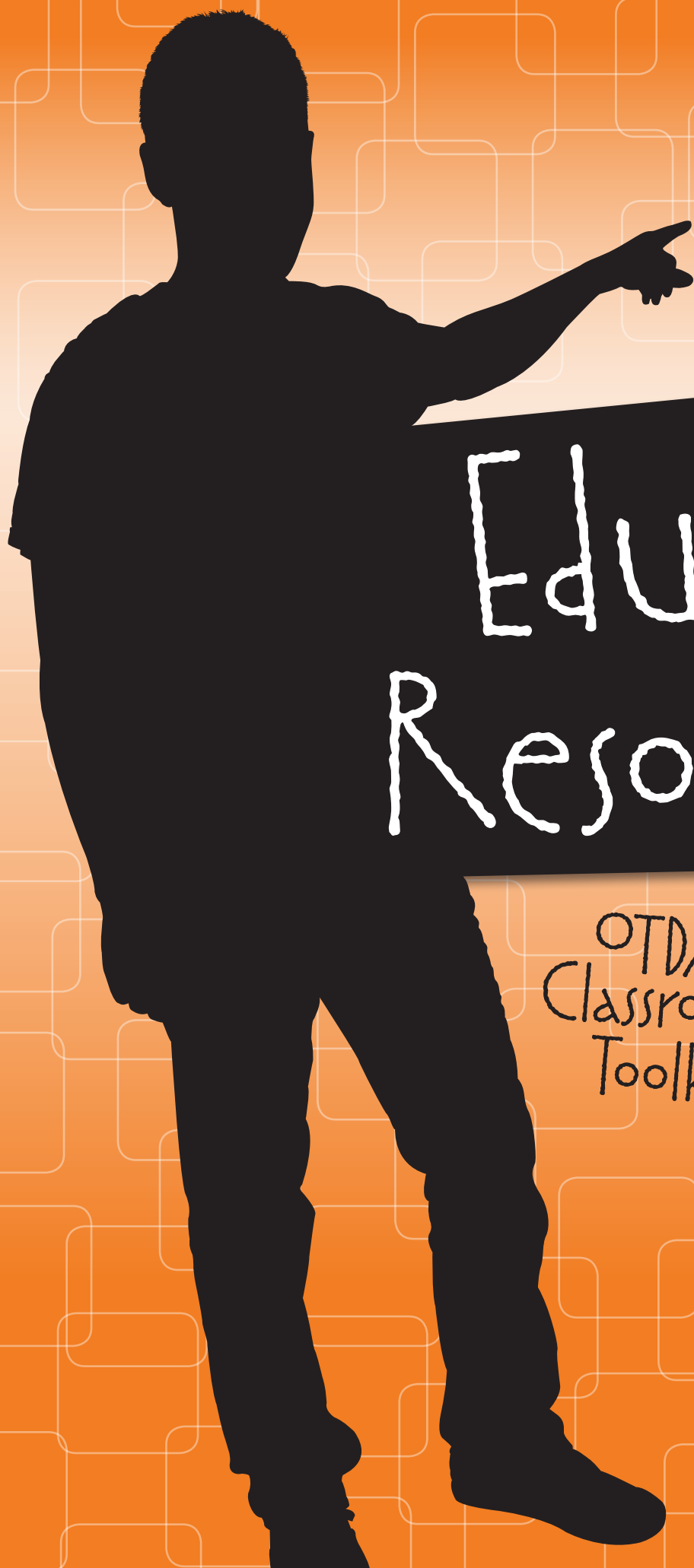
This story of life coming out of death took Italy by storm. Men, women and children wrote poems about Nicholas, drew pictures, made sculptures. Schools, streets and squares from the far north to the far south of the country were named for him. Newspapers, television and a movie, “Nicholas’ Gift,” took the story round the world. Since then, organ donation rates in Italy, which had been one of the lowest in Europe, have tripled so that thousands of people, many of them children, are alive today who would have died. What a wonderful example that at any time of any day any one of us can make a difference.

One young woman from Rome wrote this to us. “Since when you have lost your son, my heart has been beating quicker....today I think that people, common persons, can change the world. When you go and see Nicholas in the little graveyard place, please say this to him ‘They closed your eyes but you opened mine.’” He would have been very proud to hear that.

Great Idea!

Have your students read Nicholas Green's real life story and write a letter to Nicholas' family telling them how his story impacted them, or have your students research organ and tissue donation in countries and cultures around the world. They can prepare and present their findings in a world cultures class. Have them investigate the topic of Presumed Donation, which is often practiced in Europe. Younger students could simply read, discuss, and practice doing web-based searches. They could see how many links they get to information related to Nicholas Green.





Educator Resources

OTDA
Classroom
Toolkit

Guest Speaker Resources

Information on Organ and Tissue Donation speakers in your local region can be obtained at one of the following Pennsylvania Organ and Tissue Procurement Organizations:

Center for Organ Recovery and Education (CORE)

204 Sigma Drive
RIDC Park
Pittsburgh, PA 15238
1-800-DONORS-7

Gift of Life Donor Program

401 North 3rd Street
Philadelphia, PA 19123
1-800-DONORS-1

Musculoskeletal Transplant Foundation

1232 Mid Valley Drive
Jessup, PA 18434
1-888-496-7033

National Kidney Foundation Serving the Alleghenies

3109 Forbes Avenue, Ste. 101
Pittsburgh, PA
1-800-261-4115

Teacher Tip!

Ask your students to use these questions for research projects. They were submitted by students.

How does the waiting list work?

“How do they choose who gets an organ?”
“How long is waiting list? How do you go about getting listed?”
“What if somebody needed an organ very badly but another person had been waiting on the list for longer, who would get it first?”
“How many people die just being on the waiting list?”

How do they find a compatible donor?

“How do they find somebody compatible?”
“How do you determine if somebody’s heart can work in your body?”
“Would they put a baby’s kidney in an adult?”
“If you are female and you needed an organ, can you take it from a male?”
“If you want to give an organ to your family or something like that, can you have a choice of who gets it?”

How does the transplant process work?

“How does an organ go from you to another person?”
“How long can you keep an organ out of a body before transplanting it?”

What are the risks?

“What are the risks in living donation?”
“Say I am going to donate, then what would I look like?”

Are there alternatives to organ donation?

“Why can’t they just find a cure other than organ donation?”
“Why can’t they make ‘electronic’ [organs]?”
“Why can’t they use animal organs instead of human organs?”

Classroom Activities

Time is Running Out

Time Needed

Minimal (Enough time to instruct student assigned to timer and to explain to the entire class the significance of the activity.)

Materials

1. A kitchen timer

Instructions

At the beginning of class, assign one student to set the timer for 14 minutes and to reset it for another 14 minutes each time it goes off. Remind students that another person is added to the national organ transplant waiting list every time it goes off.

Student Writing Activity

Have students complete the activity by writing an essay about what things they do that take about 14 minutes. The significance of this portion of the activity is to help students to realize how easy it is to take 14 or 15 minutes for granted and yet how significant that same period of time is to someone else. Discuss as a whole group.

Every Breath I Take

Time Needed

Approximately 5 minutes

Materials

1. Small straws/stirrers (the type that are used for coffee and tea drinks) – 1 per student

Instructions

Give a small straw/stirrer to each student. Have the students hold their nose and breathe through their straw for 20 seconds. This demonstrates what it is like to be waiting for a lung transplant, struggling for each breath. Ask your students to imagine what it would be like to wait this way, often needing to use an oxygen tank for months.

Curriculum Connection

Discuss the impact that smoking has on lung function and increased risk of cancer and emphysema.

Supplemental Activity

After the activity, ask the students to write a short story or journal entry as someone who is waiting for a lung transplant. Encourage them to imagine what it would be like to do everyday activities that they now take for granted and to write about it.

Adapted from the Indiana Organ Procurement Organization (IOPO)



Using OTDA Surveys as a Way to Teach the Math Standards

On the following pages you will see two graphs that have been created to demonstrate what a simple survey regarding organ and tissue donation can do to help teach the Math Standard: 2.6 Statistics and Data Analysis. Students can easily create these graphs with a three-question survey that they develop, distribute, tabulate and analyze.

The three questions used here were:

1. Do you support organ and tissue donation? Yes or No (please circle)

2. If no, what is/are your reason(s)? You may check more than one answer.

____ religious reasons ____ distrust of medical profession ____ I want my body “as is” when I die ____ other ____ don’t know

3. What is your profession or relationship to organ and tissue donation?

____ medical doctor ____ family member ____ friend ____ classmate ____ teacher ____ other

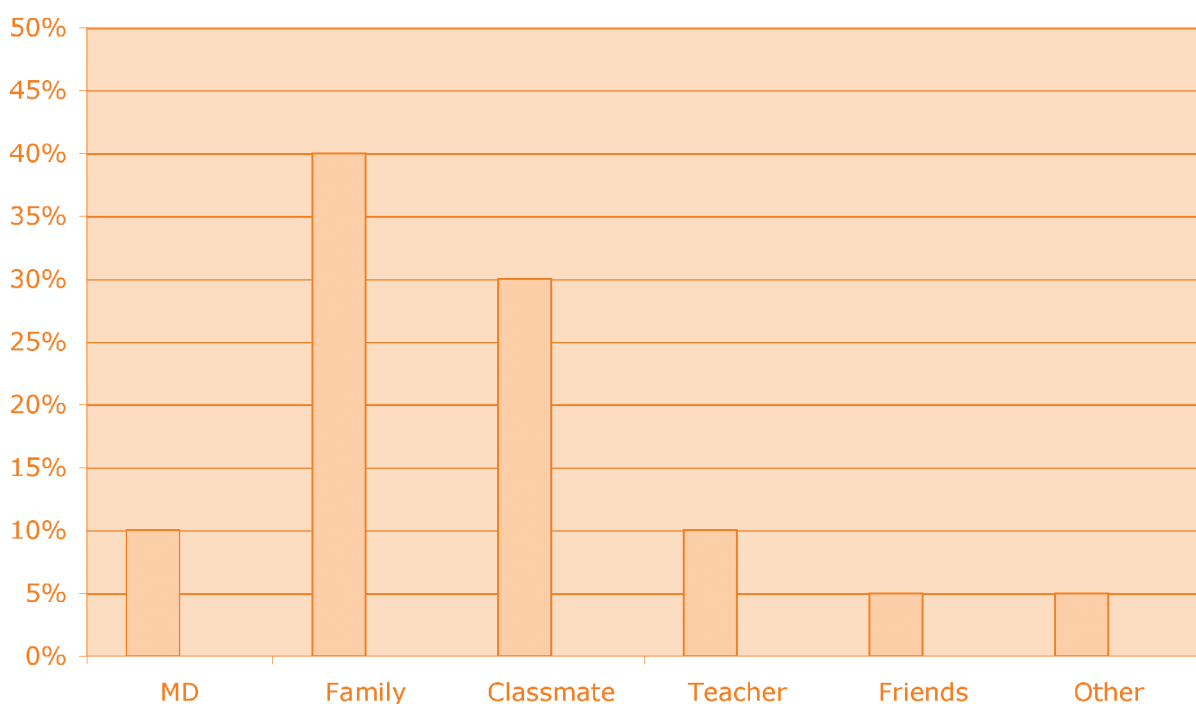
This activity is directed to respondents who do have a relationship to donation. It could easily be adapted to be a survey of the general population. Some other topic ideas for a general survey could be:

- Do you think you might ever need to be concerned about organ and tissue donation?
- What do you think about inmates getting organ and tissue transplants?
- How do you feel about alcoholics or drug addicts getting organ and tissue donations?
- The best topics to survey will be ideas that students generate themselves.

Student - Generated Survey and Results for Human Experience and Discovery Discussion

Group	YES
MD	10%
Family	40%
Classmate	30%
Teacher	10%
Friends	5%
Other	5%

What is Your Relationship to the Student?

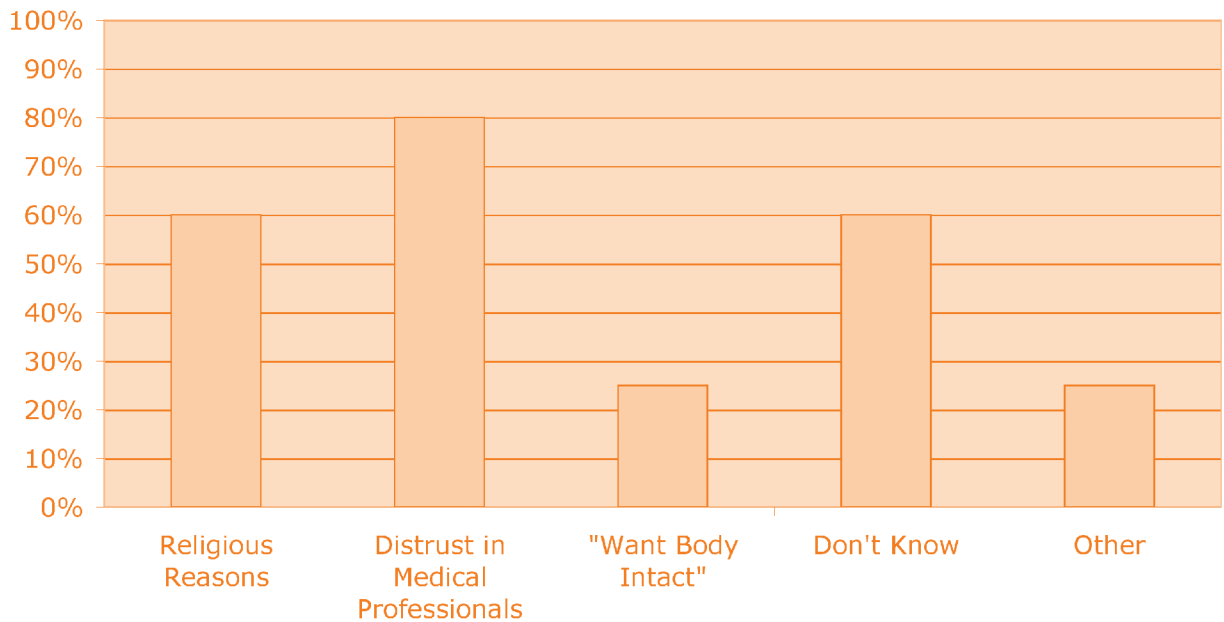


Student - Generated Survey and Results for Human Experience and Discovery Discussion

Why Don't You Support Organ and Tissue Donation?

Religious Reasons	60%
Distrust in Medical Professionals	80%
"Want Body Intact"	25%
Don't Know	60%
Other	25%

If You Don't Support Organ and Tissue Donation, Why Not?



Statistics on Donation

The United Network of Organ Sharing (UNOS) is a private, nonprofit organization that administers a national Organ Procurement and Transplantation Network (OPTN) and the U.S. Scientific Registry on Organ Transplantation under contracts with the U.S. Department of Health and Human Services. UNOS maintains the waiting list, matching patients awaiting transplantation with available organs. The following information can be found on their website.

On Oct. 14, 2010 the OPTN national patient waiting list for organ transplant includes the following:

86,481	registrations for a kidney transplant
16,057	registrations for a liver transplant
1,425	registrations for a pancreas transplant
2,214	registrations for a kidney/pancreas transplant
260	registrations for an intestine transplant
3,158	registrations for a heart transplant
78	registrations for a heart-lung transplant
1,829	registrations for a lung transplant

108,891 Total Registrations*

Number of Deceased Donor vs. Living Donor Transplants Performed, 2009

	Living	Deceased	Total
kidney	6,387	10,442	16,829
kidney/pancreas	0	854	854
pancreas	0	379	379
liver	219	6,101	6,320
intestine	2	178	180
heart	0	2,211	2,211
heart/lung	0	30	30
lung	1	1,659	1,660

28,463 Total Transplants

Ask students why they think that some organs have “0” live donors. Ask students to compare these statistics year-to-year. The yearly comparison data can be found at the Organ Procurement Transplantation Network or <http://optn.transplant.gov>. Go to Data and choose national report and then “transplants by donor type”. You will see information from 2010 back to the mid 80s.

*OPTN/UNOS policies allow patients to be listed with more than one transplant center (multiple-listing), and thus the number of registration is greater than the actual number of patients.

Pennsylvania County Summaries for Donor Designation (at DMV sites or PennDOT)

More statistics can be used for purposes of comparison, analysis, and inference. Here are recent quarterly statistics from driver's licensing centers in each county across PA.

COUNTY CODE	COUNTY	TOTAL CUSTOMERS	ORGAN DESIGNATION	%
01	ADAMS	76,475	37,706	49.31%
02	ALLEGHENY	939,254	430,185	45.80%
03	ARMSTRONG	59,794	24,292	40.63%
04	BEAVER	132,763	57,227	43.10%
05	BEDFORD	39,697	15,872	39.98%
06	BERKS	311,924	135,658	43.49%
07	BLAIR	98,845	46,665	47.21%
08	BRADFORD	48,139	23,830	49.50%
09	BUCKS	503,279	250,074	49.69%
10	BUTLER	147,184	72,366	49.17%
11	CAMBRIA	111,610	49,703	44.53%
12	CAMERON	4,159	2,046	49.19%
13	CARBON	52,333	22,292	42.60%
14	CENTRE	90,790	50,849	56.01%
15	CHESTER	364,959	199,277	54.60%
16	CLARION	28,852	11,660	40.41%
17	CLEARFIELD	60,747	28,385	46.73%
18	CLINTON	26,273	12,089	46.01%
19	COLUMBIA	49,945	22,185	44.42%
20	CRAWFORD	67,497	31,632	46.86%
21	CUMBERLAND	190,546	99,131	52.02%
22	DAUPHIN	208,184	98,528	47.33%
23	DELAWARE	426,832	192,274	45.05%
24	ELK	26,722	12,902	48.28%
25	ERIE	205,793	104,193	50.63%
26	FAYETTE	114,354	39,363	34.42%
27	FOREST	4,574	2,042	44.64%
28	FRANKLIN	110,040	50,407	45.81%
29	FULTON	11,801	4,424	37.49%
30	GREENE	28,495	10,149	35.62%
31	HUNTINGDON	33,506	15,149	45.21%
32	INDIANA	62,793	25,768	41.04%
33	JEFFERSON	36,176	15,602	43.13%
34	JUNIATA	17,243	7,185	41.67%
35	LACKAWANNA	161,777	75,093	46.42%
36	LANCASTER	385,727	188,675	48.91%
37	LAWRENCE	74,325	30,876	41.54%
38	LEBANON	105,963	48,206	45.49%
39	LEHIGH	256,222	119,370	46.59%
40	LUZERNE	255,121	103,928	40.74%
41	LYCOMING	89,304	42,514	47.61%
42	MCKEAN	32,427	15,933	49.13%

COUNTY CODE	COUNTY	TOTAL CUSTOMERS	ORGAN DESIGNATION	%
43	MERCER	87,700	37,604	42.88%
44	MIFFLIN	32,298	14,578	45.14%
45	MONROE	133,060	57,169	42.96%
46	MONTGOMERY	637,644	321,214	50.38%
47	MONTOUR	14,661	7,074	48.25%
48	NORTHAMPTON	249,643	114,517	45.87%
49	NORTHUMBERLAND	70,908	29,226	41.22%
50	PERRY	37,346	16,985	45.48%
51	PHILADELPHIA	1,036,740	309,280	29.83%
52	PIKE	45,358	21,122	46.57%
53	POTTER	13,727	6,121	44.59%
54	SCHUYLKILL	113,673	47,416	41.71%
55	SNYDER	28,874	12,234	42.37%
56	SOMERSET	60,435	26,126	43.23%
57	SULLIVAN	5,162	2,341	45.35%
58	SUSQUEHANNA	32,361	16,361	50.56%
59	TIOGA	31,998	14,887	46.52%
60	UNION	28,880	13,417	46.46%
61	VENANGO	41,505	19,254	46.39%
62	WARREN	31,620	16,693	52.79%
63	WASHINGTON	167,338	71,445	42.70%
64	WAYNE	46,503	23,199	49.89%
65	WESTMORELAND	284,174	121,903	42.90%
66	WYOMING	24,685	11,939	48.37%
67	YORK	339,789	174,225	51.27%
	TOTAL	9,648,526	4,332,035	44.90%

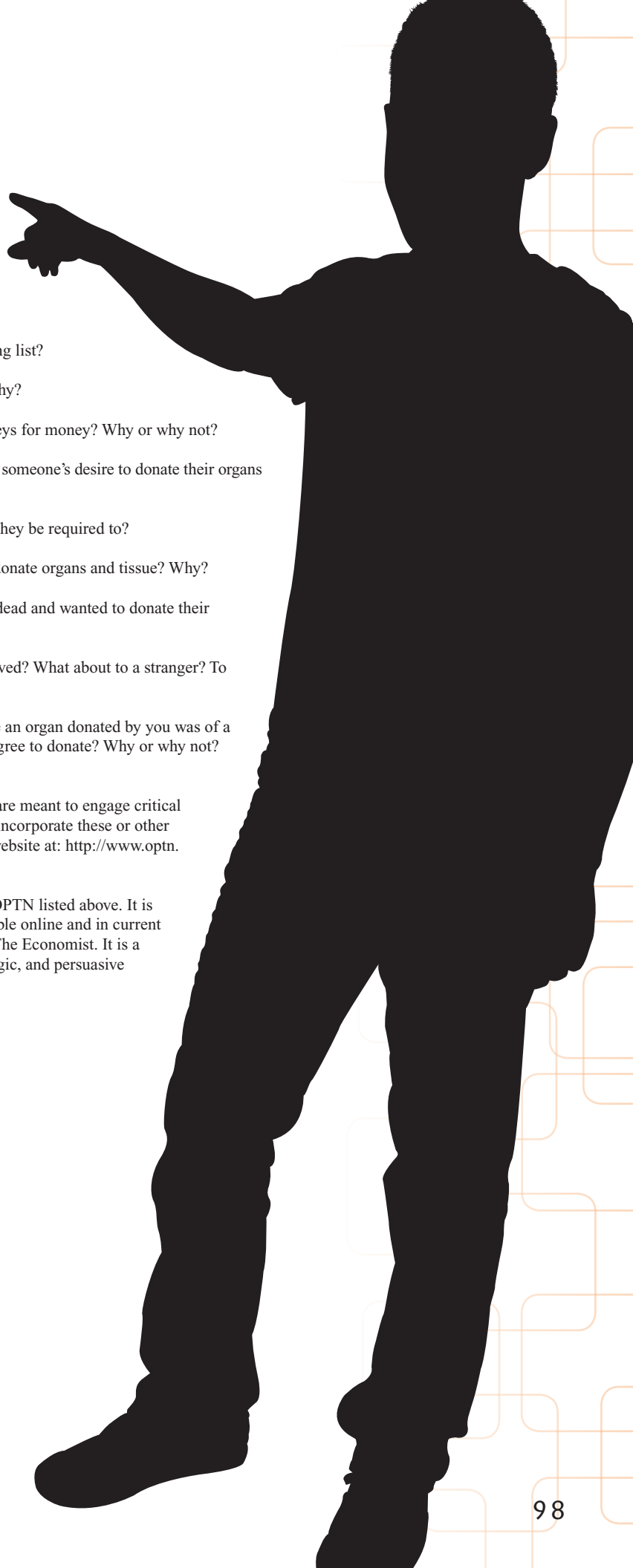
Teacher Tip!

Here are 10 Ethical Questions to Ask Your Students:

1. Should inmates be eligible for organ and tissue donation?
2. Should drug addicts and alcoholics be eligible for the waiting list?
3. Should children be given precedence on the waiting list? Why?
4. Do you think people should have the right to sell their kidneys for money? Why or why not?
5. Should parents or family members have the right to override someone's desire to donate their organs and tissue at their time of death?
6. If someone can afford to pay for an organ or tissue, should they be required to?
7. Do you think that it is a personal or a religious decision to donate organs and tissue? Why?
8. How would you handle it if someone you loved were brain dead and wanted to donate their organs and tissue, but no one in your family could agree?
9. Would you be willing to donate a kidney to someone you loved? What about to a stranger? To a neighbor?
10. What if you knew that the person that was going to receive an organ donated by you was of a religion or culture that you did not like? Would you still agree to donate? Why or why not?

There are no right or wrong answers to these questions. They are meant to engage critical thinking, debate and reasoning skills. See what you can do to incorporate these or other questions into a lesson plan. For more ideas, visit the OPTN website at: <http://www.optn.org/resources/bioethics.asp>.

The following article is a “white paper” that comes from the OPTN listed above. It is an example of the types of bioethics information that is available online and in current journals and newspapers – such as the Wall Street Journal or The Economist. It is a great tool for engaging students in critical thinking, debate, logic, and persuasive writing activities.



UNOS Ethics Committee: Ethics of Organ Donation From Condemned Prisoners

Note: This report is circulated for informational purposes and to stimulate discussion of a very important subject. The report has been presented to the OPTN/UNOS Board of Directors. It has not been adopted as a policy.

Rationale for Deliberation

As the scarcity of suitable organs for transplantation continues to grow, alternative sources for organs have been reported and others suggested. One such suggestion is to recover organs that would otherwise seem to go to waste, such as those from condemned prisoners. Reportedly, the People's Republic of China recovers organs from executed prisoners, and recent U.S. news reports have alleged that organ brokers operate in this country who arrange transplantation of the foreign prisoner's organs. This discussion is not restricted to third world countries. In the United States, proposals of this type have come from prominent figures and bodies. While one proposal suggested that prisoners be given the option of donating organs upon their death, another suggests that condemned prisoners be offered the option of trading a kidney or their bone marrow in exchange for a commuted sentence of life in prison without parole.

While it is beyond the scope of the UNOS Ethics Committee to examine the moral and ethical issues encompassing the death penalty, it is worth noting that this topic is both ethically and judicially controversial. Acknowledgment should at least be made that the death penalty is rarely available or applied in most industrialized western nations, except for the United States. All western European countries, Canada, Mexico, and Central and South American, with the exception of Chile, have abolished the death penalty. Recent U.S. data show an inequitable application of the death penalty with a significant evidence of racial bias particularly in the south. The data indicates that blacks are five times more likely to be sentenced to death than whites convicted of similar crimes, and that the economically disadvantaged, as well as more likely than the wealthy to receive the death penalty.

Any law or proposal that allows a person to trade an organ for a reduction in sentence, particularly a sentence from death to life in prison, raises numerous issues. Application of the death penalty is spasmodic and seemingly discriminatorily applied, which would suggest that these types of proposals would be coercive to particular classes of individuals—minorities and the poor. Would the reduction in sentence apply to the offer to donate, or would it only be honored if the act of donation took place? If the act of donation would exclusively qualify for the reduction in sentence, then the law or policy would discriminate against individuals found to be medically unsuitable to donate organs. Examples include:

- Those with common prison infections, such as tuberculosis, HIV, or Hepatitis B.
- The prisoners with a single functioning kidney or on dialysis, or with diabetes or other renal diseases.

If prisoners were allowed to trade a kidney to mitigate a death sentence, it may affect the actual imposition of the death penalty. With greater publicity surrounding these types of proposals/laws, potential jurors could be influenced and ultimately impose the death penalty more often with a potential societal benefit in mind. Jurors might hope that the convicted persons would

choose to trade their kidney for their life. This would present a gross inequity for those unable or unwilling to donate a kidney and who might otherwise have not received a death sentence.

The proposals that concern organ recovery from executed prisoners unveil another host of problems. One method of execution suggested is the act of organ donation itself. From a utilitarian standpoint this would make sense; the anesthetizing of the condemned and the recovery of organs in the usual manner would produce optimum organs for transplantation. However, the cross clamping the aorta and the ensuing cardiectomy, followed by the disconnection of the ventilator, create an unacceptable situation for the organ recovery team. It clearly places the organ recovery team in the role of executioner. Many physician groups, including the American Medical Association, have prohibited physician participation in state executions on ethical grounds.

Issues of informed consent of potential donors, as well as recipients need to be addressed. Obviously a person condemned to death cannot consider organ or bone marrow donation as a coercion-free option. Even a death row inmate should have the option of refusing an invasive surgical procedure, although unlikely, given the alternative. Correspondingly, a person to be executed, or their next of kin/surrogate, should be able to make an informed decision regarding any donation options, including informed refusal if they so chose. Ultimately the potential organ/bone marrow recipient(s) should be informed that the source of the donation was a condemned prisoner, while maintaining the prisoner's confidentiality. Individuals in opposition to the death penalty might object to accepting an organ from either an executed prisoner or a prisoner who traded their organ for their life.

Consider the effect that such a policy/law could have on organ donation overall. The number of potential organs recovered from condemned prisoners would be small. The conceivable stigma that would be attached to organ donation from its coupling with execution could lead to decreases in donation rates. This may especially be true within certain minority groups. Any notion that particular groups of people were receiving increased numbers of death sentences to provide organs for the rest of society would clearly make it difficult to attempt to obtain consent for altruistic donation from these groups.

Conclusion

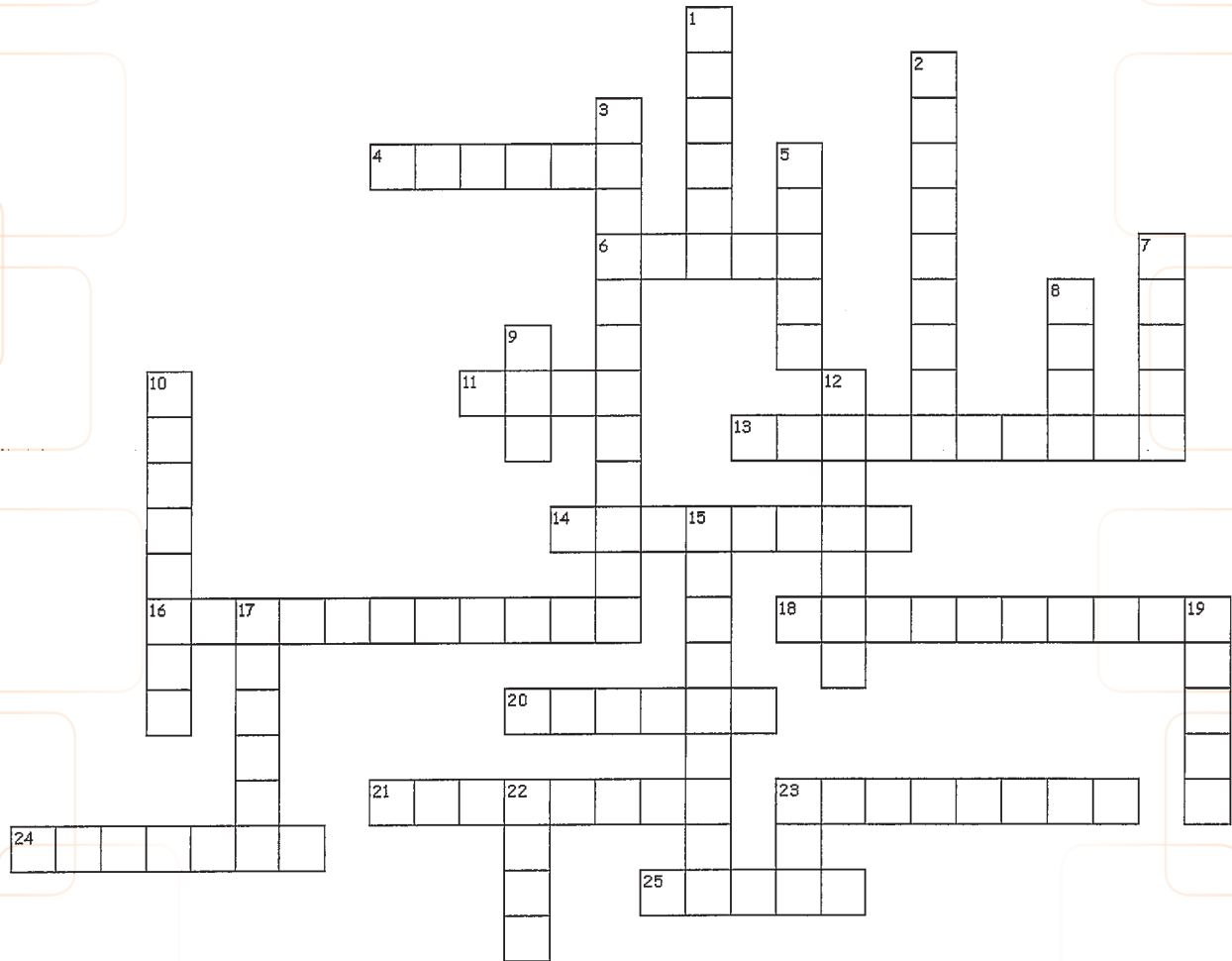
The UNOS Ethics Committee has raised a small number of the many issues regarding organ donation from condemned prisoners. The Committee opposes any strategy or proposed statute regarding organ donation from condemned prisoners until all of the potential ethical concerns have been satisfactorily addressed.

Learn More About Transplantation Bioethics

The Institute of Human Values in Health Care at the Medical University of South Carolina
Bioethics Net: Bioethics in Organ Transplantation/Donation
Science Museum of VA, Bioethics 2000
National Institutes of Health: Bioethics Resources

From URL: <http://www.optn.org/resources/bioethics.asp?index=6>
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Donate Life Crossword Puzzle



ACROSS

4. either of a pair of bean-shaped organs
6. abnormal accumulation of fluid in the body
11. PA's Pittsburgh-based OPO
13. to move an organ or tissue from one person to another
14. a mechanical means of cleaning the blood in kidney failure
16. the body's process of clotting blood
18. a generic name for a drug used to fight bacterial infection
20. color of jaundice or liver dysfunction
21. the body's resistance against disease and foreign bodies
23. the act of giving one's organs or tissue to someone else
24. relating to the heart
25. relating to the kidneys

DOWN

1. the term applied to skin, bone marrow, and blood products
2. inflammation of the liver
3. high blood pressure
5. transplanted tissue or organ
7. organ that pumps blood
8. abbreviation for program which educates students about a second chance at life
9. PA's Philadelphia-based organ procurement organization
10. relating to the chest
12. person under a physician's care
15. a white cell of the blood
17. a condition characterized by too few red blood cells in the bloodstream
19. Governor whose name is attached to Pennsylvania's Act 102
22. the organization which manages the nation-wide transplant waiting list
23. unit of genetic material

Donate Life Crossword Puzzle Answer Key

ACROSS

- 4. kidney
- 6. edema
- 11. CORE
- 13. transplant
- 14. dialysis
- 16. coagulation
- 18. antibiotic
- 20. yellow
- 21. immunity
- 23. donation
- 24. cardiac
- 25. renal

DOWN

- 1. tissue
- 2. hepatitis
- 3. hypertension
- 5. graft
- 7. heart
- 8. OTDA
- 9. GOL
- 10. thoracic
- 12. patient
- 15. leukocyte
- 17. anemia
- 19. Casey
- 22. UNOS
- 23. DNA

Word Search – Organ and Tissue Donation

Name _____ Date _____

Try to find the hidden words:

ARTERIES

BONE

CANDIDATE

CORE

CORNEA

DONOR

HEART

INTESTINES

KIDNEY

LIGAMENTS

LIVER

LUNGS

ORGANS

PANCREAS

RECIPIENT

SKIN

STOMACH

TENDONS

TISSUE

VALVES

P	E	I	N	T	E	S	T	I	N	E	S	Y	F	T	W
A	D	D	A	R	T	E	R	I	E	S	Y	W	H	I	A
N	V	W	D	C	Q	O	S	Z	C	O	R	E	E	S	O
C	O	T	H	O	X	H	R	T	C	L	A	U	A	S	V
R	R	B	R	R	F	N	D	T	F	K	L	X	R	U	L
E	E	S	T	N	E	C	A	N	D	I	D	A	T	E	I
A	C	T	V	E	L	I	V	E	R	D	O	N	O	R	G
S	I	O	M	A	N	L	D	L	U	N	G	S	K	D	A
E	P	M	S	V	K	D	M	B	U	E	F	B	P	E	M
E	I	A	W	X	R	W	O	O	F	Y	F	A	N	H	E
E	E	C	U	Q	S	A	U	N	R	G	Q	P	F	R	N
O	N	H	L	P	R	A	X	E	S	G	F	P	I	Z	T
M	T	P	R	Q	H	S	A	S	J	V	A	L	V	E	S
G	A	W	G	Y	A	X	S	S	S	K	I	N	G	O	N
U	U	E	R	M	S	F	X	E	X	T	Y	O	S	P	F
S	Q	H	J	L	J	U	N	T	D	H	K	L	R	W	K

Recommended Reading List

TITLE

*A Gift of Life: A Page from the
Life of a Living Organ Donor*

Hope From My Heart

*It Gets Dark Sometimes:
My Sister's Fight to Live and Save Lives*

*Our Hero, Freebird:
An Organ Donor's Story*

The Nicholas Effect

The Gift That Heals

Saving Jessica

My Sister's Keeper

*Raising the Dead:
Organ Transplants, Ethics, and Society*

*The Power of Two:
A Twin Triumph Over Cystic Fibrosis*

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Video Resources

The Science of Miracles

This one-hour documentary chronicles the developments and advances in science, technology, and medicine from the 1950s until present day in the field of organ and tissue donation and transplantation. It is available as a two-film set “Donate the Gift of Life” for free from the US Dept. of Health and Human Services. Films are available in both English and Spanish. It is available at <http://asl.hrsa.gov>.

No Greater Love

This one-hour documentary follows families facing the sorrow and hope of organ donation and transplantation. “Thousands of Americans nationwide are waiting for that precious life-saving gift. One of the goals of this documentary is to show how one person can make a difference in many lives by deciding to become a donor,” said HHS Secretary Tommy G. Thompson. Available as part of the two-film set “Donate the Gift of Life” for free from the US Dept. of Health and Human Services. Available in both English and Spanish. It is available at <http://asl.hrsa.gov>.

D-Tour

This documentary was originally aired on PBS’s series Independent Lens in November 2009. After much critical acclaim, the video now is available for purchase and is well worth the \$20. Your students will love it! From the website: “The emotionally moving film follows indie rock drummer Pat Spurgeon on a “dialysis tour” as he waits for a kidney transplant match and tours with his band, Rogue Wave.” As actress Maggie Gyllenhall says in the intro “This is a rock-and-roll film about life, death, and bodily functions.” Check out the new website with classroom tools and materials, too: <http://dtourmovie.com/>.

The Nicholas Effect and Thank You, Nicholas

“The Nicholas Effect” is the title of a beautiful 14-minute video about Nicholas’ life and death. His parents discuss why they made the decision to donate, what that decision has meant to them, and the amazing effects around the world. It is sold at cost to encourage as many showings as possible. The video has been translated into Spanish and Italian and is available in a PAL version for viewing outside North America. “Thank You, Nicholas” is a video in which you will meet the recipients of Nicholas’s gift and hear how it has changed their lives. It is an 8-minute video. For more information on the Nicholas Green Foundation and to order these videos and more, visit the foundation at: <http://www.nicholasgreen.org/video.html>.

The Gift of a Lifetime Website

Easily one of the best web-based resources on donation and transplantation! This website contains sections on: “The Faces of Donation,” “Understanding Donation” (interactive anatomical exploration), and “Educator’s Resources” (earn continuing professional education credits!). Experience the stories of organ and donor families, recipients, and those on the waiting list by exploring the photo-documentary film journey on www.organtransplants.org.

65_RedRoses

This is the story of 23-year-old Eva Markvoort who is waiting for a double-lung transplant due to chronic Cystic Fibrosis. The film chronicles her wait and her internet friendship with two American teens who also have CF. As Norman Wilner from NOW magazine says “Medical documentaries don’t get more intimate – or more harrowing – than this powerful look at a young Vancouver woman’s wait for a life-saving double lung transplant.” View the website and order the film at www.65redroses.com.

Mythbusters! Cambria Heights Student DVD

A student-written, -acted, -directed, and -edited 14-minute DVD about the myths and facts students have to wade through prior to making the final decision whether to designate as a donor on their driver’s license. It is available on limited basis upon request from the OTDA Project.

Be Someone’s Hero - Indiana County Career and Technical Institute DVD

Another student project, this 22-minute DVD also explores the myths and facts of donation and transplantation with a large dose of humor that your students will love! A great example of what one school did with their OTDA mini grant funding. It is available on a limited basis upon request from the OTDA Project.

Great Idea!

Have your drama and English creative writing students write and act in their own production related to organ and tissue donation. The tech students could film it. As a finale event, the entire video could be presented to the student body, parents, and media. What a super senior project! Also makes a great addition to a college application packet.

Related Websites

Center for Organ Recovery and Education (CORE) – <http://www.core.org/>

Donate Life America (Formerly the National Coalition on Donation) – <https://www.donatelife.net/>

Donate Life PA: Public awareness campaigns, PSAs, and county-by-county statistics. Great for use in media, graphic design, and marketing classes! – <https://www.donatelife-pa.org>

Done Vida: Donate Life America website for Hispanic Americans – <http://www.donevida.org/>

Gift of Life Donor Program – <http://www.donors1.org/>

High School Bioethics/Penn Center – <http://www.highschoolbioethics.org/>

James Redford Institute for Transplant Awareness – <http://www.jrifilms.org/>

Musculoskeletal Transplant Foundation – <http://mtf.org/>

National Donor Memorial – www.donormemorial.org

National Kidney Foundation (search for regional office) – <http://www.kidney.org/>

National Minority Organ and Tissue Transplant Education Program – <http://www.nationalmottep.org/>

National Transplant Assistance Fund – <http://www.transplantfund.org>

Organ Procurement and Transplantation Network (OPTN): Educational and informational databank. All materials can be reprinted for educational purposes with proper citations. Extensive data links. – <http://www.optn.org/>

Online Registry! – <http://www.donatelife-pa.org>

Pennsylvania Department of Education – <http://www.pde.state.pa.us/>

Pennsylvania Department of Health – <http://www.health.state.pa.us/>

Pennsylvania Department of Transportation – <http://www.dmv.state.pa.us/>

The Gift of a Lifetime: Web-based Documentary – <http://www.organtransplants.org/>

Transplant Recipient International Organization (TRIO) – <http://www.trioweb.org/>

Transweb – <http://www.transweb.org/>

United Network For Organ Sharing – <http://www.unos.org/>

U.S. Department of Health and Human Services/First Gov – <http://organdonor.gov>

General Subject Glossary

Adapted from <http://www.transplantawareness.org/resguide/chap42.htm>

As you learn more about transplantation, your vocabulary will begin to expand rather rapidly. We have noted here a number of the terms frequently used in transplantation. Remember, this is just a sample.

Acute

Having severe symptoms and a short course.

Allocation

The system of ensuring that organs and tissues are distributed fairly to patients who are in need.

Allogenic

Refers to genetically different members of the same species. See transplantation.

Allograph

An organ that is removed from a donor to be used in another person.

Anemia

A condition characterized by too few red blood cells in the bloodstream, resulting in insufficient oxygen to tissues and organs.

Antibody

A serum protein consisting of soluble molecules that is produced by the body's immune system, they are produced in response to and bind to substances, usually foreign, known as antigens. Antibodies to transplantation, antigens are one of the mediators of graft rejection.

Antibiotic

A drug used to fight bacterial infections.

Antigen

A substance, such as a transplanted organ, that can trigger an immune response. This immune response may be the production of antibodies.

Apheresis

An apheresis donation returns the unwanted portion of blood to the donor. Usually relating to a platelet donation.

Arteriogram

An X-ray of the arteries taken with the aid of a dye, sometimes referred to as angiography.

Ascites

Accumulation of fluid in the stomach.

Atherosclerosis

The disease in which fatty deposits build up on the inner walls of the arteries, causing narrowing or blockage that can lead to heart attack. Commonly known as "hardening of the arteries."

Autoantibody

An antibody that reacts with antigens on a person's own cells and tissues.

Autoimmunity

The condition in which the immune system mistakenly attacks the body's own cells and tissues; this immune reaction is the basis of a variety of autoimmune diseases including diabetes, rheumatoid arthritis and system lupus erythematosus, among others.

Bacteria

Microscopic organisms that invade human cells, multiply rapidly and produce toxins that interfere with normal cell functions.

Bile

Fluid produced by the liver that is transported to the intestine to help digestion and remove waste products.

Bile Ducts

Passageways in and from the liver that transport bile.

Bilirubin

Substance in bile that is produced when the liver processes waste products. A high bilirubin level causes yellowing of the skin.

Biliary Cirrhosis

Slow, progressive scarring of the bile ducts in the liver.

Biopsy

Removal of tissues for examination under a microscope.

Bladder

The part of the urinary tract that receives urine from the kidneys and stores it until urination.

Blood Vessels

The arteries, veins and capillaries through which blood circulates. Blood vessels can be donated and transplanted.

Bone

Dense tissue that forms the skeleton. Bone can be donated and transplanted.

Bone Marrow

Spongy tissue in the cavities of large bones, where blood cells are produced. Sometimes referred to as a tissue donation.

Brain Death

The condition in which the brain has permanently ceased functioning as determined by the medical team.

BUN

Stands for Blood Urea Nitrogen, a waste product normally excreted by the kidney. Your BUN value represents how well the kidneys function.

Candidate

A person awaiting an organ or tissue transplant.

Cardiac

Relating to the heart.

Catheter

Small, flexible plastic tube inserted into the body to administer or remove fluids.

Chronic

Persisting for a long time.

Cirrhosis

Irreversible scarring of the liver. Can be caused by a variety of conditions.

Clinical Trail

A prospective, scientific evaluation of a treatment regimen, agent (e.g. drug), device or procedure used for the prevention, diagnosis, or treatment of a disease.

Coagulation

Relating to the process of clotting, usually the body's system of controlling bleeding.

Connective Tissue

Forms the supportive and connective structures of the body.

Cornea

The transparent outer coat of the eyeball that covers the iris and pupil. Corneas can be donated and transplanted.

Creatinine

A product of muscle metabolism. Creatinine level is referred to as a number that is watched closely and serves as an indicator of kidney function.

Crossmatch

A test for recipient antibodies versus donor antigens. A positive crossmatch means the recipient and donor are incompatible. A negative crossmatch means there is no reaction between donor and patient and that the transplant may proceed.

Cyclosporine

A drug commonly used after transplantation to suppress the immune system of the recipient and prevent rejection by the immune system of the transplanted organ or tissue.

Deceased Donors

Donors who donate their organs or tissue after they have been declared brain dead.

Dialysis

Mechanical ways of cleaning the blood in kidney failure.

Diastolic

The bottom number of a blood pressure reading measuring the heart at rest.

Diuresis

Significantly increasing the production of urine.

Donation

Is the act of giving one's cornea, organs, or tissues to others.

Donor

One who gives of themselves.

Edema

Abnormal accumulation of fluid in the body.

Encephalopathy

Confused, fuzzy or slowed thinking when the liver is not properly functioning.

End-Stage Organ Disease

A disease that leads, ultimately, to functional failure of an organ. Some examples are emphysema (lungs), cardiomyopathy (heart), and polycystic kidney disease (kidneys).

End-Stage Renal Disease (ESRD)

A very serious and life-threatening kidney disease that minorities suffer much more frequently than do Caucasians. ESRD is treatable with dialysis; however, dialysis is costly and can result in a poor quality of life for the patient. The preferred treatment of ESRD is kidney transplantation. Transplantation offers the patient "freedom" from dialysis to lead a more normal lifestyle and can successfully treat ESRD for many years.

Febrile

Running a fever.

Fulminant

Happening very quickly and severely.

Gene

A unit of genetic material (DNA).

Gastrointestinal

Relating to the stomach and intestines.

Gastroenterologist

A physician trained in treating gastrointestinal disease.

Glucose

A type of sugar in the blood.

Graft

A transplanted tissue or organ.

Graft Failure

Absence of adequate function in a transplanted organ or tissue.

Graft Survival Rates

The percentage of patients who have functioning grafts; graft survival rates are usually given for chronological landmarks

Graft-Versus-Host Disease

A life-threatening reaction in which transplanted immunocompetent cells attack the tissues of the recipient. This is most commonly seen in bone marrow transplantation, but is also known to occur in transplantation of organs, such as the liver and the lung, that contain significant numbers of immunocompetent cells.

Heart

A muscular organ that pumps blood through the body.

Heart Valves

A tissue that prevents the back flow of blood into the heart.

Helper T Cell

The specialized white blood cell that tells other parts of the immune system to combat infection or foreign material. A transplanted organ is foreign material.

Hemorrhage

Excessive bleeding.

Hepatic

Relating to the liver.

Hepatitis

Inflammation of the liver.

Hypertension

High blood pressure.

Immune Response

The body's defense against things that are not normally part of the body, such as bacteria, viruses or transplanted organs or tissue.

Immunocompetent

Capable of developing an immune response.

Immunodeficiency

The lack of an adequate or normal immune response.

Immunologic Disease

A disease due to a dysfunction of the immune system. These are the autoimmune, allergic and immunodeficiency diseases.

Immune System

The body's natural defense mechanism against invasion by foreign bodies. In transplantation, the transplanted organ is considered a foreign body and the recipient's immune system will naturally want to defend against it through rejection of the organ.

Immunosuppression

The artificial suppression of the immune response, usually through drugs, so that the body will not reject a transplanted organ or tissue.

Intestines

The portion of the digestive track extending from the stomach to the anus, consisting of upper and lower segments.

Intravenous (IV)

Into a vein.

Jaundice

Yellowing of the skin and eyes. A sign that the liver or bile duct system is not working properly.

Kidneys

A pair of organs that maintain proper water and electrolyte balance, regulate acid-based concentration, and filter the blood of metabolic waste, which is excreted as urine.

Leukocyte

A white cell of the blood.

Living-Related Donor (LRD)

A "blood" relative who donates an organ, usually a kidney; also partial livers, lungs and pancreas lobes from LRDs are used for infants and small children when that is the appropriate transplant.

Match

The compatibility between recipient and donor. The more closely the donor and recipient "match," the greater the potential for a successful transplant.

Organ Preservation

Organ preservation is used so that organs or tissues can be kept outside the body before being transplanted. The length of time varies per type of organ, the preservation fluid, and temperature.

Organism

An individual, living thing.

OPO

Organ Procurement Organization.

OPTN

Organ Procurement and Transplant Network.

OTC

Over The Counter, non-prescription drugs, or other medications.

Pancreatic

Relating to the pancreas.

Patient

A person under a physician's care as a living donor, transplant candidate or recipient.

Platelets

The smallest elements in the blood, needed to control bleeding.

Peritonitis

Inflammation of the abdominal cavity due to intestinal perforation.

Prognosis

The predicted or likely outcome.

Protein

A type of organic compound that is one of the major components of cells and tissues.

Protocol

The plan of treatment.

Pulmonary

Relating to the lungs.

Recipient

A person who has received an eye, organ or tissue transplant.

Rejection

An event in which the immune system tries to fight off a transplanted organ or tissue by making antibodies. Immunosuppressive drugs help prevent rejection.

Renal

Relating to the kidneys.

Steroids

A group of medications, including Prednisone.

Systolic

The top number of a blood pressure reading measuring when the heart is contracting.

T Cell

A white blood cell responsible for the body's immunity. T cells can destroy cells infected by viruses, graft cells, and other altered cells (e.g. cancer cells).

Thoracic

Relating to the chest.

Tissue

A term applied to actual tissue (skin), blood products, and bone marrow.

Tissue Typing

The examination of human lymphocyte antigens (HLA) in a patient; a blood test identifying genetic markers. Tissue typing is done for all kidney donors and recipients to determine a proper match.

Transplantation

Transfer of cells, tissues or organs from one area of the body to another, or from one organism to another.

Transplantation, Allogenic (Allograft)

Transplantation between genetically different members of the same species. Nearly all organ and bone marrow transplants are allografts.

Transplantation, Autologous

Transplantation of an organism's own cells or tissues, autologous transplantation may be used to repair or replace damaged tissue. Autologous bone marrow transplantation permits the usage of more severe and toxic cancer therapies by replacing bone marrow damaged by the treatment with marrow that was removed and stored prior to treatment.

Transplantation, Syngeneic

Transplantation between genetically identical members of the same species (e.g. identical twins).

United Network for Organ Sharing (UNOS)

The designated OPTN operator.

Varices

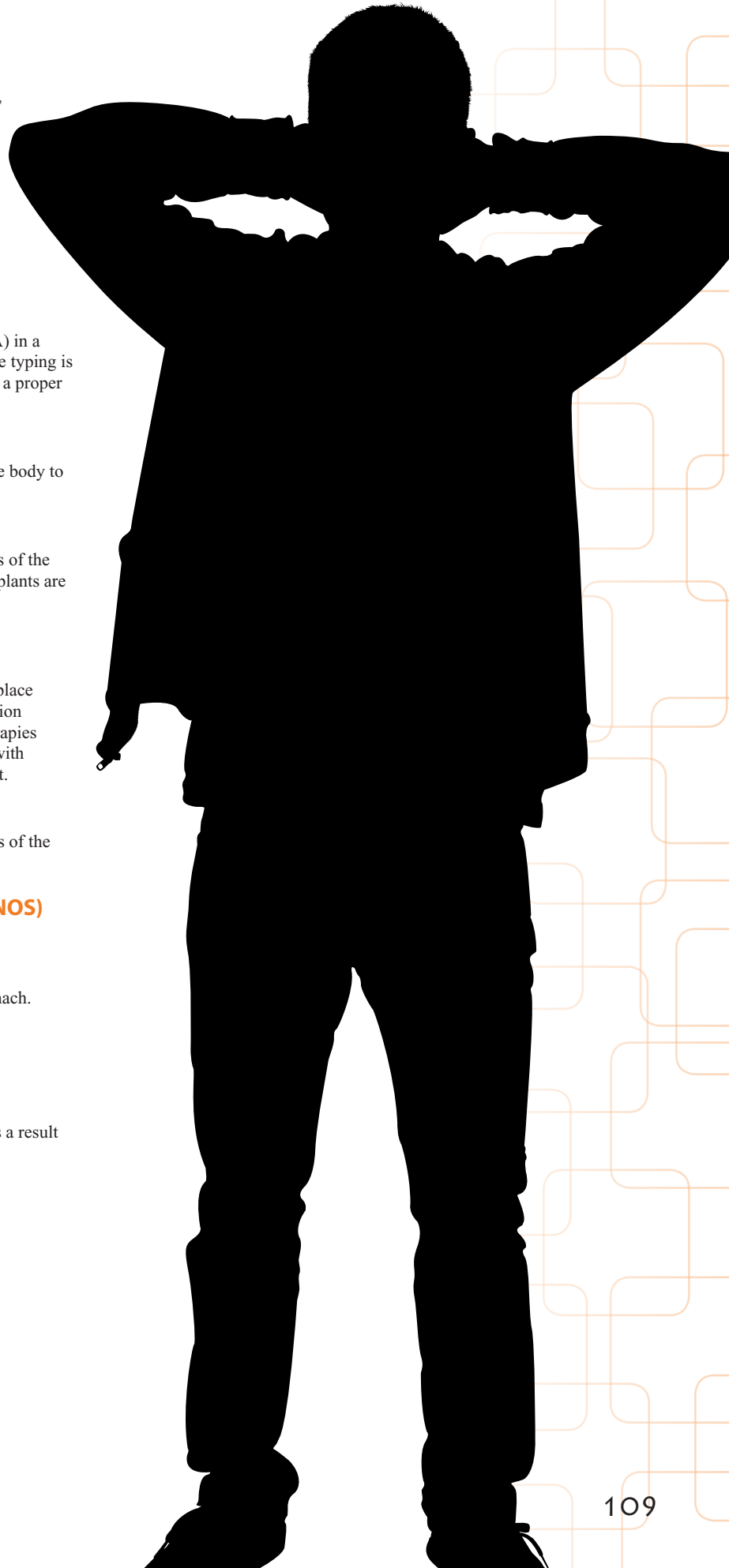
Enlarged veins that develop in the esophagus and stomach.

Vascular

Relating to blood vessels.

Xenographs

Organs transplanted from animals, ongoing research is a result of the tremendous shortage of donor organs.



Letter Home to Parents

Use this letter **BEFORE** teaching.

Dear Parents or Guardians,

Our _____ class will be addressing the issues of organ and tissue donation in the upcoming weeks. The purpose of these lessons will be to provide the students with the basic information needed to make this decision and also to continue discussing the topic at home with their parents or guardians.

There are many issues, concerns and feelings about the topic of organ and tissue donation. It is not meant to be a finished lesson once the student leaves the classroom. Please be aware that your child might be sensitive or preoccupied during and after the in-school discussion. While we feel it is natural, especially for teens, to have questions and concerns about this topic, it can also turn out to be either a time of increased sharing and discussion or a missed opportunity to learn more about one another. Even though it may be uncomfortable for you, a family discussion about organ and tissue donation today could help to make it easier, if necessary, in the future. Many families only realize too late that they are unaware of how their loved one felt about donation.

Over the next several weeks, the time will be rich for you and your family to talk about this sensitive subject together—free of high emotions, critical time factors and loss.

After you have your family discussion, each person who wants to be a donor should designate his or her specific wishes on his or her driver's license. **Even if your driver's license or state ID is not due for renewal, you can now designate as a donor online. Simply go to donatelife-pa.org.** You can also contact an Organ Procurement Organization (OPO) for further information or education. There is one on either side of the state—East or West. You should call the one that corresponds with where you live. The telephone numbers are:

Eastern Region – Gift Of Life: 1-888-DONORS-1

Western Region – CORE: 1-800-DONORS-7

If you are unsure of which organization you should call, just call 1-877-DONOR-PA, and you will be connected to the OPO in your area. You can also call the Pennsylvania Department of Health for more information. The toll-free number is 1-877-PA HEALTH. Lastly, if you would like to hear more about the upcoming lessons, please contact me via the school.

Thank you,

Pennsylvania State Educator

Source: Adapted from the IOPO Toolkit

Letter Home to Parents

Use this letter **AFTER** teaching.

Dear Parents or Guardians,

Our _____ class recently completed a lesson about organ and tissue donation and transplantation. The purpose of this lesson was to provide the students with basic information and to encourage them to discuss this important topic with their parents or guardians.

Please be aware that your child may wish to talk about the class time with you. Even though it is often an awkward conversation to have, it is vitally important to take this opportunity to discuss your family members' feelings about organ and tissue donation. To do it at this time could someday make a decision about donation easier for your family. Many families have regretted not knowing more about how their loved one feels about the subject; unfortunately, by the time they realized they did not know, it was too late.

Especially as this subject has recently been addressed in school, it is likely that your child is experiencing feelings either for or against donation and would likely be open to discussion. Why not take time tonight to talk with them?

After a discussion, if you or your child wishes to be a donor, **please visit your local DMV or simply go online to register your wish. It takes approximately 30 seconds at: donatelife-pa.org.** Or, you can contact the Organ Procurement Organization (OPO) that is in your region of Pennsylvania. Here are the numbers:

Eastern Region – Gift Of Life: 1-888-DONORS-1

Western Region – CORE: 1-800-DONORS-7

If you are unsure of which organization you should call, just call 1-877-DONOR-PA and you will be connected to the OPO in your area. You can also call the Pennsylvania Department of Health for more information. The toll-free number is: 1-877-PA HEALTH.

Thank you,

Pennsylvania State Educator

Source: Adapted from the IOPO Toolkit

Letter From Students to Parents

Provide to the student AFTER teaching.

It is important to talk to your family about organ and tissue donation! Use the following letter to take home after your class discussion and to begin the conversation with your parents.

Dear _____ (Parent or Guardian):

During _____ class, I learned about organ and tissue donation and transplantation. An important part of what I learned was the need for me to talk about my wishes about donation and transplantation with my family.

My feelings are...

- ☐ I wish to be an organ and tissue donor.
- ☐ I DO NOT wish to be an organ and tissue donor.
- ☐ I am NOT SURE at this time.

It is important for me to know how you feel about this subject. I want to take the time to talk with you about it so that we can both understand more about each other's wishes.

Signature _____

Date _____

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Organ and Tissue Donation Awareness Project