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News

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*****Lives are salvaged through joint effort of Lions Sight and Tissue Foundation and Skin Transplant Center.

DALLAS--A 34-year-old man is admitted to the Parkland Memorial Hospital Burn Unit with second and third-degree burns over 60 percent of his body. Just a few years ago, his chances for survival would have been slim. But new techniques in post-burn care, including the ready availability of donated human skin (homografts) give the seriously burned patient dramatically better chances of not only surviving, but of a much better quality of life as a recovered burn patient.

A five-year-old child injures her eye in a playground accident. The perforated cornea is destroyed, but blindness in one eye is not her only option. Because donated corneas are available, emergency surgery and a corneal transplant may salvage the eye--and instead of a lifelong handicap the child will have only a quickly fading memory of the accident.

These are but two examples of how transplantation of human tissues has come into widespread use. Much of it would not be possible without the efforts of agencies such as the Lions Sight and Tissue Foundation, working jointly with the Skin Transplant Center for Burns of The University of Texas Health Science Center at Dallas.

Each year, some 30,000 Americans are burned badly enough to require skin transplants for survival. The recovery time and suffering of another 70,000-80,000 burn victims could be reduced by the use of such transplants. And every year, sight is restored to approximately 10,000 persons in the United States through cornea transplants.

Vital tissues for these skin, cornea and other types of transplantations are being made available by the Lions Foundation and the Skin Transplant Center which joined forces in May, 1978 when it became obvious that the needs of the community could be better met by coordinating their operations. The Lions Sight and Tissue Foundation was originally incorporated as the Texas Lions Eye Bank in February, 1965, when it took over eye bank activities from the Dallas Eye Bank, Inc., founded nearly a decade earlier under the sponsorship of Dallas area ophthalmologists, insurance underwriters and several Lions Clubs. Operating as a non-profit organization, the Lions Eye Bank has helped provide eye tissue for surgery, study and research as well as performing other tasks to aid in the prevention and alleviation of blindness.

The Skin Transplant Center for Burns was formed in 1973 by Parkland Burn Unit director Dr. Charles Baxter to serve as a repository for human skin from deceased donors which is used in treating severely burned patients. By maintaining a supply of human skin, the skin bank has been able to meet the most pressing needs of the Parkland unit, one of the largest burn units in the country, as well as providing a limited supply of skin to other burn units.

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"We are the first skin bank that has tried to get a supply large enough to be a national resource, and to actually furnish other facilities with needed skin for burn units," says Baxter, who is professor of surgery at the center's Southwestern Medical School and director of both the skin bank and eye bank.

"Coordinating the efforts of the two banks makes sense," says Ellen Heck, faculty associate in surgery and university coordinator for the foundation. "We felt that the community would benefit by having a donor program of this sort--for one thing, it's much more considerate of the family involved. This way, only one person calls on the family during a time of grief--when we contact a member of the deceased's family to ask if we can explain our program and what it means to the living."

She cites more public awareness of donor programs, better quality control of tissues and organs and financial advantages as benefits derived from the program.

This cooperative effort is part of a growing trend nationally to coordinate at city, county or even state levels organ and tissue donor programs. At least two states--Oregon and Arkansas--are working toward this type of organ donor program for the entire state. Rochester, N.Y. has had a multiple organ bank for some time.

The Dallas bank, which will probably be expanded to include tissues such as bone and cartilage, also works closely with kidney and pancreatic donor programs at the center. "These organs (kidneys and pancreas) require a support system that tissues such as skin and eyes don't require," explains Heck. "But there is close cooperation between the two programs and a sharing in responsibility for securing donor permissions, public education and literature distribution."

It's hard to call a family who's just lost a loved one and ask them to donate these vital tissues, says Heck. But the response to these requests for skin and eye donations has been good. Fifty-four percent of the families contacted by the foundation agree to these donations so that the living may benefit.

"It's not our intention to intrude on a family during this very difficult time. All we ask for is a chance to explain how much this gift will mean to others and what the process will involve," she says.

Tissue donors are found in one of two ways. The individual may have a pre-willed donation such as the donor certification found on the back of the driver's license. In this case the bank is notified at the time of death, and after verifying the donation with the family, the tissue is surgically removed either at the hospital or at the funeral home. In other cases, Dallas County Medical Examiner Dr. Charles Petty notifies the bank of a potential skin or eye donor and at that point contact is made with the family.

Cooperation from community members such as ministers, funeral home directors and the county medical examiner, plus a strong public information program account for the good number of consents the foundation receives, Heck stresses.

There is no time to be lost if tissue is going to be used for transplantation. Corneas must be removed within six to eight hours after death. (The sclera, or white of the eye, can also be preserved and used to repair a damaged eye.) Donor skin must be "harvested" within 18 hours after death. Skin is removed using the same surgical techniques used on living individuals. Approximately six square feet of skin .016 inch thick is removed in strips from the back and back of the legs of the donor (where the donor sites will not be visible under normal conditions), placed on sterile nylon net, packaged and placed overnight in a regular freezer before being plunged into liquid nitrogen at -196°C .

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Skin can be preserved indefinitely using this procedure. Corneas generally must be used within four days, but with a waiting list of from 25 to 30 patients needing corneal transplants, the supply never exceeds the demand. In fact, says Heck, at any given time the need for these tissues is three times greater than the tissue available.

Skin transplants are always an emergency when immediate access to human skin can literally mean the difference between life and death.

"A burn patient can't wait," explains Heck. "Skin must be immediately available or the whole course of treatment is changed. It's most critical in burns of 50 percent and more because of the limited number of donor sites available from the patient's own body. The larger the burn, the more critical it becomes."

Burned skin must be removed or excised within three days of the injury to decrease the chances of infection of the wound areas. While pig skin can be used as a temporary cover, it must be changed about every three days. Human skin can be left on a wound for up to 21 days and benefits to the burn victim include controlling infection, providing a fluid loss barrier, reducing pain and increasing mobility in order to avoid losing joint function later on. As the wound heals, donor sites from the patient's own body will provide permanent skin grafts.

But in the meantime, recovery is hastened--the patient has gotten out of intensive care earlier, begun therapy sooner and gone home much earlier.

"Not too many years ago," says Baxter, "people with 50 percent burns had little or no chance of survival. Fortunately, that is not so today. There have been many medical advances which have contributed to increasing survival rates--not the least of these is the use of human skin to cover large burn areas. Without human skin for grafts, many of these survivors with more than half their bodies burned simply wouldn't make it."

"People have to realize the need and the good that can come from these donations," adds Heck. "By making a pre-willed donation (and making sure you've informed a relative or friend about it) you can give another person the gift of sight, or even their life.

"This is a way of creating a sort of immortality--of helping life go on even after death. A way of saying, 'Let people remember me and let them remember me for something good.'"

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PHOTOS AVAILABLE ON REQUEST

For further information on these donor programs, write Lions Sight and Tissue Foundation, Department of Surgery, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Blvd., Dallas, TX 75235 or call (214) 688-3908.