

# news THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS

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\*\*\*\*\*Dallas skin bank--largest in U.S. but cannot meet the huge demand for human skin by burn patients.

DALLAS--The Dallas skin bank was created four years ago as a repository for human skin from deceased donors to be used in treating severely burned patients. Since then skin from the Skin Transplant Center for Burns, as the bank is officially known, has been instrumental in saving the lives of hundreds of victims of chemical plant explosions, airplane crashes and other burn accidents.

The Dallas bank has grown to become the only national resource for human skin. "We are the only bank that regularly ships skin to other burn centers," says Dr. Charles Baxter, professor of surgery at The University of Texas Southwestern Medical School and director of the school's skin bank.

The bank has a very limited supply of skin, though, and every week requests from outside Dallas must be turned down. "Even if the number of donations tripled, it still would not meet the demand for skin," Dr. Baxter says. "It's like trying to run a blood bank when no one is giving blood."

The demand for human skin is tremendous. Of the 300,000 Americans injured each year by fire, about 10 percent (30,000) may need skin transplants for survival. The recovery times and the suffering of another 70,000-80,000 could be decreased by the use of such transplants.

Human skin may be transplanted immediately or frozen for later use, Dr. Baxter explains. Paper-thin layers of skin are taken from the back and the back of the legs of deceased persons within 24 hours of death. A special surgical team "harvests" the outer layers of skin in extremely thin strips--only 14 thousandths of an inch thick. The surgery is not disfiguring, Dr. Baxter emphasizes, and is probably the least objectionable of all organ procurements.

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first add skin bank

Last year alone the Dallas bank acquired 1,000 square feet of cadaver skin--more than three times as much as any other skin bank in the U.S. Of the 135 donations to the bank last year, most were made by next of kin, although individuals can "will" their skin to the bank. On the back of recently issued drivers licenses there is a space where individuals may donate certain tissues, including skin.

Approximately two-thirds of the skin deposited in the local bank is used by burn patients at Parkland Memorial Hospital, says Dr. Baxter, who is also chief of Parkland's famed burn center. The remaining third is shipped to patients in the 16 other burn centers across the country. About 150 Dallas patients received skin from the bank last year while another 100 or so received it outside Dallas.

Dr. Baxter attributes the relative success of the Dallas skin bank to the aid of the county medical examiner and to the awareness of the Dallas public plus local hospital and funeral home officials of the need for skin.

The county-supported Southwestern Institute of Forensic Sciences, which includes both the county medical examiner's office and the county morgue, is located adjacent to the health science center campus and Parkland. Dr. Charles Petty, director of the institute and chief county medical examiner as well as a professor of pathology at Southwestern, has been very helpful, Dr. Baxter says. "We have been very fortunate to work with Dr. Petty. He has provided us a room in their morgue so that we can harvest the skin without having to transport the bodies."

The medical examiner's office furnishes the bank with the names of deceased persons under its jurisdiction, and their families are contacted about making a donation. Dr. Baxter says that because the Dallas public is so aware of the need for skin, a majority of those contacted do give permission.

"People are beginning to realize how invaluable the skin is to those who have been severely burned," says Ms. Ellen Heck, the research associate in charge of the skin bank. "It is just too great a resource to waste."

Dr. Baxter and Ms. Heck currently are leading efforts to develop national guidelines and regulations for the procurement and storage of skin. "We hope eventually to have a system that will make skin as available as blood is now," Ms. Heck says.

In early 1973, just two months after the Dallas skin bank was established, eight-year-old Sherry White was burned over 92 percent of her body. Extensive burns like Sherry's require a lot of skin, either from cadavers or from family members whose tissue types closely match those of the patient. Sherry received grafts from her mother and from six donations to the skin bank. She is thought to be the only human in medical history to survive burns of that magnitude.

The skin grafts improve the patient's chances of recovery by providing a protective cover that minimizes infection and other complications, Dr. Baxter explains.

In Sherry's case, the grafts covered her wounds until the sole of her right foot and the back of her head--the only areas to escape the flames which engulfed her--had produced enough of her own skin to re-cover her body. "When the patient's own skin is in short supply, the homografts (grafts from other humans) buy us time until the patient can produce more skin," Ms. Heck says. The homografts can be left in place for several months before they are rejected, she adds.

Sterile pigskin also is used as a protective cover, but because it must be changed like a dressing every three to five days it is used only on patients with burns covering less than 50 percent of their body. Dr. Baxter was a pioneer in the use of pigskin and was the first to use it widely on a clinical basis. The pigskin gives the burn patient increased comfort and mobility, he says.

The human skin and the pigskin both are stored in liquid nitrogen at minus 196 degrees centigrade. When supplies are large enough to meet requests for skin from outside Dallas, the skin is packed on dry ice and shipped by air.

The Dallas skin bank is currently in the process of expanding the area from which they procure skin to cities surrounding Dallas, Ms. Heck says. Many of the Parkland burn patients who receive skin from the bank live in these cities, she notes.

The skin bank has a 24-hour answering service (214; 688-2609) for individuals or families who wish to make donations.

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