

# News

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\* \* \* \* Burn Trauma--body in crisis

DALLAS--It was only seven years ago that the survival of an eight-year-old girl with 92 percent burns made medical history in a burn unit run by Southwestern Medical School at Parkland Hospital. Today, more and more people with massive burns are living because of the unit's pioneering research and treatment. And as a result, the highly respected Parkland Burn Center has become the largest such facility in the United States in terms of patient volume.

At the time the child was burned in an accident involving use of gasoline to scrub tar from her feet, no human had survived a major burn of that extent.

"We now understand and are putting into routine practice many of the things that were theory when she was injured," says Dr. Charles Baxter, adding, "Thank God, we were right on most of them."

Baxter, professor of surgery and head of the Parkland Burn Center, leads a team that has had a major role in developing burn treatment over a 20-year period. It was a period during which a serious burn over no more than half the body had been considered a death warrant.

What has changed? Better means of treating burn shock and new approaches to nutrition have been developed and used effectively. (Burned persons may have up to four times more nutrition requirements than normal.)

Improved treatment also includes new ways of administering antibiotics, isolation of the patient in a special burn unit and early surgical removal of burned tissue. Parkland's team approach to burn care involves reconstructive surgeons, physical and occupational therapists, highly trained burn nurses, and social workers.

But probably the single biggest factor in burn survival today is use of human skin as a protective covering for large wounds. This is one of the reasons the eight-year-old survived.

"In the couple of years before her case, we had been able to bring four or five patients to the point of survival. But we couldn't get the vital homograft (human skin), so we lost them," said Baxter.

Because the Dallas Skin Bank was established just two months before the eight-year-old was burned, hers was the first case of this magnitude to call on its resources.

Today the girl is a pretty teen-ager and the skin bank has grown, too.

Working in cooperation with the Lions Eye Bank and other donor programs, the Dallas Skin bank now routinely receives between one-third and one-half the donor gifts in the United States. The Dallas bank, which received 228 donations last year, has become the first facility in the nation able to supply skin to other centers on emergency request basis.



Still researchers say the amount is vastly inadequate and they are pushing studies in improved freezing techniques and investigation of more efficient storage solutions in order to stretch the supply, says Ellen Heck, faculty associate and transplant coordinator.

As guiding influence for the medical school's outstanding burn team since 1961, Baxter has been able to engineer not only regional logistical operations including air lift delivery to the center, but national recognition for burn research. He still takes a personal interest in the patients who have undergone the personal shock of a large burn:

Connie Berg, a senior in college, was injured in an accident in her organic chemistry lab. Definitely a "people person," she was already having doubts about her medical technology major. The burn gave Berg more time to decide what to do with her life. She went back to school as soon as she could and took a master's degree in hospital administration. "God said, 'Wait a minute, I've got plans for you, Connie,'" she says. "If it hadn't been a big burn, I wouldn't have the opportunities to minister to other injured people, who seem to cross my path."

Charles M. Dannheim, Clarksville farmer/rancher, was left without limbs after being burned by 7,800 volts of electricity from a dangling wire on his farm. Married only a month at the time, Dannheim was not expected to live, must less become the father of two sons. "I'm still as active as I ever was," he says with pride. "Shoot, I can even dress myself." Being as active as he ever was includes hiring out for horseback work and "running any piece of heavy equipment I ever saw." In addition, he loves to dance and has taken up a new sideline-- selling his pen-and-pencil sketches of comic cowboy scenes.

Pat Henderson, young, suburban housewife, was burned in an apartment fire. Being a fighter, she confronted Baxter angrily about "fixing up" patients and turning them out into the world unprepared for society's reaction. To her surprise and delight, the surgeon heard what she was saying. With his support she went on to found a recovering burns program, encouraging former patients to support each other in their adjustments. Henderson also appears with the Dallas burn team on many professional programs to encourage other hospitals to join what has become the recovering burns movement. In addition, she has launched a cosmetic business, manufacturing and selling cosmetics for scarred skin.

David Ruth, a young businessman in his 30s when he was burned in September, 1978, reports to Physical Therapy daily at Parkland. Each session is both rigorous and painful. Not only was he badly burned, but Ruth has a severe hearing loss due to his medication. The fate of his hands, which were almost destroyed in a home explosion, caused him the most fear for the future. Does he ever wish he had died rather than face the slow hell of his rehabilitation? "To be honest, I think that every one of us does at some time or other," says the patient. "But I think I really wanted to live underneath. Those who don't die." Not able to work, he spends much of his time doing volunteer work in the hospital X-ray department.

As the survivors have learned, a burn is the most traumatic injury the body can receive. A major burn injury causes a crisis in every organ system. The whole body reacts in crazy, out-of-control ways. The heartbeat speeds up; the metabolic rate goes on a rampage; the foot soldiers of the immune system rush out to defend the wounds from invading bacteria while leaving the rear unguarded; and fluids pour around the burn injury, evaporating and causing dehydration to the rest of the body.

One of the weird things about a burn is that it may not necessarily look bad. The burned area may be only slightly pink or red and if the burn is deep, the victim, who is also in shock, may feel no pain because the nerve centers in the injured area have been destroyed.



Just what is a bad burn? According to the American Burn Association, sunburn is a good example of a burn classified "first-degree." While it may be red and even painful, the first-degree burn is not serious and can be treated by simple first-aid techniques. A second-degree burn, however, is serious. It can destroy the cells and lead to scarring but may have the capability of some regeneration. A third-degree burn generally does not have the capability of regeneration and requires surgical excision and grafting. If left untreated, a second-degree burn can progress to the third-degree stage.

When the burn patient arrives at the hospital, the team must act quickly--determining the extent of injury, maintaining an open airway, bathing the wounds and, most important, giving massive amounts of fluid immediately.

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