IN MEMORY

This patient and family booklet is supported by a generous donation from Becky and Cameron Clark in memory of Jack Clark, devoted husband and father.
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Welcome To The Arizona Burn Center

No one ever expects to get burned, and few people know what treatment is needed after a burn injury has occurred. We understand that you may feel frightened or anxious about being hospitalized. This booklet is designed to help ease your fears and give you information on what to expect while at the Arizona Burn Center. It will also answer some of the questions you might have about the future. You will meet the members of the Burn Team who will be caring for you or your loved one, learn how burns impact the body, and become aware of the steps that must be taken in getting well.

The first step after the injury is to find out how serious the burn is. When a patient is admitted to the Arizona Burn Center, the severity of his or her injury is determined right away. The airway (the patient’s ability to breath on their own), vital signs, blood pressure, pulse, and respirations are examined and stabilized. The degree of burn, age, general health of the patient, heart and lung status are also assessed. Specific care and treatment of the patient is then determined. This booklet will help make it easier for you to understand the care and treatment.

We will define the different words and phrases you will be hearing, the types and reasons for different therapies, and the ways in which you can help yourself or your loved one get well. This is a trying and confusing time for the patient, their family and friends. As a patient or family member, you are an important part of the Burn Team. We want you to ask questions. Please feel free to ask a question, as many times as it takes for you to truly understand the answer. All of your questions are important!

www.azburncenter.com
What is a Burn Center?

A burn center is a hospital unit that specializes in the comprehensive care of burns and serious skin diseases. Our burn center was founded by Dr. MacDonald Wood in 1965, and has grown from a few beds set aside for burn care, to our current, specialized unit of 19 beds – all of which can be used for intensive care, if necessary.

We serve patients from the southwestern United States, including all of Arizona, and parts of California, Utah, Nevada, New Mexico, and northern Mexico. We admit between 650-750 patients per year and care for more than 3,500 people in our outpatient clinics. Long-term follow-up care is provided by the outpatient burn clinic, so that patients may receive specialized care after they leave the Arizona Burn Center.

Patients come directly into the burn center rather than being treated in the emergency department. In this way, our specialized team of surgeons, nurses, and the rest of the burn team can see the patients quickly. We have our own operating room, physical and occupational therapy room, treatment room, and other areas just for our patients.

In 1992, the Arizona Department of Health Services, Division of Emergency Medical Services and Health Care Facilities recognized the Arizona Burn Center as a Regional Burn Center. In 2000 and 2003, the Arizona Burn Center was recognized by the American Burn Association and The American College of Surgeons as a nationally verified Burn Center. This means that we have met all the required standards to be named a Burn Center, and you can rest assured that we will provide the best care available in the southwestern United States.
Admission Room

Operating Room
Meet The Burn Team

The care of the burn patient is performed through a team effort. Our team at the Arizona Burn Center includes the patient, family, burn surgeons and surgical residents, specialty surgeons, pediatric intensive care physicians, medical physicians, nurses, physical and occupational therapists, nutritionists, burn care coordinators, social workers, respiratory therapists, chaplains, psychologists, research personnel, and volunteers. The team members work together to help the patient and his/her family both physically and emotionally, and help them to return home.

**Patient:** During the early stages of burn treatment, the Patient is dependent upon the nursing staff and other members of the team for total care. As healing progresses, the patient is more independent. Patient motivation is important during rehabilitation to enable the other team members to do their job effectively.

**Family:** The Family is a very important member of the team as they can help provide motivation and emotional support to the Patient. They will be informed on how to handle different situations that will be encountered in the Burn Center and at home. They are encouraged to ask questions of the staff and physicians.

**Burn Surgeons & Specialty Surgeons:** The Burn Surgeons are trained as specialists in the field of Burn & Trauma and are skilled in all aspects of burn care. They are the directors of each burn patient’s care. Other specialty surgeons involved in the burn team include, General/Vascular Surgeons, Plastic/Reconstructive Surgeons, Hand Surgeons, Orthopedic Surgeons, Cardiac/Thoracic Surgeons and Ophthalmologic Surgeons.

**Pediatric Intensive Care Physicians:** These physicians are skilled in all aspects of pediatric care, especially for the critically ill pediatric patient. These physicians will work jointly with the burn surgeons to provide the highest quality of care to your child. See page 43 for more information.

**Medical Physicians:** Other physicians may be consulted to assist the burn team with your or your loved ones care. These physicians may include: Cardiologists, Nephrologists, Dermatologists, Psychiatrists, Psychologists and Infectious Disease specialists.
**Nursing Service:** The nursing staff is directed by the Burn Center Director and Nurse Managers, Assistant Nurse Managers (Daytime & Nighttime) and includes, Registered Nurses, Licensed Practical Nurses, and Nurse Assistants (Burn Technicians). The nurse is with the patient the longest period of time each day and is specially trained in burn care. The nurse will do everything possible to help the patient reach total rehabilitation. The nurse's job will be facilitated by the cooperation of the patient and the family.

**Physical Therapy:** The Physical Therapist's responsibilities include daily baths, assistance in debridement, exercises, positioning, assisting with splints, and developing a home exercise program. The Physical Therapist also follows the patient after discharge. The successful preservation of function of burned arms, legs, hands, and feet depends on the cooperation of the patient with education from the physical therapist.

**Occupational Therapy:** The Occupational Therapist evaluates the need for splints, to help prevent and or reduce burn scar contractures. The Occupational Therapist's responsibilities also include positioning and exercises, diversional activities (crafts), evaluating needs, teaching activities of daily living, and providing a home program of splinting and exercise. The goal of occupational therapy is preservation of function and rehabilitative training. See page 37 for more information.

**Dietitian:** The Dietitian promotes a normal level of dietary intake welfare to minimize weight loss and to promote wound healing. The patients are instructed concerning the need for maintaining a high calorie and protein intake. This is further achieved by supplemental feedings, as indicated. The Dietitian is available to meet with families for any special food considerations of the patient. See page 39 for more information.

**Respiratory Therapy:** The Respiratory Therapist administers oxygen, breathing treatments or other assistance for patients who may be in acute or severe respiratory distress due to inhalation of noxious agents, or other lung problems like pneumonia. In more severe circumstances patients may need additional assistance in breathing with the aid of a breathing machine (ventilator).

**Chaplain:** The Chaplain serves the immediate religious and pastoral needs of the patients and families in the Arizona Burn Center. The Chaplain is available on 24-hour call for these services.

**Psychologist:** The Clinical Psychologist and Psychology Doctoral Students will be available for patient consultation and counseling at the request of the patient's physician or family. See page 29 for more information.
Child Life Specialist: A Child Life Specialist is specially trained to work with the emotional and developmental needs of children and their families. They use play and other forms of age appropriate therapy to reduce the stress associated with burn care and therapy, and help parents and children cope better with the burn care experience. See page 43 for more information.

Clinical Nurse Specialist: The Clinical Nurse Specialist teaches the nursing staff how to deal with burn injuries in the best possible manner. They will be working with your nursing team to make sure the patient gets the best possible care.

Patient Relations: Patient Relations’ top priority is to insure that you receive the services you need to get well. If you or your family has any concerns or complaints during your stay, please call on Patient Relations (602) 344-1200 to help.

Pharmacist: The pharmacist monitors the medications the patient is getting to make sure the best medications are being used for you or your loved one.

Translators: Translators are available to help you better communicate with the medical staff. Please feel free to request one.

Research Nurses & Coordinators: Research is an important part of burn care and the Research Coordinators are responsible for all aspects of each research project ongoing in the Burn Center and act as a liaison between the burn surgeons, staff, families and patients. The projects include studying the use of new medications and treatments geared to improving the treatment of the burn patient. The Research Psychologist is looking at ways to improve the psychological aspects of burn injuries. The results of all of these studies are shared at professional meetings and/or published in professional journals. The patient, and/or family may be asked to be a participant in one or more of the research projects. Once again, the overall goal is to improve upon the care of the burn patient. See page 31 for more information.

Foundation For Burns & Trauma of Arizona: The Foundation is a non-profit community agency dedicated to assisting burn victims and their families in becoming burn survivors. A family service representative is available to discuss emergency needs you may have as well as rehabilitative programs such as support groups, pediatric Burn Camp, counseling or tutoring. See page 53 for more information.

Volunteers: When available, Volunteers in the Arizona Burn Center will provide emotional support, be a resource person to patients and families, relay pertinent information to the nurses, and help the patient with snacks and meals. The volunteer also provides social activities for the patient.
**Burn Care Coordinator:** The Care Coordinator works with Case Management to insure a smooth transition of burn care from the hospital to home or a rehab center, which includes facilitation of all discharge details.

**Social Work & Case Management Services:** Sometimes a hospital stay can create hardships for the family. Our Social Service personnel are available to assist you when such problems arise. There is no charge for this service. If necessary, we can put family members in touch with helpful agencies in the community. A Social Worker is available in the Burn Center to patients, family members and friends for the following services:

I. Financial resources information and referral
   a. Local bus tickets
   b. Food commodities
   c. Temporary shelter when available
   d. AHCCCS appointments
   e. Income and entitlement, job retraining and placement
   f. Funeral planning

II. Mental Health Services In-house Information and Referral
   a. Case management in the community
   b. Sliding fee scale counseling services (depression, anxiety, sexual abuse, etc.)
   c. Support groups
   d. Substance abuse treatment
   e. HIV pre-and post-test counseling
   f. Domestic violence shelter/counseling
   g. Crisis intervention
   h. Brief therapy, assistance coping with illness, stress, grief and work.

III. Legal Issues
   a. Community legal services
   b. Power of Attorney, Living Wills
   c. Locate next of kin
   d. Child and Adult Protective Service Reporting

IV. Discharge Planning
   a. Facilitating communication between Burn Center staff and patient/family
   b. For social work service in Arizona Burn Center, please contact a nurse or unit secretary for referral.
Important Names and Telephone Numbers
– Arizona Burn Center

There are many members of the burn team, and it may be hard to remember all
the information and names of the people you will meet. If you wish, write them
down so that you can remember them more easily.

Please see the insert in the front of this book for the Name and Telephone
Number page.

• Arizona Burn Center Main Number: (602) 344-5726
• Arizona Burn Center 800 Number: (877) Phx-Burn
  (877) 865-1247
• Arizona Burn Center Fax: (602) 344-1499
• Maricopa Medical Center Main Number: (602) 344-5011
• Foundation for Burns and Trauma: (602) 230-2041
ARIZONA BURN CENTER VISITOR POLICY

To assist us in providing burn patients with the best possible care, special guidelines have been set. Please ask the staff to help you with any problems or questions you have.

- Visitors are allowed from 11:00 AM - 6:00 PM and from 8:00 PM - 10:00 PM.
- Visitors are only allowed to visit with permission of the staff.
- Visitors will use the phone located on the wall to call and ask permission from the nurse to visit between the hours of 11:00 AM - 6:00 PM and from 8:00 PM - 10:00 PM. The number to call is (602) 344-5726.
- Patients not in the Intensive Care Unit may have two visitors at one time during the hours of 11:00 AM - 6:00 PM and 8:00 PM - 10:00 PM.
- Intensive Care Unit patients may have two visitors for five minutes each hour during the hours of 11:00 AM - 6:00 PM and 8:00 PM - 10:00 PM. The nurse or physician, if necessary, may restrict this.
- Please do not follow medical personnel or other visitors through the secured doors without authorization.
- Upon entering the unit wash hands and put on a yellow gown. The sink is located on the right-hand side down the first hallway. Please re-wash your hands and remove the yellow gown once you leave the Arizona Burn Center.
- Children must be over the age of 12 years of age to visit in the Burn Center.
- In the waiting room, an adult must accompany any child under the age of 18.
- During RSV season children under the age of 12 will not be allowed in the waiting room. This is for the protection of family and our patients.
- One parent of children under 8 years of age is allowed to stay over night in the room if the child is not in the Intensive Care Unit. We will attempt to accommodate sleeping needs, however, a limited number of sleep chairs are available.
- Visitors may be asked to leave the Arizona Burn Center during procedures when their presence may impede a safe and therapeutic environment.
- Visitors will respect the privacy of the other patients. In the lobby, please be respectful of other families waiting with you.
- Visitors are encouraged to return home each night to get needed rest.

Failure to comply with the visiting policy may result in being asked to leave the Arizona Burn Center and, if required, escorted from the area. This is for the safety of all the patients.
OTHER IMPORTANT INFORMATION

SMOKING

The hospital maintains a smoke free environment. No smoking in the hospital.
Smoking areas are available in designated areas outside of the hospital.

CELLULAR PHONES

Hospital policy states that cellular phones are NOT to be used while in the Arizona Burn Center, or in any other patient care areas in on the hospital.

PARKING

Please be careful to park your vehicle in the areas that say visitor parking or you will get a parking ticket. All tickets are City of Phoenix citations and are paid to the City of Phoenix.

FOOD

Consult the nurse before bringing food to the patient. Water contains no calories or nutrition, so we often don’t want patients to have it. They may have fruit juices, sports drinks, and high protein shakes.
Understanding Your Skin

The skin is the largest organ of the body and makes up the body’s entire outer layer. Our skin helps us to stay warm when cold, or to cool off when it is hot. The skin keeps out germs and dirt, and its most important job is to protect against infection and prevent injury to the inside of the body. Skin prevents loss of body fluid, and stops us from losing too much fluid (dehydration). Skin also contains one of our five senses (touch) the nerves in our skin help us to know about the world through touch, pressure, pain, and temperature, and send messages about our world to the brain. Skin grows and shrinks as the size of our body changes. Our skin contains glands that release oils, pores that release body fluid (perspiration) to help us cool down, and hair that helps keep us warm. The skin senses movement and touch and has nerves and blood vessels that keep our skin a vital, living part of our bodies.

When our skin is damaged, our body has a break in its’ armor. This break can make us get sick or even result in death. There are the layers of fat, muscle, bone, and vital organs under our skin. A break in the outer armor makes the rest of our body feel stressed, and creates a crisis that demands immediate attention. One way in which our skin can be damaged is by being burned. Getting burned is one of the most painful, frightening, and serious injuries that a person can suffer. Being in the Burn Center is the best place for you or your family member to be.
Depth or Degree of Burn Injury

In addition to size, burns can be described by how deeply the skin is hurt. Below are pictures and descriptions of the different depths of burns, and what usually happens in treatment.

First Degree or Superficial Burn Injury:
- A “sun burn”
- Only the outer layer (epidermis) of skin is hurt
- Burned skin looks pink or red, but doesn’t have blisters
- First degree are quite painful
- First degree burns must be kept clean, but usually heal within about a week, with no scars
Second Degree or “Partial Thickness” Burns:

- Both the outer layer (epidermis) and the upper parts of the inner layer (dermis) are hurt
- Burned skin looks pale pink to white, wet, and has blisters
- Second degree burns are very painful
- Second-degree burns heal over six to twenty-one days, depending upon how deep they are. Deeper second degree burns may need surgery and skin grafting to prevent scarring and improve function
- Second degree burns that don’t need surgery may result in permanent scarring

Third Degree or “Full Thickness” Burns:

- All layers of skin – both the outer layer (epidermis) and all of the inner layer (dermis) are hurt
- Burned skin looks white, charred, yellow and/or brown
- Third degree burns tend to be dry, hard, or leathery
- Third degree burns often burn off the nerve endings, but still will mean a painful recovery
- Third degree burns almost always need grafting and usually result in permanent scars
Fourth Degree Burns:

- These, the most serious of burns, involve damage to all layers of skin as well as the muscle, bone, tendons, blood vessels and nerves below
- Fourth degree burns look white/yellow, charred, and feel very hard
- Surgery is always needed
- Fourth degree burns often result in a loss of muscle, blood vessels, nerves, and bone, which may impair function of a limb (arms/legs) and sometimes require amputation
Common Causes of Burn Injuries

Burns can be caused in many ways:

- **Flame** – Fire that touches the skin burns it in the same way that food gets cooked on a barbecue. Flames not only burn the skin but also hot smoke, fumes, and chemicals that burn your lungs or worsen the burn to your skin.

- **Scald** – Hot liquids can burn very quickly – often in a few seconds.

The thermometer illustrates how quickly a deep burn can occur when the water temperature is above 120 degrees!

- So keep your home thermostat set below 120 degrees!
- Liquid at 156° (soup on the stove) causes deep burns within 1 second.
What Causes Burn Injuries?

• **Contact** with a hot object or friction – this happens when you touch something very hot (like an iron) or when your skin slides across a rough surface (like carpet, asphalt, etc.).
  
  Example: Walking barefoot on the hot asphalt or concrete can cause deep burns to your feet.

• **Electrical** – caused when an electrical current runs through your body, either from man-made electricity or lightning.
  
  o Electrical burns usually have entrance and exit wounds – where the electricity went into and came out of your body
  
  o Electrical burns can be from first to fourth degree in depth
  
  o The burns that you see may not be all that is hurt – sometimes burn injuries happen inside the body as well
  
  o Electrical burns also cause other kinds of injuries
    
    ■ Broken and dislocated bones
    
    ■ Brain, spinal cord, and other nerve injuries
    
    ■ Damage to the eye (cataracts)
    
    ■ Heart problems (irregular heart rhythms)
    
    ■ Too much swelling of parts of the body (compartment syndrome)

• **Chemical** – when a chemical touches and harms the skin.
  
  o Certain chemicals (acids and alkali) can burn more or less quickly, depending upon how strong the chemical is
  
  o Chemicals keep on burning the skin until they are removed, usually by washing them away with water
  
  o Surgery may be needed, depending upon how deep the burn is
    
    ■ Examples:
      
      • Kitchen/Bathroom cleaners
      
      • Bleach
      
      • Pool chemicals
      
      • Gasoline/Propane/Lighter fluid
• **Explosion** – although burns usually come from flames, they often have other trauma (broken bones, etc.) and other injuries due to the ignition of chemicals like gasoline or propane.

• **Radiation** - too much sun (sun burn) or being around radioactive materials can cause serious burns.

• **Frostbite** – cold can cause burns too! Over exposure to extreme cold can cause injury similar to that of being burned by flame or hot water.
What Happens After a Burn Injury

Burn care involves different stages or time periods for recovery. Depending upon how serious your injuries are, you may or may not go through the following stages. Every patient is different and your care will depend upon your needs.

Stabilization – First, all patients are brought to the Arizona Burn Center admission room, where the doctors and the nurses find out how serious the injuries are and perform initial care. During this time, family members are asked to wait in the family waiting area, and will not be allowed to be with the patient. We will keep you informed of what we learn and our plans, but the first and most important concern is the treatment of the patient. This is a time that family members may wish to call others to inform them of what has happened, and meet with the admission team to give information about the patient’s name, address, health history, insurance coverage, etc. First and foremost, be assured that all patients brought to the Arizona Burn Center are given the very best of care.

A cardiac monitor (EKG) will be attached to the patient’s skin with special wires and pads. The monitor is a machine that listens to the patient’s heart, through wires that are connected to small stickers that are placed on the patient’s chest. This machine keeps track of heartbeats and rhythm, and tells the burn team about how the patient is doing.

During the first hour of care, the burn team finds out whether or not the patient needs help with breathing or any other aspects of staying alive. One or more intravenous (IV) access lines are started so that important fluids can be given to the patient as needed. Through these IV lines, the patient is quickly given pain or other medications to make them more comfortable, and provide extra fluid so the patient doesn’t go in to “shock”. Burn injuries cause the body to release chemicals into the blood, so that fluids leak out of the blood vessels and into the lungs and areas around the burn. Over the first few hours, and maybe even days to weeks, this makes the patient look swollen or puffy, and means that we must give extra fluids to keep up with their needs. After several days to weeks, this will stop happening, the fluids will go back into the bloodstream, and the swelling will go down.
Many times a special line is placed into the patient’s artery. This is called an *arterial line (A-line)*; it allows the burn team to record important body functions like blood pressure, pulse, etc., on a monitor. The monitor is like a television that tells the team how the patient is doing. Once the patient is in their own room, the arterial line is connected to monitors in the room, which can also be observed at the nurses station. That way, if the patient’s body does something unusual (such as the blood pressure going up or down) the nurse will know – even if they are not in the room. You will hear many different alarms and noises that tell the burn team about the patient’s needs. At first these alarms will be new and upsetting, but both you and the patient will grow accustomed to them. The staff knows the difference between alarms that need attention quickly, and those that just are giving information. You will need to learn to trust the burn team to take care of you and your loved one.

If the patient needs help breathing, medication is given to put the patient to sleep, and then a tube is placed through their mouth and into the main airway (*trachea*) just above the lungs. This tube is then connected to a machine (*ventilator*) that forces air in and out of the lungs to help the patient breathe. The doctors, nurses and respiratory therapists help to give the patient just as much breathing help and oxygen as they need. Sometimes, extra oxygen is given even if the patient doesn’t need the breathing machine. In this case, oxygen is given through a tube or mask (*nasal canula or face mask*) that blows oxygen into the patient’s nose or mouth. When the doctors want to watch how much oxygen a patient needs, a special monitor called a *pulse oximeter* is connected by a little wire to a light that is attached to the patient’s skin. This machine can send an alarm if the oxygen in the blood goes below a level set by the burn team.

There will be many other tubes, lines, and different equipment that you will see around the patient. Each has a special and important job in helping the patient to get better, and may or may not be used, depending upon the individual’s needs. Some of the most common are:

- A *nasogastric (NG) tube and duotube* (feeding tube) – the nasogastric tube is a small clear tube that goes up a person’s nose or in the mouth and down into the stomach. The tube helps to take things out of the stomach that might make the patient feel sick. Burn injuries sometimes cause changes in the ability of the person to digest food or fluids, and generally the person is not given food or drinks during the early stages of care. As soon as possible, however, an even smaller tube (duotube or feeding
tube) is inserted to give the patient a special liquid food that is very high in calories and proteins. The burn team nutritionist works closely with the doctors and nurses to give as much nutrition as the patient needs, even if they are not eating normally. Soon, however, we will be asking the patient to eat lots and lots of food, and perhaps to drink special milk shakes to give them more calories. It takes a lot of food to build new skin and tissues!

- A Foley catheter is a small tube that is put into the bladder so that the patient does not need to get up to go to the bathroom. We watch how much urine the patient makes to decide how much fluid they need to be given, either by drinking or by the IV lines.

- Nursing staff will regularly take vital signs, to monitor the patient’s temperature, blood pressure, and pulse readings. They will ask about pain and anxiety, and how the patient is feeling. These vital sign measures are taken on a regular basis.

- Small tubes of blood and urine are taken and sent off to the laboratory, on a regular basis. These laboratory samples are used to tell if the patient needs medicines or other treatments to help them get well. Often the samples can be taken right out of one of the tubes already connected to the patient. At other times, the patient needs to have a small needle put into a vein to get the blood.

There are many types of tubes, machines, wires, and other equipment that may be connected to the patient. Feel free to ask about each one, and what it does. It is not unusual for family members to spend the early days of hospitalization watching the monitors and trying to understand the alarms and numbers. It can be overwhelming! We suggest that you focus upon the patient and your own feelings, and trust the burn team to care for the patient’s needs. If you have a concern, however, speak up!
**Wound Care** – After the patient is stabilized and has been taken to their room, the next stage of recovery begins. This will usually involve caring for the burn wounds themselves, as well as giving any medical support the patient needs (pain and other medicines, nutrition, etc.).

A patient’s dressing change will occur in their room if they are on a ventilator. Otherwise, all attempts will be made by the burn team to perform each dressing change either in the admission room or one of the tub rooms. This is to ensure that the patient has a chance to get out of their room as well as get the feeling that their room is a “safe” area.

**Wound Cleaning** – The first stage of wound care is to clean the burned skin. This can be done in several ways, depending upon how deep or serious the burn is. All wound cleaning is painful, and the patient is given both pain and anxiety (worry) medicines before cleaning begins. Initially burns will be cleansed by using a non-irritating soap and water, special medicines that are put on bandages that are changed twice a day, and the use of special equipment to remove the burned skin. It is very important to remove the dead skin as quickly as possible, since it can delay wound healing and may cause infections. If the burn is deeper, the patient is taken to the operating room, where the doctors put the patient to sleep and remove the dead skin with surgical tools. Removal of the dead skin in the operating room is called *debridement* or *tangential excision*, and is necessary to prepare the area under the burned skin so that it will accept a skin graft, if needed.

**Escharotomies and Fasciotomies** – If a burn goes all the way around a part of the body, it can cause the burned skin to get very tight and stiff, instead of the usual soft and stretchable shape. Then, because of the swelling that goes along with the burns, the tight part can cut off the blood flow to areas below the burn. It acts almost like a tourniquet. When this happens, the doctors make a cut in the burned (dead) skin, to relieve the pressure. After this is done, the area is cleaned and covered with bandages. An *escharotomy* means that the cut is just through the burned skin (*eschar*) area, while a *fasciotomy* is a deeper cut into the tissue below the skin (*fascia*) in order to expose the muscle. Not all burns need these procedures.
**Grafting** - Not all burns need skin grafts, and we hope that the patient’s skin can heal without surgery. Sometimes it takes several days or weeks before we can tell. Just as sunburns get more painful and red over the days following the burn, so too do more serious burns. It may take us at least 3 or 5 days to tell us how deep they really are. Also, skin grafting may have to wait until the area under the burn is healthier, and ready to graft. There are three kinds of grafts that are used in the Burn Center. The most important is called an **autograft**, and involves taking skin from an unburned part of the patient’s body (**donor site**) and placing it on the burn wound. Our body needs its own skin to be used, because it reacts to other types of skin like an invader. Both the area that is grafted and the donor site looks raw and red, but usually heal quickly.

If the burn area is not ready for an autograft, temporary skin coverage may be necessary by using an **allograft** (also called a **homograft**) or a **xenograft** (pig skin). This thin, temporary cover is placed over the wound and allows better pain control while protecting the wound from infection. These temporary grafts stick to the wound, but are taken off when the patient is ready for autografts. Sometimes a burn patient needs several surgeries to cover their wounds, sometimes only one.

Sometimes, the different types of skin grafts are put through a machine (**skin mesher**) that makes small cuts in the graft, so that it can be stretched to cover a larger area of burn. As the wound heals, the patient’s body fills in the graft with new skin cells. Grafts are stapled on to the outside of the burn area, and covered with a thin dressing. Bulky, damp bandages are then placed on top, kept clean with antibiotic fluids that are lightly moistened over the outside of the bandage, and the new graft is left in place for several days, so that it can begin to grow. New grafts begin to grow into the skin in the first couple of days, but must be left alone for several days to really stick to the wound. New grafts are also very thin and fragile, and may need to be left in wet bandages for more than five days. Skin that has been recently grafted must be protected, since too much movement, bleeding, infection or not enough nutrition can stop the graft from growing well. Because of this, patients who have just had skin grafting may have to stay in bed, may have splints put on, and should not move the grafted parts for a few days. Therapies for the other non-burned parts of the body can still continue, however, as described below.
**Wound Healing** – Donor sites usually heal completely within one to two weeks. Scarring may or may not be seen in the area from which the graft was taken. Donor sites look and feel sore in the beginning, and the bandages over these areas may be see through, so that healing can be watched.

Skin grafts may stick after the first surgery, or the burned tissue may be deeper than first thought. Sometimes the patient must return to the operating room several times until all of the dead skin is removed (debrided or excised) and the wounds are covered (grafted). Sometimes the wounds need another grafting because the first one did not stick well, or because it broke open or became infected. The total number of surgeries needed depends upon the size or depth of the burn, and other factors of age and general health.

It is normal to wish that it would all be over as quickly as possible. It can be frustrating to have to wait to see what will happen, such as whether or not grafting will be needed, or whether or not the grafts will stick. The burn team will work hard to get you better as soon as we can, but we have found that trying to go too fast often means that you will have to come back to the hospital later, because the wounds didn’t heal fully. Try to be patient! The average length of stay in our burn center is two weeks, but that means that some people only stay overnight (if their burn is not too severe), while other patients will stay for several months.

**Rehabilitation** – All burn injuries are serious and sometimes life threatening. After your body is seriously injured, it takes all of its energy to try to heal and recover. This usually means that you must stay in bed and be given many medicines and go through other medical procedures, all of which make you feel weak and vulnerable. In the beginning, and for as long as you need it, we will take care of your every need. Right from the start, however, we expect you to take part in the healing process, and you have a big job ahead of you. We ask you to think about “the big picture” – that recovery from your burns may take a long time. The more you help yourself the sooner you will get well.

It is often surprising how weak you feel after spending just a few days in bed. Serious injuries cause the body to go into a stress response, which causes changes in your nervous system and the rest of your body. You may find that you experience changes in appetite, sleep, energy levels, and general comfort. The medicines we need to give often have side effects that make you feel different or strange. If your injuries have affected your ability to move or use a part of your body, or if you have had a change in the way your body looks, you
may experience a sense of grief or loss. All of these experiences are normal, and we will help you to recover and get back to life to the fullest extent possible. One thing is always true, however, serious burn injuries will change your life forever. You are now a different person, and that will take some getting used to.

**Pain Control** – Burn wounds of any degree are painful, and the pain comes from several different sources. First is the actual nerve and tissue damage that anyone who has had a minor burn has experienced. This type of pain is often severe and requires the use of strong medicines such as morphine to help control this kind of pain. Each patient’s pain tolerance is different. Thus, the patient is the best person to tell us how much pain they are having during dressing changes, therapy, and during each hour they are awake. It is important to give enough medicine to keep the patient comfortable, and the longer the person is taking a narcotic, the more they typically need. As the wounds heal, however, we will gradually reduce the amount of medicines needed, and will switch from giving the medications through the IV tubes toward giving pills that the patient will take by mouth. When we use narcotic medicines to treat burn pain, we almost never find patients who become addicted to the medicine. If you have a history of drinking alcohol or using drugs, however, please tell us so that we can make sure we give you all the special care you need.

The second source of pain in burn injuries is from what are called **stretch receptors** in the skin around the burn. Because the burned area often shrinks or **contracts**, there is a pulling on the healthy skin around it – which hurts. A third source is general muscle soreness and aches that come from lying in bed for a long time, or from exercising muscles that haven’t been used for a while. Here again, we will give the patient medicines to take the edge off of their pain, and will work with the patient to get the best pain control possible.

It is usually important for the person to take medicines before something painful is about to happen. Nurses will give medicines before dressing changes, and usually before the patient has physical and occupational therapies. These therapies (described below) are important parts of getting better, and should not be avoided because of pain. It is therefore important to take the medicines that are ordered, since pain and distress can make healing take longer. Not doing the required therapy may cause secondary problems with joints or grafts becoming too tight (**contractures**) and can cause long-term problems with movement.
Anxiety Control – The crisis of burn injury is frightening for everyone, including the patients themselves, their family and loved ones, and others who are involved. We expect you to feel some anxiety. We will help you cope with the anxiety and help you turn it into useful energy that will help you get better.

We routinely give our patients medicines to help with their anxieties. This medicine is usually given through IV tubing in the beginning, and may be switched to pills the patient takes by mouth, as they improve.

It is not always the case that we can take all of the pain and anxiety away with the medicines we give. Pain has two purposes – first to tell the brain that the body has been hurt so that it protects the hurt area, and second to trigger the body’s stress response and to let the person know that they need to take care of themselves and watch out for danger. The burn team will help to take care of the injuries as they heal, but the patient must also help to cope with the stress of the injury. To do this, the burn team will encourage the patient to use deep breathing, distraction, and imagery techniques in order to help the medicines to work, and reduce their feelings of nervousness and anxiety.
Psychological Complications In Burn Care

Introduction: The Arizona Burn Center has psychologists (PhDs) and psychiatrists (MDs) available as part of the burn treatment team. They can help patients with pain issues and are available to meet with patients that had emotional problems prior to their burn injury. Helping family members is also an important role of the psychology team. When families get assistance it often helps them to be better able to provide ongoing support and help to the patient. Going home and back to work in the community is harder for a burn patient when there are major psychological problems that have not been dealt with.

Good Outcomes: Most burn survivors have good emotional outcomes and do fine. Strong family support has been shown to help patients have the best long-term outcome. However, children with burn injuries and who have serious emotional problems can affect their parents, and actually cause more problems with stress, depression, anxiety and guilt.

Anxiety: Many children and adults are helped by medication and relaxation tips. Patients need to know that they can benefit when they learn to relax with the help of music and other things that take their mind off of the dressing change and to help them relax before sleep. The psychology team can tell the burn team about the patient’s anxiety. They will work with the doctors and nurses to help the patient relax and be less anxious through the use of additional medications and other methods.

Depression: Patient depression (sadness) doesn’t usually last for a long time after the burn injury, but it may be present during the early part of the patient’s recovery. About 75% of people who intentionally cause their own burn injuries had clinical depression before the burn while other mental health problems account for the rest. A more normal response to burn or trauma, however, is a grieving process that also includes depression. A skilled therapist, whose primary responsibility is to understand what is causing the patient’s depression, can help provide the patient with ways to cope with their sadness, fear and anxiety.
Body Image Dissatisfaction: Visible scarring and disfigurement can cause concern for the patient and family. Patients who don’t cope well tend to have more problems with body image issues. Talking with the patient and family on how to deal with changes in appearance can be helpful.

Post Traumatic Stress Disorder (PTSD): Problems with post-traumatic stress can be show up early in the recovery process and may be helped a lot with early intervention. Symptoms of severe post trauma stress have been associated with patients who experience a lot of pain.

Treatment Recommendations: Checking on a patient’s emotional or feelings status, the way they cope with problems and the family and friend support they have is very important to helping the patient, and can help lessen their pain, and help with them get better faster. But too much use of coping strategies can also bring more emotional problem. The psychotherapist on the Burn Team can help the patient get the best outcome. They may help the patient get answers from other members of the team, provide a safe ear to the patient and helping him/her direct their feelings in as positive way as possible. The psychologist can help patients think differently about their injury and recovery and help them to worry less and feel less anxious. Shared relaxation tips can help provide the patient with a greater sense of control over what is happening to them. Setting short-term, reachable goals and measuring how the patient is moving towards those goals can help the patient focus on the present in a more positive way and also contribute to a positive sense of control.

Coping Strategies: It is normal for us to change our thoughts about bad experiences as a way to protect ourselves. Some ways of doing this are to mentally escape from the situation and others involve trying to make the experience better. Coping strategies are important and work well when used once in awhile. But using them too much has been shown to cause more long-term emotional problems. Patients bring their own views of the world and coping styles based on their prior life experiences. The psychotherapist can help the patient use the tools they already have in a positive way. Good coping skills will help the patient to accept their injury, planning and discussion of the patient’s emotional experiences. The best outcomes are connected with only moderate use of these strategies. Too much “active coping” leads to more distress, rather than less. Rest and relief environmental stress, family support and diversionary activities are also important.
Research

Research is an important part of burn care. Our Research Coordinators work in harmony with the physicians, patients and their families to investigate new and more proficient means of burn care. Current projects include studying the use of new medications, treatments and techniques geared to improving the treatment of the burn patient. Some of the burn centers research is funded through pharmacy and product companies or from public or corporate grants. Other research projects are non-funded and are specifically derived by collecting data on unique or unpublished data. All of the research done in the Arizona Burn Center is overseen and approved by the hospital Investigational Review Board. This group of physicians, scientists, pharmacists, nurses and laypersons review all studies within the hospital to ensure the safety of the patient involved in the study.

Because burn care involves more than just the physical treatment of burns, the Arizona Burn Center is actively involved in research studies that help the patient and family with the psychological trauma of the burn injury. The Research Psychologist is looking at ways to gain a better understanding and improve how patients cope with the pain and long-term effects of burn injuries. These findings are vital to the continued improvement in the care of the burn patient.

The results of all of the research studies are shared at professional meetings across the United States and even throughout the world. Moreover, many of the findings are published in professional medical and scientific journals. At all times the results are presented while maintaining complete patient confidentiality. Once again, the overall goal of the research department is to improve upon and better understand burn injuries and how better to treat the patient and their family.
MOST COMMON BURN DRESSINGS

As time progresses and your wounds heal various types of dressings will be needed. The goal of dressing changes always remains the same: prevent infection and promote healing with as little discomfort as possible.

**Silvadene Cream (AgSD):**
A white antibiotic cream used to thoroughly cover wound. Helps to prevent infection, helps with healing and to keep burns moist. Many patients say the effect of the silvadene cream upon application is soothing and cooling.

**Bacitracin and Adaptic (B&A):**
Bacitracin and adaptic is a non-stick gauze like material with antibiotic bacitracin spread thinly over it and is applied to the burn wounds.

**5% Sulfamylon Solution and 10% Sulfamylon Cream:**
A white anti-infective cream used on deep burns. It has the ability to penetrate further into the injured tissues like the nose and ears. The solution is used on skin grafts and open wounds for antibacterial protection.

**Hydrophilic Ointment, Eucerin, Aquaphor and Forever Living Aloe Products:**
Lotion like creams and aloe based lotions and gels that are applied to healed burn areas to prevent skin against drying and cracking. They are used once the burn wounds heal completely for many years.

**Acticoat:**
A silver coated antimicrobial burn dressing that kills bacteria and yeast. Used to treat 2nd and 3rd degree burns. It is wetted with sterile water every 12 hours and changed every 2 to 3 days and sometimes left in place for 5 to 7 days.

**Aquacel-Ag:**
A gauze dressing that is to the burn wound or donor site. Used on superficial and mid-thickness 2nd degree burns. The dressing has silver inside that helps kill germs (bacteria). Once the dressing is adherent in place, it is usually left in place for up to 3 weeks.

**Trancyte:**
A college sheet impregnated with growth factors and is used to treat 2nd and some 3rd degree burns. Once it is applied and adheres to the wound, it can remain in place for up to 2 weeks.
EQUIPMENT SOMETIMES USED IN THE CARE OF BURN PATIENTS

The percentage and depth of your burn injury will determine what equipment is necessary for our individualized treatment.

**Intravenous (I.V.) Lines:**
A needle that is inserted into a vein, used to replace lost body fluids and administer medication.

**Foley Catheter:**
A tube inserted into the bladder used to drain, collect, observe, and measure urine output.

**Nasogastric Tube (NG Tube):**
A tube inserted through the nose going into the stomach, designed to empty the contents of the stomach. The intestines slows and sometimes doesn’t work after a major burn. This tube allows the stomach to rest. This tube may also be used to administer medication or feed the patient.

**Feeding Tube (Duotube):**
A smaller tube inserted through the nose going into the stomach or intestine to provide desperately needed food for healing. These feeding tubes are used when the patient is unable to eat or will not eat.

**Telemetry or Heart Monitor:**
Enables the health care providers to observe your heart’s activity and obtain your vital signs.
**Pulse Oximeter:**
A smaller monitor that enables the health care providers to measure the amount of oxygen in your tissues and read your pulse.

**Ventilator:**
A machine used in the critical care area that assist the patient with breathing or even breaths for the patient when needed.

**Oxygen by Mask or Nasal Cannula:**
A small mask that is placed over the patient’s mouth and nose or small tube placed in the nose to administer oxygen. Often during the time of burn injury you may have inhaled heated air and toxic gases. Oxygen will help your lungs remove such toxins.

**CRRT Machine (Bedside Dialysis):**
Used in critically ill patients with renal failure who cannot tolerate normal dialysis treatments. The goal of CRRT is to allow the kidney a period of rest so that it can reestablish the functions of filtering the blood and removal of waste products with preventing additional problems.

**Central Line (Swan-Ganz Catheter):**
A special catheter with several lumens (ports) that is placed into one of the larger veins in the body (usually in the neck, chest or groin). These catheters allow for closer monitoring of the patient and also provide more intravenous access for the nursing staff to give medications and blood products.
Occupational Therapy and Physical Therapy

All patients are seen by our Occupational Therapy (OT) and Physical Therapy (PT) staff, for an evaluation of their ability to move and perform normal daily activities with the first day or two of admission. This is because range of motion, of any burn, needs to start immediately!

You should NEVER “rest” or “splint” a burn injury!

Burn injuries can often cause scarring, loss of strength and mobility, and sometimes cause the loss of use of parts of our bodies. Our Occupational and Physical Therapists work closely with the patient, doctors, nursing staff, and families to make sure the patient stays as strong as possible and to help with recovery.

**Positioning** – when skin gets burned it becomes tighter and doesn’t stretch as well. This is especially true after getting skin grafts. Our Therapy staff will visit the patients (who need it) daily, and move and stretch the burn areas, to keep them loose and working. Proper positioning is important to keep joints and tissue from becoming too tight, and helps to promote healing. Sometimes the patient has to put a body part up on pillows for proper positioning, or sometimes pillows are taken away. Sometimes arms and legs are lifted up in the air to help with healing. Ask your Occupational Therapy and Physical Therapy staff to tell you what you need and what therapy will need to be done. Try to make sure to help yourself heal by following their advice.

**Splints** – a splint is something that keeps a body part in a certain position, so that it will heal better. Our Occupational Therapy and Physical Therapy staff will decide if you need splints, and if so, will make them for you. Splints can be made from foam, plastic, metal, or plaster. Splints are often used after surgery in order to keep an area that has been grafted in the right position. Sometimes you are asked to wear the splints for just a little while each day; sometimes you may need to wear the splints all day and maybe at night while you are sleeping.
**Strength Training** – As you begin to get better, our Occupational Therapy and Physical Therapy staff will get you up and out of bed, and begin to help you get stronger. At first this may be just sitting in a chair next to your bed, but soon you will be helped to get up and do exercises to strengthen your muscles. Each patient’s needs are looked at, and a special program is developed to meet those needs. We encourage you to take care of your personal needs (bathing, dressing, caring for hair etc.) as soon as you are able. We will help you to get stronger by giving you different programs of exercise, such as walking, stretching, and even using weights in our therapy rooms. These exercise programs may be needed for several months after you go home from the hospital, and you may need Occupational and Physical Therapies as an outpatient.
Nutrition

Burn patients have different nutritional needs than healthy people. Doctors and dietitians closely follow burn patients to make sure they get the nutrition they need.

Nutritional needs increase for burn patients. The body works harder to heal itself, and to do this it needs more calories, protein, vitamins and minerals. Larger burns require more calories, protein, vitamins and minerals to heal.

Calories come from food and give the body the energy it needs to heal. The body uses calories to aid in wound healing.

Protein is needed for healing after a burn injury. Foods that are good sources of protein include meat, poultry, fish, beans, nuts, milk, and dairy products. The body uses the protein you eat to replace protein lost through the wound and to repair and rebuild damaged tissue.

You will also need extra vitamins and minerals for wound healing. A multivitamin, in addition to your diet, should meet increased vitamin and mineral needs. If your wound is very large you will need extra vitamin A, vitamin C, and zinc. Your doctor and dietitian will evaluate your wound to determine if this is needed.

At the Arizona Burn Center you will receive high-calorie, high-protein meals that contain many vitamins and minerals. The meal will include high protein drinks (like Boost or Ensure) that are also high-calorie and rich with vitamins and minerals. You will be encouraged not to drink too much water because it has no nutritional values. Eating all of this diet is very important to help your wounds heal.

If you are not able to eat enough to meet your body’s need, then you may need to receive some or all of your nutrition through a tube feeding. The tube feeding will help you receive the calories, protein, vitamins and minerals your body needs to heal. Your doctor and dietitian will follow your progress to decide if this is needed.
NUTRITION FOR HEALING

When your body needs to heal you need to eat foods that give you enough calories, protein, and vitamins and minerals. Your body needs more of these nutrients during the healing process. Calories give your body the energy it needs to heal. Protein helps to repair and rebuild damaged tissues. Certain vitamins and minerals are also needed for wound healing. Giving your body proper nutrition with a balanced, high-calorie/high-protein diet will help you heal more quickly. Following are some tips on how to get proper nutrition to heal.

◆ Every day eat at least…
  ◆ 6-11 servings of the breads, grains and cereals
  ◆ 3-5 servings vegetables
  ◆ 2-4 servings fruit
  ◆ 3-4 servings of meat, poultry, beans, fish and nuts
  ◆ 3-5 servings of milk and dairy

◆ Eat snacks every day.
  Snacks between meals will help increase your total calorie and protein intake for the day.

◆ Eat protein foods with each meal and each snack.
  Good sources of protein foods are meat, poultry, fish, beans, eggs, nuts, milk, yogurt and cheese.

◆ It may help to drink beverages after meals.
  This may leave more room in your stomach for food at a meal.

◆ Take a multivitamin with minerals every day.
  You can find them at any supermarket or pharmacy. Use brands such as Centrum or the store brand multivitamin (for example, Sentryvite from Wal-Mart).
Other tips:

♦ Eat frequently during the day.
♦ It is best to get your nutrition from food; however, if you find it difficult to eat enough you may need to use liquid nutritional supplements such as Carnation Instant Breakfast, Slim Fast, or Boost. These can be used as snacks or to supplement a meal.

Following is a list of foods that may help you maintain a high-calorie/high-protein diet:

<table>
<thead>
<tr>
<th>Food</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese</td>
<td>Add to sandwiches, meat, and vegetables. Add it to casseroles, sauces, rice, potatoes and eggs.</td>
</tr>
<tr>
<td>Non-fat powdered milk</td>
<td>Add it to milk, casseroles, sauces, soups and shakes.</td>
</tr>
<tr>
<td>Ice cream/yogurt</td>
<td>Add to milk, soda, cereal, fruit, jello, pies and desserts.</td>
</tr>
<tr>
<td>Eggs</td>
<td>Add hard-boiled eggs to vegetables, salads, casseroles, soups or pasta. Add eggs to your breakfast. DO NOT EAT RAW EGGS!</td>
</tr>
<tr>
<td>Meat/Fish/Poultry</td>
<td>Add to omelettes, sandwiches, salads, casseroles and soups</td>
</tr>
<tr>
<td>Beans</td>
<td>Add to soups, pasta, rice and salads</td>
</tr>
</tbody>
</table>
Snack ideas:
- Crackers and cheese
- Graham crackers and peanut butter
- 1/2 sandwich with meat
- Quesadilla (add beef or chicken if desired)
- Cottage cheese and fruit
- Yogurt or pudding
- Liquid nutritional supplement (listed above)
- Milkshake…
  1 cup milk
  1 package instant breakfast, 1 can liquid nutritional supplement, or 1/3 cup non-fat powdered milk
  1 cup ice cream
  Add chocolate syrup, or fresh or frozen fruit to flavor
  Blend until smooth.

If you have any questions about this diet feel free to contact the Nutrition and Foodservice Department at Maricopa Medical Center (602) 344-5478.
Our philosophy of caring for children is "family centered." That means we will support you in remaining involved in the care of your hospitalized child. We strongly believe that you and your family are very important to your child's well being and recovery.

**Pediatric Intensive Care Team**

There are a specialized group of children’s doctors who specialize in pediatric intensive care that will be working with the Burn Team and your child. These doctors work with children who are very sick and you can be assured that pediatricians will always be involved in your child’s care.

**Pediatric ICU and Pediatric Ward (3rd Floor)**

At times, due to your child’s illness, or limited space in the Arizona Burn Center, your child may be transferred upstairs to the 3rd floor. The hospital's Pediatric Unit is located on this floor. Not only is there an intensive-care area for very sick children, but there is also an area where children with less serious illnesses are admitted. Be assured that the burn team along with the pediatric doctors will handle the complete care of your child.

Your child’s nutritional needs will change after a burn injury. The doctors will consult with a dietician to determine your child’s needs. Providing enough calories for your child is difficult, because the body uses so much energy to heal itself. If it seems to you like your child is being given a lot more calories than usual, you are right. This is a very important part of the recovery process. Your child will receive added proteins, carbohydrates, fats and vitamins and minerals to help the body in the recovery process.
Child-Centered Programs

The psychosocial team at the Arizona Burn Center is an important part of the healthcare team. They are dedicated to working with parents to care for your child in the best possible way. Our trained psychosocial specialists focus on the emotional needs of your child and your family. The staff will help your family become learn about the hospital environment. The staff also reinforces your very important contribution to the care giving of your child and supports you in your role as the parent of your child.

The team is familiar with the different ways in which children react to being in the hospital. Sick children's reactions vary according to their age and stage of development. These specialists may work with your child/teen to help prevent or decrease possible negative reactions to being hospitalized. They work to help the child/teen better understand what is happening to them, and why. The child is given a chance to play, ask questions, and let their feelings out. The Child-Centered Team may also be available to help your child’s brothers and sisters better understand and deal with the injured child’s situation. The Child-Centered Team is available should your child need to deal with more sensitive issues such as surgery, physical changes, bereavement, and related topics. The Child Life Specialist on the pediatric floor supervises a great PLAYROOM! This playroom is only for children and offers many games and activities for children of all ages.
Pediatric Dressing Changes

Parent Information Sheet/Dressing Changes for Children
Rules of the Arizona Burn Center

1. Dressing changes are very important to the recovery of the burned child.
   • They must be done, everyday, often twice a day! *

2. Dressing changes can be painful even with the drugs given to decrease the pain and anxiety.

3. The Arizona Burn Center prefers that parents not participate in the first several dressing change sessions. However, if you would like to participate, with the nurse’s permission, you must agree to the following:
   a. You are only allowed in the treatment room to assist in comforting your child. You may not help do the dressing change.
   b. Should you feel uncomfortable during the dressing change, please tell the nurse (i.e. dizziness or nausea). You should also leave immediately.
   c. If the nurse feels that your presence is making the dressing change more difficult, in spite of your good intentions, and he/she asks you to step out and wait… please do so.
   d. If you have concerns about the dressing change please address them with the nurse. If you feel your concerns are unanswered please ask to speak with your child’s doctor after the dressing change is completed.
   e. Singing, counting, or praying with your child can be good ways to distract them. Playing their favorite music is also helpful. Please feel free to bring music from home to be played during the dressing change.
   f. All parents or guardians will be instructed on how to change dressings before your child is discharged.
Pressure Garments

In the top layer of normal skin there is special tissue that applies pressure on the lower layers. This pressure helps the skin to keep growing, helps to heal injured skin and assists in preventing serious scarring.

When the skin is burned and the top layer can no longer provide this pressure, scarring occurs. Scarring can produce abnormalities in the skin and cause deformities. That is why pressure garments are used on burn patients. The pressure garments apply pressure, much like the top layer of skin and help to reduce such scarring called **hypertrophic scarring**. The garments help to allow for soft pliable scar tissue to form. This tissue not only looks more attractive, but it can allow the patient greater movement. Garments help reduce inflammation and itching and can help flatten the scars. They can also protect the burn area from further injury.

It is very important for burn patients to start using pressure garments while their scars are active and new. Scar tissue will respond well to treatment in the beginning stages and it is very important for the patient to wear the garments in order to reduce scarring. These garments need to be worn 23 hours a day. They should only be removed when the patient bathes or showers. Patients typically wear the garments for anywhere from 12 to 24 months. Silicone (special plastic sheets) may be placed under the garment to add more pressure and further reduce scarring. Your doctor may order these based on how your skin looks.

Pressure garments are fitted to the individual patient by a skilled technician. They need to be well cared for in order to do the best possible job for the patient. Discuss the cleaning and care of your garments with your pressure garment specialist in the Arizona Burn Clinic.
Orthotics – Pongratz Orthotics and Prosthetics, Inc.

Orthotics and Prosthetics is a branch of mechanical and medical science that deals with the support and bracing of weak or ineffective joints or muscles.

Pongratz Orthotic and Prosthetics provides complete orthotic and prosthetic services to burn patients which can include, among other things, face masks, dynamic splints, and mouth stretchers.

Available 24 hrs/7 days on call emergency

Phoenix Office: Monday through Friday 7:00AM – 5:00PM
2530 East Thomas Road
Telephone: (602) 222-3032

Tucson Office: Monday through Friday 7:00AM – 5:00PM
Telephone: (520) 322-4499 or Toll Free: 1-800-822-3032

For more information on Orthotics & Prosthetics: www.amputee-coalition.org
Follow-Up Care

Clinic Hours:

Tuesday: 10 AM to 3 PM

Wednesday: 9 AM to 2 PM

Friday: 8 AM to 12 PM

The Arizona Burn Clinic
(602) 344-5112 / (602) 344-5575
2601 E Roosevelt. Phoenix, AZ 85008
(602) 344-5726- Main Desk

The Arizona Burn Center
Out Patient Clinic Instruction Sheet

Patients referred to the Arizona Burn Center Outpatient Clinic are routinely seen once a week until the burn or wound is completely healed. After that patients are generally seen every 1 to 3 months for at least 1 year. Patients with continuing burn or wound issues will be seen until those issues are resolved.

Listed below are the basic principles of wound care regarding your burn injury.

**Silver Sulfadiazine Dressings**

Silver Sulfadiazine is an antibiotic cream ("the white stuff") that prevents infection and promotes healing. It is used on deep (2\textsuperscript{nd} and 3\textsuperscript{rd} degree) burns. It also has a cooling effect that helps relieve pain. This dressing needs to be changed once a day. If you prefer to do it twice a day, that is okay. Follow the guidelines below:

1. Take pain medication 30 to 45 minutes prior to changing your dressings
2. Remove the dressing; often wetting it will help.
3. Wash the burn with mild soap and warm water using a washcloth, removing all the old ointment and any loose skin or debris.
4. Blot dry with a clean towel.
5. Apply a thick coat of Silver Sulfadiazine (like icing on a cake) and cover with a minimal amount of gauze dressing. Silver Sulfadiazine tends to work better when some air can get through the dressings.
6. When you change your dressing, you may notice that the cream has turned gray or yellow. This is normal.
**Bacitracin and Adaptic (B&A)**
Bacitracin is an antibiotic ointment (“the clear, greasy stuff”) that promotes healing. It is used on burns that aren’t very deep (1st or 2nd degree) or that are close to healing. Adaptic is a non-stick dressing that makes dressing changes easier. This dressing needs to be changed once a day. If you want to do it twice a day, that is okay. Follow the guidelines below:
1. Take pain medication 30 to 45 minutes prior to changing your dressing.
2. Remove the dressing, wetting the dressing may help.
3. Wash the burn with mild soap and warm water using a wash cloth, removing all of the old ointment and any loose debris.
4. Blot dry with a clean towel.
5. Apply a thin layer of Bacitracin and cover with one sheet of Adaptic.
6. Cover with a minimal amount of gauze dressing.

**Acticoat**
Acticoat is a silver coated antimicrobial burn dressing. A gauze dressing with silver inside. This dressing is used to treat second and third degree burns and is often used in skin sloughing diseases. The silver helps fight infection and keeps the wound clean. Acticoat normally is wetted every 12 hours with sterile water and the dressing is changed every 2 to 3 days. On certain wounds, the Acticoat can be left in place for up to 5 to 7 days.

**Aquacel-Ag**
A gauze dressing (actually artificial seaweed) that is applied directly to the burn wound or donor site. It is used most often on superficial (second degree) burn wounds. An outer dressing of dry gauze is then applied and will be changed every two to three days. The dressing forms a gel then after several days hardens and will eventually fall off or be removed by your doctor. The dressing has silver inside the fibers in order to fight infection and keep the wound clean. The dressing once "stuck" does not need to be removed and can stay on for up to 2-3 weeks.

**Trancyte**
A collagen sheet impregnated with growth factors that is applied directly to the burn wound. It is used to treat second degree burn wounds. An outer dressing of dry gauze is then applied and will be changed every two to three days. Once the dressing has "stuck" it is left in place until the wound heals below and then the Trancyte falls off or is removed by your doctor.

**Face and Neck Burns**
Face and neck burns are treated with Bacitracin ointment without gauze dressing. The face and neck should be washed twice a day, removing all old ointment and any loose skin or debris. Apply Bacitracin as a thin layer. Reapply as needed during the day to keep the wounds moist (generally every 3 to 4 hours).
Ear Burns
Ear burns are treated with Sulfamylon cream with or without gauze dressings. Sulfamylon is an antibiotic ointment that penetrates deeply into burned tissue. It helps to prevent infection of the cartilage in the ear. The ear should be washed twice a day, removing all old cream and any loose skin or debris. Apply Sulfamylon cream as a thin layer. Reapply as needed during the day to keep the wound moist (generally every 6 to 8 hours).

Pain Control
Burns hurt. Pain medication can improve the pain and enable you to do dressing changes, but it can’t make the pain or discomfort disappear completely. Take your pain medication as prescribed. It is helpful to take pain medication 30 to 45 minutes prior to doing your dressing change. Keeping the burned area elevated will also help reduce swelling and pain.

Bathing
A daily bath or shower is helpful in wound management, especially if done at the same time as dressing change. Shampoo, soap, and other products used in bathing will not hurt the burn wound. Immediately following bathing or showering, perform a dressing change as described above. It is important to get all the cream or ointment off, and to remove as much of the dead tissue as possible. This will help the burn heal faster.

Infection
Infection can complicate burn wound care and slow healing. Signs of infection include increased redness, warmth and/or swelling in the normal skin around the burn, increased pain, and fever. A low-grade fever is normal with burn injuries, but a very high fever is not. Swelling of the burned area is also normal. If your wound appears to be getting much more swollen or redder, if your pain is much worse, or you develop a high fever, contact the Arizona Burn Center.

Diet
A healthy diet, well-balanced, nutritious diet will improve wound healing. It is especially important to eat a high protein diet. It is also important to increase your normal fluid intake. Drink lots of water, juices, and high-protein drinks. Foods high in protein include chicken and other meats, fish, and dairy products such as milk, cottage cheese, and yogurt.

Activity
Maintaining normal mobility and function of the burned area is very important. Activity decreases pain and swelling and actually promotes healing. Therefore, we encourage normal activity unless your doctor tells you otherwise. Don’t allow the burned area to get stiff!
**Occupational and Physical Therapy**
If you are receiving occupational/physical therapy, make sure you keep your appointments. Have your therapist give you exercises to do at home, and do them! Occupational/Physical therapy is the most important part of burn rehabilitation.

**Exposure**
Burns are more sensitive to hot and cold. Avoid extreme temperatures. You should also avoid exposing your burn to direct sunlight for about a year after it has healed. Protect it with sun block and clothing (long sleeve shirts, long pants, hat, gloves, etc.).

**Itching**
Itching is a normal part of the healing process. Itching can vary from minor unpleasant sensation to nearly unbearable agony. The good news is that it almost always goes away with time. The best way to deal with itching is to keep your burn moisturized, wear you compression garments, and exercise the burned area frequently. Your doctor may prescribe medications that will with itching.

**Pressure Garments**
Pressure garments are specially fitted garments, worn to reduce scarring. It is very important for burns patients to start using pressure garments while their scars are active and new. These garments should be worn 23 hours a day. They should only be removed when the patient baths or showers. Patients typically wear the garments for 12 to 24 months. (Please refer to page 47 in the book for more information.)

**Silicone**
Silicone is a special plastic sheet that is sometimes placed under your pressure garments. The silicone sheet adds pressure to the scar to flatten it. Also, the silicone pushes water from the scar to flatten it and may actually increase the temperature of the scar to help reduce its size. The silicone is left in place for 23 hours per day and washed once a day with your pressure garments.

**Questions**
If you have any questions or concerns, the Outpatient Clinic’s hours are listed above. The Arizona Burn Clinic telephone number is (602) 344-5112. If you have question and the Arizona Burn Clinic is closed or there is no answer, you can call the main desk in the Arizona Burn Center at (602) 344-5726. There is always someone available at this number or in the Arizona Burn Center 24 hours a day, 365 days a year. Please feel free to visit our website at: www.azburncenter.com.
Coping with Burn Injuries – being burned can be one of the most terrifying experiences a person can go through. It is a life-changing event, and you may feel that everything has changed after your injury. We want you to know that it is perfectly normal to have lots of difficult feelings and emotions, including fear, shock, anger, frustration, depression, loneliness, and anxiety. Burned patients and their families often find that they are in a state of crisis in the beginning, and that they can’t think straight, can’t remember little things, and feel overwhelmed. This is all normal, and we want to help you grow from your experience. Dealing with the emotions you experience is a very important part of getting better, and we have several staff members who are specially trained to help you.

It is very important for family and friends to recognize that they need to take care of themselves and their needs. Even though you may have little appetite and want to stay close to your loved one, it is important to take time to eat, drink plenty of fluids, and rest during both early and later stages of the patient’s recovery. We encourage you to take breaks from the hospital, and to set up a plan with all family members as to who will visit at what times. Allow others to give you help with your daily activities, such as home chores and responsibilities. Sit down as a family and talk about who will take over the former duties of the burned person. These might include who manages the money for the family, pays the bills, does the laundry, cleans, etc. Don’t worry about being a burden to them – often they want to help in some way but are afraid to ask.

Having a family member in the Arizona Burn Center involves a lot of sitting, waiting, and thinking. You may find that your mind is worrying about all kinds of things, and that you feel overwhelmed by stress you are under. We encourage you to talk about these things with our burn team. We
have nurses, psychologists, social workers, child life workers, and chaplains— all of whom work together to support the patient and family as they recover from the burn experience. Talking it out helps, and we have lots of ideas and strategies to share with you.

You may find that you are in need of additional support once you leave the Arizona Burn Center. The following sources can assist you.

**The Foundation for Burns and Trauma of Arizona**

A non-profit organization dedicated to assisting burn patients and their families in becoming burn survivors. The foundation has a number of excellent programs, which can help you during the crisis period as well as on the recovery journey. As a non-profit human care organization, the foundation is ready to help with emergency needs, family shelter at the Courage House, Camp Courage—a summer, week long rehabilitation camp for child survivors, Ashes to Life—an adult survivor support group, school re-entry, counseling, tutoring, college scholarships and more. Spanish speaking staff is available to help you and your family, cope during this difficult time. The Foundation for Burns & Trauma is located at 2627 North 7th Street in Phoenix, telephone at (602) 230-2041 or website at [www.azburn.org](http://www.azburn.org) (Please see enclosed brochures).

**Foundation for Burns & Trauma’s Mission:** To assist burn victims and their families in becoming burn survivors to prevent of death from fire and burns through prevention education.

**Helpful Websites**

- [www.azburn.org](http://www.azburn.org)
- [www.azburncenter.com](http://www.azburncenter.com)
- [www.burnsurvivorsonline.com](http://www.burnsurvivorsonline.com)
- [www.phoenix-society.org](http://www.phoenix-society.org)
Glossary
Terms You May Need To Know

- **Ace Wraps** - stretchy tan bandages, wrapped around an arm, leg, chest, abdomen used with grafts, burns, and/or donor sites. These bandages give support to dressings and also prevent swelling.

- **Acticoat** - a silver coated antimicrobial burn dressing that kills bacteria and yeast. Used to treat 2nd and 3rd degree burns. It is wetted with sterile water every 12 hours and changed every 2 to 3 days and sometimes left in place for 5 to 7 days.

- **Anesthesia** - medicine used to put a patient to sleep for surgery. It can be given by mouth, through the IV line or by face mask.

- **Antibiotic** - medicine used to kill or prevent the growth of germs (bacteria). It can be given by mouth or through the IV line.

- **A-Line (Arterial Line)** - a small tube placed in an artery by a needle, used to draw blood or read blood pressure. It is placed either in the wrist, the groin or the foot.

- **Aloe Vera Products** - lotions, gels and sprays that used to help your skin heal and protect it after it has healed. These need to be applied every 4 to 6 hours to keep the skin moist and to prevent dryness and skin cracking.

- **AgSD (Silvadene)** - a white antibiotic cream put on burns to prevent infection, keep burns moist, and to help with healing.
- **Aquacel-Ag** - a gauze dressing that is applied directly to the burn wound or donor site. Used on superficial and mid-thickness 2nd degree burns. The dressing has silver inside that helps kill germs (bacteria). Once the dressing is stuck in place, it is usually left in place for up to 3 weeks.

- **B&A (Bacitracin & Adaptic)** - Bacitracin is an antibiotic gel (i.e. vaseline like gel) used to treat 2nd degree burns and healing skin grafts and donor sites. This gel is rubbed into a non-stick gauze-like material (Adaptic) and then placed on the burn wound or donor site to act as a bandage.

- **Bear Hugger** - A machine that blows warm air into a blanket to help warm a patient.

- **Blood Pressure** - a way of telling the pressure of blood flow in the body in order to determine how well the heart is working and how well the blood is circulating.

- **Cardiac Monitor (ECG)** - a machine that shows heart rate, blood pressure, and other important information like breathing rate and overall how the body is working.

- **Central Line (Triple Lumen/Swan Ganz)** - a special catheter with several lumens (ports) that is placed into one of the larger veins in the body (usually in the neck, chest or groin). These catheters allow for closer monitoring of the patient and also provide more intravenous access for the nursing staff to give medications and blood products.

- **Cellulitis** - an infection of the skin and underlying layers, (sometimes surrounding the burn wound) that looks red, feels warm, and often has swelling and pain.

- **Circumferential Burn** - a burn that completely wraps around an entire body part and may cause loss of blood flow to that body part. Surgery is often needed to open the burn and allow blood flow to return. This is called *Compartment Syndrome*. This problem may occur due to burns to the fingers, hands, wrists, forearms, arms, legs and feet.
- **Collagen** - a building block (protein) of the skin made up of tiny white fiber that gives strength and durability to the skin.

- **Compartment Syndrome** - Often seen with *Circumferential Burns*, too much swelling cuts off the blood and nervous input to a body area, causing further harm. To correct this problem, surgery may be required to open the burn wound.

- **Conjunctivitis** - an infection of the lining of the eyelids causing the eyelid and sometimes the eye to be red and painful. Eye drops or antibiotic ointment is used to treat.

- **Contracture** - when scar tissue tightens and shortens, pulling on the skin around the area. If near a joint, this often leads to decreased function. A surgery *(Contracture Release)* with either a release of the scar or new graft placement maybe needed to fix the problem.

- **Contracture Release** - an operation to remove the scar tissue that is making it harder to move a certain area. Often more than one operation is need to correct the problem.

- **CPM Machine (Continuous Passive Motion Machine)** - Used often when burns cross a joint and there is decreased function of an arm or leg. The machine continuously move the extremity in order to increase range of motion.

- **CRRT (Continuous Renal Replacement Therapy)** - Used in critically ill patients with renal failure who cannot tolerate normal dialysis treatments. The goal of CRRT is to allow the kidney a period of rest so that it can reestablish the functions of filtering the blood and removal of waste products with preventing additional problems.

- **Cultured Epithelial Autografts (CEA)** - skin that is grown in a lab after a biopsy of a patient’s skin is removed. Used only in patients with large burns due to limited donor sites.

- **Escharotomy** - a surgical incision (cut) made in the eschar (burn) to relieve pressure and help blood flow to the hurt area. This is the type of operation is used to treat *Circumferential Burns* and *Compartment Syndrome*. 


- **Debridement** - scraping or wiping away dead skin using a *Norsen* (see picture). This treatment is only used in the Arizona Burn Center.

- **Dermatome** - a tool used in the operating room to take off a thin layer of skin from a non-burned area, that is then placed over a burned area. This is how skin grafts are made in the operating room.

- **Dermis** - the inner, thick layer of skin.

- **Donor site** - the area of the body from which the non-burned skin is taken. These are often taken from the legs or buttocks and are treated with *Kaltostat* and *Op-Site* to heal.

- **Duotube (Feeding Tube)** - a small flexible tube, placed in the nose or mouth, and is positioned in the stomach or small bowel, to aid in feeding the patient.

- **Edema (Swelling)** - caused by body fluids collecting in a certain area of the body. Often seen around the burn wound or sometimes, especially in large burns, throughout the whole body. It may take days to weeks for the swelling to go down.

- **Enzymatic Debriders** - medicines used to clean away dead skin or burn wound that is not coming off during normal dressing changes.

- **Epidermis** - the outer thin layer of skin.

- **Eschar** - the dead skin and tissue covering a burned area. This skin is often yellow, gray or brown in color. It often feels like leather, very tough to the touch.
- **Eucerin or Aquaphor Cream** - thick white lotions/creams that are put on healed burns, grafts and donor sites.

- **Excision** - cutting away dead tissue, while the patient is in surgery.

- **Extubate** - to remove an endotracheal (breathing) tube that was placed to help with breath on the mechanical ventilator.

- **Exudate** - the fluid that comes out of an open wound.

- **Fascia** - the sheets of stringy (fibrous) tissue, which covers muscle.

- **Fasciotomy** - a cut made in the fascia to expose muscle to relieve pressure and help blood flow to the hurt area. This type of operation is often used to treat severe *Circumferential Burns* and *Compartment Syndrome*.

- **Fluid Resuscitation** - giving the patient lots of fluids needed in the body’s reaction to being burned, usually through tubes put into the patient’s veins.

- **Fluoroscein** - a medicine put in the eyes to check for scrapes or burns on the covering of the eye.

- **Foley Catheter** - a tube that goes into the bladder so that the patient can pass urine. It is connected to a bag to collect and measure the amount of urine made every hour.
• **Graft (Autograft)** - skin that is taken from one’s own body and placed on the burned area, so that it can heal.

• **Granulation tissue** - new growth of tissue, usually seen in deep wounds or burns consisting of fibrous tissue and blood vessels. This tissue may heal well but sometimes scars and may need skin grafting.

• **H-base** - skin lotion placed on healed burn skin or healed donor sites to improve wound healing, decrease itching and keep the skin soft and comfortable.

• **Homograft (Allograft)** - a skin graft taken from the skin bank and placed on the burn to help it heal. Later, an *Autograft* must be taken from the patient’s own body and placed to this area for final healing.

• **Hypertrophic Scars** - Usually seen after severe burns that heal on their own or sometimes after skin grafting. They are large raised scars caused by too much protein in the skin. They often have to be surgically removed or have skin grafts placed over them for better healing.

• **I’s & O’s (Intake and Output)** - The nurses will measure how much goes into and comes out of the patient’s body. This includes diet, tube feeds, IV fluids, urine output, stool and any fluid from drains or catheters.

• **Infection** - invasion by and multiplication of germs (bacteria) in a body part or tissue that can cause additional injury. Often recognized by *Cellulitis* and/or pus from a wound or burned area. Infection can worsen and overwhelm the body and causes *Sepsis* which is life-threatening.

• **Inhalation Injury** - burns to the throat, airways and lungs caused by breathing in hot vapors, hot smoke, chemicals or flame. This injury often requires the patient to be *Intubated* and the use of the *Ventilator* (breathing machine).

• **Integra** - An artificial skin used to rebuild areas of deep burn and also used to surgically treat *Contractures.*
- **Intensive Care** - hospital rooms with special machines (Cardiac Monitors) that measure the patient’s heart rate, breathing, blood pressure, etc. **IV pumps** and **ventilators** are also often used in these patients. Patients are placed in these rooms when they need to be watched very carefully (Usually Arizona Burn Center Rooms 1-10).

- **Intravenous Lines (IV)** - an IV is a catheter placed into a vein using a special needle. Once placed, the catheter is attached to tubing that runs through an **IV Pump** that gives the patients medicines and other special fluids.

- **IV Pumps** - a machine that helps give patients their medications and fluids. The pumps allow the nurses to give the fluids per hour by setting the rate (flow) of each medication or fluid.

- **Intubate** - the procedure of placing a breathing tube (Endotracheal Tube) into the trachea (main airway) in a patient who is having difficulty breathing.

- **Kaltostat** - a thin sheet of calcium alginate (artificial seaweed) used to treat donor sites. It is covered with either a thin piece of plastic (Op-Site) or gauze (Kerlix). It is changed frequently but usually heals the donor within 7 to 10 days.

- **Keloid scars** - a raised, thick, firm scar that grows beyond what is needed for healing. These scars are similar to the **Hypertropic scars** and are more common in people with darker skin color.

- **Kerlix** - white gauze bandages used to wrap over burn dressings, to help to keep them in place.

- **Mepitel** - A silicone dressing used over grafts to help hold them in place. The silicone does not stick to the grafts or wounds and decreases pain with dressing changes.

- **Mesh Graft** - a skin graft that is put through a special machine in the operating room that makes perforations in the skin graft. This allows the skin graft to be stretched to cover a larger area.
- **Nasogastic (NG) tube** - a tube placed through the nose or mouth and down into the stomach, used to either suck things out of the stomach, or for it is used for feeding and giving medicines.

- **Necrotic Tissue** - dead tissue that is the result of either severe burn injury or other skin diseases. Treatment often requires surgical removal of the tissue with skin grafting.

- **Norsen** - a tool used to scrape away burn (Eshcar) or other soft dead tissue on a burn wound. This tool is only used in the Arizona Burn Center by the nurses or burn techs.

- **NPO (Nothing Per Os)** - an abbreviation that means the patient cannot have anything to eat or drink. Typically this happens the night before surgery.

- **Pig Skin (Xenograft)** - specially treated skin taken from pigs and placed on burn wounds as a temporary cover, and later removed when the patient is grafted with their own skin.

- **Pressure Garments** - once the burn wound or skin grafts have healed well these garments are used. They are tight-fitting stretching clothing that is made for some patients to help prevent swelling and to help create smooth skin after grafting. They are worn 23 hours a day for usually a year or more.

- **Prosthesis** - an artificial body part, such as an arm or leg, used if the patient’s injuries caused them to lose their own body part.

- **Re-epithelialization** - skin “buds” grow together to form new skin, often like “goose bumps.”

- **Sepsis** - an infection that spreads through the body. This is a life-threatening condition that often requires Intensive Care along with antibiotics and other special medications.
- **Sheet Graft** - and *Autograft* that is not meshed or perforated. It is a sheet of skin taken from one’s own body to place over the burn area (non-perforated).

- **Silvadene** - see AgSD.

- **Split Thickness Skin Graft (STSG)** - a skin graft that is made of the epidermis and part of the dermis. This is the normal thickness of an *Autograft* or *Homograft*.

- **Splint** - stiff foam plaster or plastic used to keep a part of the body in a certain position. Used to provide support, decrease swelling, prevent contractures, and to maintain proper position of the body part. The physical and occupational therapists will make, position and instruct the patient, family and nurses on how to care the splints.

- **Tracheostomy** - a cut made by a surgeon into the neck, that allows a tube to be placed into the lungs, to help the patient breathe. Sometimes a “fenestrated” *Tracheostomy* tube is used, that allows the patient to breathe out over their vocal cords, allowing them to talk.

- **Trancyte** - a collagen sheet impregnated with growth factors used to treat second and sometimes third degree burns.

- **Tube Feeds** - feedings administered through a tube (*Duotube* or *Nasogastric tube*) placed through the nose and into the stomach or intestine, to give plenty of food for healing. Burned skin needs lots of food to heal - sometimes more than the person can eat.

- **Ventilator (Vent)** - a machine used to help the patient breathe. It is attached to either an *Endotracheal Tube* or *Tracheostomy Tube* and oxygen is then provided by the machine to help the patient get well.

- **Vital Signs** - blood pressure, pulse (heart rate), breathing rate, temperature and pain assessment. All important values in determining how well a patient is doing.
NOTES
It is often helpful to keep a journal, and list questions while at the Arizona Burn Center.