

A SELF - HELP GUIDE

# Burn Care

**Recovery • First Aid • Preventing**



# **A Guide to Burn Care**

## **• Recovery • First Aid • Prevention**

Written by Kenneth Wright  
In consultation with Judy Knighton, R.N., M.Sc.N.; from the  
Sunnybrook Hospital, Ross Tilley Burn Centre, Toronto

Thanks also to: Maryann Smith, B.A., R.N.; Jane TenEycke,  
B.Sc., R.N.; Bonnie Abdale, M.S.W.; Sylvia Cooper, B.Sc., O.T;  
Lydia Pashutiniski, B.A.Sc., R.P.D.T, and Evelyn Paul, R.P.T.

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Burn care. Burn prevention. Burn first aid. Self help.  
Burn recovery.

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## Glossary

**Antimicrobial:** A substance that will kill or stop the growth of microorganisms like bacteria.

**Contractures:** Restricted movement of a joint caused by scar tissue or loss of normal stretchiness of the skin.

**CPR – Cardiopulmonary Resuscitation:** A first aid technique for reviving a patient who is unconscious, not breathing and pulseless.

**Debridement:** Removal of dirt and dead tissue from a burn wound.

**Epithelialization:** The regrowth of skin cells.

**Eschar:** The scab or dry crust of a burn wound.

**Grafting:** Skin tissue taken from a site or a person and put into a new site or person.

**Hydrotherapy:** The use of water to treat physical problems.

**Hypertrophy:** An increase in the size of the skin caused by an increase in the size of the skin cells rather than the number of cells.

**Necrotic:** Pertaining to dead skin tissue.

**ROM:** Exercises that will improve the Range of Motion of joints.

**Superficial:** Relating to the top surface of the skin.

**Topical:** Referring to the surface of a part of the body.

**Tubbing:** The name for a specialized bath as part of burn treatment.



## Introduction

Burn care and subsequent healing is probably not a topic that the average person would read about if given the choice between a good book or magazine article. However, burn accidents do happen, and survivors, caregivers and family members have to deal with the uphill battle of recovery and returning to a normal quality of life.

The pain, discomfort and amount of time it takes to recover from this sort of injury makes for a traumatic experience for everyone concerned.

In North America, almost 2.5 million burns are treated in hospitals each year – most of these could have been prevented. We hope this book can help to greatly reduce that number by creating awareness of the traumatic nature of burn injuries and providing some simple common sense measures that can be taken to prevent them.

With this in mind, we like to think the purposes of this book are as follows:

- A.** To create awareness of the nature and seriousness of burns.
- B.** To motivate the reader to take all possible preventive and safety actions at home or at work in order to avoid such an accident on your part or that of a family member.
- C.** To provide information on what to do if a fire breaks out in your home.
- D.** To enable the reader to give basic first aid to someone suffering from a burn injury.
- E.** To remove any fears and concerns you may have about burn treatment.

The information in this book is basic, and does not involve any “hands-on” training or role playing. Consequently, we suggest that if you wish to be truly competent and confident when it

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comes to first aid, you should enroll in a local community training class or St. John Ambulance course. This is especially relevant for the more complex artificial respiration and cardio resuscitation instructions for electrical burn injuries.

It is very important to comply with treatment and follow the procedures for caring for a burn “to the letter” to ensure the best possible outcome for you or your loved one.

This book is not meant to replace the advice of your physician or nurse regarding burn care or treatment. If anything, the material here is designed to help you communicate with your health care team in order to improve your success and satisfaction with your treatment.



# Section 1: Understanding Burns and First Aid

## Types of burns

There are four major types of burns, depending on the nature of the accident:

### 1. Thermal burns

There are usually two categories of thermal burns:

- Skin injury from dry heat due to contact with a flame or hot object. Usually a large surface area of the body is affected and the burn damage may be quite deep into the skin.
- Scalds caused by steam or boiling hot liquids. These types of burns range in severity from superficial to very deep and can be extremely serious if a large surface area of the body is involved.

### 2. Chemical burns

These are caused by strong chemicals such as acids or alkalis and can very quickly cause skin damage. They can be even more serious if these chemicals are swallowed and damage is done to the mouth and throat, or if the patient is exposed to the chemical for a prolonged period of time and absorption occurs.

### 3. Electrical burns

An electrical current can create a burn injury at those points where it enters and leaves the body. The burn injury in these cases can be quite deep into the skin. There are further associated problems where an electric shock can cause breathing dif-

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difficulties and affect the activity of the heart. Immediate resuscitation by trained first aid or health care professionals is sometimes necessary to save the injured person.

#### **4. Radiation**

The all-too-common problem of sunburn fits into this category; too much exposure to the sun can cause redness, swelling and blistering. Other sources of this sort of burn include overexposure to ultraviolet radiation, such as sun lamps and tanning beds.



## First aid treatment

### The basic aims of burn first aid are:

1. To lessen the effects of heat.
2. To reduce pain.
3. To prevent infection of the burned skin area.

The first action to take for a severe burn or scald is to call 911 for an ambulance and any other number that can quickly bring medical help. The severity of a burn can be minimized when appropriate first aid measures are taken at the scene of the accident. The correct sequence of events immediately following a burn injury is suggested by the catch phrase, “Stop, drop, roll and cool”: **Stop** – don’t run; **drop** to the ground; **roll**, to put out the fire, and **cool** with water to stop the burning.

### The following are general first aid tips for all burns:

Do not touch burns – this can cause infection.

Do not break blisters if they are small, look clean and are not around joints. If they do break, carefully cut away the loose skin with a clean pair of scissors and cover the open area with a clean bandage or dressing or a moist cloth until medical care is given.

Do not apply ointments, lotions, or oily dressings; they can have the effect of keeping heat in instead of letting the heat out. NO BUTTER, FLOUR OR TOOTHPASTE, PLEASE.

Do not use gauze, cotton, wool or anything likely to stick when covering a burn.



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Do not give anything by mouth to an unconscious person. A person who is conscious and complains of thirst should be given small sips of water only.

Swelling can occur around the burned area, so ensure that anything constrictive – clothing, jewelry, etc. – is removed or loosened as soon as possible.

For large surface area superficial burns, seek medical help.

For all deep burns and electrical burns, seek medical help.

For burns to elderly people or infants, seek medical help.



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**The following first aid instructions are recommended for the different categories of burns:**

**Thermal burns**

1. Cool the affected burn area with cold water. This can be achieved by placing it under running water, immersing it in water or by applying a wet cloth to the burn.
2. Remove rings, bracelets or other jewelry as quickly as possible before the swelling begins.
3. Cover the burn with a clean cloth or preferably a sterile, lint-free dressing (even a facial tissue will work) and secure this lightly with a bandage or one that is improvised from an article of clothing.
4. Seek hospital treatment for burns and scalds larger than the size of a quarter in area. If you have any doubts, err on the side of caution and go to the hospital.
5. Do not breathe or cough on the burn.
6. Do not touch the burn.
7. Do not break blisters.
8. Do not remove clothing stuck to a burn.
9. Do not apply medications, ointments or greasy substances to the burn.

**Chemical burns**

**A. Wet chemicals**

Corrosive chemicals such as acids and alkalis are always serious because the chemicals will continue to burn the skin for as long as they remain there.

1. Immediately flush the chemical away with water – lots of water!
2. Do not wait to remove clothing around the affected area.
3. Continue flooding the affected area while removing clothing at the same time.



4. Continue flooding until all the corrosive chemical has been washed away.
5. Do not use any so-called chemical neutralizers such as vinegar, baking soda or alcohol to treat any chemical burns.
6. If a corrosive chemical spills on the eye, flush the eye slowly with running water for at least 10 minutes. If necessary, hold the eyelids open with your fingers.
7. Continue the first aid instructions as previously described for a thermal burn from points 2 to 9.

### **B. Dry chemicals**

If the chemical is not wet but dry – like lime, a common corrosive – it should be brushed off before flushing or flooding the burn injury with water. Then, follow all the instructions listed for first aid treatment of a wet corrosive chemical.

### **Electrical burns**

Burns from this type of injury may be far more serious than they appear. There could be life-threatening associated injuries involving breathing or heart difficulties. The injured person may have been violently thrown by the force of the electrical shock, causing serious physical injuries such as broken bones or damage to internal organs. It is vital in these cases to seek emergency medical assistance.

1. Do not touch the injured person until the electricity is turned off.
2. Carefully turn off the electrical source causing the injury.
3. Check the injured person for pulse and breathing.
4. Give artificial respiration or cardiopulmonary resuscitation (CPR) if necessary (see instructions on the following pages).
5. Locate the burn damage area. This is usually located where the electrical current entered and left the body.
6. Apply a clean, dry dressing over the burn areas.
7. If you have not already done so, seek medical aid by calling 911 or other means.



## Artificial Respiration Guidelines

### Adult Casualty

#### A. Give two breaths

1. Open the airway.
2. Cover the casualty's mouth with your own and pinch nostrils (fig 1).
3. Give enough air to make the chest rise.



fig 1

#### B. Check for carotid pulse for 5-10 seconds (fig 2)

1. If pulse present, give one breath every 5 seconds.
2. If pulse absent, START cardio-pulmonary resuscitation (CPR).



fig 2

### Child Casualty

#### A. Give two breaths

1. Open the airway.
2. Cover the child's mouth with your mouth and pinch the nostrils.(fig 3)
3. Just give enough air to make the chest rise.



fig 3



- B.** Check carotid pulse for 5 - 10 seconds
1. If pulse present give one breath every 3 seconds. (fig 4)
  2. If pulse absent START CPR.



fig 4

### **Infant Casualty**

- A.** Give two breaths
1. Open the airway.
  2. Cover the infant's mouth and nose with your mouth (fig 5).
  3. Give just enough air to make the chest rise.



fig 5

- B.** Check brachial artery (inside upper arm) pulse for 5 - 10 seconds (fig 6)
1. If pulse present give one breath every 3 seconds.
  2. If pulse absent, START CPR.



fig 6

### **Cardio Pulmonary Resuscitation**

Perform CPR ONLY if the casualty is:

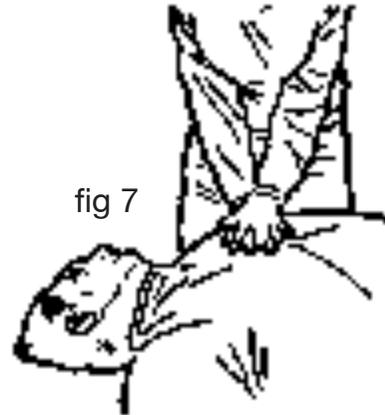
- A.** UNCONSCIOUS
- B.** NOT BREATHING
- C.** PULSELESS



## Adult Cpr

### A. Do CPR compressions (fig 7)

1. Place heel of one hand on lower half on breastbone in centre of chest.
2. Place heel of other hand on top of first hand.
3. Press straight down to compress chest 1.5" - 2" (3.8 -5.0cms)
4. Press at the rate of 15 compressions in 9 seconds.



### A. Give 2 breaths every 15 seconds

### B. Recheck pulse and breathing after one minute.(Fig 8)

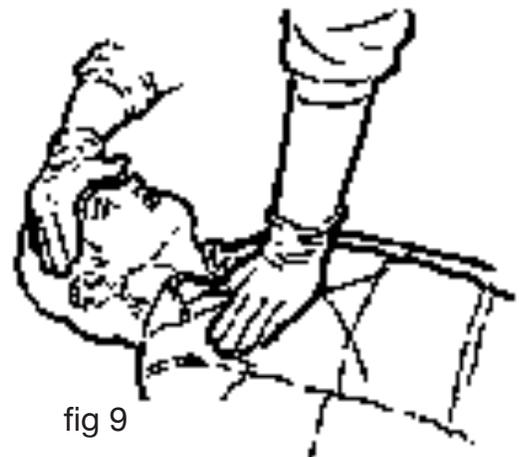
### C. If pulse is still absent continue CPR until help arrives.



## Child Cpr

### A. Do CPR compressions (Fig 9)

1. Tilt back forehead with heel of one hand.
2. Place heel of other hand on lower half of breastbone in centre of the chest.
3. Press straight down to compress the chest 1 - 1.5" (2.8 - 3.8cms)
4. Press at the rate of 5 compressions every 3 seconds .





- B.** Give one breath after every 5 compressions.
- C.** Recheck pulse and breathing after one minute of CPR (fig 10).
- D.** If pulse still absent continue compression until help arrives.

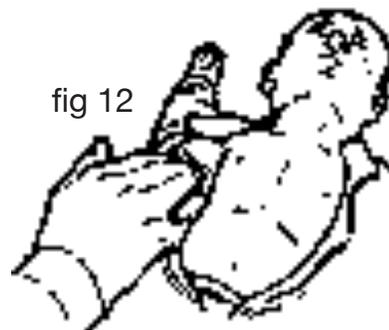


### Infant Cpr

- A.** Do CPR compressions ( fig 11)
  1. Tilt back forehead with the heel of one hand.
  2. Place two fingers of the other hand in the centre of the chest, one finger width below nipple line.
  3. Press straight down to compress chest  $\frac{1}{2}$  - 1".
  4. Press at the rate of 5 compressions every 3 seconds or less.



- B.** Give one breath after every 5 compressions
- C.** Recheck pulse and breathing after one minute of CPR. (fig 12)
- D.** If pulse is still absent continue compressions until help arrives.





## **Radiation burns**

There is no specific first aid treatment for radiation burns. However, minor sunburn can be treated as follows:

Wet a towel with tap water and squeeze out the excess water

Cover the burned area with this wet towel. This will soothe and cool the skin.

Only use ointments and creams recommended by a health care professional.

## **Assessing the burn**

The medical team will objectively assess the injury with regard to initial treatment and long term care. However, in order to understand the devastation a burn can cause, it is important to appreciate the role our skin plays in our physical well-being.

### **Our skin performs the following functions:**

1. Protects the body from infection
2. Controls body temperature
3. Retains body fluids.

### **The severity of a burn depends upon:**

1. The amount of body surface affected
2. The location of the burn – around the face or throat could be considered critical since it might affect breathing
3. The depth of the injury
4. The age of the patient and his or her general state of health.

### **The categories of burn depth are usually described as follows:**

1. Superficial partial-thickness burns, also known as mild second-degree burns. These burns and scalds affect the shallow outer layers of the skin. They resemble sunburns and can be very painful, but will usually heal within 10 days.
2. Deep partial-thickness burns, also known as deep second-

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degree burns. These can be very painful; blisters can form and the injury takes 14 to 21 days to heal.

3. Full-thickness burns, also known as third-degree burns. These involve damage to all layers of the skin including the skin-reproducing cells. The skin will require skin grafting in order for the burn injury to heal.

**The two generalized types of burns can be summarized as follows:**

1. The burned area is reddish, swollen and may blister. The pain can initially be severe, but the healing is rapid and leaves little scarring.
2. Deep burns are those in which the whole thickness of the skin is affected. There is usually less pain initially because the nerve endings may have been temporarily destroyed. Healing can be slow and scars may develop.

It is not always possible for the medical team to tell the severity of the injury at the time of diagnosis. It often takes several days to find out whether the burn wound will heal on its own or whether grafting is needed. Consequently, it follows that it is not always possible to predict exactly how long it will take for a burn injury to completely heal.



## Section 2:

# Medical Treatment of the Burn

When you have a burn injury, you may be sent to the emergency department of your local hospital. Here, your burn injury will be assessed and treatment begun. The physician at the hospital may decide you would benefit from being treated at a more specialized facility called a burn center. Therefore, you may be transferred to a different department or to another hospital where the burn centre is located.

These burn centres are usually small units containing around 10 beds. They are comprehensively equipped to effectively treat patients with critical burn injuries. Health care professionals at these centres are highly trained and experienced, each with a different key role to help you recover from your injury and are made as comfortable as possible. They have an unusual degree of empathy to help patients through the difficult emotional trauma associated with severe burn injuries.

### **The burn team**

In case you wish to compile a list of questions for the various specialists at a burn centre, here are the various members of the burn team. We have provided space to for you to write down any questions you may have:

### **Physicians**

Primarily, plastic surgeons oversee all the care given to patients at a burn centre. As the burn injury heals, these medical specialists have the expertise to ensure the best possible healing and the least amount of scarring. Other medical specialists may be called on under the guidance of the plastic surgeon. You may hear the term “fellow” or “resident”; these are qualified physi-

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cians training to become specialists in burn care. They have been assigned to the burn unit under the supervision of the plastic surgeon.

**Questions to ask the physician:**

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**Nursing staff**

The nurses who work in the burn centre are the mainstay of all patient care in the unit. Because of the nature of burn injuries, these nurses work with patients for long periods of time and get to know them and their families very well.

The role of the nurse is to offer as much supportive care as possible and ensure the patients' critical needs are communicated to the appropriate members of the burn team. The degree of emotional support, positive mental outlook and caring that these nurses provide to patients and family members is very important to the patients' overall recovery.

Nurses assess, on an ongoing basis, the patient's condition and assist the physician in the planning and implementation of treatment.

There may also be a clinical nurse specialist who works directly with patients and family members, providing teaching and psychological support in the burn centre and the hospital, as well as after the patient is discharged from the medical facility. Such a nurse works with the bedside nurse and the other members



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of the medical team on all patient care issues.

The administrator of the burn centre's nursing unit is responsible for coordinating all aspects of patient care, ensuring all the necessary resources (products, personnel, equipment and so on) are available. This nurse is in charge of the management and smooth running of the burn centre.

While patients and family members will probably have contact with all the various nursing specialists mentioned above, the initial key nurse to speak with about the daily issues of care is the bedside nurse on duty that day.

**Questions to ask the bedside nurse:**

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**Dietician**

A burn injury makes huge demands on the body and there is usually a basic need for a well balanced, high protein, high calorie diet to ensure the healing nutritional requirements are met. Patients generally need a variety of extra supplements, vitamins and minerals that the dietician can order. After discharge from the medical facility, patients must keep to a sound nutritional plan to maintain optimum healing.



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**Questions to ask the dietician:**

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**Physiotherapist**

Also known as the physical therapist, this health care professional helps patients regain or maintain physical functioning, like arm or leg movement, that may have been diminished after the burn injury. The physiotherapist provides patients with a range of motion (ROM) exercises that, over a period of time, help get the muscles and joints back to normal. Initially, these exercises are generally carried out in the hydrotherapy room or when the dressings are removed. In this way, the exercises will not be restricted due to bulky dressings. In most cases, it is important to begin the exercises as soon as possible.

**Questions to ask the physiotherapist:**

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