Severe burns

CONTENT

EXPERTS

Intensive Care and Burn Center ward U2 at the HUCH Jorvi Hospital:

plastic surgeon Jussi Valtonen,

registered nurse, Master of Health Care Katarina Andersson,

registered nurse, Bachelor of Health Care Pia Tiimo,

authorised wound care nurse Sari Ilmarinen,

registered nurse, Bachelor of Health Care,
wound care nurse Lotta Korkeaniemi,

registered dietitian Salla Juselius,

occupational therapists Salla Lempiäinen, Anna Piironen,

physiotherapists Sirkku Vuolle, Katja Repetti,
Jenny Vuonoranta,

registered nurse, crisis intervention support worker
Riitta Tasanen,

registered nurse, specialist in sexological counselling,
sex therapist Annukka Lavikainen,

social workers Anna-Kaisa Raatikainen, Klaudia Kokkola

LAYOUT Funkkis – Brändi & Markkinointi

TRANSLATION Itranslate

IMAGES Jarno Mela

PRINTED at PunaMusta

PUBLISHED by The Finnish Allergy, Skin and Asthma Federation 2024

ABOUT BURNS

In Finland, an estimated 20,000 people seek health care due to burns each year. About 1,000 require hospitalisation, half of them children. Approximately 50 Finns each year sustain life-threatening burns that require intensive care. Burns account for about 5% of all injuries.

Causes and progression of burn injuries

A burn is tissue damage resulting from heat, electricity or a corrosive substance. For adults, flames and hot liquids are the most typical cause for burns. For children, by far the most common cause are hot liquids.

Temperature, voltage, strength of a chemical substance and length of exposure affect the degree of a burn. For instance, sustained temperatures of 52°C cause a deep burn in 20 minutes while temperatures exceeding 100°C cause a deep burn in under one second. Furthermore, damaged tissue releases neurotransmitters that trigger swelling in the surrounding tissue.

Swelling increases for 48 hours after the injury, causing the depth of the burn to increase over the course of the first two days. With extensive burns covering over 20% of the body surface area, swelling is prevalent and therefore causes significant dehydration. For those with extensive burns, fluid resuscitation is essential to avoid a so-called burn shock.

Degrees of burns

First-degree burns cause redness and swelling of the skin. No blistering occurs but skin is sensitive to touch. First-degree burns heal within a week without causing scars.

Second-degree burns involve various degrees of damage to the layers of the skin but the damage does not permeate all layers. One typical symptom of superficial second-degree burns are blisters on the skin surface. If a blister is removed or it bursts, the injured area is typically pink, wet and very painful. In superficial second-degree burns, the skin retains its sense of touch. In deep second-degree burns, blisters are typically unroofed and the underlying skin is either tile-red or even pink. The skin surface can also be dry.

Deep second-degree burns reduce the sense of touch to varying degrees. Superficial second-degree burns

heal within two weeks and surgery is rarely necessary. Deep second-degree burns, however, often do not heal on their own and can cause a burn scar when healed. This is why surgery is often justified. If a deep second-degree burn is left unoperated, this can result in a visible, tight scar that hinders functionality.
In third-degree burns, all layers of the skin are destroyed. This is why they are also called full thickness burns. The burned skin is typically dry, leathery and charred-black, lacking any sense of touch. Third-degree burns require surgery in almost every case.

First aid

A burn is tissue damage resulting from heat, electricity
As first aid for burns, prevent further exposure by e.g. extinguishing or removing burning clothes or removing a piece of clothing that has come into contact with hot liquid. Next, cool down the burn by applying running water of under 25°C for 10 to 20 minutes. If a small child suffers a burn, remember to uphold their body temperature when cooling down the burned area.

Hospital care for burns

Dedicated burn units are specialised in treating extensive burns that require intensive care. The

Intensive Care and Burn Center ward U2 at the HUCH Jorvi Hospital in Espoo is the only specialised burn unit in Finland.

Treating extensive injuries that require intensive care involves prolonged attention and requires competence in various fields. The likelihood of surviving extensive burns primarily depends on the extent of the injuries and the patient's age. When receiving the best care, children and young adults can survive burns exceeding 90% of their total body surface area, while burns of more than 15% can be life-threatening to the elderly.

Initial steps at the hospital

Burn victims typically come to the burn unit from a health centre or a local hospital where the extent of the burn has been assessed and first aid administered. Patients with extensive burns have also been prepared for transfer.

It is important for immediate family to be present at the early stage. They can provide information about the burn victim, such as any underlying conditions or ongoing medications, and also give a more accurate description of the events. Burn victims typically fail to

grasp the reality of their situation, which is why close cooperation between the immediate family and the care personnel is important.

Patients are typically received at the burn centre by a surgeon, an anaesthetist and 2 or 3 nurses. In initial evaluation, potential life-threatening conditions are ruled out and vital functions are secured. Next, the surgeon is tasked with assessing the extent and depth of the burns. Victims with extensive burns are treated with required fluid resuscitation and put on appropriate pain medication.

Burn areas are showered and carefully cleaned, and all loose dead tissue is removed. The burns are photographed to help assess the depth increase of the burn and monitor wound healing. Next, wounds are covered with various wound care products, depending on what best suits the patient. Dressings with silver are currently some of the most popular initial wound care products.

Victims with extensive burns are treated with required fluid resuscitation and put on appropriate pain medication.

Pain management

While burns are always painful, pain can be effectively managed. A burn patient's level of pain can be assessed from three perspectives.

Tactile allodynia is pain related to wound care, hydrotherapy and movement therapy. By patients' own experience, it is the worst possible kind of pain sensation. Only the most potent intravenous pain medication can help efficiently alleviate allodynia, but even the strongest medication does not entirely remove it. The latest wound care products, however, enable less frequent changing of dressings.

When a patient is under anaesthesia and connected to a ventilator, dressings can be replaced with no fear of pain. Only full anaesthesia can remove allodynia.

Background pain is nagging pain experienced in the burned areas as well as joint pain resulting from prolonged bed rest. Effective intravenous and oral medication is available for removing background pain.

Psychogenic pain is mental or emotional pain, and as such, it is more difficult to manage. Burn patients have

a lower pain threshold due to the psychological crisis, anxiety or depression brought on by their injury.

They can develop high anxiety towards treatment procedures that changes to psychogenic pain. While psychogenic pain is not physical pain similar to allodynia or background pain, the patient experiences it as actual physical pain.

The patient is thoroughly informed of all treatment procedures beforehand. The care administered should be based on mutual trust, and careful management of a patient's mental state is a high priority during treatment sessions. In practice, pain management typically involves a combination of medication for relief of allodynia, painkillers for background pain and psychological pain management methods, such as background music, videos or games.

While psychogenic pain is not physical pain similar to allodynia or background pain, the patient experiences it as actual physical pain.

Burn surgery

Superficial burns heal within three weeks without surgery, but deep and extensive burns require surgery or even multiple surgeries. In these surgeries, all dead tissue, skin and, if necessary, the underlying adipose tissue are removed before infection sets in. Depending on the extent and depth of the burn, the first surgery can take place as soon as within two days of the injury.

A typical surgery involves remedying burn-induced tissue loss with skin grafting, i.e. surgically removing thin patches of undamaged skin from other areas of the body. Thighs are the most typical donor site but skin grafts can technically be taken from nearly any area of the body.

When treating extensive burns, skin grafts are meshed and spread over the wound surface. Meshing helps expand skin grafts to cover larger damaged areas. Expansion rate depends on where the burn is located. Highly stretched skin grafts are not appropriate for arms, for instance, and in the facial region skin grafts are not meshed at all. The goal is to ensure better aesthetic and functional results.

In the initial stage, skin grafts are anchored in place with metal staples, stiches or tissue glue. Skin grafts typically adhere to the wound bed in about two days. The grafts are initially redder than the surrounding skin but eventually take on a slightly lighter colour than the original healthy skin.

AMBULATORY CARE

Referral for further care

All burn patients that are either referred or who require outpatient special health care are treated at the Intensive Care and Burn Center ward at the HUCH Jorvi Hospital. A patient's first visit is always with a plastic surgeon specialised in burns. They assess the nature of the burn and the required follow-up care. The services of an occupational therapist responsible for scar treatment and a physiotherapist responsible for functional ability may also be needed.

Outpatient burn care

Visits take anywhere between 30 minutes to two hours, depending on the extent of the burns. Patients also have an option to take hydrotherapy in connection with their visit.

Wound care can potentially cause pain. It is advisable to take pain medication before a visit. For children, premedication is used when necessary to reduce anxiety and pain.

Visits at the outpatient burn clinic are scheduled depending on the rate of healing. Between visits to the outpatient clinic, dressings can be changed at home when necessary, or with a wound care nurse at a local health care centre. Patients are provided with written wound care instructions.

All burn patients have the continuity of their care secured at the outpatient burn clinic after discharge and transition to follow-up care.

For children, premedication is used when necessary to reduce anxiety and pain.

WOUND CARE

Healthy skin protects the body from external microbes. A burn disrupts this protection. Efficient wound care and suitable dressings are designed to create a favourable environment for the wound to heal and to prevent infections.

All burn wounds should be protected with dressings. There is a wide range of wound care products available. Different hospitals and outpatient clinics use different wound care products, but they are all equally efficient when used correctly.

At hospitals, wound care treatments are typically administered during the morning shift. The lengthy treatments, the light anaesthesia, if administered, and pain medication often cause patients to grow tired. Therefore, dressing changes should be scheduled accordingly in conjunction with visit planning.

There is a wide range of wound care products available.

Cleaning and caring for a burn when no surgery has taken place

A burn wound can be washed with drinkable water, patient's condition permitting. Otherwise, burns are washed with wound cleaning solutions.

The burn wound is cleared of soot, dirt and debris such as pieces of clothing, sand, tree needles or pieces of dressing. Blisters and loose pieces of surface skin are removed. After cleaning, the wound is covered with a suitable wound care product.

The wound care product is selected depending on the wound's age, extent, stage of healing and other factors. Any underlying conditions or allergies must also be taken into account. Products that restrain microbial growth and reproduction are used for infected wounds.

The depth of the burn wound continues to increase for up to 3–5 days after the injury. In the early stages, burns should be inspected more frequently to determine final depth and the potential need for surgery. Early on, the burn wound also secretes high amounts of interstitial fluid. Absorbent dressings need to be replaced daily, or even several times a day if the injury is extensive. With time, production of exudate

decreases and dressings need replacement less frequently.

A superficial burn heals in about two weeks. A deep burn requires surgery to heal. Because assessing burn depth is a difficult task, the physician who makes the healing assessment and the need for surgery must have experience in burn treatment.
videos or games.

Post-surgery care

After burn surgery, the patient has more wounds than before, because burned tissue was surgically removed and the wound was covered with a skin graft taken from an unaffected area of the body. Covered with a wound care product in the operating room, the skin graft donor site heals in two to three weeks.

Skin grafts take a couple of days to adhere but full healing and the need for wound care can last several weeks. Movement of the skin graft site should be avoided until the skin graft has had time to adhere. If necessary, splints are used to prevent joint movement. A method called negative pressure wound therapy can be used to help the skin graft adhere and stay in place, potentially allowing more freedom of movement.

Negative pressure wound therapy applies negative pressure on the wound surface, improving circulation at the wound bed, draining excess fluids and keeping the fresh skin graft in place against the wound bed. To administer negative pressure wound therapy, a dedicated device is used along with a drain and an airtight dressing. The negative pressure system keeps the negative pressure at the desired level and alerts of any clogs or leaks.

Despite these measures, skin grafts can occasionally be destroyed due to infection or abrasion, forcing additional surgery and new skin grafting.

Healed burn wounds, skin grafts and donor sites require therapy. Skin should be washed and creamed daily. New skin is initially very delicate and does not withstand abrasion. Early on, new delicate skin easily develops blisters and breaks. New skin must be protected from the sun. Pressure garments designed to reduce hypertrophic scarring prevent blistering and protect from abrasion and sun.

To administer negative pressure wound therapy, a dedicated device is used along with a drain and an airtight dressing.

BURN RECOVERY DIET

Sufficient nutrition supports recovery

A burn injury changes metabolism, causing destructive metabolism (catabolism) which can in turn lead to unintentional weight loss and loss of muscle mass in particular. This metabolic disturbance can persist for up to a year. Good nutrition and medication can help prevent the loss of muscle mass, but it may be difficult to halt it entirely.

After sustaining a burn, the body needs energy, protein, fat, vitamins and minerals in more quantities than usual. Prolonged bed rest and extended intensive care may also decrease muscle mass. To recover, the body needs extra nutrition to grow muscle mass and improve strength.

The more extensive the burn, the more energy the body needs. But even with smaller burns, diet and sufficient intake of nutrients are important concerns. Insufficient intake of nutrients can slow down wound healing and recovery. Food is therefore an important part of the healing process.

Unintentional weight loss can increase malnutrition risk

If your body does not get the nourishment it needs or if your diet does not contain enough of the right nutrients, you can develop malnutrition. A burn injury can cause weight loss, but you start gradually regaining the lost weight as you recover. Unintentional weight loss during recovery can be a sign of malnutrition. Please also keep in mind that a prolonged hospital stay may cause loss of appetite, which may prevent you from eating enough or make it more difficult.

Ensuring good nutrition is one of the key things that can help you cope and speed up your recovery. As your nutrient intake improves, you feel better, your mood brightens and you regain your appetite.

Sufficient intake of energy and protein helps you maintain your constitution and resistance and gain

muscle mass. Even with good diet and sufficient nutrition, adipose tissue can grow faster than muscle mass in the early stages of recovery. Even if this is the case, you need to maintain sufficient nutrition and not, for instance, reduce your intake. Pay attention on how to balance your diet throughout your recovery.

Meal frequency

It is recommended to eat smaller and more frequent meals throughout the day. A good rule of thumb is a meal or a snack every 2 to 3 hours. An example of a good eating schedule might be: breakfast, snack, lunch, snack, dinner and supper.

A high meal frequency ensures sufficient and constant energy supply throughout the day. It is recommended to shorten overnight fasting and enjoy supper just before going to bed and eat breakfast right after waking up. The period of overnight fasting should not exceed 10–11 hours. With shorter periods of fasting, the body gets more nutrients over the course of a day, speeding up recovery.

High-energy and high-protein diet

Energy

If you experience unintentional weight loss during your recovery, you should increase your energy intake. In this case, you can do away with a low-fat diet. With fats (such as vegetable oils, margarines, butter), cream and even sugar, you can increase your energy intake without eating bigger portions. You should prefer sources of soft fats such as oils and vegetable fat spreads. You can indulge yourself and, for instance, enjoy some goodies more often without feeling guilty about it.

Protein

Sufficient protein intake is particularly important for the healing of wounds and maintaining muscle mass. You should add a high-protein food to your every meal and snack. For instance, meat, fish, chicken, egg, dairy products, legumes, lentils, beans, nuts and soy products are high in protein. If you find it difficult to eat during breakfast, lunch and dinner, it might be easier for you to use a lot of milk or sour milk, yogurt, curdled milk, cheese or fresh cheese, eggs or cold cuts.

Food group/tips

Dairy produce, i.e. milk, sour milk, curdled milk, curd, sour cream, cottage cheese, cheeses, soy products

Pick products that are high in energy, i.e. products with more fat and sugar.

Meat, chicken, fish, egg / Dairy produce / Cold cuts and cheese / Products with broad bean

Include these high-protein foods with your every meal. Favour those that you like best. Mild seasoning might help you eat meat better.

Bread, porridge, potato, macaroni and other grain products

Add fat for more energy. For instance, you can enhance your plate of porridge, pasta or mashed potatoes with a spoonful of oil, margarine or butter.

Oil, margarine (70–80% fat), mayo, avocado, nut butter, nuts, seeds

These are the most convenient sources of extra energy. Add fat to every portion you eat, e.g. rapeseed oil and cream in soups, avocado in a smoothie and nut spread on biscuits.

Kissels and other desserts

Add whipped cream or ice cream to kissels and other desserts.

Pastries and snacks

High-energy snacks you can enjoy include pasties, biscuits, nuts and chocolate.

Drinks

Drink milk or sour milk with your meals and enjoy juice or supplemental nutrition drinks when thirsty. Drink between meals to boost your meal-time appetite.

Fruits, vegetables and berries

You can eat less fruits, vegetables and berries than you typically would because they contain very little energy and no protein.

Vitamins and minerals

Your body needs significantly more vitamins and minerals than usual for the wound healing process. While it is preferrable to get the required vitamins and minerals in your regular diet, that is not always possible. In the early stages of burn recovery in particular, you may need to add vitamin and mineral supplements to your regular diet. Multivitamin products include a

wide range of protective nutrients to secure your daily needs.

Supplemental nutrition drinks

Available at the pharmacy, supplemental nutrient drinks (Nutridrink®, Fresubin®, Resource®) can help you secure your nutrient intake if you are unable to eat sufficiently or find it too hard.

One bottle contains 250–400 kcal of energy and 8–20g of protein (a glass of milk, for example, contains 7g of protein and a 100g steak contains 20g of protein). With a wide range of supplemental nutrition products available, you should find one that you like and that fits your special diet, if any. You can enjoy 1–3 bottles per day as a snack and, for instance, chill them with ice, add water or sip them slowly for dessert.

PHYSIOTHERAPY AND OCCUPATIONAL THERAPY

A multidisciplinary team provides therapy and rehabilitation for burn patients, including physiotherapists and occupational therapists. Burn injuries bring along changes in various aspects of life, including physical and functional ability, everyday life, work and social life. The more severe the burn injury, the bigger the impact.

Goals of rehabilitation

The goal of the rehabilitation is to maintain physical and functional ability and return it to pre-injury level. Burn injuries can sometimes cause permanent changes that prevent reclaiming pre-injury level functional ability. In such cases, the goal is to reach the best possible level of functional ability and quality of life.

Physiotherapy and occupational therapy commence right away in intensive care along with other care. These therapies are an integral part of a burn patient's treatment throughout their period of intensive and

inpatient care and the often-long rehabilitation. Patient's personal goals and prior ability to function are considered when planning rehabilitation.

Methods of physiotherapy and occupational therapy

Methods of physiotherapy and occupational therapy are no different for burn patients than for those of other patient groups, but skin grafts, scar tension and pain are special characteristics that need to be considered. Physiotherapists and occupational therapists employ active and passive range of motion therapy, breathing therapy, exercises involving movement and everyday activities as well as position therapy and splinting.

Therapy is focused on scar management, passive stretching and scar treatments. Patient's need for assistive equipment is also assessed throughout the rehabilitation process, and patients are briefed on their use.

Efficient pain management is an essential part of a burn patient's overall care. In addition to medical pain management, the patient can be counselled on various methods of pain management.

Therapy is focused on scar management, passive stretching and scar treatments.

Physical activity and range of motion exercises

A recent burn does not prevent physical activity or use of limbs. When possible, dressings are applied so that they do not prevent movement. In intensive care, physical activity is resumed as soon as possible. If active exercise is not possible during the period of intensive care, the therapist administers passive range of motion exercises.

Basic motion, balance and every-day functions are practiced over the course of the prolonged intensive care. Furthermore, muscle strength, stamina and joint mobility are maintained and improved. Early on, guiding the patient to change their posture, or just to eat, is part of the exercises. This is something that a patient may struggle with due to their reduced overall strength.

For burn patients, rehabilitation is long process and involves several stages. Hospital care alone can take

months, depending on the extent of their injuries. Physiotherapy and occupational therapy often continue after the patient is discharged. Patient's personal motivation and commitment to exercise plays an important role throughout their treatment, even more so after their discharge.

SCARS

Early on, burn injury areas and skin graft donor sites remain red or even purple for a lengthy period, only turning lighter over time. The deeper the injury, the more prominent the scar. Deeper second and third-degree burns nearly always result in visible scars. Scar formation is unique to each individual, and you cannot always tell beforehand how aggressively a scar tries to grow.

Actual scar formation (scar hypertrophy) only begins some weeks after the wound is healed. Symptoms of scar hypertrophy include scar thickening and hardening, aggressive redness, itchiness, tingling and, occasionally, sensitivity to touch. A scar can get so thick and prominent that it hinders or prevents normal movement. Tightness of skin is at its worst in the morning and lets up over the course of the day with movement and exercise.

Scars may remain visible, but over time they become softer and flatter and the colour returns closer to normal. This process is called scar maturation. On average, the entire scar process takes from six months to a couple of years. New skin easily burns and becomes pigmented in the sun, so it should be protected with clothing and sunscreen, especially during the scar growth stage (sun protection factor 50). Skin graft scars do not retain regular skin's ability to withstand sun.

Scar treatment

Scar treatment is always planned individually, and instructions are provided for the methods chosen. Proper wound care and reduction of swelling are part of preventing hypertrophic scars. Daily application of cream and massage are a number one priority in scar treatment as they improve scar flexibility and reduce itchiness. Other scar treatment methods include prolonged stretches, pressure therapy and silicone products designed for scar management. Scar treatments continue until the scars have lightened or softened.

Daily application of cream and massage are a number one priority in scar treatment as they improve scar flexibility and reduce itchiness.

Prolonged stretches work best when the skin has been creamed well. Stretches are often administered with the help of splints and orthoses which help prolong the stretches. Splints for prolonged stretching are typically used at night or during rest, leaving daytime for active exercise.

Pressure therapy prevents scar growth, keeps skin moisturised and flexible, flattens scars, reduces itchiness and accelerates scar maturation. Pressure treatment typically starts with an interim pressure garment or a flexible dressing material. Custom-made pressure garments are ordered when swelling and patient's weight have stabilised. Pressure garments should be worn 23 hours a day, removed only when taking a wash or when administering skin treatment or performing more active exercises, if necessary. Pressure treatment can also be applied with the help of various splints and orthoses in, for instance, the facial area. Various silicone products can be used as is or combined with pressure therapy to make the treatment more efficient.

Pressure treatment typically starts with an interim pressure garment or a flexible dressing material.

MENTAL SUPPORT

A sudden serious accident is a crisis and an adjustment challenge for the entire family. It shocks, evokes fear, anger and guilt and undermines their sense of security. Earlier experiences and previously learned coping mechanisms are not always enough to understand the situation and manage emotional response. A new traumatic event can trigger prior traumatic experiences.

Your body's response can manifest as pain and aches. Insomnia and inability to concentrate are typical responses. Strong sensations are a normal way for a body to react to an abnormal situation.

Changes to body image and physical crisis

A burn survivor has to adjust to many uncomfortable situations during their treatment. Prolonged wound care, pain and itchiness also bring a burden to mental health. During the first few weeks of recovery, a burn patient uses most of their strength to adapt to these physical stress factors. For patients in intensive care, the physical crisis with its periods of intensive care and wound treatment takes several weeks.

The psychological process only begins at the rehabilitation stage when a burn survivor becomes aware of the actual loss they have suffered due to the injury. They might deny what has happened or refuse to acknowledge the extent of their injuries. The scars sustained and the impaired ability to function pose challenges for recovery and rehabilitation. Sufficient information regarding their state and their treatment plan helps them understand and come to terms with the situation. Recovering their strength and making progress in their daily functional ability invoke a sense of accomplishment and rekindle a sense of hope.

Coming to terms with the injury

As they begin to process the events, denial as a defence mechanism subsides, enabling them to gradually face and process the experience. Grieving starts and emotions begin to surface. These emotions can be painfully strong, and extreme mood swings are not unusual. Nightmares are typical to this stage, as are memories of the events forcing themselves to the surface.

Physical rehabilitation is also a burden on mental health, and this is why fatigue and depression are common. The burn victim may blame themselves or others. They may be hostile, throw tantrums or cry easily. They may feel that life has lost its meaning. The experience puts their relationship with themselves and their surroundings to the test. On the other hand, they may also be relieved that they are still alive.

Understanding and perseverance are required from the friends and family of a burn victim to withstand their bursts of anger and mood swings.

Family members need realistic information on the quality of the injury, its prognosis and treatment plan.

This requires trust and cooperation between the burn survivor, their next of kin and the care personnel. To help next of kin navigate their own crisis process, they need sufficient mental support from their networks of family and friends as well as mental health professionals and peer support.

Adjustment and building for the future

As a burn survivor is discharged from the hospital, they have to face the true ramifications of their altered body image and impaired functional ability. They grieve for what they have lost. They analyse their life, looking at what is unchanged and familiar and what they have gained to replace what was lost. Their scars, where they are on the body, and the permanent loss of functional ability make it more difficult for them to reclaim their social role. If the injury was sustained at the workplace, going back to work may cause anxiety and fear. Coming to terms with the changed situation is mentally taxing, and they may find themselves less interested in the outside world.

Crisis always involves grief and letting go. With time, they start to rediscover positive things in life, previously obscured by the crisis. They gradually start rebuilding their future. While the events may leave a ‘scar’ that never fully fades, it does not stop them from getting a new grasp on life. Gradually, new interests replace those that were lost. They start believing in themselves again, giving them courage to live.

Where to find help?

A difficult crisis exacts a serious physical and mental toll on family and friends as well. They worry about their loved one, and getting to the ward where they are treated may require extensive travel. The period of hospital care takes several weeks, and staying at the bedside takes its toll. It is hard to be there for the patient when you are tired and fatigued yourself. This is why it is important to rest, spend time outdoors and eat regularly. If you are a burn survivor's family member and you feel that you need sick leave or sleep medication, you should take it up with your physician.

Processing the thoughts and feelings the crisis has evoked together with others helps cope with everyday life and moving forward. The presence and the support of family and friends are tremendously important, as human interaction is the best possible help available. Do not hesitate to look for professional help or peer support groups.

At the Burn Centre ward, patients receive mental support from a burn team consisting of professionals from various fields. In addition to ward physicians and nurses, this workgroup includes a psychiatrist, a psychiatric nurse, a physiotherapist, an occupational therapist, a social worker and a hospital chaplain. These professionals assist in planning and applying mental support for the burn survivor for the entire duration of their treatment period. Information on the care provided and any further needs for assistance is submitted to the hospital or health centre responsible for the follow-up treatment.

Mental support is available for the patient's family and friends at their home municipality's health centre, local crisis centres and occupational health care. Support for children and young people is provided by the local health centre, child health clinic and school health care services. Children react to shocking events the same way adults do. It is important for parents to talk about the incident with their child and not to try and hold emotions back too much. Children should be encouraged to express themselves by means of drawing and play. Everyday routines, such as school, daycare and hobbies help the child feel secure. Families of children or young people with burn injuries receive support from their hospital or outpatient clinic. In emergencies, mental support is provided by regional crisis centre workers by phone. Where necessary, they also make house calls or visit the scene of the accident. They assess the situation and the need for support and help in arranging further services. The service is fully confidential and free of charge.

Burn survivors and their family and friends may seek out help from various organisations as well. These organisations can also be contacted anonymously.

Families of children or young people with burn injuries receive support from their hospital or outpatient clinic.

IMPACT OF BURN INJURY ON SEXUALITY

Severe burn injuries always have some impact on human sexuality. A changed body, sensory loss, pain and psychological trauma often bring changes to sexuality and relationships. Individuals with severe burns often experience challenges in regard to their femininity/masculinity and their current or future relationships. Issues related to expressing sexuality and reproduction may cause concern, and they might also worry about whether they are still loved and accepted.

However, a burn injury does not extinguish human sexuality. Sexuality and experiences of sexuality remain despite the injury.

Sexual identity crisis

Severe burn injuries affect one's self-image, and internal and external changes may also have significant impact on sexual identity. It is possible for an individual to temporarily lose their personal relationship with their own body or their gender identity.

Disability affects relationships as well

On an emotional level, relationship issues can manifest as an inability to talk about or understand the change the other person has experienced in how they see themselves as a man or a woman. A changed body may feel strange, confusing and scary for both the burn survivor and their partner.

Impaired sense of touch and, on the other hand, overly sensitive skin bring challenges to both the burn survivor and their partner in showing affection and touching each other. Serious burn injuries are commonly associated with low sexual desire, at least in the early phases of recuperation. The survivor's partner may also suffer from low sexual desire.

Sexual dysfunction

A burn victim's sexuality and relationships are put to the test; the closer the injury is to erogenous zones, the bigger the challenge. Extended hospital stays and possible medication may cause vaginal dryness, making intercourse more difficult.

Impaired sense of touch in injured sexual organs cause erectile dysfunction in men and vaginal dryness,

arousal disorder and low sexual desire in women. A changed body image and many other factors may cause erectile dysfunction in men and vaginal dryness in women. Limited range of motion due to burn injury scars and amputations may make intercourse and self-gratification more difficult.

Teenage burn survivors have to rebuild their self-image, often experiencing a crisis in the process. Physical appearance becomes a priority, and young people may renounce some male/female characteristics.

For small children, burn injuries often mostly affect the outlook parents have on their child's future. Acceptance and possible relationship and reproductive issues may cause anxiety to parents, even though the child is quite able to learn how to live with the burn and the scars.

Sexual healing

The importance of sexuality is unique to each individual. Reaching a subjectively fair level of sexual healing requires patience and time. By gradually exploring their changed body, burn survivors may find new erogenous zones to supplant the lost ones.

Affection, intimacy and human touch are important and should be sustained in a relationship. Self-indulgence, sexual fantasies and self-gratification can be very helpful in waking up one's sexuality and getting pleasure. If necessary, it is recommended to seek out external help in matters related to sexuality and relationships.

SOCIAL SECURITY FOR BURN PATIENTS

Burn injuries often require prolonged hospital stays and extensive rehabilitation which may impact a patient's ability to function and work. It is important that the burn survivor is aware of existing social benefits and services and knows who to contact in related matters. Hospital social workers can provide information on social security and services. Burn patients may also turn to Kela and/or their insurance company to find out more. Advice is also available from the Finnish Burn Association and the Finnish Allergy, Skin and Asthma Federation.

Reimbursements and compensations

Burn injury compensations are contingent on the circumstances under which the injury originally took place. Depending on the situation, you may apply for compensation for burn injury-related treatment costs and loss of income from Kela, your insurance company or the State Treasury. Health insurance provided by Kela is a part of Finnish social security which is used to compensate for loss of income during incapacity for work, for instance. A burn patient may also be eligible for compensation paid out from statutory insurances if the injuries are caused by a traffic, work or military accident.

Ensuring your livelihood during illness

Recuperating from a burn injury may require the survivor to take an extended sick leave, and the injury may even result in permanent incapacity for work. If you are in an employment relationship, first check whether your employer pays you a salary during the sick leave. Under certain conditions, Kela's sickness allowance compensates for the loss of income due to incapacity for work for a maximum of one year.

Kela's sickness allowance may be applied for by, for instance, employees, entrepreneurs and students who are unable to perform their regular work duties due to an injury or an illness. If the incapacity for work continues after Kela's sickness allowance period expires, the patient may apply for rehabilitation subsidy or disability pension from Kela and a pension insurance company.

If the burn survivor is under 16 years of age and their guardian has to partake in their treatment or rehabilitation, Kela may compensate for loss of income with special care allowance.

If the burn injuries have resulted from a work or traffic accident or a military accident, an application for compensation for loss of income can be submitted to an insurance company or the State Treasury based on the Motor Liability Insurance Act, the Workers' Compensation Act or the Military Accident Act.

If the burn injury was caused due to the survivor attempting to save people, animals or movables from a fire, they may be eligible for compensation from the State Treasury based on the Rescue Act.

If the burn survivor's income is not sufficient to cover their daily expenses, despite the compensation for loss of income, they may apply for basic social assistance from Kela and supplementary social assistance from the social welfare office. Social assistance is the ultimate form of economic support available, provided for an individual or a family to help them cover their basic living expenses.

> **If the burn injury was caused due to the survivor attempting to save people, animals or movables from a fire, they may be eligible for compensation from the State Treasury based on the Rescue Act.**

Treatment and medicine costs

Any fees resulting from public service hospital care are charged from the patient in accordance with the Act on Client Charges in Healthcare and Social Welfare and the corresponding Government Decree. Client charges for public services have an upper limit per calendar year. Any fees charged for services provided to patients under 18 years of age are counted towards the annual upper limit of one of their guardians. Upon reaching the upper limit, most services included within the limitation, such as outpatient clinic fees, are provided free of charge. The price of inpatient care also decreases after the upper limit is reached.

Under certain conditions, Kela reimburses costs resulting from prescription drugs, foods for special medical purposes and basic ointments. Medicine expenses are reimbursed after the annual initial deductible is met. However, children and young people are exempt from the initial deductible. It is applicable from the beginning of the year during which a young person turns 19.

If the burn injuries have resulted from a work or traffic accident or a military accident, an application for reimbursing the patient's medicine costs can be submitted to an insurance company or the State Treasury.

If the burn survivor's income is not sufficient to cover their daily expenses, despite the compensation for loss of income, they may apply for basic social assistance from Kela and supplementary social assistance from the social welfare office. Social assistance is the ultimate form of economic support available, provided for an individual or a family to help them cover their basic living expenses.

Reimbursement for health care-related travel costs

Kela reimburses the patient with some of the expenses related to travelling to a public or a private health care centre when the journey is necessary to tend to the injury or attend rehabilitation. Travel cost reimbursements cover the least expensive means of transport, taking the patient's physical condition and traffic conditions into consideration. The reimbursement applies for costs exceeding the initial deductible.

Any necessary travel costs exceeding the initial deductible are reimbursed in full. For instance, travel by own car or taxi is reimbursed if this is necessitated by the patient's physical condition or poor traffic conditions. When using taxi services, you should book a Kela taxi from a regional dispatch centre.

If an overnight stay is necessary in order to, for instance, arrive on time for treatment or rehabilitation or avoid repetitive daily travel, Kela may pay out an overnight accommodation allowance.

If the burn injuries have resulted from a work or traffic accident or a military accident, an application for reimbursing travel costs can be submitted to an insurance company or the State Treasury.

Kela's disability allowance and care allowance for pensioners

A burn patient may apply for Kela's disability allowance for persons aged 16 years or over if their functional capacity is reduced for at least one year. Reduced functional capacity means that the patient has difficulties taking care of themselves and managing with daily chores.

Disability allowance for persons under 16 years may be applied for a burn survivor under 16 who requires regular care, attention and rehabilitation due to their injury. Their need for care and attention must be greater than normal and last for at least six months.

If the burn injury patient is fully retired and their functional capacity is continuously reduced for at least one year, they may apply for care allowance for pensioners from Kela.

Care and attention for under 16-year-olds must be greater than normal and last for at least six months.

Other indemnities in case of fire

If the burn survivor's home or its movables are damaged in a fire, indemnities for the damages may be claimed from the insurance company where the survivor has a home insurance. The insurance company can also help in organising temporary housing.

Ask your insurance company for more information on claiming indemnities for statutory insurances, such as the motor liability insurance, as well as for voluntary insurances, such as travel insurances.

You may also request assistance from your home municipality's social welfare office, parishes and other organisations.

You can ask your insurance company for more information on claiming indemnities for voluntary insurances, such as travel insurances.

HOSPITAL DISCHARGE

Depending on the severity of the burn injury, the burn survivor may have to remain in hospital care for an extended period of time. And because eventual hospital discharge may bring about various challenges, planning for it should start fairly early on in the recovery and include arrangements for follow-up treatments and rehabilitation.

When making discharge plans, possible impairment resulting from the burn injury, need for assistance and personal life situation should be taken into account.

Family members and friends have an important role in helping the burn survivor return home, as the treatment and rehabilitation continue after the hospital stay. The hospital staff aims to assess the type of help a burn survivor might need after discharge in order to be able to cope with everyday functions to the best of their ability.

Social welfare services assist the burn survivor with their daily chores at home. A service needs assessment should be made at the survivor's wellbeing services county with the purpose of assessing the need for assistance and support and creating a plan for using the services. Services include home care with home services and home nursing. Home care may help a burn survivor with wound care and dispensing medicine, for instance.

If the burn injury impairs the survivor, it may be possible to apply for disability services provided by the wellbeing services county, such as home alteration work or transport services. Home alteration work may include, for instance, the installation of support rails which help the patient move around in their home. Transport services may be applied for if the injury limits the burn survivor's movement so severely that they are not able to perform everyday tasks, such as running errands, studying or going to work.

Family members or other close acquaintances who stay at home to care for the patient with reduced functional capacity may apply for informal care support from their wellbeing services county. Informal care support payments are based on an informal care agreement between the carer and the wellbeing services county.

Rehabilitation

While the rehabilitation process is often long for burn survivors, there are several types of rehabilitation available. They include various therapies aimed to improve the functional and working abilities of the burn survivor. Common forms of therapy include physiotherapy and occupational therapy. Rehabilitation is organised by e.g. the public health care sector, Kela, insurance companies and patient organisations.

For rehabilitation to succeed, a burn survivor may also need various assistive equipment, such as a walker or a wheelchair. The party responsible for acquiring and financing the assistive equipment is determined by its purpose of use. Burn survivors are provided

with assistive equipment from primary health care or specialised medical care, for instance.

Common forms of therapy include physiotherapy and occupational therapy.

Organising rehabilitation is contingent on the situation which resulted in the burn injury. If the burn injuries have resulted from a work or traffic accident or a military accident, an application for reimbursing rehabilitation costs can be submitted to an insurance company or the State Treasury.

Burn injuries and the events that led to them may also be traumatising to the survivor's family. Relatives have the opportunity to seek help from crisis emergency services or the local health centre. It is also possible to request help from peer support workers and peer support families. Sourced by the Finnish Burn Association, they provide support for burn survivors and their family and friends.

Returning to work

A burn injury may impact the burn survivor's opportunities for earning a living as the injury may impair their ability to work or function for a long period of time, even permanently. Due to their injury, burn survivors may have difficulties in performing their work duties or be completely unable to return to their former work. Burn injuries may also impact the career paths and employment opportunities of young people and adults. A burn survivor should plan their return to work or school with health care services and their employer or school.

If the burn survivor is able to return to work, they may be eligible for Kela's partial sickness allowance. Return to part-time work is a voluntary arrangement which requires consent from both the employee and the employer.

If the burn survivor's condition so requires, their return to work may also be supported by means of vocational rehabilitation which aims to improve their prospects of performing work. Vocational rehabilitation may also help young people enter working life.

Some vocational rehabilitation tools include try-outs, coaching as well as various trainings and courses. Provision of vocational rehabilitation services is applied from Kela or a pension insurance company. If the burn injuries have resulted from a work or traffic accident or a military accident, vocational rehabilitation services can be applied from an insurance company or the State Treasury.

A burn survivor should plan their return to work or school with health care services and their employer or school.

Burn survivor's status and rights

Every health care unit has a patient ombudsperson who provides information on the rights of the burn survivor and promotes said rights. The patient ombudsperson also provides advice and, where necessary, assists the burn survivor in filing an objection or a complaint, or a notice of injury filed with the Patient Insurance Centre. In social welfare services, the corresponding duties are tasked to a social ombudsperson appointed by the municipality.

FINNISH BURN ASSOCIATION

Aino Loikkanen, association specialist, the Finnish Allergy, Skin and Asthma Federation:

The Finnish Burn Association helps burn survivors and their family and friends overcome the injuries and return to normal life.

Provided by the Association, peer support is very important for a burn survivor. The Association helps burn survivors in finding a peer support worker and organises annual member meetings, such as a weekend camp in Padasjoki each May.

The Finnish Burn Association is a national volunteer organisation which happily welcomes new volunteers. For more information on its operation, see: palovammayhdistys.allergia.fi

The Finnish Burn Association is a member organisation of the Finnish Allergy, Skin and Asthma Federation. The Federation supports the Association's work, organises courses for burn survivors and produces information

on burn injuries. The Federation can also provide more information on peer support. Peer support is also available in the private Facebook group for burn survivors, called Vaikean palovamman kokeneet, Allergia-, iho- ja astmaliitto.

Information on the Association's activities is provided via member newsletters, in its magazine, on its website and on Facebook. Members get the Allergia, iho & astma magazine as a membership benefit four times a year. Any private individuals, organisations or companies which want to support and promote the Association are accepted as members.

ON PEER SUPPORT

Ulrika Björkstam, burn survivor:

I suffered severe burn injuries in a flight accident in November 2008. It felt as though my life had turned upside down. I was afraid of the future. I was quite motivated to rehabilitate and get back on my feet but I found it difficult to accept my altered appearance.

I had already received peer support in the United States at a hospital where I was first tended to. Some workers from the local burn association came to visit me. Despite this, it was a difficult endeavour to ask for peer support in Finland at first, even though I was made aware of the Finnish Burn Association already as I recuperated at the Burn Center ward.

I finally found the courage to attend a camp in Padasjoki where I met my then peer support worker and others who had gone through similar ordeal. It was relieving to be able to share my experiences and to feel like I belonged!

The peer support gave me so much extra strength at a moment crucial to my recovery that there was no question in my mind that I wanted to volunteer myself once I had processed my trauma. So when I was asked to meet up with Elina, I did not hesitate one bit.

I knew that the meeting might be emotional for both of us but I thought it was extremely important that Elina received peer support already at the hospital, just like I did. I remember staying in her room for quite a while. Elina asked me all kinds of questions regarding my recovery, and I showed her the skin grafts in my hands that had already healed.

The power of peer support lies in the fact that not everything needs to be explained in painstaking detail. It is also important to have the support of someone outside your family and friends as they also have to deal with the crisis. I am really happy that we have kept in touch with Elina. I've also had the pleasure of meeting her family!

Elina Toimela, burn survivor:

I was burned badly in my home in late 2015. I was sure I wouldn't survive, but the Burn Center took great care of me and managed to stitch me back up – even though 63% of my total skin area was burned.

I didn't have time to think about the future during the difficult treatments, even if my mind was inundated with all kinds of questions. I didn't know what kind of residual injuries I would be left with, so I tried my best to appreciate the fact that I survived and see as many of my friends as possible at the hospital.

The head nurse brought me a guide book on burn injury care which I immediately read from cover to cover. They also brought up the peer support provided

by the Finnish Burn Association and suggested that I meet up with Ulrika. I said yes right away and began to anxiously look forward to our first meeting.

Eventually, Ulrika came in with a smile on her face and spoke in a kind voice. I had a ton of questions: how is your skin, does it feel tight, are you going to have more surgeries, what have you had to give up, what was your percentage... Ulrika answered all of them patiently and filled in with many details about her own recovery. It was quite a relief to hear, and especially see, that you can survive the difficult treatments with your sanity intact.

That is how my recovery started. After I left the hospital, the first thing I did was arrange a meet-up with Ulrika at Café Ursula. We chatted about life outside the hospital, how to get going again and what to consider. Ulrika provided some true words of wisdom, and one really stood out: "Stop worrying about things you can't control."

I attended the Finnish Burn Association's camp soon after leaving the hospital. At first, I only took a day trip because I wasn't sure how I would manage an overnight stay with all my wounds. But that one day

was a real eye-opener: people with burn injuries are lovely, caring humans who wanted to help me and my children overcome the trauma.

Each burn injury camp has given my children plenty of new perspective and insight for living with a burn survivor. My recovery takes a huge leap forward every time we see other people in the same situation.

I wholeheartedly recommend the peer support for all burn survivors! There is no one better than another burn survivor to tell you how to move forward with your recovery, let alone give you tips on compression wear, sunscreens, creams and various treatment recommendations.

The power of peer support lies in the fact that not everything needs to be explained in painstaking detail.

“By attending the association’s events, I realised how important it is to meet other burn survivors. It gave me hope that I can make it, too. Becoming a member was definitely worth it.”

ALLERGY SKIN & ASTHMA

The Finnish Allergy, Skin and Asthma Federation