

Managing Pain After Burn Injury

December 2023

<https://msktc.org/burn/factsheets>

BURN Factsheet

This fact sheet explains how to understand and manage your pain as you recover and heal from a burn injury. It describes different types of pain and medical and behavioral techniques to help you cope.

The Model Systems Knowledge Translation Center works with Burn Model System (BMS) centers to provide free research-based rehabilitation resources for people living with burn injury (See <https://msktc.org/burn> for more information). This factsheet has been approved by experts from the BMS centers.

Introduction

Pain and discomfort are an unfortunate part of burn injury and recovery. Many of our patients tell us that ongoing pain continues to be a problem after discharge from the hospital.



Continued pain can interfere with every aspect of your life, including:

- *Sleep*: pain can make it difficult for you to fall or stay asleep.
- *Ability to work or go to school*: pain can limit your ability to function or concentrate on the job.
- *Mood*: pain can cause depression and anxiety, especially when the pain is severe and lasts a long time.
- *Quality of life*: pain can keep you from being able to enjoy time with loved ones or do activities that are meaningful.
- *Healing*: pain can get in the way of healing if it keeps you from being able to sleep, eat, or exercise enough.

If you are having pain, tell your health care provider.

Things to remember:

- Burn pain is complex and requires careful assessment by your health care provider to find the best treatment.
- Pain management often requires a multidisciplinary approach that includes both medication and non-medication treatments and involves a team of health care providers, such as psychologists, physical therapists, and pharmacists, working with your physician.
- Pain severity is not necessarily related to the size or seriousness of the injury. Small burns can be very painful, while some large burns are not as painful.

Step 1: Understanding Your Pain

There are many different types of burn pain, and each person's pain is unique. Understanding the type, intensity, and duration of your pain is important for getting the best treatment.



Your health care provider will ask you about several types of pain:

- **Acute pain**: short-term intense pain that typically happens during a procedure like dressing changes or physical therapy.



- **Breakthrough pain:** pain that comes and goes throughout the day, often due to wound healing, contractures (tightened skin), or stretching.
- **Resting pain:** also called “background” pain that is almost always present, even at rest.
- **Chronic pain:** ongoing pain that lasts for 6 months or longer after the wound has healed.
- **Neuropathic pain:** pain that is often described as shooting, burning, and can also feel like pins and needles or stabbing. This type of pain is caused by nerves damaged by the burn injury. As these nerves regenerate (regrow), you may experience burning, tingling, or itching.



You might also be asked to describe the pain in the following ways:

- **Intensity:** how strong the pain is, often rated on a scale of 0–10, with 0 as “no pain” and 10 as “worst pain imaginable.”
- **Duration:** how long it lasts (for example— minutes, hours, days, etc.).
- **Timing:** when it gets worse (during the day, night, or during certain activities).
- **Quality:** how the pain feels (for example—stinging, throbbing, itching, aching, shooting).
- **Interference:** how the pain affects your emotions and your ability to do things like work or go to school.

Other important information that can help your health care providers plan the best treatments for your pain include:

- Your experiences with either acute pain or chronic pain before your burn injury.
- Your experiences with poor sleep, depression, or anxiety before or after your burn injury.
- Pain medications, including self-medication and home remedies, you have taken and used in the past.
- How much your pain limits your ability to do certain things.
- Any activities that make your pain worse or better.

Step 2: Treating Your Pain

Medications



- **Over-the-counter** pain medications, such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs; ibuprofen and naproxen are examples) can be used for long term pain relief. They are not addictive. These medications are effective for treating muscle pain. Use of NSAIDs for long-term pain management may cause serious side effects and should be used only under the supervision of your health care provider.
- **Opioids** are commonly given in the hospital, after discharge from the hospital, and to help with pain from open wounds. Some examples of these medications are morphine, hydrocodone, hydromorphone, oxycodone, and tramadol. Opioids are not effective for chronic burn pain. Side effects, such as constipation and low mood, can also become a problem, and opioids are addictive. For these reasons, your physician will help you taper off opioids when appropriate.
- **Anticonvulsant medications**, such as gabapentin and pregabalin, are useful for managing nerve pain or itching in some situations. These medications work by changing the way the body experiences pain. Anticonvulsant medications can also help with itching.
- **Sleep medications**, such as melatonin, might be used if pain is interfering with sleep. Talk to your physician about sleep hygiene and safe medications for sleep.



- **Antidepressants** can provide pain relief for some people with chronic pain, even if they are not depressed. Antidepressants can also help with sleep. You might talk to your health care provider about trying antidepressants as one way to manage your chronic pain.

Behavioral Approaches

Rarely do medications take away all of the pain. You may also need to use behavioral approaches to help make pain more manageable. A psychologist with expertise in pain management can work with you to find non-medication approaches that can help. These may include:

- **Physical activity** can help manage pain. Although it may seem counterintuitive to increase your physical activity when you are in pain, it is important to remember that not all pain is a signal of harm and needs rest. Research has shown that the more physically active we are, the less pain that we have and the more we are able to do. It is important to establish a regular exercise routine as soon as your doctor says it is safe. This will increase function, decrease pain, and improve your mood and self-esteem. 
- **Relaxation:** a burn injury puts immense stress on the body that continues for many months during the recovery phase. This stress causes muscle tension that can increase pain. Relaxation techniques can be used to lessen the stress placed on your body. Some of these techniques include deep breathing, yoga, and progressive muscle relaxation.
- **Pacing of activities** can help you control your pain. Daily activity and regular exercise are crucial in order to rebuild your strength and stamina and increase your range of motion. But pushing yourself too far can increase your pain.
 - Pace yourself by gradually increasing your physical activity over time. If you are too sore to move comfortably the day after an activity, you have probably pushed yourself too hard.
 - It is best to reduce your activity level until you are more comfortable. This is a difficult balance as burn recovery can be painful, and some pain may be necessary to progress to your previous level of function. Work closely with your physical and occupational therapists to set up an activity program that is best for you.
- **Cognitive (thinking) techniques** use the power of your thoughts to relieve stress. These techniques include a process called “cognitive restructuring,” which helps you change the way you think about your pain and reassure yourself that the pain is temporary and manageable.
- **Mindfulness meditation** has been shown to be a very effective treatment for pain. The technique is easy to learn. There are programs online that can guide you in a mindfulness exercise, or you can work with a mental health provider.
- **Hypnosis** has been shown to be a powerful tool in relieving both acute and chronic pain. A psychologist can teach you how to do self-hypnosis so you can include it in your daily routine. 

Step 3: Coping With Pain

People have different ways of coping with difficult situations or physical discomfort. Your coping “style” can have a large impact on how much pain you feel or how much the pain bothers you.



In any difficult situation, a person reacts by either trying to change the situation, change themselves, or by “giving up.” The first two options are “active” coping styles and are highly effective in managing stress. The third option is much less helpful and often results in withdrawal or symptoms of depression.

Research has shown that it is best to first think about how much of the situation is under your control, and then pick the best active coping style. If the situation is out of your control, changing how you think about and respond to it can be the best coping style. A psychologist can work with you on developing this kind of coping skill.

It is also important to decide which parts of the situation are under your control. For example, you cannot change the fact that you have sustained a burn injury that has resulted in ongoing pain. “Wishing” the injury had not occurred and dwelling on the “what-ifs” won’t help your pain and may lead to feeling more helpless and depressed. However, focusing on the part of the situation that you can control—such as your own rehabilitation, time spent in physical therapy, doing your daily range-of-motion exercises, and following the pain management strategies suggested by your doctor—can be a highly effective coping strategy.

References

Ratcliff, S. L., Brown, A., Rosenberg, L., Rosenberg, M., Robert, R. S., Cuervo L. J., Villarreal, C., Thomas, C. R., & Meyer 3rd, W. J. (2006). The effectiveness of a pain and anxiety protocol to treat the acute pediatric burn patient. *Burns*, 32(5), 554–562.



Romanowski, K. S., Carson, J., Pape, K., Bernal, E., Sharar, S., Wiechman, S., Carter, D., Liu, Y. M., Nitzschke, S., Bhalla, P., Litt, J., Przkora, R., Friedman, B., Popiak, S., Jeng, J., Ryan, C. M., & Joe, V. (2020). American Burn Association Guidelines on the Management of Acute Pain in the Adult Burn Patient: A review of the literature, a compilation of expert opinion, and next steps. *Journal of Burn Care and Research*, 41(6), 1129–1151. doi:10.1093/jbcr/iraa119

Schneider, J. C., Harris, N. L., El Shami, A., Sheridan, R. L., Schulz 3rd, J. T., Bilodeau, M.-L., Ryan, C. M., (2006). A descriptive review of neuropathic-like pain after burn injury. *Journal of Burn Care & Research*, 27(4), 524–528.

Wiechman Askay, S., Patterson, D. R., Sharar, S. R., Mason, S., & Faber, B. (2009). Pain management in patients with burn injuries. *International Review of Psychiatry*, 21(6), 522–530. doi:10.3109/09540260903343844



Authorship

Managing Pain After Burn Injury was originally developed by Shelley A. Wiechman, PhD and Shawn T. Mason, PhD, in collaboration with the Model Systems Knowledge Translation Center (MSKTC). It was reviewed and updated in 2017 by Shelley A. Wiechman, PhD, Walter J. Meyer, MD, Jeffrey C. Schneider, MD, Karen Kowalske, MD, Kathryn Epperson, BSN, RN, in collaboration with the MSKTC and in 2023 by Shelley A. Wiechman, PhD, Andie Hall, PharmD, BCCCP, Haig Yenikomshian, MD, and Caitlin M Orton, MPH, in collaboration with the MSKTC.

Source: The content in this factsheet is based on research and/or professional consensus. This content has been reviewed and approved by experts from the Burn Model System (BMS) centers, funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). The content of the factsheet has also been reviewed by individuals with burn injury and/or their family members.

Disclaimer: This information is not meant to replace the advice of a medical professional. You should consult your health care provider regarding specific medical concerns or treatment. The contents of this factsheet were originally developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR; grant number 90DP0012) and were updated under an NIDILRR grant (90DPKT0009). NIDILRR is a Center within the Administration for Community Living (ACL), U.S. Department of Health and Human Services (HHS). The contents of this factsheet do not necessarily represent the policy of NIDILRR, ACL, or HHS, and you should not assume endorsement by the federal government.

Recommended citation: Wiechman, S. A., Hall, A., Yenikomshian, H., & Orton, C. M. (2023). *Managing pain after burn injury*. Model Systems Knowledge Translation Center (MSKTC).

<https://msktc.org/burn/factsheets/managing-pain-after-burn-injury>.

Copyright © 2023 Model Systems Knowledge Translation Center (MSKTC). May be reproduced and distributed freely with appropriate attribution. Prior permission must be obtained for inclusion in fee-based materials.

