

Delirium After Burn Injury

April 2020

www.msktc.org/burn/factsheets

BURN Factsheet

This factsheet explains what delirium is and what you or your friends and family can do about it.

What you need to know about delirium

- What is delirium?
- What are the symptoms of delirium?
- After a burn injury, who develops delirium in the hospital?
- What can the health care team do to help?
- Does delirium go away?
- What are the long-term effects of delirium?
- What can you do to help someone who has delirium?
- Frequently asked questions about delirium

What is delirium?

Delirium (dee-leer-e-um) is a 'disturbance in mental abilities that causes confused thinking and reduced awareness of one's environment.'¹ It is usually caused by an underlying health problem, such as an infection. Other causes include changes in the sleep cycle, an illness, medicines, or drug withdrawal. Delirium does not mean that your loved one is "crazy" or has a permanent mental illness.

Three types of delirium have been identified:^{1,2}

- **Hyperactive** delirium. This is likely the easiest type to recognize. Signs include feeling restless or agitated; people may pace. People may have rapid mood changes. They may also hallucinate, or see things that are not there. They may not cooperate with care and pull at intravenous (IV) lines and tubes or try and get out of bed.
- **Hypoactive** delirium. Signs of this type may include inactivity (slow and/or limited activity). People may feel sluggish or more tired than normal. They may seem to be in a daze and may not recognize loved ones.
- **Mixed** delirium. This type includes both hyperactive and hypoactive signs and symptoms. The person may quickly switch back and forth between these two states.

What are the symptoms of delirium?^{1,2}

Symptoms of delirium may begin over a few hours or a few days. They may come and go throughout the day. Other times, people may have no obvious symptoms. Symptoms tend to be worse at night when it is dark. Some of the main symptoms include the following.

Reduced awareness of the environment. This includes:

- Not being able to stay focused.
- Being easily distracted.
- Being withdrawn, with little or no activity or little response to the environment.

The Burn Model Systems program is sponsored by the National Institute on Disability, Independent Living, and Rehabilitation Research, Administration for Community Living, U.S. Department of Health and Human Services. (See <http://www.msktc.org/burn/model-system-centers> for more information).

Poor thinking skills. This includes:

- Having poor memory and attention. A person may not recall instructions. He or she may ask for questions to be repeated.
- Being disoriented. A person may not know where he or she is or what is happening.
- Problems with speaking. This may include rambling or nonsense speech.
- Problems with reading or writing.

Changes in behavior. This may include:

- Seeing things that are not there.
- Being restless, agitated, or even aggressive.
- Calling out. This may include moaning or saying words that do not make sense.
- Being withdrawn; this is common in older adults.
- Having or showing little or no feeling or emotion.
- Not sleeping well.
- Reversing day and night cycles. This causes trouble sleeping at night and daytime drowsiness.

Emotional disturbances or changes. These include:

- Having a wide range of emotions. People may feel anxious, scared, or paranoid. They may also feel sad, cranky, or angry.
- Having sudden mood swings that cannot be predicted.
- Having personality changes.

After a burn injury, who develops delirium in the hospital?

Only a few studies have looked at delirium in burn patients. One study found that as many as 77% of burn patients who need a breathing tube develop delirium in the intensive care unit (ICU).³ Delirium may also develop after an operation. About 15% of burn patients develop delirium after an operation.⁴ Older age is a risk factor for developing delirium in the hospital. In some cases, delirium may have no known cause.

What can the health care team do to help?

Doctors and nurses use several screening tools daily to help identify delirium. They may ask the same questions when they see the patient each day, or even during every nursing shift.

The health care team knows that delirium may develop, especially in patients in the ICU. They will try to prevent it. This may include having the patient walk around the nursing unit or sit up in a chair. Patients should walk as soon as they can and often (make sure the burn team okays this type of activity). The team may also have the patient stay awake during the day and look for ways to help the patient sleep at night. The team may ask you to help with this by adjusting lights and noise in the room at certain times of day.

The team will try to manage your loved one's pain from their burn injury without over- or under-treating them.

The team may limit medicines that can make people feel confused. If your loved one is breathing with the help of a breathing machine, the doctors and nurses will try to decrease the use of medicines that make your loved one drowsy.

They will treat infections, correct fluid and electrolyte imbalances, and promote normal sleep and wake cycles.

They will try to limit interruptions by grouping nighttime care (medication administration, vital signs, and other assessments).

The care that a patient with delirium receives or the strategies used by the health care team to treat or prevent delirium may differ.

What can you do to help someone who is experiencing delirium?

The health care team may ask you about your loved one's medical history and usual behavior. Often, patients with delirium cannot provide an adequate medical history. Helping the team to understand how your family member's mental state is different from usual is a big help. It is also important that you tell your loved one's doctors and nurses if you notice a sudden change in the patient's behavior or emotions.

It is helpful to tell the health care team about your loved one's home routine and habits. This may include what time they wake up and go to sleep, their hobbies, and their likes and dislikes. Doing familiar tasks can help make a long hospital stay feel more normal.

Minimize daytime naps to help reset the day/night sleep cycle. Keep the lights on and the blinds open during the day. Turn the TV and lights off at the same time every night. Using an eye mask, ear plugs, or headphones (that play calming music) can help drown out the noise of the hospital. These habits can also help improve the patient's sleep.

Make sure to bring your loved one's glasses and hearing aids to the hospital. This will help them recognize you and their surroundings, which improves delirium. Bring a few photos of the patient and their loved ones, including pet photos, to help reorient them. Bringing in a favorite toy or stuffed animal may also help the child who experiences delirium.

Do not argue with your loved one if he or she is confused. This will lead to frustration. Instead, gently reassure the patient and remind them that they are safe in the hospital. It may also help to remind your loved one of the date, day of the week, and year. Keep instructions simple and give your loved one time to process directions. If you get frustrated, it is okay to step away from the bedside to take a break.

When your loved one is delirious, limit noise and visitors. Identify a small group of trusted friends or family members who can be with the patient to reassure them. During these quiet times, limit talking, touching, or other stimulus.

Does delirium go away?

For most patients, delirium gets better when they get treatment for the underlying cause of the change in their mental state. This could be a medical issue, a sleep disturbance, or side effects from medicine.

What are the long-term effects of delirium?

For some patients, the effects of delirium linger after their hospital stay. These effects may not be obvious. Patients may be much improved but still have problems with certain tasks that require focused thinking.

In a study of burn patients treated at an inpatient rehabilitation facility after their hospital stay, about 25% of patients had some difficulty with memory or thinking through a new problem when they left the rehabilitation hospital.⁵

Studies with non-burn patients have found that patients who had more days of delirium while in the ICU had the most severe long-term issues with their cognition⁶ and some have trouble with activities of daily living and functioning.⁷

Frequently Asked Questions About Delirium

1. **Is delirium a kind of dementia?** No, but it may be hard to tell the difference between dementia and delirium sometimes. A person can have both. 'Dementia is the loss of cognitive functioning—thinking, remembering, and reasoning—and behavioral abilities to such an extent that it interferes with a person's daily life and activities.'⁸
2. **How can I tell the difference between dementia and delirium?** Signs of delirium start over a few hours or a few days; dementia begins with minor symptoms that slowly get worse over time. With delirium, staying focused is difficult. A person in the early stages of dementia is generally alert. Symptoms of delirium may shift or change often throughout the day. With dementia, people have fairly consistent memory and thinking skills during the course of a day.

Comparison between delirium and dementia⁹

	Delirium	Dementia
Timing of onset of symptoms	Develops quickly, in hours or days	Develops over months or even years
Impact on memory or thinking	Delirium can make memory and thinking problems worse	Dementia is a disturbance of thinking
Length of illness/symptoms	Usually clears up after a few days or weeks	Usually a permanent condition

3. **Is delirium a disease?** No, it is a group of symptoms.
4. **What is usually the first sign of delirium?** Sudden confusion about time and place (where they are).
5. **Can delirium occur at any age?** Yes, delirium can occur at any age to include children, but it is more common in the elderly.

Additional Resources

Critical Illness, Brain Dysfunction, and Survivorship (CIBS) Center: <https://www.icudelirium.org>. Accessed January 21, 2020.

Patient Education: Delirium (Beyond the Basics): <https://www.uptodate.com/contents/delirium-beyond-the-basics?topicRef=16994&source=see-link>. Accessed January 21, 2020.

References

- 1 Mayo Clinic. (n.d.). *Delirium: Symptoms and causes*. Retrieved from <https://www.mayoclinic.org/diseases-conditions/delirium/symptoms-causes/syc-20371386>. Accessed February 27, 2019.
- 2 Gleason, O. C. (2003). Delirium. *American Family Physician*, 67(5), 1027–1034.

- ³ Agarwal, V., O'Neill, P. J., Cotton, B. A., Pun, B. T., Haney, S., Thompson, J., Kassebaum, N., Shintani, A., Guy, J., Ely, E. W., & Pandharipande, P. (2010). Prevalence and risk factors for development of delirium in burn intensive care unit patients. *Journal of Burn Care and Research*, 31(5), 706–715.
- ⁴ Guo, Z., Liu, J., Li, J., Wang, X., Guo, H., Ma, P., Su, X., & Li, P. (2017). Postoperative delirium in severely burned patients undergoing early escharotomy: Incidence, risk factors, and outcomes. *Journal of Burn Care and Research*, 38(1), e370–e376.
- ⁵ Hendricks, C. T., Camara, K., Violick Boole, K., Napoli, M. F., Goldstein, R., Ryan, C. M., & Schneider, J. C. (2017). Burn injuries and their impact on cognitive-communication skills in the inpatient rehabilitation setting. *Journal of Burn Care Research*, 38(1), e359–e369.
- ⁶ Girard, T. D., Jackson, J. C., Pandharipande, P. P., Pun, B. T., Thompson, J. L., Shintani, A. K., Gordon, S. M., Canonico, A. E., Dittus, R. S., Bernard, G. R., & Ely, E. W. (2010). Delirium as a predictor of long-term cognitive impairment in survivors of critical illness. *Critical Care Medicine*, 38(7), 1513–1520.
- ⁷ Brummel, N. E., Jackson, J. C., Pandharipande, P. P., Thompson, J. L., Shintani, A. K., Dittus, R. S., Gill, T. M., Bernard, G. R., Ely, E. W., & Girard, T. D. (2014). Delirium in the intensive care unit and subsequent long-term disability among survivors of mechanical ventilation. *Critical Care Medicine*, 42(2), 369–377.
- ⁸ National Institute on Aging. (2017). *What Is dementia? Symptoms, types, and diagnosis*. Retrieved from <https://www.nia.nih.gov/health/what-dementia-symptoms-types-and-diagnosis>. Accessed April 9, 2019.
- ⁹ Critical Illness, Brain Dysfunction, and Survivorship (CIBS) Center. (n.d.). *Patients and families overview*. Retrieved from <https://www.icudelirium.org/patients-and-families/overview>. Accessed January 21, 2020.

Authorship

Delirium after Burn Injury was developed by Gretchen J. Carrouger, MN, RN; Taylor Powell, BSN, RN (Northwest Regional Burn Model System; UW Medicine Regional Burn Center, Seattle, WA); Jeffrey C. Schneider, MD (Boston-Harvard Burn Model System, Boston, MA); and Kimberly Roaten, PhD, CRC (North Texas Burn Model System, Dallas, TX) in collaboration with the Model Systems Knowledge Translation Center.

Source: The content in this factsheet is based on research evidence and/or professional consensus and has been reviewed and approved by an editorial team of experts from the Burn Injury Model Systems (BMS), funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).

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 developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90DP0082). NIDILRR is a Center within the Administration for Community Living (ACL), 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.

Copyright © 2020 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.

