



# SMOKING AND WOUND HEALING

## Overview

You have shared with your wound healing team that you have a history of smoking, so it is important that you are aware that smoking can delay (or halt) healing, resulting in a negative outcome.

No dressing or treatment can overcome the negative effects of smoking because healing happens beneath the surface. We have also found that in some cases, insurance companies will not cover the costs of treatment if the patient continues to smoke.

Your wound healing team will be your biggest supporters and will guide you to resources to quit or reduce smoking. It is difficult to change a habit, but your healing depends on it.

## Healing Basics

Healing is a complex process that requires **healthy blood flow to deliver the oxygen and nutrients necessary to heal**. By improving circulation and blood flow, more healing nutrients and oxygen reach the wound, which promotes healing. If this process is interrupted, it can slow or prevent healing entirely.

## Will Smoking Affect Healing?

Yes, in a very negative way. In fact, **wound healing may not happen at all in the presence of smoking**. Cigarette smoking harms nearly every organ and tissue in the body, causes many diseases, and reduces general health.

Smoking also negatively affects your immune function. A healthy immune system is needed to help your body fight illness and infection, especially when you have a wound. As a result of smoking, the cells and antibodies that protect your body and wound against bad bacteria become weak, which makes it easier for your wound to become infected. An infected wound is hard to heal and may last many months or years<sup>1</sup>.

Some chemicals found in cigarette smoke such as **carbon monoxide** and **nicotine**, have a very specific effect on wound healing.

**Carbon Monoxide (CO):** Smoking tobacco increases the CO content of your blood. Carbon monoxide enters the blood from the lungs and combines with hemoglobin, blocking the blood's ability to carry oxygen to body cells. This leads to hypoxia, a medical term that means the body is not able to supply adequate amounts of oxygen to the tissues (which is needed for wound healing). In addition to impairing wound healing, hypoxia can also lead to infection because the body is unable to fight off "bad" bacteria.

**Nicotine:** Nicotine is an addictive drug and one of the harshest chemicals in tobacco smoke. Nicotine is a "vasoconstrictor", which means it constricts or narrows blood vessels. When blood vessels constrict, blood flow is slowed or blocked depriving your wound from receiving the nutrients and oxygen necessary for healing.

## Why is Smoking Harmful?

Cigarette smoking is the leading preventable cause of death in the United States<sup>1</sup>. According to the American Lung Association, there are approximately 600 ingredients in cigarettes. When burned, cigarettes create more than 7,000 chemicals. At least 69 of those chemicals are known to cause cancer, and many are toxic.

Every "puff" of a cigarette delivers these toxic chemicals to your body which can build up in your blood vessels and cause damage to the body's organs and systems. Additionally,

- Smokers are more likely than nonsmokers to develop heart disease, stroke, and lung cancer.<sup>2</sup>
- Smokers are at greater risk for diseases that affect the heart and blood vessels (cardiovascular disease).<sup>2,3</sup>
- Smoking can cause lung disease by damaging your airways and the small air sacs (alveoli) found in your lungs.<sup>2,3</sup>
- Smoking can cause cancer almost anywhere in your body.<sup>2,3</sup>

# The Health Effects of Quitting

When you make the decision to cut back or quit smoking, your body will experience positive results very quickly<sup>3</sup>.

- Within 20 minutes of quitting: Your blood pressure and pulse rate drop to normal and the temperature of your hands and feet increases to normal.
- Within 8 hours of quitting: Your blood carbon monoxide levels drop and your blood oxygen levels increase to normal level, which will directly improve wound healing.
- Within 24 hours of quitting: Your risk of a sudden heart attack goes down.
- Within 48 hours of quitting: Your nerve endings begin to regrow. Your senses of smell and taste begin to return to normal.
- Within 2 weeks to 3 months of quitting: Your circulation improves. Walking becomes easier. Your lungs work better. Wounds heal more quickly.
- Within 1 to 9 months of quitting: You have more energy. Smoking-related symptoms, such as coughing, nasal congestion, fatigue, and shortness of breath improve. You will have fewer illnesses, colds, and asthma attacks. You will gradually no longer be short of breath with everyday activities.

## How to Quit

Your health care team can guide you to resources that can help you “cut back” and hopefully quit smoking. Explore options that will assist you such as nicotine patches, gum, lozenges, medications, counseling and smoking cessation classes. Replace the habit with other activities or hobbies to fill the time where you would normally choose smoking.

Many insurance plans offer smoking cessation programs and resources. Call the customer service number on the back of your health insurance member card to find out what your benefits are. For additional information and resources to help you quit, call or visit the following:

- US Department of Health:  
Surgeon General “Quit Now” 800-784-8669
- US Department of Health & Human Services:  
[www.smokefree.gov](http://www.smokefree.gov)
- American Lung Association Helpline:  
800-LUNGUSA (800-586-4872)

**Your wound care team will help you with this “most important decision of your life”. It may take many tries before you finally quit, but keep trying – your health and healing depend on it.**

## References

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