

Cardiovascular Health

What is cardiovascular disease?

Cardiovascular disease refers to narrowed or blocked arteries and blood flow to the following regions:

- heart (“coronary heart disease”)
- brain (“cerebrovascular disease”)
- arms or legs (“peripheral vascular disease”)

Heart disease is the most frequent cause of death in the U.S., and is one of the leading causes of death among people with SCI.

Does my spinal cord injury increase my risk for cardiovascular disease?

- Scientists have recently recognized the importance of cardiometabolic disease (CMD), or the influence of many different conditions that combine to increase the risk for heart disease, stroke, and diabetes. The most relevant CMD components considered in people with SCI include diabetic (insulin resistance) and lipid (cholesterol, triglycerides) status, obesity, and high blood pressure.
- It is unclear if cardiovascular disease is more common in individuals with SCI than in those without SCI. CMD risk is felt to be similar in people with and without disability. However, your own risk is determined by many factors, including: veteran status, your age at injury, duration of SCI, pre-SCI health, family history, ethnicity and heritage.
- Some of the important and possibly modifiable factors that increase the risk for cardiovascular disease are more common in people with SCI. However, they can be more difficult to treat.

These risk factors include:

- Abnormal blood lipids: high “bad” cholesterol (LDL), low “good” cholesterol (HDL), and high fat (triglycerides or TG)
- Diabetes
- Physical inactivity and being overweight
- High blood pressure
- Smoking

What will medical providers consider when assessing my risk for cardiovascular disease?

- Generally, medical providers use the same guidelines as in people without SCI (cholesterol, blood pressure, glucose control from the American Heart Association and American Diabetes Association) to decide when to treat these risk factors. Special considerations for people with SCI include recommendations to use specific methods of assessing and defining obesity (body fat $\geq 22\%$ in adult men and $\geq 35\%$ in adult women; body mass index ≥ 22 kg/m² in both men and women).
- Recently published expert recommendations include checking for CMD risk factors at the time of discharge from acute rehabilitation, following lipids and glucose control at least every 3 years if the screen is normal, and blood pressure with routine visits at least yearly if normal. Blood pressure should be confirmed on a separate visit if elevated. Detailed clinical practice guidelines for SCI are now available (see Resources).

What can I do to reduce my risk of cardiovascular disease?

- **High LDL and TG and low HDL levels** increase the risk for cardiovascular disease.
 - Have your blood lipids checked regularly.
 - Changing your diet can lower your LDL level.
 - Learn more: http://sci.washington.edu/info/forums/reports/nutrition_2011.asp
 - Exercising more can increase your HDL level.
 - There are also medications that can improve your lipid profile.

- **Smoking** injures blood vessels and increases the risk of cardiovascular disease.
 - Quit smoking! You can learn more about quitting at www.smokefree.gov.
- **Diabetes** is often accompanied by other cardiovascular risk factors.
 - Regular endurance training such as manual wheelchair propulsion, handcycling or arm ergometry, and swimming can help to prevent or manage diabetes once it is diagnosed.
 - Learn more: http://sci.washington.edu/info/forums/reports/universal_fitness.asp
 - People with disabilities often need medications, which may be in the form of pills or injectable insulin. Your medical provider will help decide on the most suitable medication to manage your diabetes.
- **Physical activity** decreases your risk for diabetes, heart disease, and high blood pressure.
 - Moderate intensity exercise at least 150 min each week (30-60 min 3-5 days/week or at least 10 min 3 times a day) is recommended.
 - Exercising with an SCI can be more challenging due to paralysis, lack of exercise opportunities, and difficulty raising heart rate among those with higher injury levels.
 - More resources on ways that you can exercise are available at www.nchpad.org.
 - **High blood pressure** can injure the blood vessels over many years. Long-term elevated blood pressure is not the same as the brief period of elevated blood pressure that some people with SCI experience when faced with painful or uncomfortable events (autonomic dysreflexia).
 - High blood pressure can be lowered through diet, exercise, weight loss, and medications.
 - Talk to your doctor about what your blood pressure should be and how to best lower it.

Resources for Health Care Providers

- Consortium for Spinal Cord Medicine (2018). Identification and Management of Cardiometabolic Risk after Spinal Cord Injury: Clinical Practice Guideline for Health Care Providers. Retrieved from: <https://www.pva.org/publications/clinical-practice-guidelines>
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Disclaimer: This information is not meant to replace the advice from a medical professional. You should consult your health care provider regarding specific medical concerns or treatment.

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