

Cardiovascular Disease Management After SCI

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Fact Sheet

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There is a wide spectrum of interventions to help manage cardiovascular disease (CVD) in individuals with spinal cord injury (SCI) including lifestyle changes, medication, angioplasty and coronary artery bypass grafts (CABG). Changes in physical activity, diet, and medications are typically used to treat components of cardiometabolic syndrome, including dyslipidemia, in people with SCI.¹ Lifestyle modifications such as physical activity and diet (non-medical treatments) are preferable for health management in at risk-populations with SCI, when possible.

Lifestyle change

Physical Activity: Physical activity, including upper-arm ergometry and functional electrical stimulation training of lower limbs, has been shown to reverse musculoskeletal, cardiorespiratory, and metabolic abnormalities in individuals with SCI.^{2,3} Regular exercise has been shown to improve abnormal lipid profiles in individuals with SCI^{2,3} and blood pressure in the general population.⁴ See Fact Sheet “Physical Activity Interventions for Cardiovascular Health” for more detailed exercise interventions.

Modifying Diet: Modifying diet can also decrease the risk for CVD. Nutrition recommendations include:^{1,5}

- SCI-specific targets for BMI ($\leq 22\text{kg/m}^2$)⁵ and caloric requirement
- diet that focuses on whole grains, fruits, vegetables, low-fat dairy, poultry, fish, legumes, and non-tropical vegetable oils and nuts
- reducing salt intake (≤ 2400 mg for people with hypertension)
- reducing simple sugar intake
- reducing saturated fat ($\leq 5\text{-}6\%$ of total caloric intake),
- reducing red meat and cholesterol intake

Blood Pressure

Blood Pressure (BP) is an indirect measure of CVD status in individuals with SCI. Regular monitoring of BP is necessary for individuals with SCI, and individuals with tetraplegia should take extra caution as they demonstrate lower and less stable BP than people with low thoracic injuries.⁶ BP should be measured in supine and sitting in people with SCI as position can impact the resulting measurement.⁵ There are no specific guidelines for individuals with SCI, and individuals with SCI should coordinate with their physician to determine appropriate BP targets. Current guidelines for pharmacological treatment of hypertension in the general population are:⁴

Stage 1 Hypertension: Systolic 130-139mmHg or Diastolic 80-89mmHg, treat with BP lowering medication in some people at elevated risk of CVD

Stage 2 Hypertension: Systolic ≥ 140 or Diastolic ≥ 90 mmHg, treat with BP lowering medication

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Dyslipidemia

Screening:⁵ Screening for dyslipidemia should be performed at the time of discharge from rehabilitation. Repeat screening for dyslipidemia every three years if initial testing is normal or annually if dyslipidemia is confirmed or if multiple risk factors for dyslipidemia are present. Medication: Pharmacological treatment for abnormal lipid profiles typically starts with statin medication.⁵ There is proven efficacy of statin to lower LDL levels, CVD events and mortality in patients with increased CVD risk. Statins may have some side effects. Statins may cause statin-induced myalgia in 5-10% of individuals, and it rarely causes rhabdomyolysis. It is unknown if individuals with SCI are at greater risk for these side effects.⁷

Patient Resources

Fact Sheet from UW Medicine's Spinal Cord Injury Empowerment Project:
http://sci.washington.edu/empowerment/Cardiovascular_Health_2018.pdf

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