



Coronary Artery Disease and Spinal Cord Injury

People with chronic SCI have high rates of heart disease. The best-known studies in this area have looked mostly at men (not women) with SCI, but they have taught us that at least 50% of people with paraplegia and 80% of people with tetraplegia have evidence of heart disease when they undergo stress testing (1,2), even if they never get the classic symptoms of chest pain or problems with breathing. Over 20% of people with SCI will die of heart disease (3), but that number may increase as people with SCI are living longer lives than they did even two or three decades ago.

No one knows for sure why people with SCI have high rates of heart disease. Between 70 and 80% of people with SCI have abnormal cholesterol levels (4), around 20% have diabetes, and 30% of people with paraplegia have high blood pressure (less common among people with tetraplegia) (5,6). Each of these conditions can increase the risk of developing heart disease, as does a lack of physical activity. There are other risk factors for heart disease in SCI which we are only beginning to understand. Low testosterone levels in men with SCI may contribute to unfavorable cholesterol levels, and sleep apnea—a problem with breathing at night, which as many as half of people with SCI may have (7,8)—may also increase overall risk.

There have only been two journal articles looking at treating people with SCI with cholesterol-lowering medications (9,10). Unfortunately, neither one questioned if doing so reduces the risk of having a heart attack or dying; they only examined whether these medications can be safely used by people with SCI, which they can.

There are no specific guidelines for screening people with SCI for heart disease, although national guidelines recommend checking cholesterol levels every five years. Given that people with SCI are at high risk, their physicians should check their EKGs (an office-based test of how your heart functions) and may consider asking them to take a cholesterol reducing medication (called a “statin”), even if their “bad” cholesterol levels appear normal. Other risk factors for heart disease should be discussed, including blood pressure, lack of exercise, and sleeping problems. Doctors evaluating individuals with

SCI who have breathing complaints, nausea, chest pain, dysreflexia, or certain other symptoms should consider the possibility of heart disease.

References:

1. Bauman W, Raza M, Spungen A, Machac J. Cardiac stress testing with thallium-201 imaging reveals silent ischemia in individuals with paraplegia. *Arch Phys Med Rehabil.* 1994 Sep;75(9):946-50.
2. Lee C, Lu Y, Lee S, Ding H. Evaluating the prevalence of silent coronary artery disease in asymptomatic patients with spinal cord injury. *Int Heart J.* 2006;27:325-30.
3. DeVivo M, Krause J, Lammertse D. Recent trends in mortality and causes of death among persons with spinal cord injury. *Arch Phys Med Rehabil.* 1999 Nov;80(11):1411-19.
4. Vichiansiri R, Saengsuwan J, Manimmanakorn N, Patpiya S, Preeda A, Samerduen K et al. The prevalence of dyslipidemia in patients with spinal cord lesions in Thailand. *Cholesterol.* 2012;2012:1-6.
5. Bauman W, Spungen A. Risk assessment for coronary heart disease in a veteran population with spinal cord injury. *Top Spinal Cord Inj Rehabil.* 2007;12(4):35-53.
6. Yekutieli M, Brooks M, Ohry A, Yarom J, Carel R. The prevalence of hypertension, ischaemic heart disease and diabetes in traumatic spinal cord injured patients and amputees. *Paraplegia.* 1989 Feb;27(1):58-62.
7. Leduc B, Dagher J, Mayer P, Bellemare F, Lepage Y. Estimated prevalence of obstructive sleep apnea-hypopnea syndrome after cervical cord injury. *Arch Phys Med Rehabil.* 2007 Mar;88:333-7.
8. Stockhamer E, Tobon A, Michel F, Eser P, Scheuler W, Bauer W et al. Characteristics of sleep apnea syndrome in tetraplegic patients. *Spinal Cord.* 2002;40:286-94.
9. Nash M, Johnson B, Jacobs P. Combined hyperlipidemia in a single subject with tetraplegia: Ineffective risk reduction after atorvastatin monotherapy. *J Spinal Cord Med.* 2004;27(5):484-7.
10. Nash M, Jewis J, Dyson-Hudson T, Szlachcic Y, Yee F, Mendez A et al. Safety, tolerance, and efficacy of extended-release niacin monotherapy for treating dyslipidemia risks in persons with chronic tetraplegia: A randomized multicenter controlled trial. *Arch Phys Med Rehabil.* 2011 Mar;92:399-410.

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