

Autonomic Dysreflexia

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Fact Sheet

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Introduction

Autonomic Dysreflexia (AD) is a condition that commonly affects people with spinal cord injury (SCI) above the level of T6.¹ It is defined as a sudden systolic blood pressure increase by more than 20-40 mmHg.² 90% of people with SCIs are susceptible to experiencing AD, with higher levels of SCI leading to a higher risk.³ AD is considered a medical emergency that can be life-threatening; it can cause stroke, seizures, myocardial ischemia, and potentially death.⁴

What Causes Autonomic Dysreflexia?

AD is caused by a hyperactive response of the autonomic nervous system to a noxious stimulus or a trigger below the level of injury. Such triggers may include:¹

- Full bladder or bowel
- Blocked catheter
- Urinary tract infection (UTI)
- Ingrown toenail
- Tight clothing
- Pressure sores
- Prolonged pressure of an object, such as an abdominal binder or tight shoe
- Sexual intercourse
- Menstruation
- Prolonged stretch of hamstrings

Signs and Symptoms⁵

Although AD can be asymptomatic, it is important to recognize some of the common signs and symptoms one may experience with this condition. Such signs and symptoms include:

- Sudden increase in blood pressure
- Altered heart rate (reflex bradycardia)
- Anxiety
- Blurred vision
- Headache
- Flushing of skin (blotchy) and sweating above the level of injury
- Goosebumps

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How to respond to an AD Episode⁵

Immediately sit the person upright to aid in decreasing their blood pressure. Once the person is sitting upright, identify the noxious stimuli and remove it, if possible. Check to see if the urine bag is full; if so, slowly empty it. In addition, check the catheter tubing for constriction or blockage. If blocked, usually any tissue in the tube can be “milked” out. If you are unable to rapidly identify the stimulus, begin to loosen any items constricting the body such as clothing, shoes, and tight abdominal binder. Continue to monitor the person’s blood pressure. If the cause is not identified or able to be quickly resolved (e.g., urinary tract infection or pressure ulcer), seek emergency medical assistance.

Prevention

People with SCI and their physical therapists, caregivers and other healthcare providers can take preventative measures to decrease the risk of autonomic dysreflexia. In many cases, preventative measures include recognizing and removing any triggers before an event occurs. Triggers that can be controlled in a preventative fashion include: closely monitoring catheters to ensure the bladder does not become too full, removing or loosening any noticeable tight clothing, and making sure to remove any object that may provide prolonged pressure to the patient (e.g., braces, tight Foley bag elastic straps). In addition to these strategies, an anti-hypertensive medication may be prescribed in order to prevent or reverse the effects of AD.⁶

AD and Exercise

The disposition to autonomic dysreflexia during exercise is heightened when muscle movement is generated, or when exercising with a fever or during bladder emptying.⁷ To help prevent autonomic dysreflexia from occurring during exercise, be sure to empty the urine bag prior to exercise.⁸ Be sure to monitor for triggers while exercising to decrease the risk of AD. Pause or stop the exercise or activity if you notice signs of AD and rest until the AD episode resolves.

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