

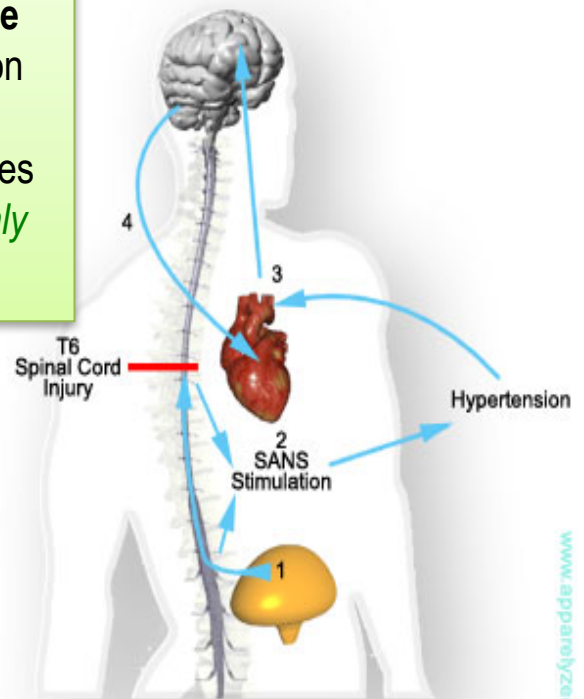
AUTONOMIC DYSREFLEXIA (AD)

- Can occur in patients with a spinal cord injury above T6.
- Occurs when there is an irritation, pain, or stimulus to the nervous system below the level of injury (T6).
- The irritated area sends a signal to the brain but it is not able to reach the brain.
- A reflex action takes place in the Sympathetic Autonomic Nervous System (SANS), tightening blood vessels, causing BP to rise.
- If this high BP not controlled it may cause a stroke, seizure, or death.

WHY BRADYCARDIA & FLUSHING ABOVE THE INJURY?

Caused by **PARASYMPATHETIC** response trying to “balance out” the SANS overreaction occurring below the injury.

Parasympathetic response can't get messages below level of spinal injury (“lesion”), *so it only affects top half of body & heart.*



- * ↑BP - Severe & Rapid
- * Flushed Face
- * Headache
- * Distended Neck Veins
- * ↓Heart Rate
- * ↑Sweating

Vasodilation Above

-- Level of Injury --



Vasoconstriction
Below Level
of Injury

- * Pale
- * Cool
- * No Sweating

Autonomic dysreflexia (also known as *autonomic hyperreflexia*) is a massive uncompensated cardiovascular reaction mediated by the sympathetic nervous system. It involves stimulation of sensory receptors below the level of the SCI [spinal cord injury]. The intact sympathetic nervous system below the level of injury responds to the stimulation with a reflex arteriolar vasoconstriction that increases BP, but the parasympathetic nervous system is unable to directly counteract these responses via the injured spinal cord. Baroreceptors in the carotid sinus and the aorta sense the hypertension and stimulate the parasympathetic system. This results in a decrease in heart rate, but the visceral and peripheral vessels do not dilate because efferent impulses cannot pass through the injured spinal cord.

The most common precipitating cause of autonomic dysreflexia is a distended bladder or rectum. However, autonomic dysreflexia can be caused by any sensory stimulation, including contraction of the bladder or rectum, stimulation of the skin, or stimulation of pain receptors.

Manifestations include hypertension (up to 300 mm Hg systolic), throbbing headache, marked diaphoresis above the level of injury, bradycardia (30 to 40 beats/minute), *piloerection* (erection of body hair [“goosebumps”]), flushing of the skin above the level of injury, blurred vision or spots in the visual fields, nasal congestion, anxiety, and nausea. It is important to measure BP when a patient with an SCI complains of a headache.

This is a life-threatening condition that requires immediate resolution. If uncorrected, autonomic dysreflexia can lead to status epilepticus, stroke, myocardial infarction, and even death.


Nursing interventions in this serious emergency are elevating the head of the bed 45 degrees or sitting the patient upright, notifying the physician, and determining the cause. The most common cause is bladder irritation. Immediate catheterization to relieve bladder distention may be necessary. Instill lidocaine jelly in the urethra before catheterization. If a catheter is already in place, check it for kinks or folds. If it is plugged, perform small-volume irrigation slowly and gently to open a plugged catheter, or insert a new catheter.

Stool impaction can also result in autonomic dysreflexia. Perform a digital rectal examination only after application of an anesthetic ointment to decrease rectal stimulation and to avoid increasing symptoms. Remove all skin stimuli, such as constrictive clothing and tight shoes. Monitor BP frequently during the episode. If symptoms persist after the source has been relieved, administer an alpha-adrenergic blocker or an arteriolar vasodilator. Continue careful monitoring until vital signs stabilize.

Teach the patient and caregiver to recognize the causes and symptoms of autonomic dysreflexia. They must understand the life-threatening nature of this dysfunction and know how to relieve the cause.

(Lewis et al., 2014, p. 1459)

AUTONOMIC DYSREFLEXIA
(Medical Emergency Card)

 www.apparelyzed.com
Enabling Independence Through Social Interaction
Spinal Cord Injury Peer Support

Autonomic Dysreflexia (AD) results from a sudden rise in blood pressure in an individual with a spinal cord injury (SCI), with a neurological level of T6 or above.

The cause of AD is a pain stimulus below the level of injury, resulting in an unopposed sympathetic system discharge. Raising the blood pressure 20-40mm Hg systolic above the person's normal baseline blood pressure, may trigger the symptoms of AD.

Symptoms of Autonomic Dysreflexia

- Increased blood pressure
- Flushing & sweating above the level of the SCI
- Bradycardia
- Anxiety
- Cardiac irregularities
- Bronchospasm or respiratory distress
- Goose bumps on skin above the level of the SCI
- Severe headache

If left untreated, this condition can result in seizure, retinal hemorrhage, stroke or in extreme cases, death.

If any symptoms of AD appear, ensure the following:

- Keep the person in a 90° upright position.
- Check there is free urinary drainage.
- Check for distended bowel.
- Check for ingrowing toenails and skin sores.
- Assess for other possible noxious stimuli.
- Hypertension should be treated medically if it persists with prescribed Nitro Paste or Nifedipine.

Card Holder's Medical Information

Name:

Baseline Blood Pressure:

Level of Injury:

Emergency Contact:

Relationship:

Phone Number:

For further information on AD visit: www.apparelyzed.com

WALLET CARD
(Fold horizontally, then fold vertically and place in wallet.)
www.apparelyzed.com/autonomic.html

Worksheet created by
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