Autonomic Dysreflexia
A Medical Emergency

Key Points

- Autonomic Dysreflexia (AD) is a medical emergency that occurs due to a rapid rise in blood pressure in response to a harmful or painful stimulus below the level of your Spinal Cord Injury (SCI)
- It occurs in people with SCI at T6 and above but has in rare occasions been reported in individuals with SCI as low as T8
- If left untreated your blood pressure can rise to dangerous levels, risking stroke, cardiac problems, seizures, even death
- Typically there is a pounding headache as your blood pressure rises. Other symptoms can include redness and sweating above the level of your SCI, slow heart rate, goosebumps, nausea, nasal congestion, blurred vision, shortness of breath and anxiety
- Some or all of the symptoms may be present
- AD can be triggered by any continuous painful or irritating stimulus below the level of your lesion. The most common causes are related to the bladder or bowel
- Relieving the cause of the AD will resolve your AD episode
- If the cause cannot be found or treated, medication is required to lower your blood pressure
- All people with SCI at T6 and above should carry their autonomic dysreflexia medical emergency card at all times
- The best treatment for AD is prevention
- People at risk of AD often carry an ‘AD Kit’ with them - items useful to resolve AD such as catheters and prescribed medication
What is Autonomic Dysreflexia?

Autonomic Dysreflexia (AD) is a medical emergency. It is an exaggerated nervous system response to a noxious or painful stimulus below the level of your spinal cord injury (SCI). This means that your body responds to something painful or harmful by raising your blood pressure, but your brain cannot control this potentially dangerous rise in blood pressure (BP) because messages are blocked by your SCI.

The rise in BP can be resolved by treating the cause of the AD. If the cause cannot be found or treated medication must be administered to control your blood pressure.

Who gets Autonomic Dysreflexia?

AD can occur in people with spinal cord lesions above the T6 level, however some rare cases of it occurring as low at T8 have been reported. Because this condition affects only a very small percentage of the population there is a lack of awareness of it. It is important you, your family, and your carers know how to recognise and treat this life-threatening condition.

It should also be noted that people with SCI at T6 and above usually have a lower blood pressure than the general population, so a blood pressure which is considered normal in the general population may not be normal for you.

What Happens?

Pain or irritation below the level of your SCI triggers a reflex and your body’s natural response is to raise your blood pressure by tightening your blood vessels below your injury level. Your brain gets information that your blood pressure is rising, and it tries to adjust this. It does this by slowing down your heart rate and trying to widen your blood vessels. However, the messages to your blood vessels below the spinal cord injury are blocked due to your SCI. Therefore, the blood vessels above your SCI widen, but the blood vessels below the level of your injury remain tight, causing your blood pressure to remain high. Without intervention and finding the cause your blood pressure will continue to rise.
Symptoms

• Some or all of these symptoms may be present –
• A rise in blood pressure causes a pounding headache
• Your heart rate slows
• There is a flushing, redness and sweating of the skin above the level of your spinal cord injury where the blood vessels are widened
• Your skin is cold below the level of your injury, where the blood vessels remain narrow, also causing goosebumps.
• Your body’s response to your rise in blood pressure may also cause nausea, nasal congestion, blurred vision, shortness of breath, and anxiety or a sense of apprehension.
Causes of Autonomic Dysreflexia

Episodes of AD can be triggered by many potential causes. Any continuous, painful or irritating stimulus below the level of your injury can cause an episode of AD. However, bladder issues are by far the most common cause, followed by bowel issues.

The following events or conditions are some things that can cause episodes of AD.

- Excessively full bladder
- Constipation
- Urinary tract infection
- Bladder or kidney calculi (stones)
- Pressure ulcers
- Ingrown toenails
- Tight clothing
- Sitting on scrotum
- Haemorrhoids
- Stomach upset
- Sexual intercourse
- Ejaculation
- Menstruation
- Pregnancy, labour or delivery
- Burns or sunburn
- Blisters
- Insect bites
- Fractures or other trauma
- Gallstones
- Surgery or procedures
- Gastric ulcers or gastritis

In fact, anything that causes continuous pain or irritation below the level of your SCI.
Treatment of Autonomic Dysreflexia

AD will resolve when the cause of your pain or irritation is removed. Therefore the cause must be identified and resolved. **This requires immediate action.**

Make sure you are sitting upright to try and reduce the blood pressure and loosen tight clothing.

Refer to the Autonomic Dysreflexia **Medical Emergency Card** for step by step instructions for managing and resolving AD.

If the cause cannot be found or fixed, medication must be given to lower your blood pressure. If AD continues to be uncontrolled or medication is not available, you (or someone) must dial 000 for an ambulance, and show your Autonomic Dysreflexia **Medical Emergency Card** to the paramedics and hospital staff. It is essential to present this card to anyone involved in your treatment to stress the seriousness and urgency of AD.

Many people at risk from AD carry a ‘kit’ in case of emergency. This kit can include such items as urinary catheters, lignocaine gel, gloves, and any medication that has been prescribed for you to manage AD.
Autonomic Dysreflexia Medical Emergency Card

This card should be carried at all times. It provides information about identifying and treating AD, as well as contact details for the Spinal Unit at Royal Perth Hospital if advice is needed.

What is Autonomic Dysreflexia?
This is a condition of sudden high blood pressure, which may continue for days. It may be a common cause of a sudden haemorrhage or fist.

The normal range of blood pressure for the group of people who are at risk of AD is commonly 90/60 - 100/60 lying and lower when sitting. A BP of 130/90 is commonly considered to be pathological.

Symptoms & Signs
The person may present with all or some of the following:
- Pounding headache
- Blurred vision
- Flushing and blotching of the skin above the level of the spinal cord injury
- Profuse sweating
- Diaphoresis
- Chills without fever
- Bradycardia (slow pulse rate)
- Hypertension (high blood pressure)

Common causes
- Bladder irritation, e.g. distended bladder, urological procedure, urine infection
- Bowel irritation, e.g. distended rectum, chemically irritant suppositories
- Skin irritation, e.g. pressure sore, ingrown toenail, burns
- Other, e.g. contracting uterus, abdominal disease.

Patients and carers know about this condition and can often suggest the cause.

Treatment
Ask if the patient has just taken a drug to control the autonomic dysreflexia. Two people are required to control the situation.

1. Sit up right or elevate the head of the bed. Loose clothes and remove compression stockings and abdominal binder.

2. If the person has an IDC or SPC:
   a) Empty leg bag and estimate volume. To determine whether the bladder is empty, ask if volume is reasonable considering fluid intake and output earlier that day.
   b) Check that the catheter or tubing is not kinked or flow is not impeded by a blocked inlet to the leg bag or perineal valve in the leg bag. If the blood pressure > 170mm systolic, start drug therapy (see point 3).
   c) If the catheter is blocked, irrigate GENTLY with no more than 30 mls of sterile water. Drain the bladder slowly (see point 2iii).
   d) If the catheter is blocked, irrigate GENTLY with no more than 30 mls of sterile water. Drain the bladder slowly (see point 2iii).
   e) If the bladde is empty, the person still requires close observation as the bladder can go into severe contractions causing hypotension to recur. Consider giving an oral anticholinergic medication, e.g. Oxybutynin HCL.
   f) Monitor the blood pressure for the next four hours.

3. If the person does not have a permanent catheter:
   a) If the bladder is distended, lubricate the urethra with a generous amount of lubricant containing a local anaesthetic jelly, e.g. lignocaine (XYlocaine) jelly, wait two minutes, then pass a catheter to empty the bladder. Drain the bladder slowly (see point 2d).

For further information contact:
Sir George Bedbrook Spinal Unit,
Royal Perth Rehabilitation Hospital
Perth
(08) 9382 7284

This information is endorsed by the Australian & New Zealand Spinal Cord Society 3/3/2006.
Prevention of Autonomic Dysreflexia

Preventing episodes of AD relies on managing the factors which trigger AD. It may be helpful for you to keep an AD diary, recording your episodes of AD, its cause and effective treatment.

Given many episodes of AD are related to the urinary tract, good bladder management is essential. Avoidance of bladder distension, urinary tract infections, and renal stones is important. Additionally, other factors which commonly trigger AD include constipation and skin problems, so good bowel management and skin care can help prevent AD.