BODY MATTERS

sia spinal injuries association
for life after spinal cord injury

# AUTONOMIC DYSREFLEXIA

## FACTSHEET

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# Autonomic dysreflexia

## What is it?

Autonomic dysreflexia (AD) is a condition where there is a sudden and potentially lethal rise in blood pressure. It is the body's way of responding to a problem and is often triggered by acute pain or another harmful stimulus in the body, such as an overfull bladder.

The condition is unique to spinal cord injured (SCI) people and most commonly affects those with injuries at or above T6 level. The rapid rise in blood pressure (hypertension) can lead to a stroke (cerebral haemorrhage) and even death. If you have an injury above T6, you must understand how to prevent and manage AD.

**Autonomic dysreflexia should ALWAYS be treated as a medical emergency**

Studies have shown that AD can occur at any time after the spinal shock has subsided following a SCI. SCI people with incomplete lesions are as likely to experience AD as people with complete lesions, although symptoms can be less severe.

## Why does it occur?

AD arises in response to pain or discomfort below the level of a spinal cord lesion. That is because blood pressure typically rises when the body encounters a harmful stimulus, as seen in the fight or flight response.

With a T6 or above injury, the autonomic nervous system cannot lower blood pressure that has risen below the level of injury in response to pain or discomfort in that region. That means blood pressure continues to increase, often to dangerous levels, until the trigger has been resolved. Meanwhile, the autonomic nervous system tries to lower blood pressure above the SCI. These AD symptoms provide a warning mechanism to take immediate and appropriate action.

If an AD episode is not resolved, the continuing surge in blood pressure becomes extremely dangerous and can lead to a stroke and possibly death.

## Who is at risk?

- SCI people injured at or above the level of T6.
- Those with complete injuries are more likely to be affected.

## What are the symptoms?

You may not experience all the typical symptoms mentioned here and some may be unique to you. A pounding, usually frontal, headache is often present alongside one or more of the following common symptoms:

- Flushed (red) appearance of skin above the level of injury
- Profuse sweating above the level of injury
- Pale coloured skin below the level of injury
- Stuffy nose
- Severe hypertension (note: SCI people typically have a lower resting blood pressure than non-SCI people)
- A tight chest
- Slow heart rate (bradycardia)

# What are the common causes?

## Bladder

- Distended bladder. This is usually due to a blockage or obstruction, such as a blocked or kinked catheter or a full leg bag, which prevents urine from flowing from the bladder
- Too long between self-intermittent catheters
- Urinary tract infection or bladder spasms
- Bladder stones

## Bowel

- Distended bowel, which can be due to a full rectum, constipation or faecal impaction
- Haemorrhoids
- Anal fissures
- Stretching of rectum or anus or skin breakdown in the area

## Skin

- Pressure ulcers
- Burns, including sunburn
- Ingrown toenails
- Tight-fitting clothing or shoes
- Any injury to the skin in the paralysed part of the body

## Sexual activity

- Over-stimulation during sexual activity
- Ejaculation

## Gynaecological issues

- Menstrual pain
- Labour and delivery

## Other causes

- Bone fractures below the level of injury
- Pain or trauma
- Syringomyelia
- Deep vein thrombosis
- Acute conditions such as a gastric ulcer or appendicitis
- Anything that would otherwise be experienced as pain

You should be familiar with AD symptoms in the same way a person with diabetes is aware of the early signs of hypoglycaemia (low blood sugar). You may well be able to spot the onset yourself and take immediate action or get help before the problem escalates to the point where there are serious consequences.

Not all medical staff are aware of AD, and you should be an expert in your condition. You could find yourself explaining what is happening to you to a healthcare professional. An SIA medical emergency card can help communicate the problem.

As you approach discharge from hospital after injury, your community care team and full-time carers should become familiar with the causes and effects of AD. Equally, they should ensure you understand AD and can spot the symptoms.

# Treatment

Recognising AD quickly is essential so that treatment can be started at once. The trigger causing the episode must be identified and resolved to prevent dangerously high blood pressure.

## What action should be taken on spotting autonomic dysreflexia?

- Sit up and drop your feet
- Loosen any clothing and check nothing is putting pressure on the skin
- Perform a quick assessment to find the cause so that it can be removed

**Actions should be prioritised as follows:**

## Find and remove the cause

### Bladder

The most common cause of AD is the non-drainage of urine. This can result from a blocked catheter, urinary tract infection or overfilled collection bag.

### Action

**If you have a Foley or suprapubic catheter, check the following:**

- Is your drainage bag full?
- Is there a kink in the tubing?
- Is the drainage bag at a higher level than your bladder?
- Is the Flip-Flo tap open?

After correcting any obvious problems, and if your catheter is not draining in two to three minutes, the catheter must be changed immediately.

If you do not have a Foley or suprapubic catheter, perform catheterisation and empty your bladder.

**Do NOT attempt a bladder washout as this could increase your blood pressure further**

### Bowel

If a bladder problem has not triggered the episode, the cause may be your bowel. This can be due to constipation, anal fissures, haemorrhoids or infection.

### Action

Insert a gloved finger lubricated with an anaesthetic lubricant, such as 2% lignocaine gel, into your rectum. If the rectum is full, insert some lubricant and wait for at least three minutes before gently performing digital removal of faeces. The use of lubricant and the wait time reduces the sensation in the rectum and is essential because performing digital stimulation and manual evacuation can worsen AD.

**If you were doing this when the AD symptoms first appeared, stop the procedure and resume after the symptoms subside**

## Other causes

If bladder or bowel problems have been ruled out as the cause of AD, investigate alternative triggers from the list given previously and remove the offending stimulus. Staying calm is important because anxiety can worsen the problem.

## Know your blood pressure

You, your carers and family members should know your normal blood pressure. Document it along with your pulse rate in a prominent place, such as on your care plan or SIA medical emergency card.

People with high-level paraplegia and tetraplegia have a low resting blood pressure, typically 80mmhg or 90mmhg systolic for a cervical injury. A rise to 120mmhg or 130mmhg systolic could be dangerous even though this range may be a healthy blood pressure for a non-SCI person.

Sharing your normal blood pressure with an attendant healthcare professional is essential if you have an AD episode. This information allows them to acknowledge that there is a rise.

## Call 999 if the trigger cannot be resolved

Familiarise yourself with AD treatment options in case symptoms persist despite interventions. If you don't already have one, ask for a vasodilator (medicine that causes the blood vessels to widen, reducing blood pressure) for use at home. This treatment can be administered if you have an AD episode that cannot be quickly resolved.

Always carry an emergency medical card that describes AD and the treatment needed because not all healthcare staff are familiar with the condition. You can get a free emergency medical card from SIA.

## Autonomic dysreflexia emergency kit

**Always keep an AD kit with you. This should have:**

- A spare catheter. For an indwelling catheter, you will need syringes to deflate and inflate the balloon with sterile water
- Prescribed AD medication – usually nifedipine or glyceryl trinitrate, or GTN. Check this regularly to ensure it is in date
- Anaesthetic lubricant such as 2% lidocaine (lignocaine) gel
- Sterile vinyl gloves
- Wet wipes and disposal bags

**Warning: a drop in blood pressure (hypotension) can occur following medication for AD**

# Reducing the risk of autonomic dysreflexia

**Fortunately, you can take precautions to reduce the risk of AD. These include:**

## Bladder

- Change catheters regularly to prevent blockages (usually every four to six weeks)
- Keep catheters free of kinks by checking after every transfer or position change
- Follow your intermittent catheterisation or Flip-Flo release regime regularly to avoid an overfull bladder
- Be aware of the early onset symptoms of a urinary tract infection (UTI), such as fever, feeling unwell and concentrated urine
- Prevent UTIs with good personal hygiene
- Drink plenty of fluids

## Bowel

- Maintain a regular bowel regime, avoiding incontinence and constipation
- Eat enough fibre to help prevent constipation
- Treat haemorrhoids

## Skin

- Frequent pressure relief when in the chair and bed
- Regularly check pressure-relieving aids and follow maintenance guidelines
- Check skin regularly
- Avoid tight or restrictive clothing
- Prevent sunburn and scalds by avoiding sun overexposure and using an SPF50 sunscreen
- Establish a good posture in your wheelchair

## Other

- If you are pregnant or planning a family, make sure your obstetrician or gynaecologist is aware of your healthcare needs as a SCI person
- Ensure the correct dosage and timing of medications
- Deepen your knowledge of the causes, signs and symptoms, first aid, and prevention of AD. Make sure those around you or caring for you are similarly educated

# In summary

- Autonomic dysreflexia is a potentially life-threatening medical problem
- It requires immediate attention
- Learn what triggers an episode and how to deal with it. Teach those around you the warning signs and treatments
- Have the necessary tools handy to deal with an AD episode
- Fix the problem, sit up and try to stay calm
- Call for medical attention if the symptoms do not subside

**For an emergency medical card, call the SIA freephone support line on 0800 980 0501**

*Information adapted from Managing Spinal Cord Injury: Continuing Care; Chapter 22 'Autonomic Dysreflexia' by Paul Harrison and Alison Lamb

**For more information, contact us at:**
Spinal Injuries Association, SIA House,
2 Trueman Place, Milton Keynes, MK19 6HY

0800 980 0501 (freephone support line open Mon-Fri 10.00am-4.30pm)
sia@spinal.co.uk

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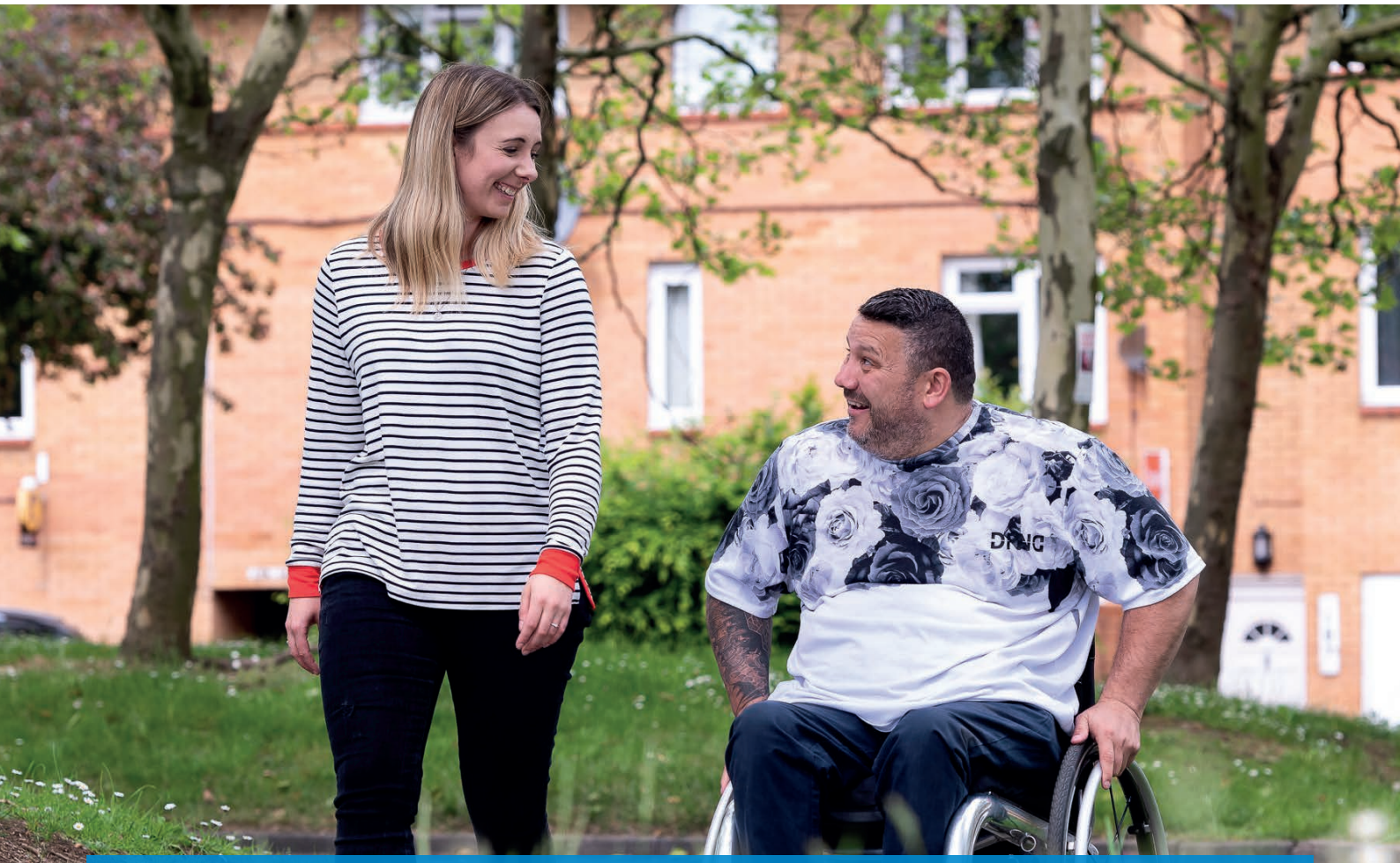

## About SIA

Spinal Injuries Association (SIA) is the leading national charity for anyone affected by spinal cord injury. We have specialist support available, for free, to support you through the mental and physical challenges you may face, both now and for the rest of your life.

Our support network is coordinated by a team of people, across the UK, who can put you in touch with our network of experts and trusted partners, covering all aspects of mind, body and life, to help you move forward with life. Our partners specialise in services such as legal, care, housing, finance, mental health and much more.

We are the voice of spinal cord injured people, through our expertise and we can connect you to the services and organisations you need through our network for all.

You can join the SIA community by signing up for free online at www.spinal.co.uk.



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