

Autonomic Dysreflexia

Background

The autonomic nervous system is responsible for automatic body functions that occur without conscious effort, such as heart rate, blood pressure, breathing, and digestion. Autonomic dysreflexia (AD) occurs when a stimulus triggers an exaggerated response of the autonomic nervous system, causing sudden changes in blood pressure and other bodily functions. AD emerges after a spinal cord injury (SCI), usually when there is damage at level T6 or higher. The higher the SCI, the greater the risk of developing episodes of AD.

AD is a potentially life-threatening medical emergency that causes vasoconstriction (narrowing of the blood vessels) and a sudden, exaggerated increase in blood pressure. It is usually accompanied by a severe throbbing headache, slowed heart rate and facial flushing. Common signs and symptoms include:

- Increased blood pressure
- Sudden onset headache
- Blurry vision
- Shortness of breath
- Sweating above level of injury
- Flushed face or red blotchy skin above level of injury
- Cold, clammy skin or goose bumps
- Nasal congestion
- Menstrual cramping
- Nausea
- Anxiety

Prompt assessment and immediate intervention are essential. Rapid reduction of blood pressure and removal of the triggering stimulus are necessary to prevent serious complications, including seizure, stroke, cardiac complications, or death.

Bladder and bowel irritation are the most common causes of AD, including distension, urinary tract infection, blocked urinary catheter, bladder or kidney stones, constipation, and hemorrhoids. Other sources of discomfort, such as pressure areas on the skin, tight clothing or socks, ingrown toenails, and blisters, can also trigger a response.

Carrying a “wallet card” or wearing a medical alert bracelet is recommended to inform others about the condition and the necessary emergency interventions. AD is a medical emergency and requires prompt identification and treatment.



CONSIDERATIONS FOR IMMEDIATE CARE INCLUDES:

- **Sitting up:** Support the student to an upright position to help reduce blood pressure.
- **Removing noxious stimuli:** Check the skin and remove or loosen any tight or wrinkled clothing, shoes, or braces.
- **Checking bladder:** Catheterize immediately, ensure the catheter is not clogged or kinked.

Continue to monitor blood pressure throughout the episode and follow the student's emergency plan. Note that symptoms of AD may initially progress before they begin to improve.

Top Takeaways for School

Autonomic dysreflexia (AD) is a potentially life-threatening medical emergency that can develop in individuals with a spinal cord injury when an irritating stimulus below the level of the injury triggers a sudden increase in blood pressure.

Common triggers in school could include a full bladder or delay in bladder emptying, extended sitting (e.g., long bus ride), or pressure on the skin from tight socks or braces.

Prevention is a key component of AD management. Ongoing education of school staff regarding appropriate bladder, bowel, and skin care practices is essential.

Never leave the student unattended. Follow the student's emergency care plan.

Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnoses: Autonomic dysreflexia, risk for disturbed sensory perception, risk for unstable blood pressure, impaired urinary elimination and impaired physical mobility
- Student-specific AD triggers, avoidance or intervention strategies
- Respiratory interventions and equipment (consider tracheostomy brand/size and downsize, suctioning brand/size, frequency of suctioning, ventilator brand and settings); note location of suctioning, use of private duty nursing if applicable
- Nutrition interventions and equipment (consider brand/size of feeding tube, tube replacement, water flushes, fluid intake goal and supplements); note school district policy on tube replacement and consider keeping backup feeding tube kit at school if applicable
- Elimination interventions and equipment (consider catheterization brand/system, French size, cleaning procedure and frequency of catheterization); note location of procedure
- Assessment of implanted medical device (consider location, date of surgical placement, and device-specific information)
- Temperature regulation considerations in school setting and transportation
- Use of specialized equipment, adaptive equipment and orthotics
- Activity, positioning, transferring (consider precautions and/or restrictions)
- Skin check, pressure relief techniques
- Equipment troubleshooting (consider equipment/device user manual, battery, charger)
- Consider emergency action plans (EAPs) and emergency evacuation plans (EEPs) related to special health care needs, including staff education/training

Discussion Starters for the Educational Team

1. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
2. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
3. Does the student need additional adult support to access the academic curriculum in the least restrictive environment?
4. Is the physical school environment safely accessible for the student's mobility needs (e.g., entry and exit, ramps, location of classes, access to elevator, doorways)?
5. Does the classroom environment support the student's needs and/or equipment (e.g., desk/seating options, maneuverability space, electrical outlets, flash pass for bathroom or nurse)?
6. Will staff receive education/training to implement the student-specific emergency plan?

Resources

Kennedy Krieger Institute: International Center for Spinal Cord Injury
[kennedykrieger.org/patient-care/centers-and-programs/international-center-for-spinal-cord-injury](https://www.kennedykrieger.org/patient-care/centers-and-programs/international-center-for-spinal-cord-injury)

Christopher and Dana Reeve Foundation: Paralysis and Spinal Cord Injury Wallet Card
[christopherreeve.org/todays-care/living-with-paralysis/free-resources-and-downloads/wallet-cards/](https://www.christopherreeve.org/todays-care/living-with-paralysis/free-resources-and-downloads/wallet-cards/)

United Spinal Association
[unitedspinal.org](https://www.unitedspinal.org)



For more information, please scan the QR code or visit: [KennedyKrieger.org/SHNIC](https://www.KennedyKrieger.org/SHNIC)