

Autonomic Dysreflexia

Kendra Baker RN

Kasey Aiello, Patient Liaison

Rebecca Charbonneau MD

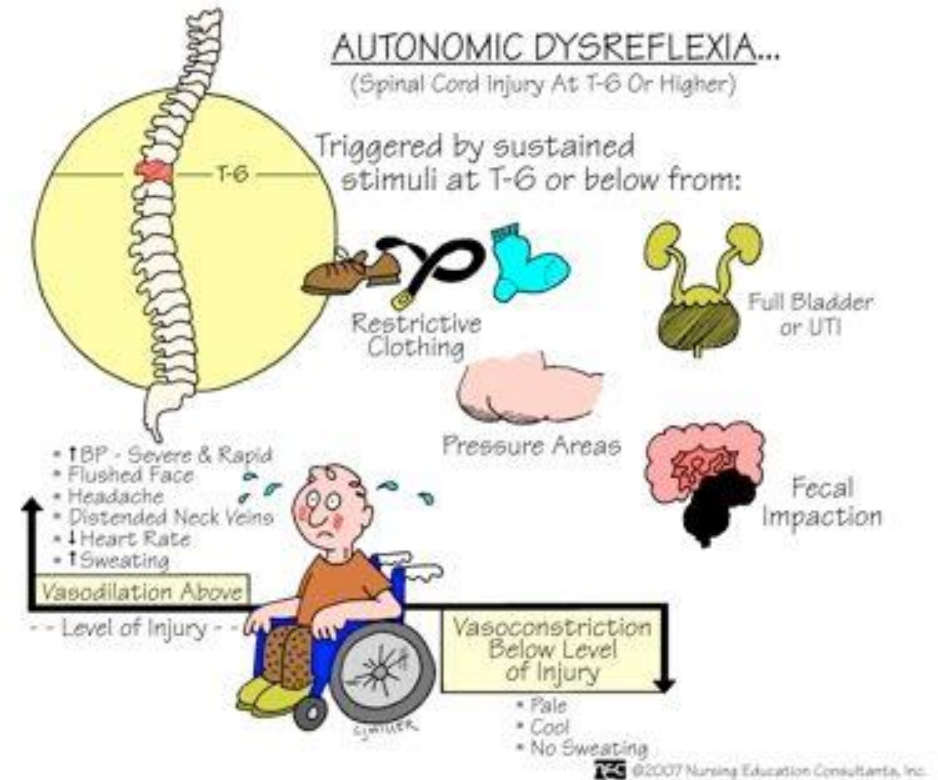
Overview

- ❑ Definition
- ❑ Pathophysiology
- ❑ Causes of AD
 - ❑ Bladder
 - ❑ Bowel
 - ❑ Skin
 - ❑ Other causes
- ❑ Treatment
- ❑ Lived experience

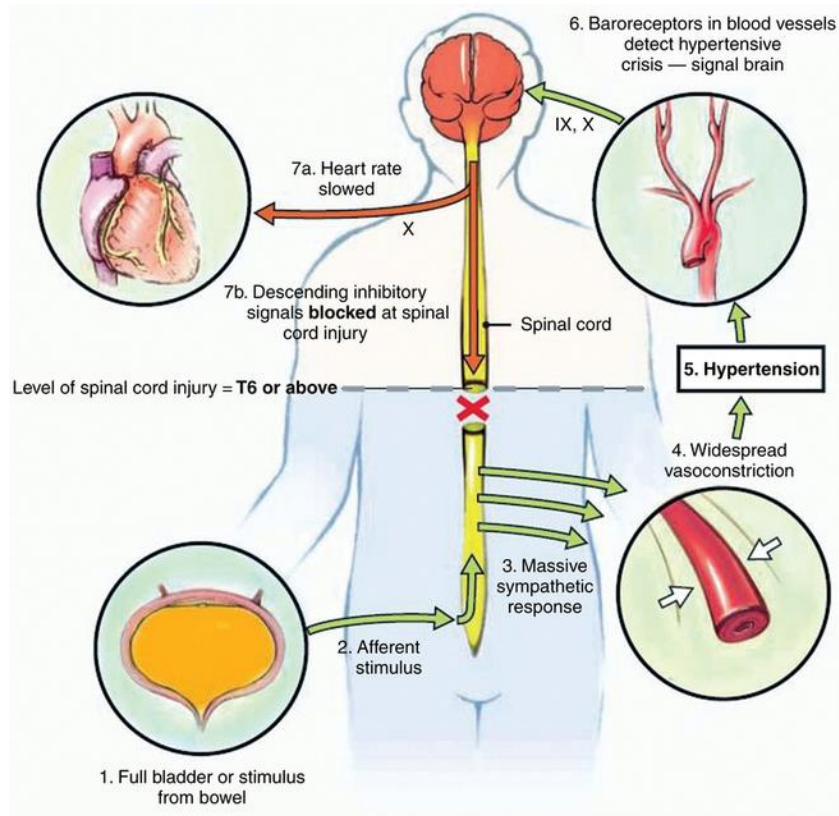


Autonomic Dysreflexia Definition

- ▶ Sudden rise in blood pressure (20 to 40 mmHg) above the patient's normal blood pressure, in response to a painful (noxious) stimulus below their level of injury (e.g.. full bladder, skin pressure).



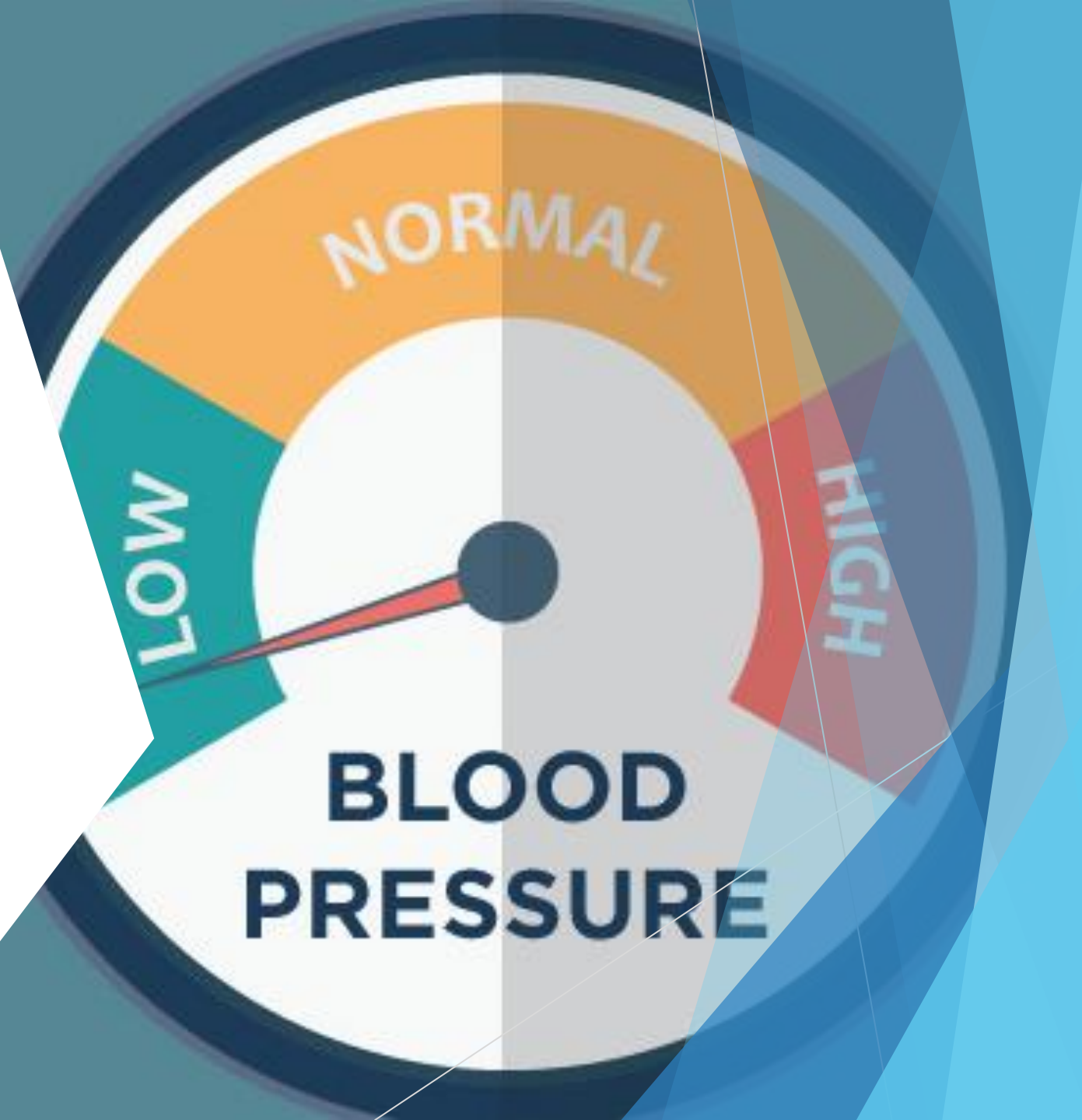
What is Autonomic Dysreflexia?



- ▶ An emergency situation
- ▶ An abnormal response which occurs when the body is experiencing pain below the level of the SCI
- ▶ This pain message do not reach the brain because of the SCI
- ▶ Blood pressure can rise to dangerous levels
- ▶ If the cause of the pain is not treated, serious complications can occur:
 - ▶ Stroke
 - ▶ Seizure
 - ▶ Organ damage
 - ▶ Brain injury
 - ▶ Death

People with SCI often have lower BP

- ▶ Autonomic nervous system controls BP.
- ▶ There is a disruption of the nerve impulses at the level of injury in the autonomic nervous system
- ▶ With a spinal cord injury, the sympathetic nervous system, (fight or flight response), becomes hypoactive which in turn causes a lower blood pressures.



Bladder

Bladder distention

Catheterization

UTI

Bestial torsion

Scrotal compression

Epididymitis

GU instrumentation

Sexual intercourse

Ejaculation

Menstruation

Labour and delivery

Bowel

Bowel distension

Appendicitis

Erosive gastritis

Gastric reflux

Gastric and duodenal ulcers

Cholecystitis and cholelithiasis

Enemas

Hemorrhoids

Anal fissure

Skin

Pressure ulcer

Ingrown toenails

Sunburn

Blisters

Constrictive clothing

Contact with sharp objects

Extremities

Heterotopic ossification

DVT

Fracture

Joint dislocation

Electrical Stimulation

Other

Boosting

Excessive caffeine/alcohol

Substance abuse

Surgical procedures

Pulmonary emboli

Signs and Symptoms of AD

- ▶ Hypertension
- ▶ Bradycardia
- ▶ Severe or pounding headache
- ▶ Changes in vision such as seeing spots or loss of vision
- ▶ Anxiety or feeling of apprehension
- ▶ Face, neck, or shoulder flushing or splotchy skin
- ▶ Nasal congestion
- ▶ Slow heart rate
- ▶ Chills or goose bumps below level of injury

Management includes:

- Removing the cause of the noxious stimulus
- If conservative management isn't effective, medical management with anti-hypertensive medication may be required to prevent serious complications

A provincial Autonomic Dysreflexia protocol was developed

Why?

- ▶ Patients living with spinal cord injuries reported that AD management was inconsistent and lacking in many healthcare settings in Alberta.
- ▶ This was putting them at risk for developing serious complications

Why?

- ▶ Created a standardized direction for staff
- ▶ To create a resource for staff who may not routinely care for spinal cord injury patients .



[COVID-19 Info](#) | Continuous masking remains in effect at all AHS, APL and Covenant facilities provincially.

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Care for Patients with Spinal Cord Injury in Hospital

Neurosciences, Rehabilitation & Vision Strategic Clinical Network™

In Alberta, there are four sites, including five programs, in the two major urban cities that provide acute, post-acute and inpatient rehabilitative care for patients with acute spinal cord injury (SCI). Additionally, patients who live with SCI can be admitted to any of the 98 hospitals in Alberta for issues unrelated to their SCI. Care of persons with SCI is diverse, complex and involves several care disciplines, and it is currently not standardized provincially.

The NRV SCN is leading a provincial initiative to improve and standardize the nursing and allied health care for patients with spinal cord injury (SCI) in Alberta acute care and inpatient rehabilitation hospitals. The goal of this initiative is to: decrease practice variation, improve patient and family experience, improve transitions in care, and to improve safety for patients.

Summary of Initiative

- [Standardization of Nursing and Allied Health Care for Patients with Spinal Cord Injury in Alberta Hospitals](#)

Standardized Topics

Ten topics were prioritized for standardization. The following topics are completed:

Autonomic Dysreflexia

- [Autonomic Dysreflexia: Adult](#) – Protocol

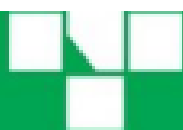
Quick Reference

- [Exploring the Patient Experience of Spinal Cord Injury: From Acute Hospital to Inpatient Rehabilitation](#) (presentation)
- [Empowerment, Communication, and Navigating Care: The Experience of Persons With Spinal Cord Injury From Acute Hospitalization to Inpatient Rehabilitation](#) (article)

Questions/Suggestions

Email: neurorhabvision.scn@ahs.ca

Where do I find it?



TITLE

AUTONOMIC DYSREFLEXIA: ADULT

SCOPE

Provincial: Acute Care

DOCUMENT #

HCS-284-01

APPROVAL AUTHORITY

Clinical Operations Executive Committee

INITIAL EFFECTIVE DATE

September 15, 2021

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Not applicable

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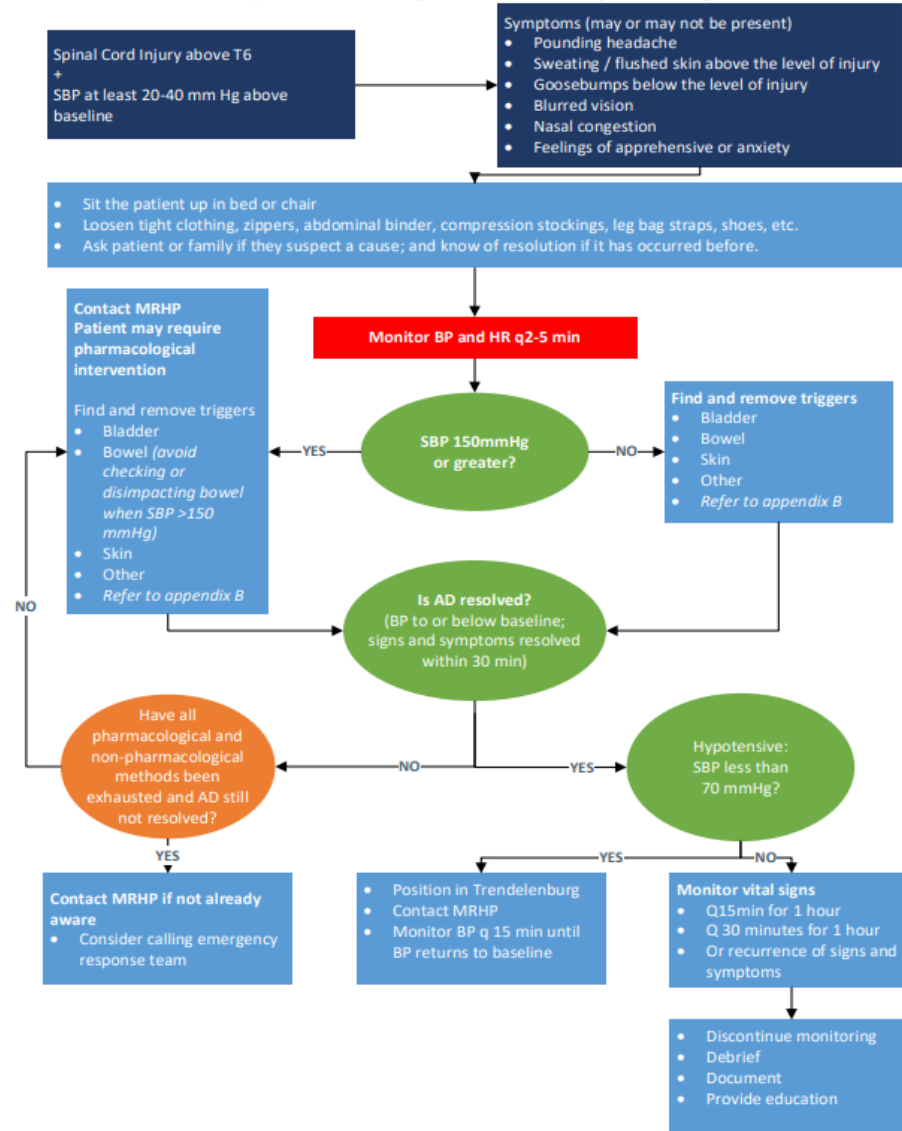
September 15, 2024

NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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APPENDIX A

Autonomic Dysreflexia Recognition and Management Algorithm



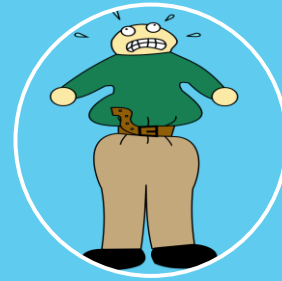
Management of Autonomic Dysreflexia



If possible sit the patient up in bed or a chair



Monitor blood pressure q2-5 minutes



Loosen clothing (zippers, abd binder, compression stockings, leg bag straps)



Notify the MRHP if SBP greater than 150 mmHg and no orders are on their health record



Identify the trigger of the noxious stimuli and remove and or resolve

Full bladder

Bladder infection

Any tests done on the bladder

Full bowel

Gaseous distention

Rectal irritation

Sitting/laying on something hard

Tight clothing

Pressure injury

Wounds/burns

Ingrown toenails

Other triggers that may cause discomfort below level of injury

Severe pain

Fractures

Menstrual cramps

Pregnancy or labour and delivery

Constrictive devices

Complications of an indwelling vascular access device

Any procedure without general or adequate local anesthetic

Lidocaine 2%

Topical anesthetic lidocaine 2% gel should be considered prior to catheterization or disimpaction during an episode of AD

If not available proceed with the catheterization or disimpaction to remove the noxious stimulus

Pharmacological Management

Antihypertensive medications with quick onset and short duration are recommended

In non pharmacological management is ineffective and SBP remains greater than 150mmHg

Treat with Captopril 12.5mg and then repeat after 10 minutes if SBP remains greater than 150mmHg

If after 30 minutes post initial Captopril give Nifedipine 5-10mg, bite and swallow



Pharmacology

Captopril

- ▶ ACE inhibitor
- ▶ Half life of 2 hours
- ▶ Caution in pt's with impaired renal function

Nifedipine

- ▶ Calcium channel blocker
- ▶ Stays in your system for 7 hours
- ▶ Caution in pt's with impaired liver function

Change in neurological status

Contact your
MRHP

Reduced level
of consciousness

New weakness

New numbness

Signs of a stroke

Facial droop

Slurred speech

Vision changes

If SBP is less than 70mmHg and/or symptomatic for hypotension

01

Place patient in Trendelenburg position

02

Contact MRHP

03

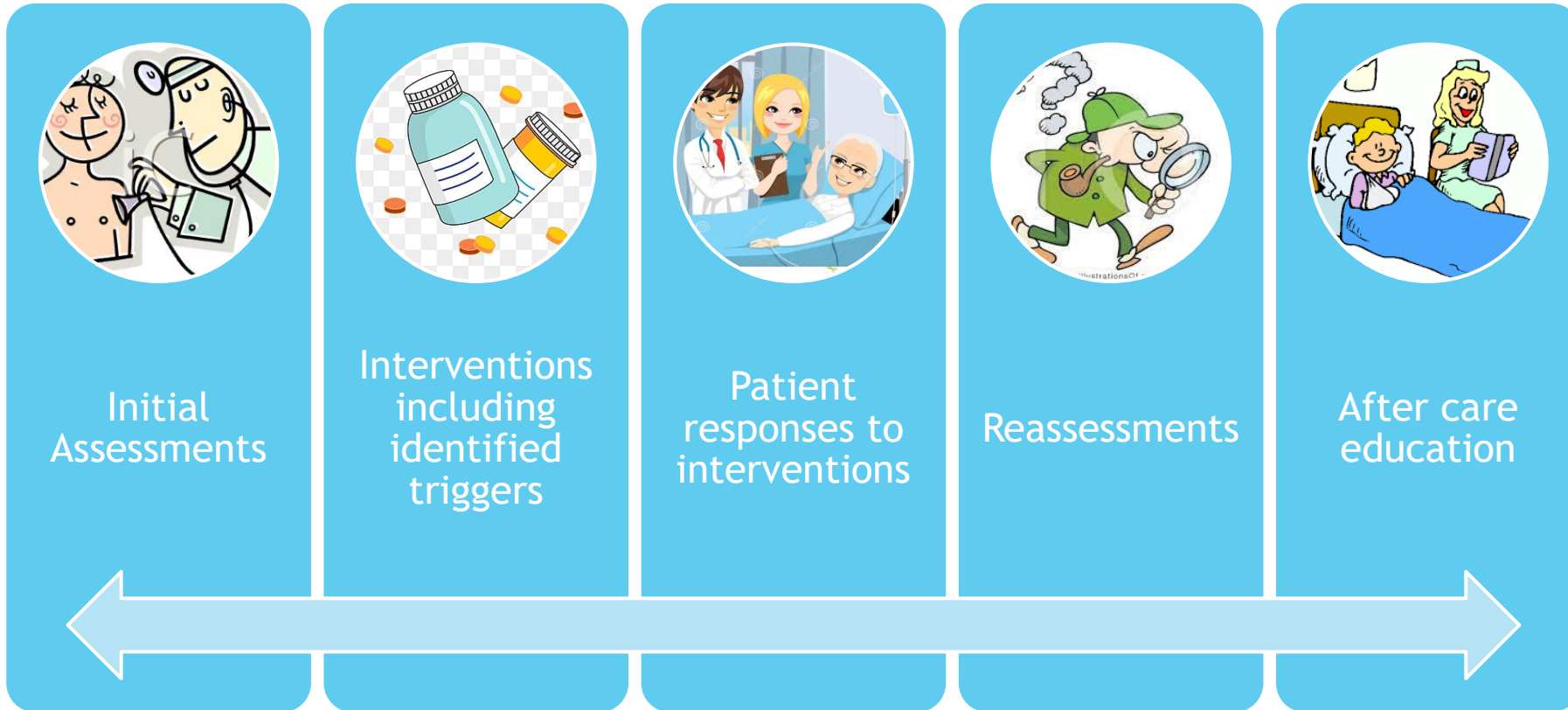
Consider IV fluid resuscitation

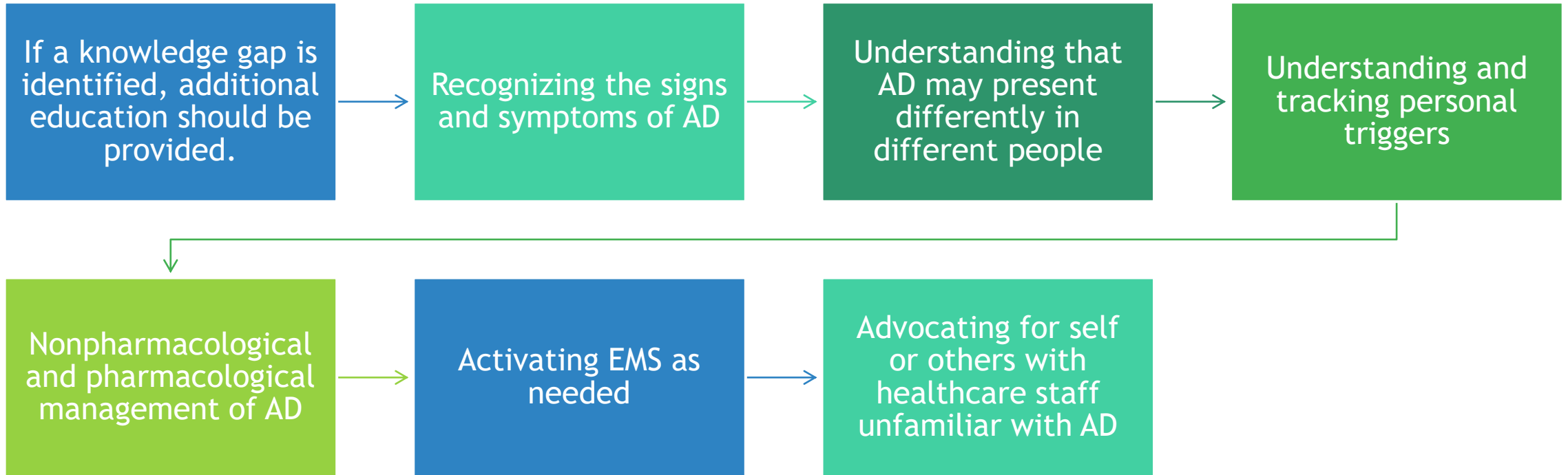


Resolution of AD

- ▶ AD is considered resolved when SBP returns to or is below its baseline, and signs and symptoms have resolved
- ▶ After AD has resolved plan to check vital signs
 - ▶ Q15 minutes for one hour
 - ▶ Q30 minutes for two hours
- ▶ If AD does not resolve with nonpharmacological and pharmacological management, the MRHP and/or emergency response team should be called and consider a consult to critical care team.

Documentation








Education

Pocket Cards

- ▶ These are printable pocket cards for patient and families to use to get assistance when experiencing AD
- ▶ TNR gives these out to all our patients in our patient education groups.

MEDICAL ALERT: AUTONOMIC DYSREFLEXIA		Common Signs and Symptoms:	What to do:	Access AHS AD protocol:
Name _____ Baseline BP _____ Level of injury _____		<ul style="list-style-type: none"> • Pounding headache • Sweating above level of injury • Flushing of skin above level of injury • Pale and/or coolness below level of injury • Goose bumps below the level of injury • Blurred vision and/or nasal congestion • Feelings of apprehension or anxiety 	<ul style="list-style-type: none"> • Ask patient if they suspect cause • Sit up at 90 degrees • Remove cause if known • Loosen any tight clothing/zippers or restrictive devices • Monitor BP every 2-5 minutes • Check bladder • Check bowel • Check skin 	Outlines recognition and treatment including medication management (for health care providers)
<p>Autonomic Dysreflexia (AD) is a sudden increase in blood pressure (BP) 20-40mm Hg above baseline, caused by an irritant below the level of a spinal cord injury (SCI). AD typically occurs in patients with a SCI at the level T6 and above.</p> <p>If not treated immediately, AD can lead to stroke, seizure or death.</p> <p>Common Causes:</p> <ul style="list-style-type: none"> • Full or distended bladder (most common) • Full bowel or constipation • Areas of pressure • Sitting/lying on something hard • Constrictive devices or clothing • Skin or hair caught in zippers 				
<p>If AD does not resolve or patient is unresponsive, call 911 or activate Medical Emergency Response</p>  				

Knowing your own baseline BP

You can check your own BP at home



Why?

- ▶ You are an expert in your care.
- ▶ Knowing your blood pressure at home is critically important in helping to prevent and treat AD early!
- ▶ You can learn to recognize the symptoms and triggers of AD
- ▶ You can teach your family and friends how to help you through an episode.



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