Pelvic Floor Therapy for the Person With Spinal Cord Injury

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Learning Outcomes

- Identify the common bladder, bowel, and sexual function deficits experienced by a person with a spinal cord injury
- Create a behavioral plan for a patient with neurogenic bowel and bladder to improve function
- Develop a pelvic floor evaluation for a patient with a spinal cord injury
- Develop a comprehensive treatment program for a patient with spinal cord injury and neurogenic bowel and bladder
- Create a patient education program for the spinal cord community on sexual dysfunction after SCI
- Identify adaptive equipment needed for bowel, bladder, and sexual function after spinal cord injury

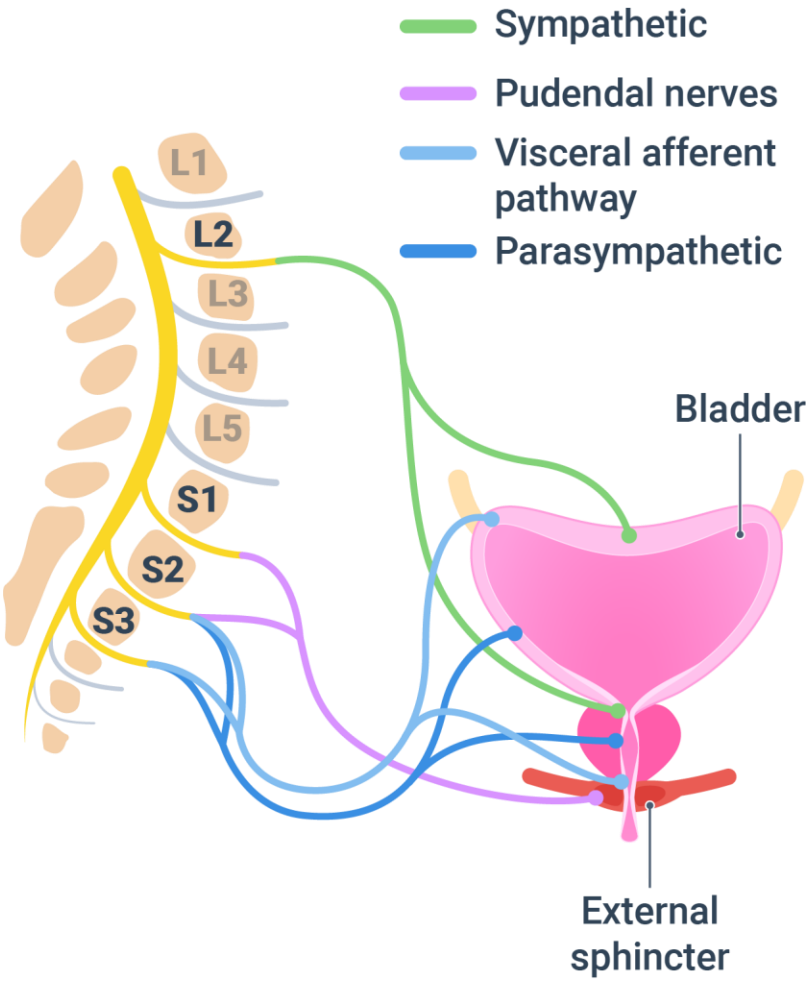
Note

- This course will not cover the anatomy of the pelvic floor or the anatomy of the LUT/bowel
- This course assumes a basic knowledge of pelvic floor functioning
- If you do need a refresh on pelvic floor mechanics, please check out the general neurologic pelvic floor course

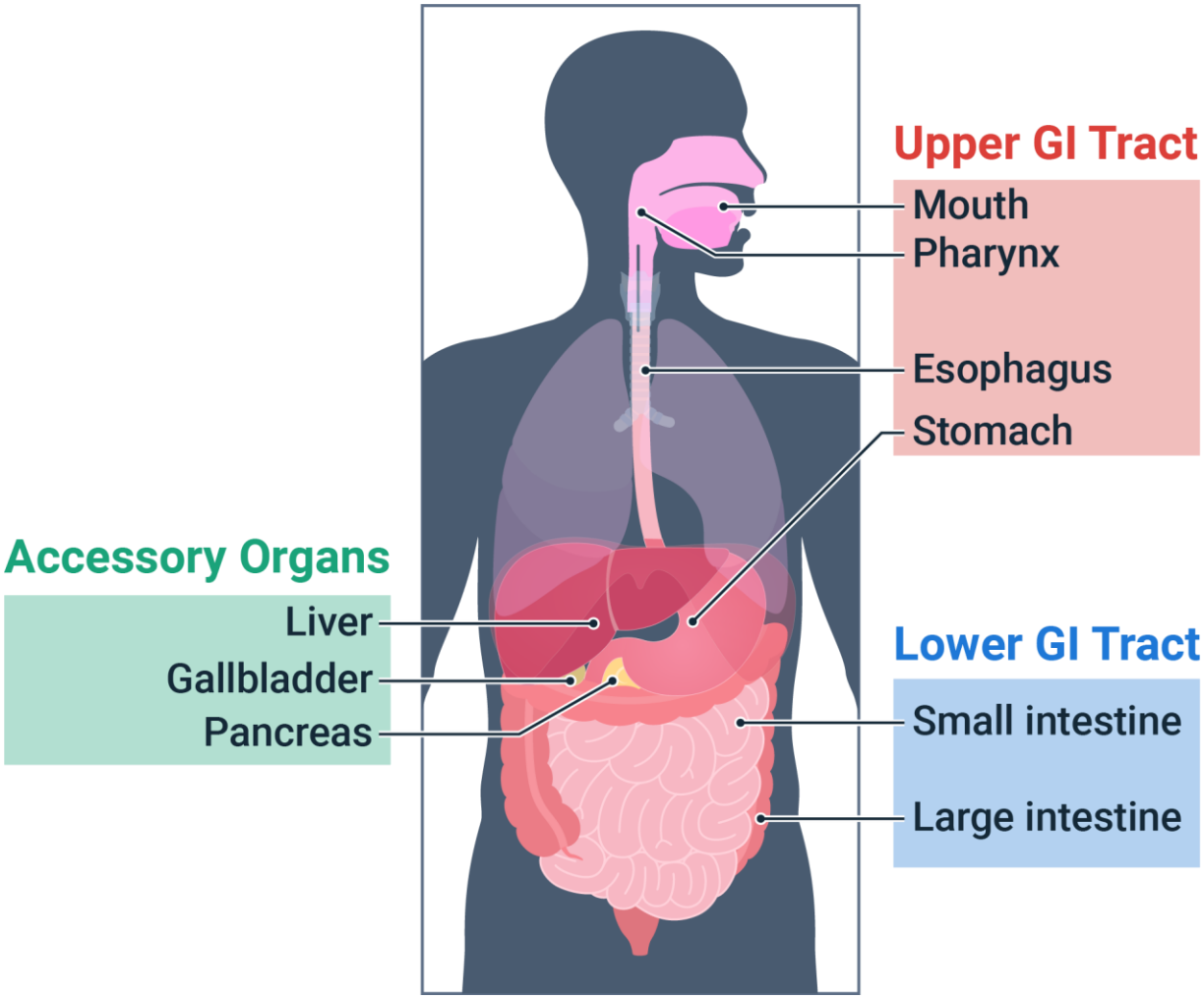
Chapter 1

Introduction to Bowel, Bladder, and Sexual Function in People With Spinal Cord Injuries

Innervation of the Bladder and Bowel

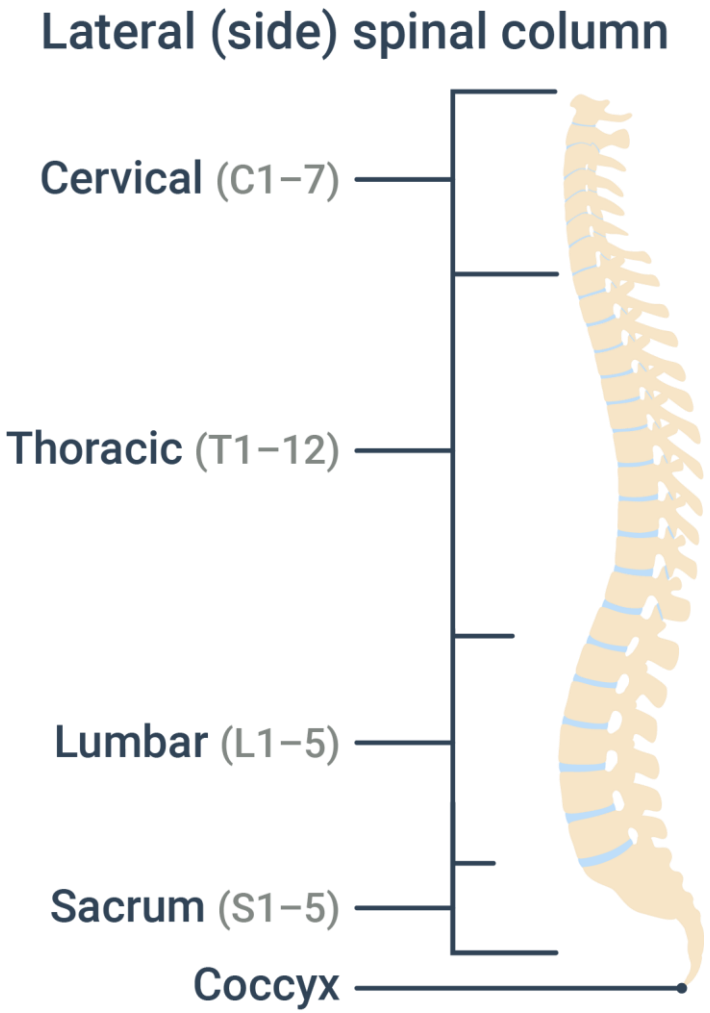


Innervation of the Bladder and Bowel (cont.)



Spinal Cord Injuries

- Any injury above the level of S2–4 will impact bowel, bladder and sexual function in that patient
- Impact can vary by type of injury
- Important to know the characteristics of the spinal cord injury prior to beginning pelvic floor treatment



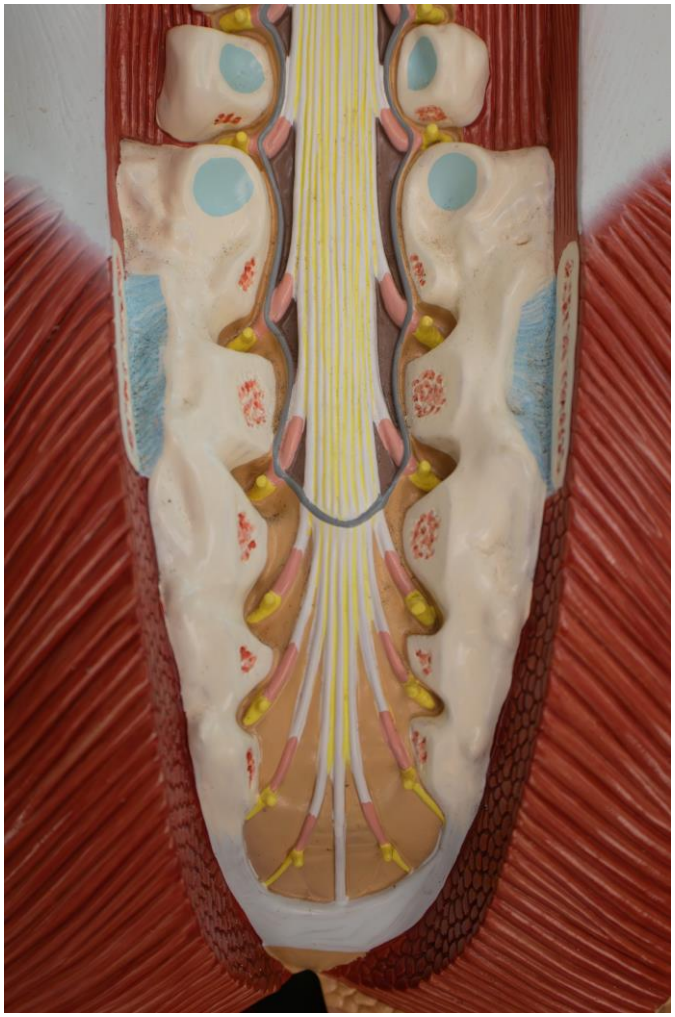
Overview

- ASIA levels[1]
  - A = complete, no sensory or motor function in sacral segments
  - B = incomplete, preservation of sensory but not motor function below the neurological level, and includes the sacral segments
  - C = incomplete and preservation of sensory but not motor function below the level
  - D = incomplete, preservation of motor function below the level of injury

1. Rupp et al., 2021

Cauda Equina Injury

- Causes: herniated disc(s), infection, spinal stenosis, trauma to the spine, postoperative complications from lumbar surgery, spinal tumors, and congenital malformation
- Often, the earliest signs are bowel and bladder
- Treatment: surgical decompression
- Post surgery: if continued bowel and bladder symptoms need a management program



Types of Bladder Issues

Hyperreflexic Bladder

- Lesion at L1 or above
- Dysreflexia of the bladder and sphincter
- Can result in vesicoureteral reflux
- Increased risk of UT, kidney infection, stones, and renal failure

Areflexic (Flaccid) Bladder

- Lesion below L1
- Less common
- Normal tone in the external sphincter but loss of tone in the bladder
- Increased incontinence with increases in pressure
- Usually will have incomplete emptying

Hamid et al., 2018

Bladder

- With a spinal cord injury, there is an initial time of bladder areflexia
  - Can last anywhere from a few days to a few weeks after the injury
  - Generally, this is managed by continuous drainage from a catheter

Bladder (cont.)

- Autonomic dysreflexia
  - Occurs when the level of insult is above T6
  - Due to massive sympathetic discharges within the spinal cord
    - Vasospasm of the skin and visceral organs
    - Hypertension
    - Severe headache
    - Increased risk of stroke

Bladder (cont.)

- In SCI, the most common method of bladder emptying is the intermittent catheterization program (ICP): draining of the bladder on a set schedule, typically every 4–6 hours
  - Indwelling catheters are more prone to urinary tract infection, so these patients need significant education, including patients who have sustained a cauda equina injury

Bladder (cont.)

- Neurologic management
- Preserve or improve upper urinary tract function
  - Control UTIs
  - Maintain a low-pressure bladder

Bowel Management

- In the acute stage, patients are experiencing spinal shock and therefore have a flaccid bowel[1]
- Most problems arise due to a loss of voluntary defecation
- 95% of patients have to use at least one therapeutic method to initiate defecation
- 50% of patients become dependent on others for toileting
- Patients often rate bowel dysfunction higher on the perceived problem scales than their loss of mobility

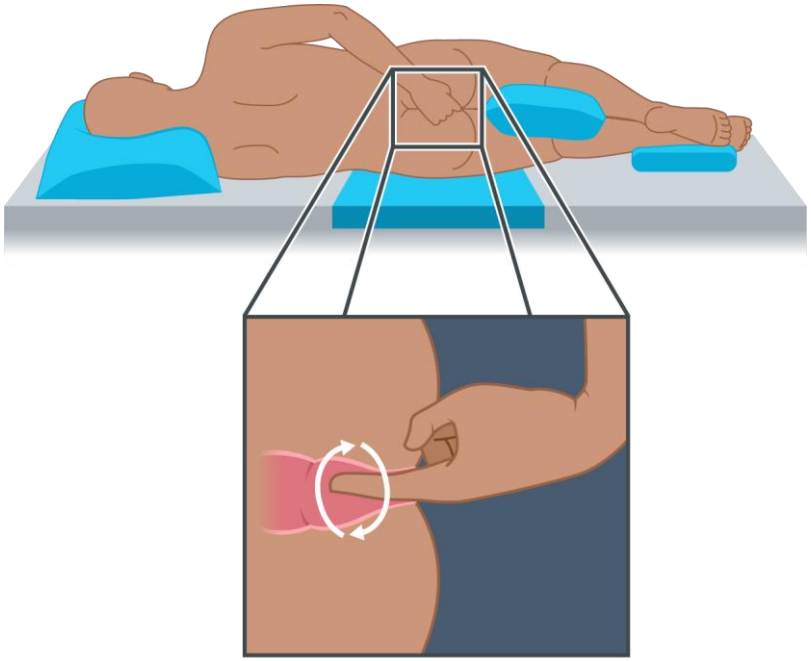
1. Plante & Rhudy, 2024

Bowel Management (cont.)

- Spastic bowel
  - Calm down spasticity through medication
  - Manual evacuation
- Flaccid bowel
  - Manual evacuation of stool
  - This can be done either through digital rectal stimulation or an enema

Bowel

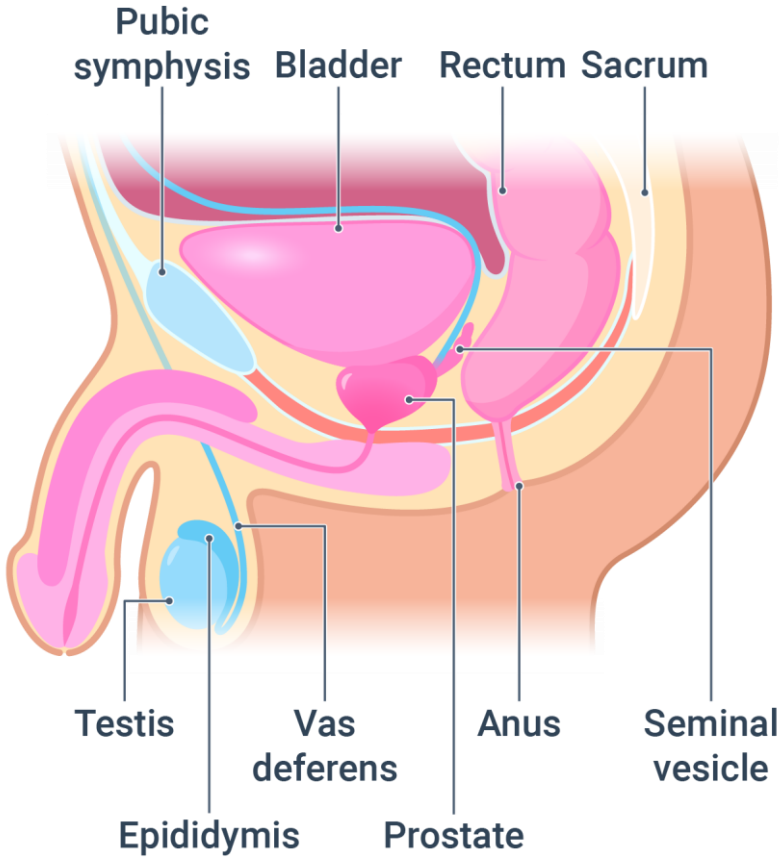
- In patients with preserved defecation reflex, emptying can be stimulated every 1–3 days by finger stimulation
- Other methods
  - Suppository
  - Mini enema



Notice the circular motion of the finger

A Quick Note on Sexual Function

- Erectile function is almost always affected in people with SCI
  - Psychogenic
  - Physiologic
- Poor research and options for female sexual dysfunction in SCI



Chapter Summary: Introduction

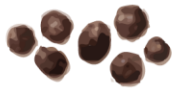
- To treat bowel, bladder, and sexual function in patients with SCI, you must first understand the neurologic deficits in their injury
- Bowel, bladder, and sexual function will almost always be affected in some way for this population
- Understanding the level of injury can help inform your evaluation and treatment plans

Chapter 2

Evaluation of the Bowel, Bladder, and Sexual Function

Physical Therapy Evaluation

- Review of the current bowel and bladder plan
  - Bladder diary
  - Bowel diary
- Review urodynamic or other bowel testing
- Discuss concerns and goals for bowel and bladder management



Type 1: Separate hard lumps, like nuts (hard to pass)

Type 2: Sausage-shaped, but lumpy

Type 3: Like a sausage but with cracks on its surface

Type 4: Like a sausage or snake, smooth and soft

Type 5: Soft blobs with clear cut edges (passed easily)

Type 6: Fluffy pieces with ragged edges, a mushy stool

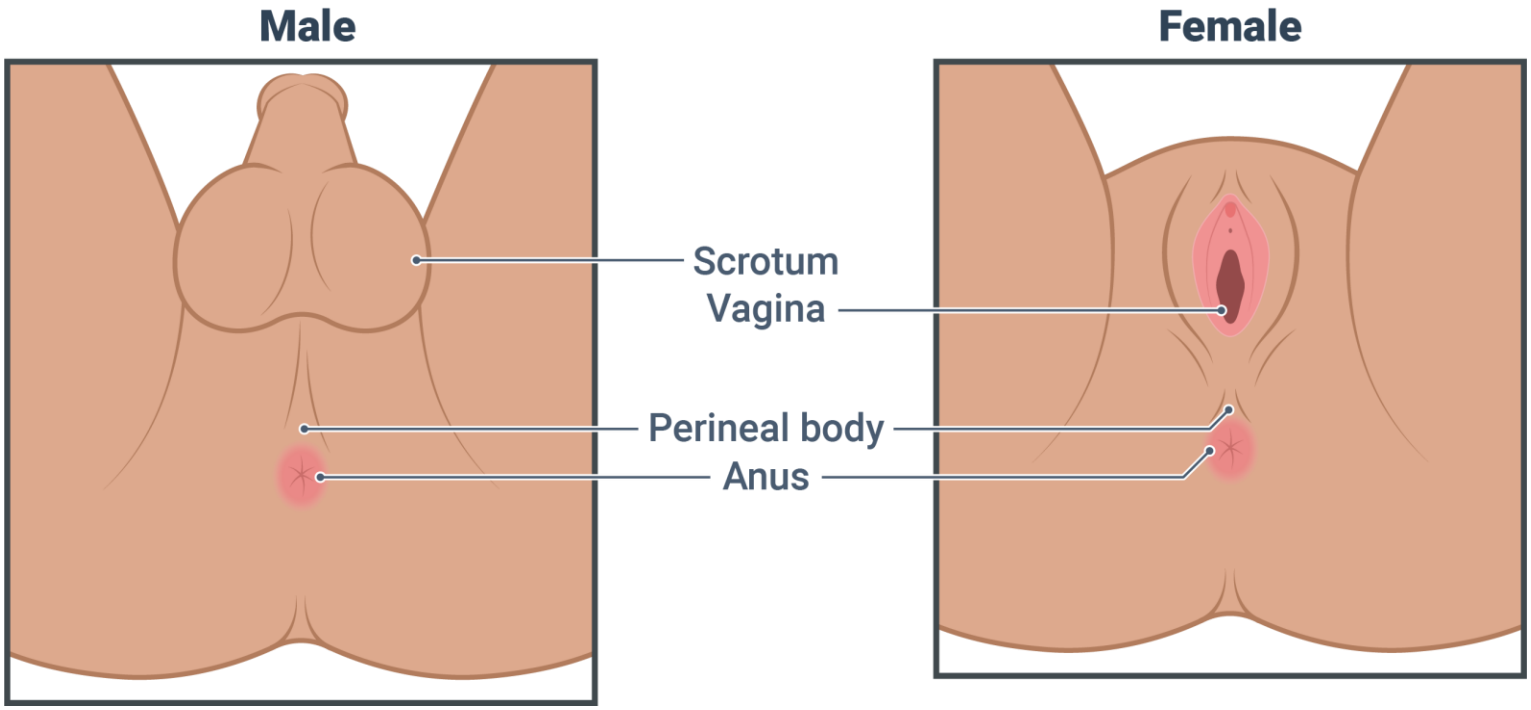
Type 7: Watery, no solid pieces, entirely liquid

Physical Therapy Evaluation (cont.)

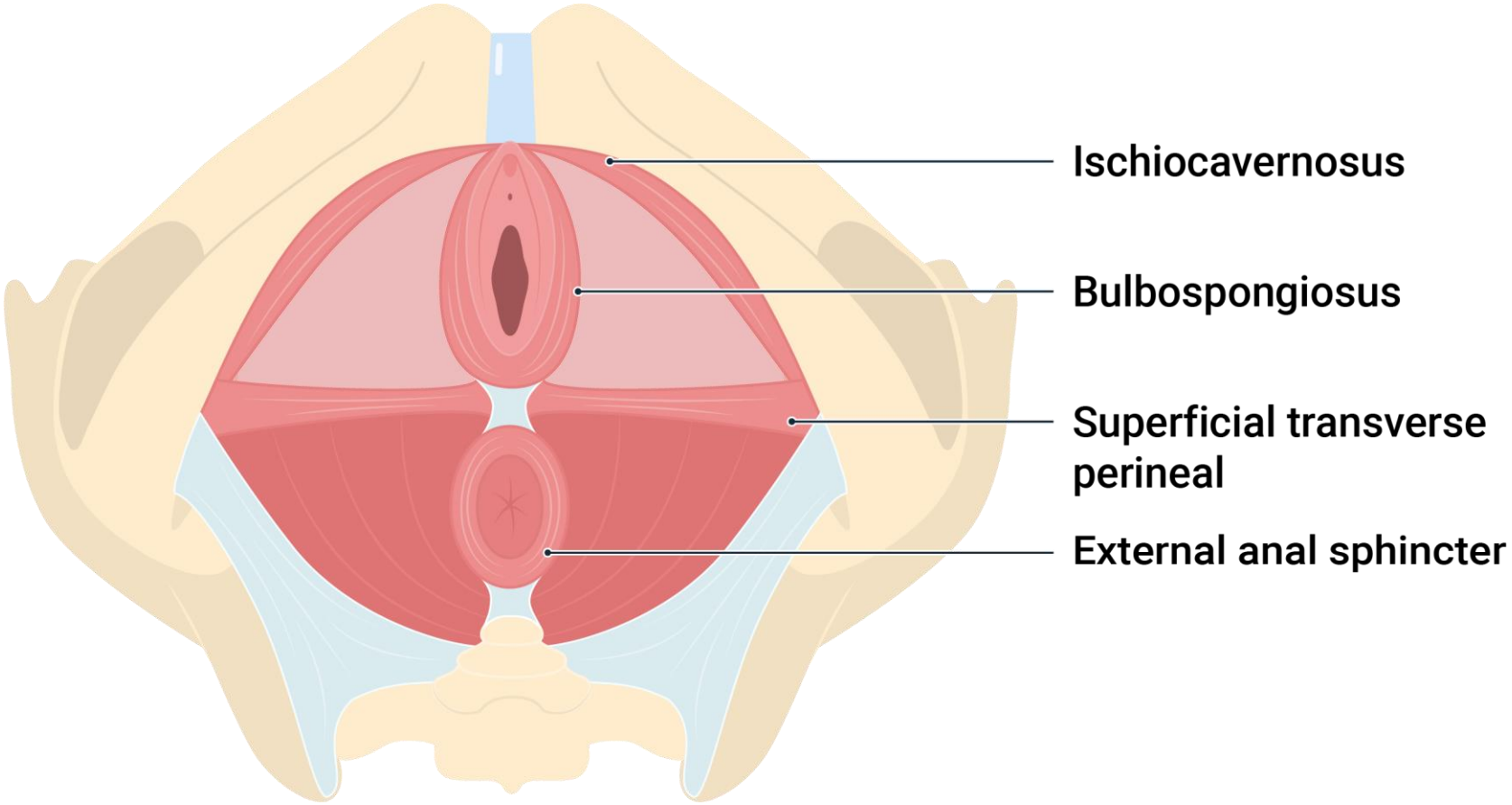
- Sensation testing
- Motor testing
- Mobility screen
  - Helpful to screen for transitions between surfaces
  - May want to complete a toilet transfer
  - OT should screen for fine motor to determine the best toileting strategy

Physical Therapy Evaluation (cont.)

- Reflexes
  - Bulbocavernosus/bulbospongiosis
  - Anal sphincter



Physical Therapy Evaluation (cont.)

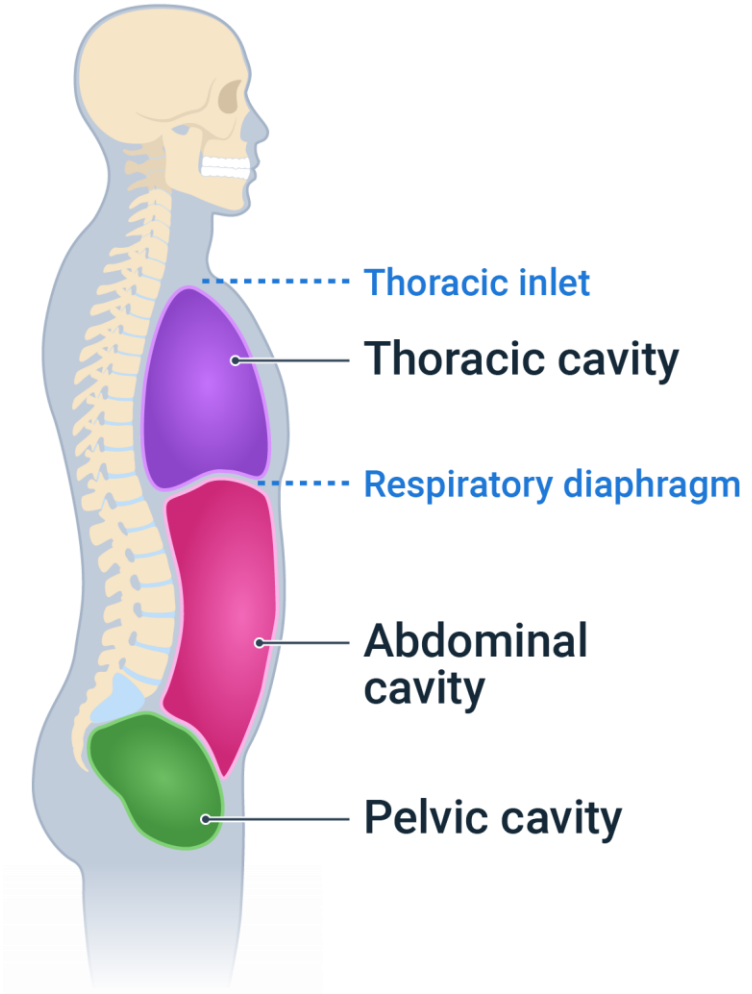


Physical Therapy Evaluation (cont.)

- External evaluation
  - Levator ani palpation
  - Visualization of the perineal body/perineal body mobility
  - Abdominal evaluation
- Internal exam (if necessary)
  - Pelvic floor muscle strength
  - Ability to move the pelvic floor through the full range of motion

Physical Therapy Evaluation (cont.)

- Evaluation of diaphragmatic breathing
- Evaluation of abdominal cavity pressure management
- General spinal and rib mobility
- Diastasis recti evaluation



Demonstration

- External Pelvic Floor Evaluation
  - External over clothes evaluation
  - Evaluation on Granville medical model
  - Abdominal pressure evaluation with diastasis recti

Physical Therapy Evaluation (cont.)

- Equipment evaluation
  - Wheelchair seating and positioning
  - Bathroom equipment evaluation
  - Bed evaluation

Wheelchair Evaluation

- Posture
- Cushions
- Back

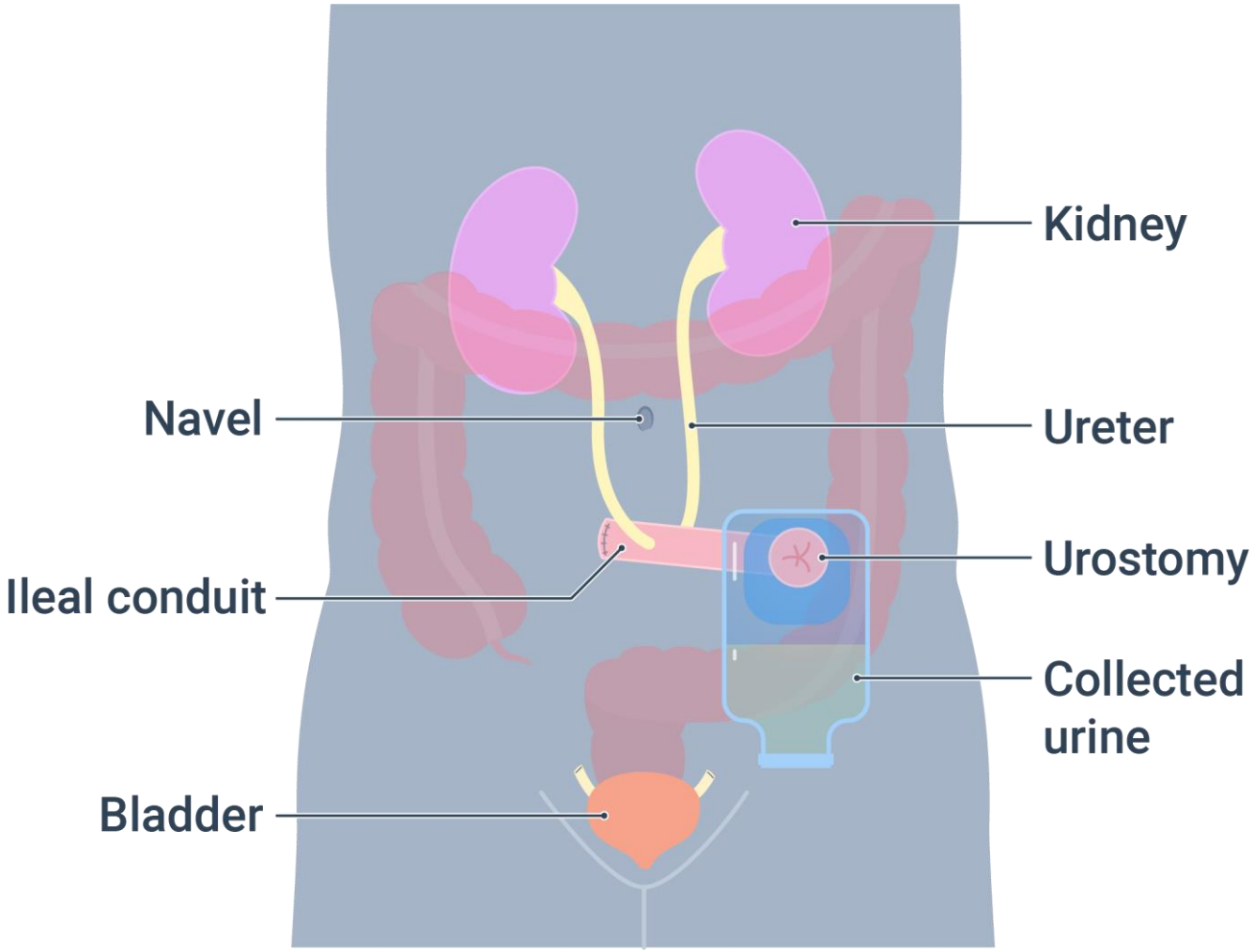
Chapter Summary: Evaluation

- Most patients will not need an internal pelvic floor evaluation
- Behavioral techniques need to be evaluated in this population
- Equipment is key in this population, so if you are not familiar with wheelchairs, it is helpful to pair up with a seating clinic

Chapter 3

Treatment of the Bowel, Bladder, and Sexual Function

General Treatment of the Bladder

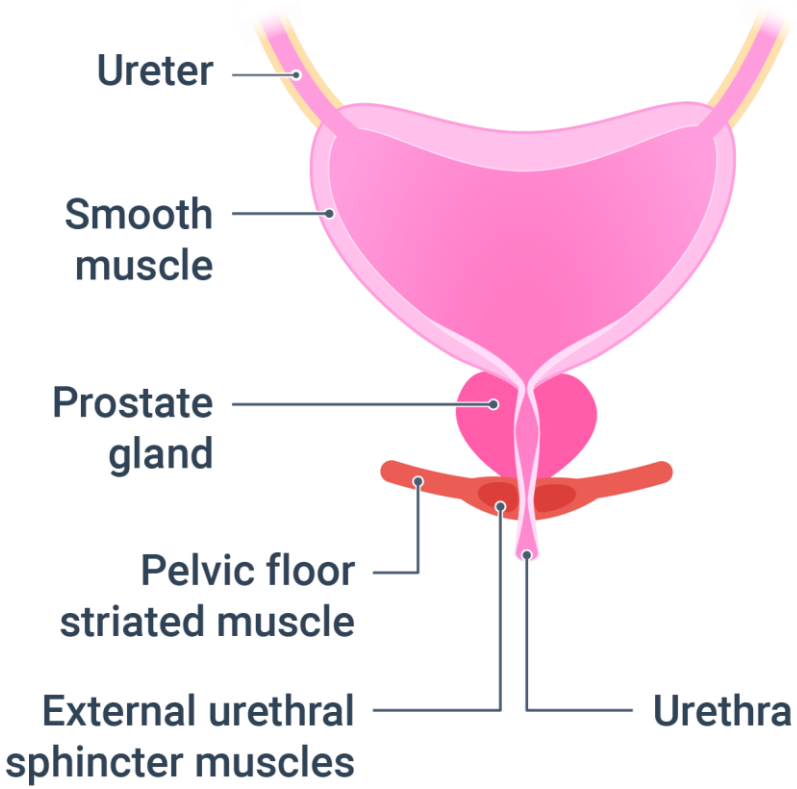


General Treatment of the Bladder (cont.)

- Multidisciplinary team of pelvic PT, OT, and a physician
- Medications are key in this population
- Regular testing will inform general treatment

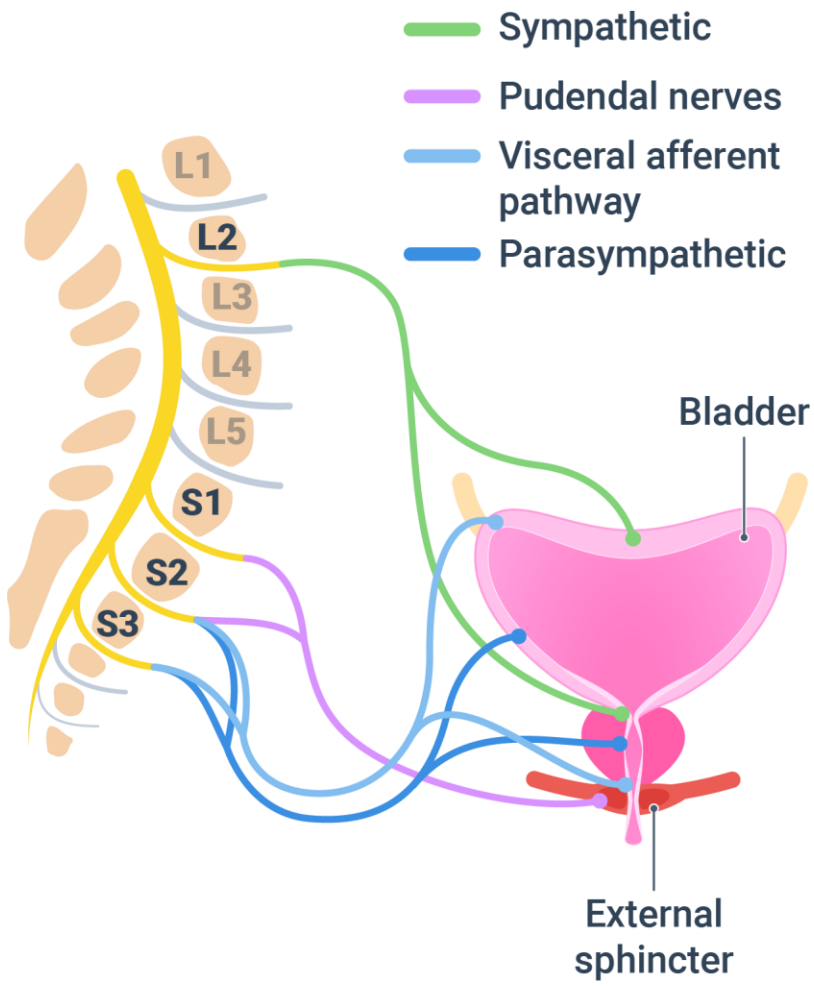
Treatment of the Bladder

- The goal is to empty the bladder at specific intervals
- Upper urinary tract preservation
- Decrease any leakage that may be occurring
- Decrease risk of UTI



Treatment of the Bladder (cont.)

- Behavioral techniques
  - Adequate fluid intake
  - Review the catheterization schedule
  - If a patient is getting less than 200 mL out with a catheter, they need to decrease the frequency
  - If a patient is getting out more than 500 mL, they need to increase frequency

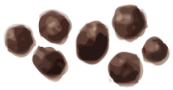


Demonstration

- Catheter Explanation
  - Catheter types
  - Clean technique
  - Hand function explanation

Treatment of the Bowel: Goals

- Regular bowel evacuation
- Decrease constipation/ improve consistency of stool
- Eliminate any leakage



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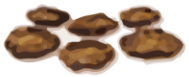

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Treatment of the Bowel

- General bowel recommendations
  - Timing
    - Eat a good diet and drinking plenty of fluids
    - Use bowel medicines
    - Use methods to clean out stools
  - Diet and fluids
    - Natural fiber
  - Limit bladder irritants

Demonstration

- Bowel Program
  - Types
  - Positioning
  - Transanal Irrigation

Treatment: Modalities

- Biofeedback
- Electrical stimulation[1]

1. Manaila et al., 2024

Demonstration

- Abdominal Massage
- Abdominal TENS

Demonstration

- Toileting Posture
  - Abdominal Binder
  - Taping
  - General Posture aids

Chapter Summary: Treatment

- Treatment of bowel and bladder function for this population will be composed primarily behavioral advice and training
- Team should be interdisciplinary to ensure the patient is able to be as independent as possible
- Equipment and medications will be a large part of treatment, so therapists should become aware of what is available

Course Summary

- The level of injury will determine the type of treatment you are delivering
- Continence is not always the goal, but independence in toileting is the main treatment focus
- Most patients will need some type of assistance with bowel and bladder function

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