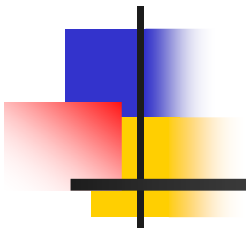


Spasticity – What I hope to answer

1. What is spasticity
2. Why does it occur
3. What are the causes
4. Are there benefits
5. What if there is a change in my spasticity
6. How do I manage my spasticity





What is Spasticity?

- Spasticity or spasms are spontaneous, involuntary, uncoordinated reflex movements of muscles.
- Studies show prevalence up to 80% of SCI.
- Can be beneficial to function but when poorly controlled may lead to medical complications, impair function and decrease Quality of Life.



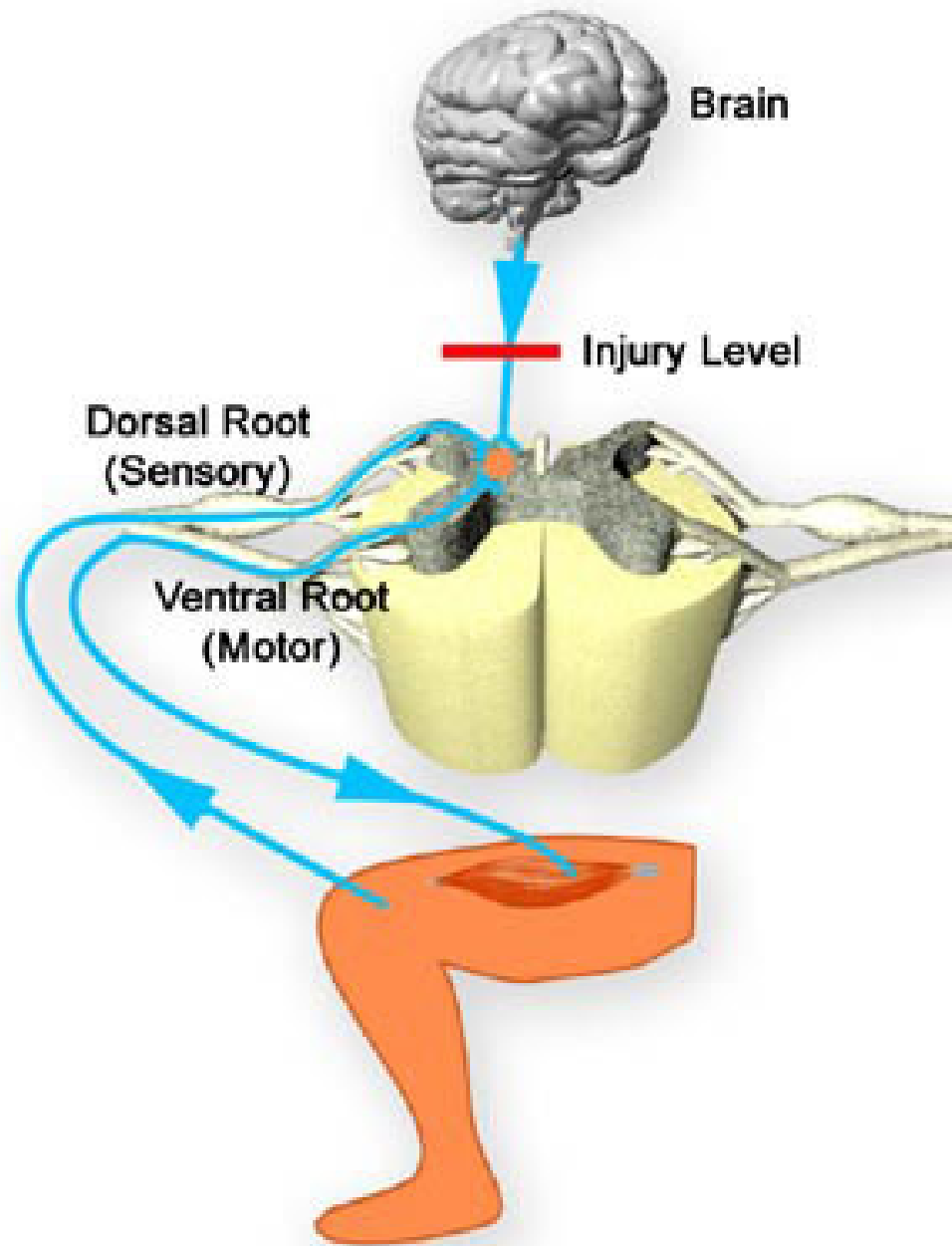
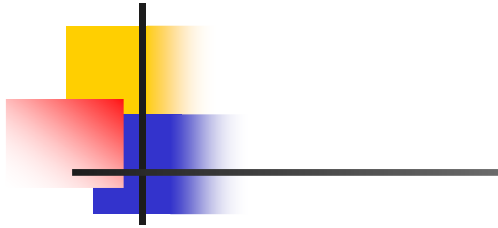
Clinical Presentation

- Common to have:
 - Increased muscle tone or firmness
 - Hyperexcitability of stretch reflexes
 - Uncontrolled involuntary muscle contraction
 - Some altered posture
 - Interference with mobility or selective movement
- May continue as one long contraction or be jumping-like movements.
- flexor pattern (bending) or extensor pattern (straightening) response in the muscles



What causes Spasticity?

- **Any sensory stimulus** (e.g moving the leg, touching the skin) going into the cord tends to excite the muscles below the injury level on a reflex basis.
- Easiest to conceptualize is muscle stretch





What Can Increase Your Spasticity?

1. Improper positioning
2. Infections (ie. UTI)
3. Distension (bowel or bladder)
4. Increased effort
5. Anxiety
6. Some clients report changes in barometric pressure
7. Anything that would be considered unpleasant/painful to the body such as: pressure sore, ingrown toenails, burn, etc.
8. Other...



Benefits of Spasticity

- **Communication signal**
- Less muscle wasting (maintain muscle tone)
- Improved blood circulation
- Intentionally triggered spasms can help with bowel and bladder function
- Assist with various functional activities (Transfers, Balance, Walking)



Drawbacks to Spasticity

- Joint contracture
- Poor posture
- Pain
- Sleep disruption / Fatigue
- Decreased functional mobility (Transfers & Balance)
- Difficulties with posture and positioning
- Skin breakdown (shearing)
- Bladder and bowel accidents



What If I Have a Change in Spasticity?

1. Maybe a symptom of a problem somewhere else in your body (UTI, overfull bladder, pressure ulcer, ingrown toe nail, fracture, etc...)
2. What is the impact of the spasticity (skin breakdown, difficulty with transfers, joint contractures, etc).
3. What is new (medications, physical activity, bladder and bowel routines).

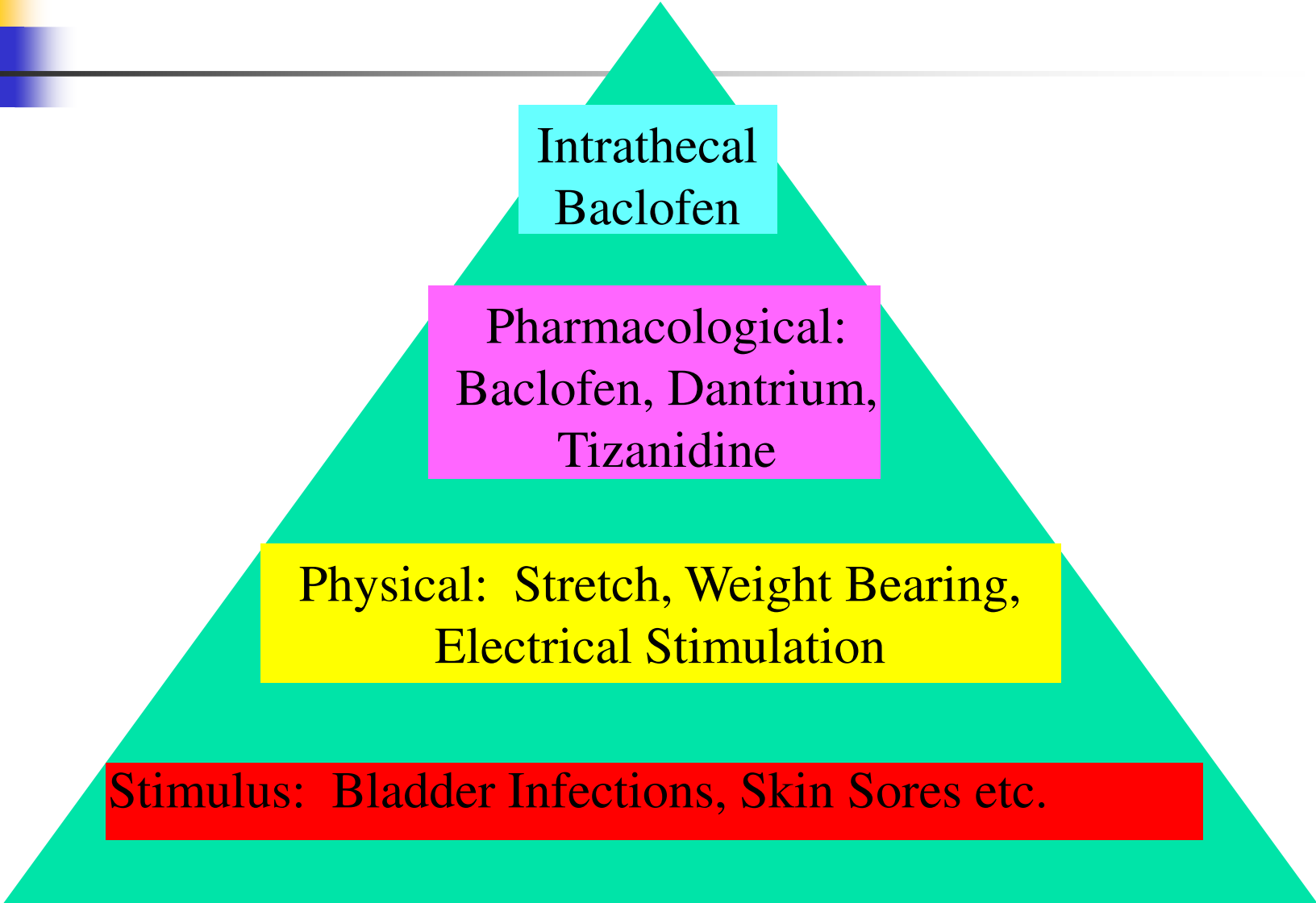
Don't ignore a significant change in your spasticity.



Managing Spasticity

- Spasticity generally treated if it is interfering with some level of functioning, positioning, care, or comfort.

Management Pyramid



The diagram is a green pyramid divided into four horizontal layers. From top to bottom, the layers are: 1. A light blue box containing the text 'Intrathecal Baclofen'. 2. A pink box containing the text 'Pharmacological: Baclofen, Dantrium, Tizanidine'. 3. A yellow box containing the text 'Physical: Stretch, Weight Bearing, Electrical Stimulation'. 4. A red box containing the text 'Stimulus: Bladder Infections, Skin Sores etc.'. A horizontal line with a decorative graphic on the left side passes behind the pyramid.

Intrathecal
Baclofen

Pharmacological:
Baclofen, Dantrium,
Tizanidine

Physical: Stretch, Weight Bearing,
Electrical Stimulation

Stimulus: Bladder Infections, Skin Sores etc.



Step 1: Removal of Stimulus

- Check for:
 - Tight clothing
 - Tight leg bags
 - Kinked catheter tubing
 - Signs of a Urinary Tract Infection
 - Elevated Blood Pressure
- Constipation
 - Flat cushion
 - Cut/bruise/burn
 - Muscle / Joint Injury



Step 2: Physical Management

Range of Motion & Stretching

Slow sustained stretch will

- Inhibit the muscle reflex arc
- Fatigue the stretch reflex

Avoid a quick stretch as this will increase spasticity



Step 2: Physical Management

- **Stretching/ROM**
- **Weight bearing**
- **Electrical Stimulation (TENS)**

- Positioning/Seating
- Muscle Strengthening
- Heat/Cold application
- Splinting/Orthosis



Step 2: Physical Management

1. Know which muscles are most affected by spasticity
2. Follow a stretching routine which targets these muscles
3. Be vigilant in maintaining your mobility – daily practice will help to “dampen” spasticity



Contractures

- One of the most significant consequences of spasticity as it greatly affects function
- Little can be done after a contracture develops, so best address it before it happens

Step 3: Medication Management

Drug

Side Effects

Baclofen

Every drug has side effects. Risk benefit discussion with your physician.

Dantrolene

Tizanidine

Clonidine

Gabapentin



Other Pharmacological Options

- Accupuncture
- Marijuana
- Baclofen pump
- Injection: Botox or Phenol



Summary

- It is an issue of management, not treatment
- A change in the intensity or pattern of spasticity is something to pay attention to as it can potentially interfere with function and quality of life.
- Educate yourself to find therapy strategies that optimize your function and quality of life