Trunk/Core Stability

Amy Mount
What is the “Core”?

The core muscles of the trunk include everything that is not extremity related.

- **Abdominals**: rectus abdominis, transverse abdominis, internal and external obliques, diaphragm
- **Back**: Erector spinae, multifidis, paraspinals, quadratus lumborum, psoas major, trapezius, lats.
- **Hips**: Gluteus max & med, psoas, pelvic floor

...among others (to a lesser extent)

Handzel, 2008, 26
These muscles allow us...

- Balance & Stability
- Holding postures
- Controlling movement
- Force

Handzel, 2008, 26
Poor posture allows muscles to weaken, stretch, become too tight, etc. which lowers the efficiency and strength of muscles of the trunk.

Good posture creates a helpful muscular “belt” around the trunk that increases core strength and efficiency by using these muscles to stay upright.
“A strong and stable core allows power to be generated and transferred through the kinetic chain” (Handzel, 2008, 27).
Force Transfer/Absorption

- Jumping
- Running
- Athletics
Having a strong core…

- Improves balance and stability
- Improves energy efficiency of movements
- Increases generation and absorption of force
- Helps to prevent injury
- Supports organs of the abdomen and pelvis
- Control of bowel and bladder

Handzel, 2008, 27
Patient diagnoses that may have core weakness or may benefit from strengthening:

- CVA
- Multiple sclerosis
- Cerebral palsy
- Spinal cord injury (T4 and distal may have some trunk function depending on type of injury)
- Muscular dystrophy
- Parkinson’s
- Anyone in bed or W/C for long periods
  ... and many more
Exercises

For lower functioning patients: sitting or standing upright, sitting on thera-ball, weight shifting in sitting or standing, dissociation exercises, trunk rotation, mirror therapy for posture

Bridge, thera-ball bouncing, marching, chopping, prone press-ups, quadruped exercises, “rowing,” planking, standing crunches, hand-knee resist crunch, nudging the patient

Crunches, sit ups, “superman,” thera-ball crunches, bicycle crunches, side plank, … and many more
Stretches

- Long sit reach, prone press-ups, rotation, lateral bending, hooklying knee drop, rolling on ther-ball flexion/extension.
- Quadruped
Core strength can be determined with manual muscle testing (MMT) of trunk flexors/extensors, hip flexors/extensors.

To some extent, Tinetti Performance Oriented Mobility Assessment (static and dynamic balance in sitting and standing, etc.)

Observation
References
