

## Core Strength & Balance

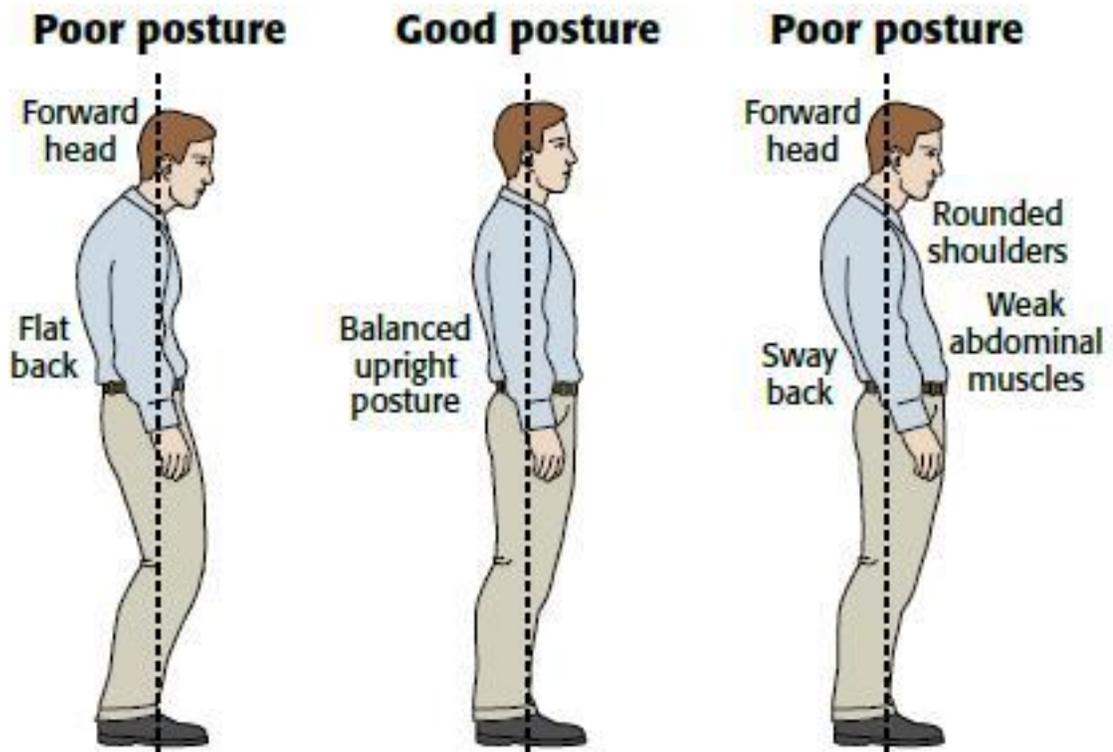
Karen Kemmis, PT, DPT, MS, GCS, CDE, FAADE  
SUNY Upstate Medical University  
Physical Medicine & Rehabilitation and Joslin Diabetes Center

### 1. Core muscles stabilize and protect the spine.

The “core” muscles: Multifidus; Transverse Abdominis; Pelvic Floor; Diaphragm.

*When they work in coordination with each other, they stabilize the spine & pelvis which can aid in the reduction of low back pain.*

### 2. Good core strength can lead to better balance and stability.



<https://rechargehq.com.au/correct-standing-posture/>

### 3. Learn simple core strengthening exercises.

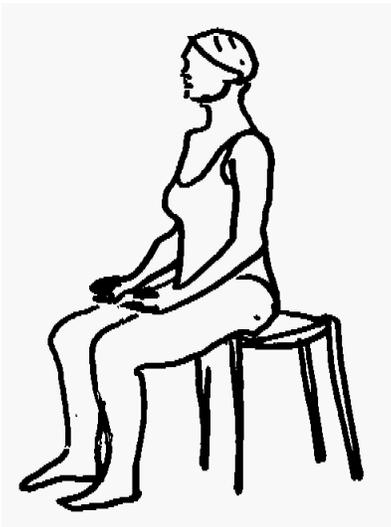
#### ➤ Breathing for core control



#### **Breathing for core control**

- Sit with both feet on the floor with your spine as tall/long as you can.
- Place your hands on the sides of your ribs to feel them expand when you breathe in. Then apply pressure inward to the sides of your ribs as you breathe out.
- Inhale again, allowing your ribs to expand out to the sides.
- Exhale, gently pushing your ribs in as you pull in your abdominals.

#### ➤ Pelvic elevator



#### **Pelvic elevator**

- Sit with both feet on the floor with your spine as tall/long as you can.
- Inhale and expand your ribs.
- Exhale and lift the pelvic floor away from the chair, up into your body as if you are stopping the flow of urine.
- Inhale and allow your pelvic floor to lower back down.
- Exhale and repeat. Imagine your pelvic floor is an elevator and each time you draw it in the elevator is moving to a higher level.

- Putting it all together: Inhale, exhale as you lift your pelvic floor, gently pull in your abdominals, and allow your ribs to come in.
- Reach up to the cupboard
- Reach straight forward
- Reach forward to the right with your right hand
- Reach forward to the left with your left hand
- Lift your knee up as if marching
- Slide to the front of the chair, place feet one more forward than the other, stand up using your hands as little as possible; sit and repeat with the other foot forward

#### 4. Moving into balance with core control.

Wide stance



Normal stance



Narrow stance



Wide semi-tandem



Semi-tandem



Tight semi-tandem\*



Tandem\*



Single limb



- Wide stance: Breathing with core control/pelvic elevator in standing
- Normal stance: Breathing with core control/pelvic elevator in standing
- Narrow stance: Breathing with core control/pelvic elevator in standing
- Wide semi-tandem stance: Breathing with core control/pelvic elevator in standing
- Semi-tandem stance: Breathing with core control/pelvic elevator in standing
- Tight semi-tandem stance: Breathing with core control/pelvic elevator in standing
- Tandem stance: Breathing with core control/pelvic elevator in standing
- Single limb: Breathing with core control/pelvic elevator in standing
- Moderately challenging position:
  - Look up and down
  - Look right to left
  - Reach up
  - Reach forward as if into trunk
- Reach right then reach left
- March in place, standing tall with core control

## 5. Move, challenging your balance with core control.

These are more challenging exercises. You should only attempt them if you are confident that you will be safe. If you are not sure, don't take a chance on your own. Consider doing them if you have someone to spot you OR request a referral for physical therapy for balance training.

- Walking sideways along a wall/counter
- Walk along the counter crossing one foot in front of the other (grapevine)
- Walk along the counter crossing one foot behind the other
- Walk along the counter alternating as you cross your feet one in front and then in back of the other (carioca)
- Walk down the hall heel to toe as if on a tight rope
- Walk down a hall on your toes, then on your heels
- Walk down the hall looking up then down
- Walk down a hall looking to the right, then left, then right, etc.
- Standing as if the left foot is in the middle of a clock, step the right foot forward as if to touch the clock at 12 then back to the center, to 1 then back to the center, to 2 then back to the center, and continue the same as you go to 3, 4, 5, and 6 o'clock. Then change the right foot to the middle as you move from the left foot from 6, to 7, 8, 9, 10, 11, 12. Repeat going the opposite direction; now do only even numbers; then only 12, 3, 6, 9, and 12.
- Do the alphabet with your hands and feet: left arm traces a big A in the air, right arm traces B, left foot traces C (while you are only standing on your right foot), right foot traces D (while you are only standing on your left foot), left arm traces E, etc. Once you can do this well, do the alphabet with your feet only, alternating left and right for each letter.

### General Information about Balance Training

- You should do some static (still) and some dynamic (moving) balance exercises
- Always do balance exercises where you will be safe
  - For static exercises, you can stand with your back in a corner and place a sturdy chair in front of you OR in front of the sink with your hands hovering in it
  - For dynamic exercises, move along a kitchen counter, or down a narrow hallway
- You should feel wobbly when you do balance exercises but not as if you could lose your balance and fall
- Work with a physical therapist if you feel you are unsafe doing these exercises on your own