How To Achieve Your Best “Plumb Line”

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This packet is intended to be used as a tool to learn about posture and its effects on the body. It also demonstrates “typical” postural deviations, though is by no means an all inclusive list of every type of possible posture. And finally the exercises and stretches are suggestions only, please consult your physician before you start any type of exercise or fitness program.
Achieving your best “Plumb Line” is not only about improving your physical posture, but it’s also about living a life that makes you “stand tall”. So while this packet is focused on the physical aspects of posture, it has become evident to me over the years that there is also a strong correlation between our emotional state and the way we stand, sit and walk. As an example, consider when you are stressed. Most likely your shoulders are tense, rounded forward, you may have back pain and you are breathing very shallowly. Whereas when you are feeling healthy, happy and strong you tend to stand up taller, keep your shoulders back and breathe more deeply. It is important to recognize both the physical and emotional contributors to your posture so that you can work on them individually and be able to successfully achieve your best “Plumb Line”.

So use this packet as a tool to figure out what postural deviations you may have and how you will be able to improve them. This will bring you an increased body awareness that will hopefully stay with you each and every day to make you stronger, healthier and improve your overall well being. I wish you nothing but success on this journey.
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What is a plumb line?

A plumb line is a perfectly straight line used to assess posture. The ideal posture in relation to the plumb line is pictured below. The main muscle groups are listed in green.

- Normal curve of neck (Cervical Spine)
- Normal curve of upper back (Thoracic Spine)
- Normal curve of low back (Lumbar Spine)
- Neutral position of head
- Neutral Pelvis (not tipped forward or backward)
- Neutral knee position (not flexed or hyperextended)
- Neck Flexors
- Neck Extensors
- Back Extensors
- Abdominals
- Hip Flexors
- Hip Extensors
Why is posture so important?
The skeleton is supported and moved by the muscles in our bodies. When muscles in our bodies are over or under working and not performing as they were designed, postural misalignment results. These muscular imbalances leave the body vulnerable to injury and strain. Prolonged periods of inactivity can cause postural muscles of the body to become weak, long, shortened or tight. And intensive activity can also cause muscular imbalances that lead to dysfunction and compensation. Ideally, the body needs a wide variety of balanced activities to promote postural strength and endurance.

Benefits of proper posture:
- Alignment of your joints, ligaments and muscles will put your body in the most optimal position to decrease the risk of injury or pain with everyday activities as well as during exercise.
- Correct distribution of your weight so that one area of your body does not have to work harder than another.
- It allows for enough room for our internal organs to function as well as possible.
- Makes breathing deeply easier and more natural.
- It makes you look taller and thinner.
Three “Typical” Postural Deviations

Kyphosis-Lordosis Posture

- **FORWARD HEAD**
- **NECK FLEXORS** (ELONGATED AND WEAK)
- **ABDOMINALS** (WEAK)
- **ANTERIOR PELVIC TILT** (FORWARD)
- **HIP FLEXORS** (SHORT AND STRONG)
- **UPPER BACK** (ELONGATED AND WEAK)
- **INCREASED CURVE IN UPPER BACK** (KYPHOSIS)
- **HYPEREXTENDED LOW BACK** (LORDOSIS)
- **LOWER BACK** (SHORT AND STRONG)
- **HYPEREXTENDED KNEES**
Sway-Back Posture

- **Forward Head**
- **Neck Flexors (Elongated and Weak)**
- **Posterior Pelvic Tilt (Backward)**
- **Hip Flexors (Elongated and Weak)**
- **Upper Back (Elongated and Weak)**
- **Increased Curve in Upper Back (Kyphosis)**
- **Flexion of Low Back (Flattening)**
- **Hamstrings (Short and Strong)**
- **Hyperextended Knees**
Flat-Back Posture

- **Forward Head**
- **Posterior Pelvic Tilt** (Backward)
- **Increased Curve in Top of Upper Back** (Kyphosis)
- **Flexion of Low Back** (Flattening)
- **Hip Flexors** (Elongated and Weak)
- **Hamstrings** (Short and Strong)
- **Extended Knees**
- **Neck Flexors** (Elongated and Weak)
Exercises & Stretches to Correct Postural Deviations

Kyphosis-Lordosis Posture

- **Chin Tuck**
  - Lying on your back with knees bent, gently press your neck towards the floor by depressing chin towards your neck. This allows the back of your neck to stretch and the front of your neck to strengthen.
  - Complete 2 sets of 10, holding for 3 seconds

- **Doorway Stretch**
  - Standing in a doorway, raise your right arm arm out to the side and bend your elbow to 90 degrees. Your hand and elbow should be pressed up against one side of the doorway. Gently step through the door with your right foot to feel a stretch in the front of your chest on the right side.
  - Complete 3 sets, holding for 30 seconds. Repeat on the other side.

- **Shoulder Blade Retraction**
  - Sitting or standing with your arms by your sides, gently pull your shoulder blades back, down and together. Do not compensate by arching your back, the movement should be subtle and controlled.
  - Complete 3 sets of 10, holding each contraction for 3 seconds
• **Posterior Pelvic Tilt**
  • Lying on your back with your knees bent. Gently tuck your tailbone and press your back closer to the floor. Your buttocks should not be lifting off the floor.
  • Complete 3 sets of 10, holding each contraction for 3 seconds

• **Hip Flexor Stretch**
  • Kneeling on your right knee (use a cushion under it for comfort) place your left foot in front of you. Holding your abdominals in tight gently shift your weight forward, without bending or arching from the waist, until you feel a stretch in front of your right hip.
Sway-Back Posture

• Chin Tuck
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  • Complete 2 sets of 10, holding for 3 seconds

• Doorway Stretch
  • Standing in a doorway, raise your right arm out to the side and bend your elbow to 90 degrees. Your hand and elbow should be pressed up against one side of the doorway. Gently step through the door with your right foot to feel a stretch in the front of your chest on the right side.
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• Shoulder Blade Retraction
  • Sitting or standing with your arms by your sides, gently pull your shoulder blades back, down and together. Do not compensate by arching your back, the movement should be subtle and controlled.
  • Complete 3 sets of 10, holding each contraction for 3 seconds

• Anterior Pelvic Tilt
  • Using a mirror for visual cues, stand so you can see your body from the side angle. Gently rotate your pelvis forward to create a slight curve in your lower back
  • Do this 10 times to get your back used to the position and then try to keep your body in that position while your sitting, walking and doing other daily tasks.
• **Hip Flexor Strengthening**
  • Lying on the floor straighten out your right leg on the floor and keep your left knee bent. Gently raise and lower your right leg while keeping your abdominals held tightly to not let your back move.
  • Complete 3 sets of 10. Repeat on the other side.

• **Hamstring Stretch**
  • Lying on the floor near a door frame, raise your left leg up against the wall with your knee slightly bent. Your right leg should extend out straight on the floor through the doorway. Gently try to straighten your left leg to feel a stretch behind the leg.
  • Complete 3 sets, holding for 30 seconds. Repeat on the other side.
Flat-Back Posture

• Chin Tuck
  • Lying on your back with knees bent, gently press your neck towards the floor by depressing chin towards your neck. This allows the back of your neck to stretch and the front of your neck to strengthen.
  • Complete 2 sets of 10, holding for 3 seconds

• Doorway Stretch
  • Standing in a doorway, raise your right arm arm out to the side and bend your elbow to 90 degrees. Your hand and elbow should be pressed up against one side of the doorway. Gently step through the door with your right foot to feel a stretch in the front of your chest on the right side.
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• Shoulder Blade Retraction
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Tips to Reach and Maintain Your “Plumb Line”

• **Consistency**: Postural deviations have taken a lifetime to create, so be patient with the exercises and do them consistently. Small changes that you make daily will have a great impact.

• **Reinforcement**: Use a mirror to look at your posture. Over time our bodies lose a sense of where proper postural alignment is, so it’s a good idea to check yourself in a mirror every once in a while to ensure you’re body is in the right place.

• **Weight Distribution**: Make sure that your weight is always evenly distributed between both legs/feet when you’re standing and both hips when you’re sitting.

• **Reminders**: Use something, such as a string around your wrist, to remind yourself of your posture. Then every time you see your reminder it will cue you to either adjust or continue to maintain the position you are in.
• **Breaks:** Use a timer/alarm at your desk so that you get up frequently throughout the day. The longer you sit, the more relaxed you become and the weaker your core strength becomes. Getting up at least once an hour is advised, even if it’s just standing up to do some stretching or breathing for a minute.

• **Breathe:** We use so little of our lung capacity each day, something we need desperately for our bodies to get sufficient oxygen and energy to our organs. Remember to breathe while you work, drive and eat.

• **Imagery:** Always imagine a string pulling you up out of the top of your head

• **Relax:** Though it may not feel natural at first, never tighten your muscles to achieve good posture. This will only put undo stress on your joints and muscles.

• **Stretch:** Remember to do gentle stretching throughout the day to elongate the tight muscles.
Special Circumstances

In some cases it may be more appropriate to seek out a physical therapist that can do an individual postural assessment. These instances may include but are not limited to:

• If you have been diagnosed with **scoliosis**

• If you have **pain** that is limiting your function

• If you have had a **surgery** that permanently effects your posture

• If your postural state does not fall into any or part of the given postural deviations

**Good luck and may you always “stand tall”!**

**Allison Oswald DPT, WCS, CPT**