Posture Alignment Therapy And How Does It Work? ................................................................. 2
Improve Your Posture with ........................................................................................................ 8
3 Simple Exercises......................................................................................................................... 8

Motion, Posture Anatomy & Structure enables us to stand up, sit down and move around .... 11

THE SUB-SYSTEMS OF MOTION ............................................................................................... 12
  1. Limit Bed Rest ......................................................................................................................... 16
  2. Keep Exercising ...................................................................................................................... 17
  3. Maintain Good Posture .......................................................................................................... 17
  4. See a Specialist ...................................................................................................................... 17
  5. Strengthen Your Core .............................................................................................................. 17
  6. Improve Flexibility .................................................................................................................. 17
  7. Ditch the Brace ....................................................................................................................... 18
  8. Apply Ice and Heat .................................................................................................................. 18
  9. Sleep the Right Way ............................................................................................................... 18
 10. Quit Smoking ......................................................................................................................... 18
 11. Try Talk Therapy .................................................................................................................... 18
 12. Use Relaxation Techniques .................................................................................................. 18

Sit Correctly And Avoid Heart Problems .................................................................................. 19
  How do I fix my poor posture? ................................................................................................. 21
  Standing Postural Muscles ........................................................................................................ 22
  Posterior Pelvic Tilt ..................................................................................................................... 22
  Lordosis ...................................................................................................................................... 23
  Kyphosis ..................................................................................................................................... 23
  Forward Head Posture ............................................................................................................... 24
  Winged Scapula .......................................................................................................................... 24
  Protracted Shoulder Girdle ........................................................................................................ 25
Posture Alignment Therapy And How Does It Work?

Posted on September 14, 2014

In my last blog post, I shared my story with you, and how I got started using Posture Alignment Therapy to help others get out of pain and improve athletic performance. Now, I want to answer the questions: What the heck is Posture Alignment Therapy, and exactly how does it work?

Posture Alignment Therapy is a holistic exercise technique that uses gravity and a person’s own body weight to improve alignment and balance, naturally eliminating the underlying causes of pain and physical limitation. It is not chiropractic, massage, yoga, pilates, or physical therapy.
The technique is based in the basic principal that the human body is comprised of 8 major load-bearing joints: shoulders, hips, knees and ankles. These joints function best when horizontally and vertically aligned as shown in the image of Function Freddie below:
When these joints are out of alignment, the body is susceptible to joint wear and tear, pain and injury:

The human body was designed to stand on 2 feet, and to be in motion, constantly, in order to survive. The combination of gravity and movement are not only necessary to maintain the body’s skeletal alignment, but also critical for survival...that is prior to modern conveniences and technology.

Today we no longer need to move in order to survive. In order to make a living these days, most of us click a mouse, stand stationary in one place, or perform the same repetitive movement patterns over and over. The problem is simple, we do not move nearly enough to remain pain free and functional.

The solution is also simple: Move More! Participating in sports and organized physical activities are a great way to supplement movement into your day to day routine. Posture Alignment Therapy comes into play when pain gets in the way, or when someone wants to prevent future injuries. The program involves a customized sequence of simple, low demand daily stretches and exercises called a ‘menu’ that are designed to restore function and balance. The menu does not focus on the symptom or the site of pain, rather, it addresses the underlying alignment issues that are causing the problem.
People that embrace the fact that they simply do not move enough, and perform their menu daily with periodic visits with their therapist (in this case me) to fine tune their menu are the ones that have the most success. A well constructed menu, when done daily, will empower the client to keep themselves healthy and pain free without having to rely on “after the fact” treatment of pain and injuries.

Now, let’s get down to business and talk about how this technique can actually boost your performance in sports. I’ll use my client Trish Davis, as an example. Before beginning Posture Alignment Therapy, Trish had chronic back pain that hindered her training for close to 3 years. Her max front squat weight was 165lb, and she was not able to progress past that weight due to back pain. Trish’s before photos below show that her hips and spine were out of alignment. If you look even closer, you may see that her shoulders, knees and ankles were also misaligned.
After 1 month of doing a customized daily menu that addressed the overall alignment of her shoulders, hips, knees and ankles, Trish’s alignment greatly improved, as shown by the after photos below. Today her max front squat weight is up 25lb to 190lb, and she is pain free during weighted squatting movements!
Principles of Alignment

- Outer Spiral
- Inner Spiral
- Organic Energy
- Muscular Energy
- Open to Grace
- Focal Point
Stop reading this for a minute—and think about your shoulders. Where are they? Are they rounded or slumped? Are they causing a strain in your neck?

Many of us have little or no awareness of our posture, but poor posture can contribute to a host of problems, including muscle pain and injury when performing regular activities, such as getting dressed or carrying groceries. The good news is that it’s easy to take control of our upper-body posture.

Our editors spoke with Brent Anderson, PhD, a physical therapist, adjunct instructor at the University of Miami and founder and president of Polestar Pilates in Coral Gables, Florida (www.PolestarPilates.com), about improving upper-back alignment. When our upper body is in alignment, we optimize the movement of our joints… have increased muscle strength… and are at decreased risk for injury. The exercises below borrow from Pilates, an exercise modality uniquely able to help improve posture. During Pilates, you perform controlled, mindful moves that improve the flexibility and strength of muscles required for good posture.
RETRAINING YOUR MUSCLES

You can align your head, neck and back by retraining your muscles. These easy-to-do exercises are designed to help you with this by improving the range of motion and strength of the muscles of the back and neck so that it is easier to bring them into alignment. Repeat each exercise up to 10 times daily. Do each repetition carefully, and you won’t need to do more to benefit. Consult with a doctor before doing any new exercises.

**Rolldown. What it does:** Improves movement of the spine and increases postural awareness.

Stand against a wall with the back of your head, rib cage and buttocks touching the wall. Walk your feet about one foot away from the wall, and put your hands on your thighs. Slowly roll forward, sliding your hands gently down the fronts of your thighs. As you roll forward, feel each vertebra leave the wall. When you have gone as far as you can, roll back up, touching one
vertebra at a time to the wall. People with osteoporosis should not do this exercise—bending the spine forward is not recommended for those with low bone density. The movement can result in micro-fractures of the spine.

**Paint the Ceiling.** *What it does:* Increases range of motion in the neck.

While seated, imagine a long artist’s paintbrush extending up from the crown of your head. Remain seated as you position your head so that the crown of your head is as close to the ceiling as you can get it. With the “paintbrush,” nod your head forward and backward, drawing a one- to two-inch line on the ceiling. Move just your head. Next, “paint” a short line on the ceiling from side to side. Finally, paint a small circle by rotating your head in both directions.

**The Pre-Swan.** *What it does:* Increases the strength and mobility of the muscles of the upper spine. Helps correct a forward curve in the upper spine.

Lie on your stomach on the floor on a mat or carpet. Bend your elbows so that your hands are under your shoulders. Inhale, and gently press your hands into the floor. Reach your elbows toward your heels, and peel your upper chest off the floor, keeping the lowest ribs in contact with the floor. This small movement should be felt only in the upper back and chest. (If you feel this in the lower back, you may have rolled up too high.) People with back problems should consult a doctor before doing this exercise.

To find a certified Pilates instructor to help you improve your posture, visit www.PilatesMethodAlliance.org, a nonprofit organization that provides a list of qualified instructors around the country.
Motion, Posture Anatomy & Structure enables us to stand up, sit down and move around.
Posture is not just how you hold your neck or the slump of your shoulders and low back. Everything in the body is connected, and our posture is the coordinated workings of all the different mechanical parts of the body.

The body’s motion system controls posture. Scientists call this system the neuro-musculo-skeletal system (NMS), and break it down into three sub-systems.

**THE SUB-SYSTEMS OF MOTION**

1. **Contracting System**

   *Muscles contracting to create motion:* Also called the Active System, because it requires active control

2. **Connecting System**

   *The framework of the body:* Also called the Passive System, because we have no active control of these tissues, which include:

   - Bones: to hold the body up.
   - Ligaments: to hold the bones together at the joints.
   - Joint Capsule: the ligamentous sack around every joint containing the synovial fluid for joint lubrication.
   - Tendons to hold the muscles to the bone.
   - Cartilage and discs: to protect weight-bearing and stressed surfaces where bones meet in joints.
   - Fascia: Tissue holding all the pieces together.
3. Control System

Telling the muscles what to do, and when to do it.

- Brain: gives the orders, both conscious and unconsciously.
- Spinal Cord: main cable and low-level processing for information between the brain and everything in the body.
- Nerves: the wires controlling the muscles.
- Mechanoreceptors: sensors within muscles and joints telling the brain where the body is in space.

For example, you can tell if your hand is open or clenched in a fist even without looking because of these deep sensors.
Our bodies move when, either consciously or unconsciously, brain and nerves of the control system tell the muscles what to do, within the constraints of the physical limitations of the muscles, ligaments, and tendons. The human body is literally designed to move, and that motion follows in a chain, known as a kinetic chain. Posture and body motion depend on the coordinated workings of these Contracting, the Connecting, and the Control systems.
5 Posture Principles explain posture and bio-mechanics:

- **MOTION**
- **BALANCE**
- **patterns**
- **Compensation**
- **Adaptation**
These common-sense concepts can help you understand how your body moves and give you insight into how to keep your body moving well so you can age well. These principles are from the book *Stand Taller–Live Longer*, but the concepts are universal—no matter how you look at it, chiropractors, physical therapists, MDs, massage therapists, trainers, posture coaches and everyone else who studies how the body moves agrees with these fundamental principles.

Like the nearly 80% of Americans who will experience a back problem during their lifetime, Beverly Hayes suffers from back pain. For many, the injury is triggered by a strenuous activity, like gardening or weight lifting. Others simply bend down to pick up a pencil and their back gives out.

“It felt like a screwdriver was piercing through my bones,” the 46-year-old Chicago artist says about the pain that developed shortly after she ran a half-marathon. “It took over my life. I couldn’t bend down or sleep — I was petrified I would never feel normal again.”

Mary Ann Wilmarth, DPT, a spokeswoman for the American Physical Therapy Association and chief of physical therapy at Harvard University, says it is critical that people address any back pain or injury right away. “Early intervention can help prevent a chronic problem from developing and obviate the need for medication and surgery,” she says.

Thanks to a combination of activity, core strengthening exercises, and physical therapy, Hayes says her symptoms have improved dramatically over the last year. Here are 12 ways to help alleviate back pain:

1. **Limit Bed Rest**

Studies show that people with short-term low-back pain who rest feel more pain and have a harder time with daily tasks than those who stay active.
“Patients should avoid more than three days of bed rest,” says Mike Flippin, MD, an orthopaedic surgeon who specializes in back and spine care at San Diego Medical Center. “I encourage my patients to get moving as quickly as possible.”

2. Keep Exercising

Activity is often the best medicine for back pain. “Simple exercises like walking can be very helpful,” Wilmarth says. “It gets people out of a sitting posture and puts the body in a neutral, upright position.”

But remember to move in moderation, Flippin says. “Stay away from strenuous activities like gardening and avoid whatever motion caused the pain in the first place.”

3. Maintain Good Posture

The pain may have started after a long workout at the gym, but the strain that caused it has probably been building for years. Wilmarth says most people have poor posture when going about their daily activities, putting unnecessary strain on their backs.

“Little things add up,” she says. “You can increase the pressure on your back by 50% simply by leaning over the sink incorrectly to brush your teeth. Keeping the right amount of curvature in the back takes pressure off the nerves and will reduce back pain.”

4. See a Specialist

Developing an individualized exercise plan is essential to managing chronic back pain, says D. Scott Davis, PT, MS, EdD, OCS, an orthopaedic physical therapist and associate professor at West Virginia University.

“There is no magic aspirin that addresses lower back pain in everyone,” Davis says. “Some patients need more core strengthening while others benefit mainly from stretching and improving flexibility. Find a physical therapist, exercise physiologist, or chiropractor who specializes in back care. They will match you with the right exercise plan.”

5. Strengthen Your Core

Most people with chronic back pain would benefit from stronger abdominal muscles.

“The torso is a combination of many muscle groups working together,” Frank B. Wyatt, EdD, professor of exercise physiology at Missouri Western State University, tells WebMD in an email. “If the abdominals are weak, other areas must pick up the slack. When we strengthen the abdominals, it often reduces the strain on the lower back.”

6. Improve Flexibility

Too much tension and tightness can cause back pain. “Our goal in increasing flexibility is to put an equal load throughout the body from the feet all the way up to the head,” Davis says. “One good exercise is to sit on the edge of the bed with one leg extended and the other one on the floor. Give your hamstrings a stretch by leaning forward while keeping your back in a neutral position.”
7. Ditch the Brace

It’s tempting to baby your back muscles, but Davis says braces should be used sparingly. “Braces are helpful for strenuous activities, like heavy lifting, but only keep them on for 15 minutes at a time,” he says. If you wear a brace all day, the muscles — which should be providing stability — weaken and you will have less core strength.

8. Apply Ice and Heat

Heating pads and cold packs can comfort tender trunks. Most doctors recommend using ice for the first 48 hours after an injury -- particularly if there is swelling — and then switching to heat.

But “it is difficult to say if ice or heat is more beneficial,” Flippin says. “I recommend that patients use whichever they find comforting as long as their skin is protected.”

9. Sleep the Right Way

The amount of rest you get is important, and so is the position you get it in. “Sleeping in a bad position or on a mattress without support can cause back pain,” Wilmarth says.

Some pointers:

- Back sleepers should put pillows under their knees.
- Side sleepers should place pillows between their knees to keep their spine in a neutral position.
- Stomach sleeping causes the neck and head to twist and can put undue stress on the back.

10. Quit Smoking

Lighting up doesn’t just damage your lungs; it can also hurt your back.

A study recently published in the American Journal of Medicine found that current and former smokers are more likely to have back pain when compared with people who have never smoked.

“Nicotine causes the small blood vessels to constrict and decreases the delivery of blood to the soft tissue,” Flippin says. “I tell all my patients that quitting smoking could help alleviate their back pain.”

11. Try Talk Therapy

Back pain is often seen with issues such as depression and anxiety, says Alex Moroz, MD, associate professor of rehabilitation medicine at NYU Langone Medical Center.

“Your emotional state colors the perception of pain,” Moroz says. “Therapy can be a helpful part of rehabilitation.”

12. Use Relaxation Techniques

Research shows that practices such as meditation, deep breathing, tai chi, and yoga, which help put the mind at rest, can do wonders for the back.

“If you can induce a relaxation response, it will help reduce the perceived pain level,” Moroz says.
Heart Ailments as a Focus Area

One of the most important focus areas for individuals is a healthy heart. All nations, races, sexes and age groups are now equally prone to heart related ailments across the World. This problem is even more acute in areas where there is a genetic predisposition to heart problems; like the Indian subcontinent. It is estimated that over the next couple of decades, one in every three individuals will have some issue related with the heart by the time they reach their fifties.

Reasons For Heart Problems

There are so many reasons given for the increasing incidence of heart related problems. This is true even for young, healthy people and those who do not have a genetic predisposition. Some of the reasons which impact the heart are:

- Exposure to pollution, whether environmental or noise.
- Food sources are poisoned across the world. Everything we eat has chemicals, hormones and impurities, including the freshest of sea food.
- Impure milk and milk products.
- **Drinking water** is contaminated. Treated water has excess amounts of unwanted elements and minerals which also cause damage.
- Stress levels.
- Lack of sleep or other sleep related problems.
- Incorrect lifestyle.
- Bad eating and drinking habits.
- **Alcohol**, tobacco, coffee and drugs.
- Excessive, unrequired or over-the-counter medication.

**The Most Important Factor For Heart Problems**

Most of these risk factors are known to us even though we may not pay attention to them. However, one of the most important factors is the way we sit. The modern way of sitting is one of the main causes which accelerates or initiates heart problems.

How we sit has a great impact on the entire body, especially on the heart. As highlighted above, one of the biggest contributors to heart disease and blood pressure is the way we sit. The worst way to sit is on a chair or a sofa with your feet down. This is how we all sit today all the time, even at home.

The reason is that sitting like this increases the work load for your heart. The heart has to practically increase its efforts by over sixty percent to pump back blood against gravity and get it to circulate across the body. This puts an amazing amount of extra strain on the heart. The wear and tear is surer and faster. In combination with the other causes mentioned above, imagine the load on the heart.

**The Solution; How To Sit**

What is the correct way to sit? This is the logical question. The answer is thousands of years old and given by the Yogis and Rishis of the past:

Preferably sit on the floor. If you are on the floor itself, there is less work to do, to pump blood upwards.

If you cannot sit on the floor, then sit with your legs up in different positions. Sitting with your legs up cuts out the effort of pulling up blood from the waist downwards, because the body is folded closer to the heart. So the heart now has to pump that much of a distance less (the length of your legs, waist down is more than the upper body), against gravity. That is fifty to sixty percent of the effort gone.

Try sitting with your legs crossed over each other or intertwined. This locks the legs and blood requirement reduces dramatically to the lower limbs. Initially you may find you get
pins and needles but with practice, this becomes very comfortable. Keep shifting your legs every few minutes in different positions. Once you are used to it, there will be no discomfort.

**Other Benefits of Sitting Cross Legged Or With Legs Up**

It has been seen that sitting in this position uses up less energy than sitting on a chair and sometimes even better than lying down.

In addition, sitting in this position and also eating in this position creates a very positive pressure on the digestive organs. In a short span of a few weeks you may notice digestive problems will reduce.

Sitting like this helps keep the spine supple and maintains your balance. It is good for spine health, back aches and also reduces the load on the lower spine.

This ideal position in Yoga is called Sukhasana. If you cannot sit cross legged, start making it a habit to sit with your legs up as much as you can to keep your heart healthy.

**How do I fix my poor posture?**

![Image of posture issues and solutions](image)

In general, strength training is going to help posture more than anything else. There are specific exercises and methods to fix specific issues with poor posture, if needed:

**Lumbar Lordosis, or Anterior Pelvic Tilt (APT):** Lower cross syndrome is a posture issue generally caused by sitting all the time. The erector spinae (lower back spinal muscles) and hip flexors tend to
be tight (and should be stretched), and the glutes and abdominals tend to be weak (and should be strengthened). This typically causes one's butt and gut to stick out. Find fixes here. The first 3 pages of this pdf can serve as a handy reference sheet for the exercises mentioned in the linked post.

**Swayback, or Posterior Pelvic Tilt (PPT):** People with a posterior tilt tend to look as if their lower back and butt are completely flat. Find fixes here. The "psoas test" link is broken, so here is a replacement video to go along with the written description.

**Thoracic Kyphosis and Forward Head ("Computer Guy" Hunchback):** Upper cross syndrome is another posture issue caused by sitting while hunching forward (at a computer, over books, etc). The pectorals and the upper back/next tend to be tight, while the scapular muscles (shoulder blades) and neck flexors tend to be weak. This post has excellent information on why you're doing different exercises, but many of the links have degraded. This pdf demonstrates how to do the specific exercises mentioned (skip to page 4 for the specifics for this section, although all of the stretches are good).

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**Standing Postural Muscles**

The diagram to the right illustrates how the body is held erect. The thick black lines represent the principal muscles involved in standing. The vertical dotted line indicates the center of gravity. Note this line falls behind the axis of rotation of the hip and in front of the knee. This renders the ligaments of the joints tense, which are represented by dotted lines passing in front of the hip (ilio-femoral) and behind the knee (posterior ligament).

---

**Posterior Pelvic Tilt**

Sometimes referred to as flat back, posterior pelvic tilt involves the reduction of the natural lumbar curvature. This posture is characterized by the shortening of the hip extensors (Hamstrings & Gluteus Maximus inflexibility), tight abdominals, and lax hip flexors. Sitting on the back of the hips may indicate a posterior pelvic tilt. It is rarely brought about by lack of muscular strength. The posterior pelvic tilt is less common as the anterior tilt as seen with lordosis.

- Examples of affected exercises:
  - Leg Press
  - Squat
  - Straight Leg Deadlift
• Example preventative / corrective exercises:
  o Hip Flexor: Lever Hip Flexion
  o Hamstrings: Lying Hamstring Stretch
  o Gluteus: Seated Glute Stretch
  o Abdominal: Abdominal Stretch

**Lordosis**

Pelvis is positioned forward and downward. Hips are slightly flexed and lumbar spine is excessively hyperextended. Hip flexors, erector spinae are short. Abdominal, hamstrings, gluteus maximus muscles may be weak. Increased risk of lower back injury during standing or lying hip extension, flexion, or stabilization activities, and weighted overhead activities. See abdominal weakness and hip flexor inflexibility.

• Examples of affected exercises:
  o Squat
  o Hack Squat
  o Military Press (standing)
  o Roman Chair Sit-up

• Example preventative / corrective exercises:
  o Hip Flexor: Kneeling Hip Flexor Stretch
  o Erector Spinae: Lower Back Stretch
  o Abdominal: Crunches
  o Hamstrings: Leg Curl
  o Gluteus: Seated Leg Press

**Kyphosis**

Exaggerated anterior-posterior curvature of the vertebral column, most often involves an excessive forward bending in the thoracic area. Kyphosis occurs in older adults, particularly women with osteoporosis and osteoarthritis. Kyphosis is sometimes accompanied by other posterior problems such as posterior or anterior pelvic tilt (compensates for altered line of gravity) and protracted shoulder girdle (unrelated). Kyphosis makes it difficult to include overhead exercises, particularly when combined with a winged scapula condition or shoulder external rotation inflexibility.

• Examples of affected exercises:
  o Shoulder Press
• Seated Triceps Extension
• Front Squat
• Overhead Squat

• Corrective exercises for gravity induced kyphosis:
  o Strengthening of thoracic vertebral column extensors
  o Stretching of thoracic vertebral column flexors

Forward Head Posture

An anterior positioning of the cervical spine is characteristic of forward head posture, or protracted neck. Forward head posture may make it more difficult to perform exercises with the bar in front of head or neck. Evaluate neck position at night since elevating head too high with additional pillows may act as a continuous neck stretch throughout the evening exacerbating the forward head posture.

• Examples of affected exercises:
  o Shoulder Press

• Corrective exercises for gravity induced kyphosis:
  o Strengthening of cervical vertebral column extensors
    • Isometric Neck Retraction
  o Stretching of cervical vertebral column flexors
    • Neck Retraction

Winged Scapula

Medial border or inferior angle of scapula protrudes slightly from body. A winged scapula condition may be accompanied by a protracted shoulder girdle. Risk of shoulder injury is compounded with a supraspinatus weakness or an external shoulder rotation inflexibility. Because of the forward tilt of the scapula, complete flexion or external rotation of the shoulder may be seemingly restricted. A winged scapula condition indicates a serratus anterior weakness. The rhomboids may be weak and the pectoralis minor may be short. A winged scapula is considered
normal posture in young children, but not older children and adults.

- Examples of affected exercises:
  - Shoulder Press
  - Pullovers
  - Pull-downs
- Example preventative / corrective exercises:
  - Incline Shoulder Raise
  - Cable Row
  - Pectoralis Minor Stretch
  - Wall Lat. Stretch

**Protracted Shoulder Girdle**

The shoulders are pulled forward. Medial border of the scapula may also protrude slightly from body. Increased risk of shoulder injury during shoulder transverse flexion and transverse adduction activities, specifically when elbow travels behind shoulder. Scapula protraction can also decrease width of subacromical space, possibly increasing risk of subacromical impingement (Solem-Bertiff E, et al. 1993). In both cases, risk of shoulder injury is compounded with a infraspinatus weakness.

Possible limited range of motion during retraction of the shoulder girdle. A protracted shoulder girdle may be accompanied by a winged scapula condition or transverse adduction / flexion inflexibility. The subscapularis and Pectoralis minor and clavicular & sternal heads of the pectoralis major muscles may be short. The trapezius (middle fibers) and particularly the rhomboids may be weak if the medial borders of the scapula also protrude slightly from body.

- Examples of affected exercises:
  - Bench Press
  - Chest Press
  - Flies
  - Barbell Hack Squat
  - Upright Row (particularly close grip)
  - Front Lateral Raise (with internal shoulder rotation)
- Example preventative / corrective exercises:
- **Cable Row** or **Lever Row** (do not hold protracted position)
- **Doorway Modified Chest Stretch**
- **Wall Shoulder Girdle Stretch**
- **Doorway Subscapularis Stretch**
- Work through full range of motion on chest exercises
  - just to position that slight stretch is felt.

If lying on one's side, position upper arm under head (with or without pillow in between) since lying on one's side with one's arm down or in front (protracting shoulder girdle) may act as a continuous stretch throughout the night exacerbating this condition.

Likewise, those with a protracted shoulder girdle should avoid stretches that protract the shoulder such as **Rear Delt Stretches** or holding a **protracted position** during **rowing resistive exercises**.

Normalizing this postural deficiency can improve mechanics of the shoulder and provide a fuller appearance throughout the chest.

**Scoliosis**
Mediatorial curve of the vertebral column.

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### Instinctive sleeping and resting postures: an anthropological and zoological approach to treatment of low back and joint pain

**Michael Tetley**, physiotherapist

If you are a medical professional and have been trained in a “civilised” country you probably know next to nothing about the primate *Homo sapiens* and how they survive in the wild. You probably do not know that nature has provided an automatic manipulator to correct most spinal and peripheral joint lesions in primates. In common with millions of other so called civilised people you suffer unnecessarily from musculoskeletal problems and are discouraged about how to treat the exponential rise in low back pain throughout the developed world. Humans are one of 200 species of primates. All primates suffer from musculoskeletal problems; nature, recognising this fact, has given primates a way to correct them.

The study of animals in the wild has been a lifelong pursuit. I grew up with tribal people and in 1953-4 commanded a platoon of African soldiers from nine tribes, who taught me to sleep on my
side without a pillow so that I could listen out for danger with both ears. I have organised over 14 expeditions all over the world to meet native peoples and study their sleeping and resting postures. They all adopted similar postures and exhibited few musculoskeletal problems. I must emphasise that this is not a comparison of genes or races but of lifestyles. I tried to carry out surveys to collect evidence but they were meaningless, as tribespeople give you the answer they think you want. They often object to having their photographs taken, so I have demonstrated the postures.

Summary points

- Forest dwellers and nomads suffer fewer musculoskeletal lesions than “civilised” people
- Nature’s automatic manipulator during sleep is the kickback against the vertebrae by the ribs when the chest is prevented from movement by the forest floor
- Various resting postures correct different joints
- Pillows are not necessary

Some instinctive sleeping postures

Figure Figure 1 shows a mountain gorilla lying on the ground on his side without a pillow—a position in which I have also seen chimpanzees and gibbons sleeping—and a Kenya African in a similar position on a palm leaf mattress on a concrete floor. Note how he uses his laterally rotated arm as a pillow and can listen out for danger with both ears.

Figure 1

A mountain gorilla asleep on one side (left); a Kenyan asleep in a similar position (right). (Photo of gorilla by Bob Campbell, a National Geographic photographer who was portrayed in the film Gorillas in the Mist)

When lying on one side you do not even need the arm as a pillow: when the lower shoulder is fully hunched, the neck is completely supported. I think the neck should deviate towards the ground as gravity then shuts the mouth, preventing insects from entering, and a little traction is applied to the cervical spine (fig 2, top). When the head is down, the vertebrae are stretched between two anchors and every time the ribs move through breathing the tension is increased, the vertebrae realign themselves, and the movement keeps the joints lubricated. Current thinking is to keep the spine straight by use of a pillow. Has anyone ever seen a gorilla shinning up a tree
with a pillow? Note also the plantar flexed foot. A dorsiflexed foot rotates the knee and alters the Q angle (between the resultant pull of the quadriceps muscle and the patella tendon), producing uneven wear and, in time, pain.

![Figure 2](image)
In side lying (top) the neck is completely supported; with a slight change in position (bottom) the penis is protected from insects.

Tribal people do not like lying on the ground in the recovery position while wearing no clothes as the penis dangles in the dust and can get bitten by insects. When the legs are in the reverse recovery position (fig (fig2, bottom), the penis lies on the lower thigh and is protected. In this position the Achilles tendon of the leading foot can be inserted in the gap between the big toe and the first lesser toe to help correct a bunion.

When sleeping in the open in very cold climates and when the ground is wet, humans often resort to sleeping on their shins, like the Tibetan caravaneers photographed by Peter, Prince of Greece and Denmark, in 1938 (fig (fig3,3). Nature has not covered the anterior border of the tibia and the medial border of the ulna with muscle, so in this position there is only skin and bone in contact with the cold ground and heat loss is reduced. The body is also folded to conserve heat; both ears can listen for danger, be it lion or terrorist; and when the head is down gravity shuts the mouth and it is impossible to snore.

![Figure 3](image)
Tibetan caravaneers sleeping on their shins

Figure Figure44 shows the “lookout posture,” another position using the arm as a pillow to reset shoulder, elbow, and wrist: accessory joint movement is regained because the weight of the head
resting on the arm is at right angles to the line of movement, producing a lateral glide. I have seen Howler monkeys using this position in Costa Rica.

Figure 4

The lookout posture

Quadrupedal lying (fig 5) is ideal for stretching collagen fibre throughout the body. In the penis protect position, with the pelvis locked, the spine is rotated and flexed. With the elbows out sideways and the chest on the ground, many spinal lesions can be corrected gently using nature's automatic manipulator. Animals are clever because they use the radiant heat from the sun to encourage relaxation of their muscles when they adopt this posture. In this photograph note that the dog's sternum is in full contact with the ground but that of the human is not: this can be easily corrected by rotating the right arm medially to lower the sternum. It has been noted that guide dogs working in towns breathe the same pollutants as humans yet do not have asthma. Could this be because when they lie on their chests the kickback from the upper ribs keeps the corresponding vertebrae mobile, allowing the sympathetic system to work efficiently?

Figure 5

Quadrupedal lying

Some resting postures

Arabs in the Sahara will sit in the position shown in figure 6 for hours and it keeps the forefoot aligned on the hindfoot, as the ischia rest directly on the calcanea and the feet point straight backwards. People who sit like this do not seem to get much osteoarthritis in their knees in old age. Cross legged sitting prevents arthritic hips. A flying doctor from Kenya remarked to me that over the years as local tribesmen became more civilised he more often saw arthritis of hips and knees.
Figure 6

Sitting on the heels

The full squat, with the heels on the ground (fig (fig7)) resets the sacroiliac joints; takes hips, knees and ankles through the full range; and can be very useful in treating backs. To start with, some Westerners have to hold on to a doorframe.

Figure 7

The full squat

Conclusion

Largely anecdotal evidence has been collected by “old timers” for over 50 years from non-Western societies that low back pain and joint stiffness is markedly reduced by adopting natural sleeping and resting postures. This observation must be recorded to allow further research in this direction as these primitive societies no longer exist and the great apes living in the wild are heading for extinction. All we have to do is to be good primates and use these preventive techniques.
“Stand up straight!” “Pull your shoulders back!” As children, we were told to have good posture. Yet we were seldom taught effective ways to accomplish this. Indeed, we were often not even told just what “good posture” is.
The consequences of this information gap can be seen all around us: stiff necks, shoulders hunched forward or pulled tightly back, restricted breathing, and tightness in the thighs, legs and ankles. Backaches, headaches, and other painful symptoms are often the unfortunate result.

The Alexander Technique is a time-tested method of teaching ways to restore our natural balance, flexibility and ease of movement. It teaches the use of the appropriate amount of effort for a particular activity, releasing more energy for all our activities. It is not a series of treatments or exercises, but rather a reeducation of the mind and body that helps you discover a new balance in your body by releasing unnecessary tension. It can be applied to all of your daily activities.

The Alexander Technique places a great deal of emphasis on the relationship between your head and neck. The way we manage that relationship has huge implications for the way the rest of our body is organized. If, as is so often the case, we compress our heads down into our spines, a whole series of compensatory tensions is created. If, on the other hand, we can learn to allow our head to balance lightly on top of our spine as nature intended, our built in “anti-gravity” reflex is activated and our body is encouraged to release previously held restrictions.

A neutral spine or good posture refers to the "three natural curves [that] are present in a healthy spine."[1] Looking directly at the front or back of the body, the 33 vertebrae in the spinal column should appear completely vertical. From a side view, the cervical (neck) region of the spine (C1-C7) is bent inward, the thoracic (upper back) region (T1-T12) bends outward, and the lumbar (lower back) region (L1-L5) bends inward. The sacrum (tailbone area) (S1-S5 fused) and coccyx (on average 4 fused) rest between the pelvic bones.[2] A neutral pelvis indicates the anterior superior iliac spines and pubic symphysis fall in the same vertical line.[3]

Posture and natural curvatures

The word posture comes from the Latin verb ponere, which means "to put or place." The general concept of human posture refers to "the carriage of the body as a whole, the attitude of the body, or the position of the limbs (the arms and legs)." [4]

Webster’s New World Medical Dictionary defines neutral posture as the stance that is attained "when the joints are not bent and the spine is aligned and not twisted.[5] Neutral posture has given rise to the idea of achieving “ideal posture.” Ideal posture indicates proper alignment of the body’s segments such that the least amount of energy is required to maintain a desired position. The benefit of achieving this ideal position would be that the least amount of stress is placed on the body’s tissues.[6] In this position, a person is able to completely and optimally attain balance and proportion of his or her body mass and framework, based on his or her physical limitations. Good posture optimizes breathing and affects the circulation of bodily fluids.

Posture abnormalities

In medicine and occupations concerned with physical fitness, the concept of good posture is referred to as "neutral spine."[7] In this context, proper posture or "neutral spine," is the proper alignment of the body between postural extremes. Deviations from neutral alignment are identified as excessive
curvature or reduction in curvature. Rarely do these deviations in curvature occur in only one plane; however, they are typically referred to in this manner. In the anterior/posterior view, deviation from vertical results in abnormal lateral curvature of the spine called Scoliosis. In the sagittal view, excessive curvature in the cervical region is cervical lordosis, in the thoracic region thoracic kyphosis, and in the lumbar region lumbar lordosis. Reduction in curvature is typically termed flat back if present in the thoracic region and lumbar kyphosis if present in the lumbar region.

In posture analysis, the spine is compared to a plumb line to detect the aforementioned abnormalities. From the anterior/posterior view this plumb line should run vertically down the midline of the body dividing it symmetrically into right and left halves indicating even weight distribution on left and right sides. From the sagittal view the plumb line should bisect the ear, odontoid process of C2, the cervical vertebral bodies, the center of the glenohumeral joint, the lumbar vertebral bodies, the center of the acetabulum, just posterior to the patella, and through the tarsals of the feet. This sagittal line of reference theoretically indicates even distribution of weight between the front and the back of the body.

Quantifying abnormalities

Scoliosis is well established and even evaluated at an early age. It is typically quantified using the standardized Cobb angle method. This method consists of measuring the degree of deformity by the angle between two successive vertebrae. The Cobb method was accepted by the Scoliosis Research Society (SRS) in 1966. It serves as the standard method for quantification of scoliosis deformities. Sagittal plane posture aberrations such as cervical and lumbar lordosis and thoracic kyphosis have yet to be quantified due to considerable inter-individual variability in normal sagittal curvature. The Cobb method was also one of the first techniques used to quantify sagittal deformity. As a 2D measurement technique it has limitations and new techniques are being proposed for measurement of these curvatures. Most recently, 3D imaging techniques using computed tomography (CT) and magnetic resonance (MR) have been attempted. These techniques are promising but lack the reliability and validity necessary to be used as a reference for clinical purposes.

Posture assessment has also become quite popular in many practical environments like the personal training and sports conditioning settings. The need for reliable methods of posture assessment as a screening tool is warranted. Current available programs such as those through the National Posture Institute (NPI) and Posture Print are recommended for the practical setting but cost close to $1000 and may not be feasible for all practitioners.

Chronic deviations from neutral spine leads to improper posture. Increased stress on your back and causes discomfort and damage. When the spine is left in non-neutral posture for extended periods of time, it raises the diaphragm, preventing the body from taking a full breath. This can lead to reduced oxygenation throughout the body. It can also compromise the internal organs' performance by
putting pressure throughout the abdomen.[11] People who sit for long hours on the job are susceptible to a number of misalignments."[12]

"Neutral spine" is ideally maintained while sitting, standing, and sleeping.[13]

References

4. Definition of Posture, Webster's New World Medical Dictionary
5. Definition of Neutral Posture, Webster's New World Medical Dictionary
7. Webster, Deborah, The Neutral Spine, wellbridge.com
13. Markusic, Jeanne, Maintaining a Healthy Spine - Posture
Pilates pronounced "Puh - LAH - Teez", a physical fitness system that was developed in the early 20th century by Joseph Pilates focuses on the core postural muscles that help keep the body balanced and are essential to providing support for the spine.

Definition
Mind and body approach to exercise
Around 80 years ago
Mental concentration, breathing and movement
Complicated system of effective but gentle, whole-body conditioning and corrective exercises
Concentrates on building core strength in the body and lengthening the spine
Pilates is about moving in ways that help strengthen your powerhouse, including your stabilizing muscles
Pilates emphasizes toning over flexibility (but it enhances both)
Pilates instructs an individual to inhale through the nose and exhale through the mouth
Performance is on the mats as well as the pilates machines which help build a longer, leaner and a dancer-like physique
Pilates should be practised if an individual wants an exercise that improves flexibility while toning muscles - especially abs

Approach
What is it?
Physical areas of focus
How?
Emphasis on
Breathing & Concentration
Practice
What to choose?

Yoga
An ancient practice from the northern India known as a path to both, physical as well as mental well being which includes everything from physical posture and healthy diet to breathing, relaxation and meditation skills
Mind, body and spirit approach to exercise
5000 years ago
Kind to all beings, including ourselves, and to search for balance in our lives and lifestyle
Yoga is a lifestyle rather than simply an exercise
Considered therapeutic and aims at uniting the body with mind and spirit and helps people find harmony and release stress
Involves static poses, which are held while exploring your breathing, physical feelings and emotions
Yoga emphasizes flexibility over building strength (although it enhances both)
Yoga practitioners are taught to inhale and exhale through the nose only
The different styles are generally practised in a group sitting on a yoga mat with the aid of a yoga instructor
Preferred if someone wants to concentrate more on flexibility less on toning, and also searching for something that helps reduce stress and gives an opportunity for some quiet time

bitesizewellness.com (via diffen.com)
Being afraid I’ll end up looking like the humpback of Notre Dame when I’m older is a reasonable fear. Either osteoporosis or poor posture may be my fate, unless I take some steps in the right direction. Overall health and wellness has become much more of a priority now that I’m in my thirties. Good posture was something I may have only heard about from my mom when she told me to straighten up (or when I was acting out, more likely).

As a yoga teacher I find myself more conscientious about the way I’m sitting or standing. Sometimes at my day job I find myself slumping over in my chair and then it suddenly dawns on me how I’m sitting.
I have been practicing poor posture for so long that I now have to practice good posture. Especially as a yoga teacher, I should lead by example and should not be sitting hunched over. So, even I have to remind myself about good posture once in a while.

Recent studies have shown yoga to improve posture, and it’s not surprising that this is true. In addition to increasing body awareness, yoga strengthens the core and lengthens the spine. The spine is the thing that holds up our body all day long, so it’s important to keep it in tip-top condition. Not to mention it has to support that heavy bowling ball of a head we carry around all day long!

Try these simple poses during your day to improve your posture:

**Mountain Pose (Tadasana)**

Yes, this is a yoga pose. It doesn’t feel like it at first, but it’s a very active pose. Stand tall, feel your feet on the ground, open your chest with arms at your sides, slightly tuck your tailbone, engage your thighs, roll your shoulders back and down to lower your shoulder blades, and bring your chin back so your ears are above your shoulders. It’s all in the chin and you want to align your body from feet to head.
Standing Forward Bend (Uttanasana)

This is probably one of my favorite poses because I can literally feel my spine lengthen as I fold over towards my feet. Just hang there, grab your elbows with your opposite hands, and breathe. After you release your arms, try looking up by opening the chest and flattening your back on an inhale. Then exhale and fold again. This pose saves me on visits to the chiropractor!

Cobra Pose (Bhujangasana)

This is an ideal pose for strengthening the back and opening the chest. Place your hands on the mat in front of you in a sphinx position and then slowly straighten your arms into your full extension of cobra. Bring your shoulders away from your ears, while keeping your pelvis and toes on the mat.
Hero Pose (Virasana)

This is a seated yoga pose that makes it difficult to slouch. Sit on your heels and sit up straight with the crown of your head towards the sky. If you have knee issues, this will not be your pose. If you can’t sit on your heels, get an ergonomic chair that mimics this pose or use a pillow for cushion.
Child’s Pose (Balasana)

This is also known as resting pose in yoga. Sit back on your heels and reach your arms out in front of you or bring them alongside the body towards your feet into a tiny little yoga ball.

Locust Pose (Salabhasana)

This is another great pose for strengthening the back. Open your chest lifting your arms and legs off the mat while keeping the pelvis on the mat. If necessary, you can lift just your chest and aim your arms towards your feet. A more advanced yoga pose would be to go into bow pose, but proceed with caution until you’re ready.

Remember, just like our bad habits developed over time, our good habits take time to build back up as well. Try practicing these poses and see which ones resonate with you. Give yourself reminders in your calendar or on your desk to be present to your posture. In the end you will breathe, move, and feel better.
Want Better Posture?
Hit the yoga mat for this five-minute routine that helps you stand taller, look slimmer, and feel amazing. By Kristin McGee

WANT TO KNOW WHAT I DO
every day to look five pounds thinner and give my confidence an instant boost? It's this posture-improving yoga series: Staff to Twist to Side Bend to Forward Bend (go through it three to five times, holding each pose for a full breath). The poses open up the shoulders, scoop in the lower abs, and straighten the lower back so you are able to breathe more deeply. Plus, you get all the other benefits of terrific posture, including stronger abs and back—meaning less pressure on your joints. If there's a better payoff for five minutes of moving, I'd love to know what it is!

HOW TO DO IT

1. Sit tall with legs straight, feet flexed. Engage thighs and lower abs. Place hands by hips (fingers forward); imagine pressing the floor away while squeezing shoulder blades.

2. Inhale, hugging right knee in to chest. Exhale, opening right knee out to side and bringing it to floor (as shown). Place right foot against inner left thigh.

3. Inhale, twisting torso to the right. Place left hand on right thigh and right hand on floor behind you. Lengthen spine, growing taller as you twist.

4. Exhale, lifting right arm overhead and forward. Lengthen waist as you side-bend over left leg; left forearm coming to floor alongside inner calf, palm up. Keep gaze forward or look up at right arm.

5. Inhale; return to sitting. Exhale; turn to left leg and fold over it. Imagine lengthening your sides. Inhale; come back up. Exhale and extend right leg. Repeat on opposite side.

KRISTIN MC Gee is a yoga and Pilates instructor, personal trainer, and star of 15 yoga and Pilates DVDs. Find her fave moves at Health.com/Kristin.
Develop Your Posture
Watch Your Weight
Eat for Medicine
Release Your Stress
Do Your Yoga

All to Keep
Healthy
Wealthy
and Wise