



Linda T'ai Chi Weekly Handout June 13, 2021

Let's Hear it for Knees!



T'ai Chi for the knees

Some of you may know of Robin Robertson who teaches a spin class at the Bellingham Tennis Club. But she is likely best known for her book, "Healthy Knees Cycling." She has suffered from knee issues most of her life but in spite of that, she is an avid cyclist.

I am going to begin this weekly handout stealing shamelessly from her book about the structure of knees. If you get through this technical description, (I am a nerd at heart) you will understand the benefit of T'ai Chi to the health of knees, and more importantly, why I stress proper alignment of knees while performing Tai Chi and frankly, walking and standing.

Excerpted from *Healthy Knees Cycling* by Robin Robertson

"Your knee is a weight bearing joint that acts like a complex hinge. Your bones are your lever arms, your knee joint is the fulcrum, (the center of rotation) and your muscles are the pulleys. Your bones are the support beams giving your body structure. Your knee

joint is made up of three major bones- the thigh bone (femur) the shin bone (tibia) and the knee cap (patella). Your lower leg also has a second smaller bone (fibula)

“Cartilage protects your bones. There are two types-one at the end of bones that shrink-wrapped padding between the femur and tibia bone and shock absorbing and stabilizing cushions called the meniscus. Synovial fluid is your joint oil that lubricates and nourishes your cartilage. Synovial fluid is self-contained within the knee.

Ligaments are the ropes tying your bones together. They stabilize your knee and keep it in the correct shape and position. Tendons are the ropes fastening muscle to bone.”
Healthy Knee Cycling pages 17-18.

The bones and muscles of the legs and gluts are designed to hold us up, not the tendons and ligaments. As written previously, they are the support beams and bear the weight. When we are aligned improperly, we shift that job to the tendons and ligaments that are more fragile and subject to injury when forced to do the work of muscles and bones,

Knowing this, what do we do to keep our knees healthy and/or to reduce further injury or disability of compromised knees?

1. Develop and strengthen the muscles in the lower body. These muscles can hold up the weight of the body.
2. Strengthen our upper body called the core.
3. Use proper posture and alignment of the head, spine, hips, legs, knees and feet.
4. Know the difference between being sore and being in pain. Pain is the red light., Soreness is the yellow light.
5. Use self-care immediately following any injury- the RICE method (Rest, Ice, Compression and elevation. Seek care as soon as possible to avoid further injury or decline.

T'ai Chi when performed properly uses all of these strategies and therefore is healthy for the knees. According to research on the benefits of T'ai Chi, because of the slow, graceful movements T'ai Chi may help relieve osteoarthritis pain.

Experts have long recommended tai chi as a low-impact workout that's gentle on the joints. Research published in 2016 in *Annals of Internal Medicine* revealed additional benefits: It may be as effective as physical therapy for knee osteoarthritis (OA) and helps to alleviate symptoms of anxiety and depression. T'ai Chi also gives people more confidence and reduces the fear of falling leading to a better and more satisfying life.

Alignment of the Knee

Do you notice the bow stance in this drawing?



Happy Knees

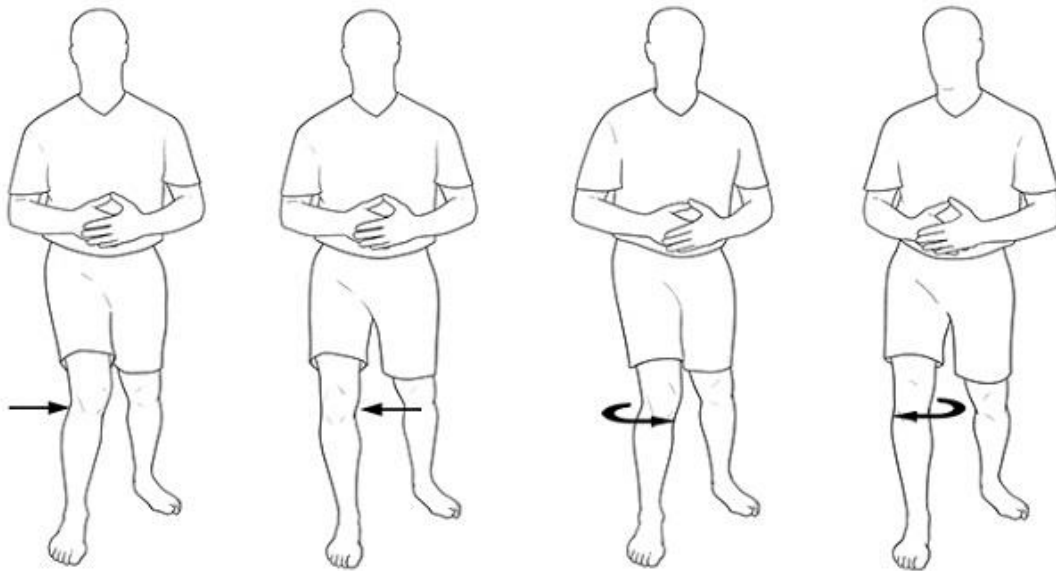
Keep your knee Over the Foot

Keeping your knee over your foot means: **The center of the knee joint stays approximately over the center of the foot.** By maintaining the knee over the foot, you avoid collapsing the knee in or out, and you avoid pushing the knee too far forward or back.

Keep your Kneecap Aligned with Toes

Keeping the kneecap aligned with the toes means: **The front of the knee is facing the same direction as the foot.** By keeping the kneecap aligned with the toes, you avoid twisting the knee in or out.

Let's Take a Look at Improper Alignment



Knee misalignments: collapsing in/out, twisting in/out.



Very unhappy knees



Humans are designed to move. The moral of the Story- T'ai Chi is good for your health and wellbeing but if you are not doing Tai Chi, keep moving by doing natural exercise and walk as much as you can. The lack of mobility as we age is detrimental to our health, our independence, and our quality of life.

Peace,

Linda