

Regional stretching



ANTHONY LETT

Key concepts

- Regional/compartmental stretching
- Role reversal stretching
- Nuanced stretching

The three concepts above (which we will call “RRN” here) represent the essence of the Yin Pilates and StretchFit approach to teaching, practicing, and learning about the mechanics of stretching. The approach is reductionist- it starts with a complex phenomenon-the whole body, and then stretches its more fundamental constituents – a muscle compartment, then an individual muscle and then particular fibres within a muscle, where possible. This approach ensures a thorough “no stone left unturned” exploration of the terrain body grounded in good medical science.

To backtrack a little to previous articles, a suggested starting point for navigating the body is to divide it into regions or compartments, kind of like dividing a large country into individual states. This approach provides a broad map with which to probe the entirety of the body for stiffness with a sense of purpose and direction so that we don’t feel like we’ve parachuted into the middle of nowhere. Having found our bearings, this model then provides a highly tuned GPS to help us locate very exact locations.

“**Role reversal**” and “nuanced stretching” go hand in hand and represent the second part of this approach. Role reversal is a method whereby we analyse the joint actions of a muscle or a group of muscles within a compartment and reverse as many of the actions as we can in order to stretch them with more precision. We do this because although the muscles of a compartment share common actions and thus provide us with a good starting point, many muscles within a compartment have specialised roles. Nature

has determined that collectively a compartment can work together to achieve a basic movement and that individual muscles can diversify to provide us with our vast array of fine joint motions.

Nuancing a stretch describes how we explore a stretch. To use the navigation analogy above, once we have found our city, our suburb and our street, we then search door to door. For example, we might first stretch the anterior compartment of the leg (the suburb.) Then, we think about targeting a muscle within it, say, the extensor digitorum longus (the street). If we understand its line of pull or joint actions, we can do this without too much trouble. “Nuancing” once we find the initial stretch allows us to locate the muscle or the fibres within it with more precision, (the final door to door pursuit).

Let’s take a look at some examples of this approach below.

Stretching the anterior leg and the extensor digitorum longus

The anterior compartment of the leg consists of a group of muscles that share the common action of dorsi flexion of the ankle. See image1 below So, we start stretching the entire compartment by plantar flexing the ankle.



Image 1 - the anterior compartment of the leg contains several muscles. Each has an individual function and the collective function called dorsiflexion.

The extensor digitorum longus



Image 2 - the extensor digitorum longus.

The anatomy of the EDL tells us that it is involved in multiple actions.

The EDL can extend the toes, dorsiflex the foot, and assist with eversion. According to our role reversal principle, to stretch it in its entirety, we need to reverse these actions as much as we can. So, we flex the toes, plantar flex and invert the foot. (See images below) If done correctly, this will provide a decent to strong stretch in about 90% of the population. (The remaining ten percent who don't feel anything much probably don't need to do it!).

Once we find the stretch, we can nuance it further by rolling weight above each toe. If you are like me and have a Morton's toe (otherwise called Morton's foot or Greek foot or Royal toe,) which is characterized by a longer second toe you will probably find this region is the tightest. This is probably because the second toe and its muscle and tendinous attachment has had to adaptively shorten to fit into most common shoes which are made to accommodate the big toe as the longest.

To summarize, the reductionist model took us from anterior compartment to individual muscle and then to individual fibres within the muscle with our nuanced exploration.



Image 3 - To stretch the anterior compartment of the leg, (dorsi flexors) we plantar flex the foot. With the toes tucked under, or flexed, we are applying the role reversal principle to the EDL. By flexing the toes, we reverse its primary action-toe extension.



Images 3 & 4 show the nuanced approach. First in image 3, weight is spread generally above each toe. In image 4 it is shifted subtly to the outer toes. Image 4 also shows the foot in a degree of inversion, thus reversing the role of the EDL further.

The hip flexors

A second example can be demonstrated by stretching the hip flexors. There are twelve muscles capable of flexing the hip, many of them located in the region called the anterior thigh. Below in image 5, you can see several of them:



Image 5 - some of the hip flexor muscles.

To target the entire region first, we employ the role reversal principle by simply extending the thigh while holding the pelvis in a posterior tilt. This will likely bring on a raft of sensations anywhere from medial to lateral in the front of the extended hip. **See Image 6.**



Image 6 - shows a general stretch for the hip flexor group where the thigh is extended in the sagittal plane. The concentric actions of the hip flexors have thus been reversed.

Next, we can think about how to nuance it a little more. Let's take the pectineus, a muscle that sits on the border of the anterior and medial compartments. (See image 7) The pectineus is involved in multiple actions including hip flexion and adduction. Employing the role reversal approach, we can target it directly by performing hip abduction and extension, motions opposite to its functional concentric actions of hip flexion and adduction. See Image 8 below

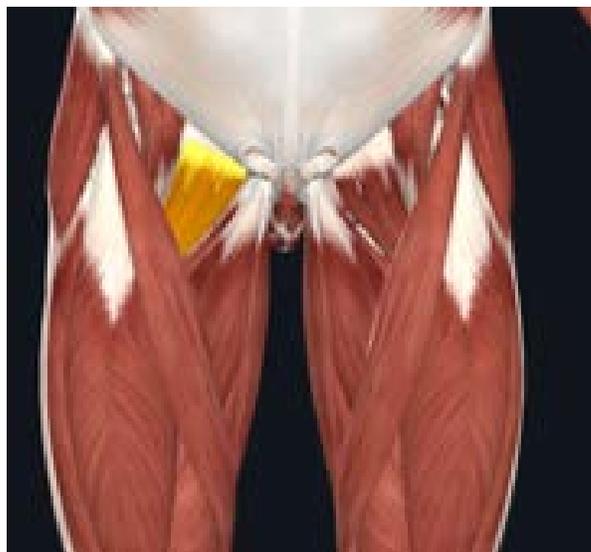


Image 7- the pectineus is both a hip flexor and adductor. To stretch it we need to reverse these roles and take the thigh into hip extension and abduction.



Image 8 - Employing the role reversal approach again, we can target pectineus directly with hip abduction and extension. To nuance the stretch, we can explore very subtle shifts of the hip and pelvis and feel for changes in sensation.

The Tensor Fascia Lata

The TFL is another hip flexor found more laterally than the pectineus. Image 9. (In fact, the TFL is usually classed as a member of the gluteal group.) Interestingly it is also an internal rotator and abductor of the hip. To the experienced student who is more discerning, stretching it feels fundamentally different to stretching the psoas or the pectineus for example.



Image 9- The TFL is a hip flexor and also an internal rotator and abductor of the hip.

To reverse the functional roles of the TFL we need to extend the hip as well as adducting and externally rotating it. This can be tricky, but it is possible. In any case, it probably not necessary to reverse every single action of a muscle in order to stretch it, although every little bit does seem to help. See the images below for examples.

Image 10 A & B - The hip is first taken into extension combined with a strong posterior pelvic rotation.

10 A



10 B



The thigh is then adducted – **see image 11 A & B**. This is achieved by leaning the hips towards the left.

Image 11 A



Image 11 B



Finally, the thigh is externally rotated. Although it is difficult to see, the external rotation is achieved by rotating the pelvis in a horizontal plane, relative to a fixed femur. This is known as pelvic on femoral rotation. See Image 13 for a demonstration, and image 14 for an explanation of horizontal plane pelvic rotation and external rotation.

Image 13 - The pelvis is rotated away from the fixed rear leg called pelvic on femoral rotation in the transverse plane. This effects an external rotation torque to the leg. Although it may look more like thoracic rotation has been performed, this is just a by-product of transverse pelvic rotation.



To summarize again, the hip flexor group are found in the anterior thigh region. By reversing the role of any of the muscles within the group, we can focus the stretch on each one to a greater extent. We then try, with acute attention, to nuance the position further in order to find our particular tight spots.

Pelvic on femoral rotation

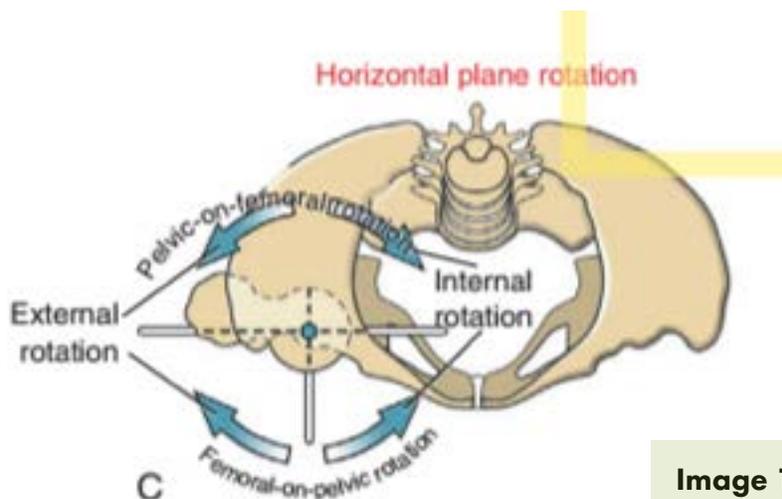


Image 14

Image 14 - If the pelvis itself is rotated around the fixed femur it is described as pelvic on femoral rotation. In the transverse plane example above, a movement of the pelvis toward the left would effectively increase the transverse angle between the shaft of the femur relative to the pelvis. Thus, it is described as external rotation. When performed in association with a thigh that is extended and adducted as above, the TFL will come under considerable tensional stress, i.e. the stress that tends to pull things apart.

Summary

- The approach above is based on a scientific model called “Methodological reductionism” It is as a method for dealing with complexities by breaking them down to better understand them.
- It employs 3 processes
 1. Dividing the body into compartments or regions
 2. Reversing the role of muscles as a way of targeting them precisely
 3. Nuancing stretches in order to home in on specific muscles or fibres within muscles.

The regional, role-reversal, nuanced approach to stretching relies on a good understanding of anatomy and kinesiology combined with the ability to be present to what you, the stretchee, are experiencing. Combining these elements gently probes the body from the macro to the micro to ensure that nothing is left unattended to. The person, not the pose, is the central feature, as it should be.