

Muscles and yoga

Stretching muscles and making them more elastic is an important aspect of yoga, allowing the body to sit comfortably in meditation for extended periods of time. The asanas are designed to stretch and to strengthen all the muscles of the body. Some asanas target single muscles, while others target muscle groups. It is important for us as yoga teachers to understand the way muscles work, how they can become more elastic overtime and how to help our students gain the greatest benefit from their practice in relation to this concept. In this paper I will discuss different ways to make muscles more elastic, including passive, active and facilitated stretching, static vs. dynamic stretching, using the breath to relax muscles, consciously releasing the breaks on muscles, using a combination of asanas to work particular muscles, and the importance of a consistent daily practice to improve the elasticity of muscles. In addition to these concepts for stretching muscles I will also discuss the importance of strengthening muscles, ways to use massage to help the elasticity of muscles and the correct approach to stretching being gentle on the body. In order to help make examples more clear I will focus on the hamstring, which is a key muscle to stretch in yoga and often people have difficulty with their elasticity.

To begin I will discuss the difference between passive, active and facilitated stretching. Used together these three types of stretching can greatly improve the elasticity of muscles. Passive stretching uses gravity to help elongate the muscle. Padastasana, standing forward fold is a good example of passive stretching for the hamstrings. The weight of the torso lengthens the hamstrings as well as the lower back. In order to target the hamstrings the pelvis can be tilted forward, targeting the hamstrings more so than the lower back. By raising the ischium, or the sitbones, the backs of the legs are lengthened, concentrating the stretch in the hamstrings. Additionally, the back can be straightened, creating a greater stretch in the hamstrings as the weight of the body becomes heavier.

Pashimottasana, seated forward fold, is an example of actively stretching the hamstrings. In this asana gravity has little to go with the position and muscles must be engaged to obtain the asana. When a muscle is engaged, the agonist, lengthening naturally occurs in the muscle on the opposite side of the body, the antagonist. In the upper leg when the quadriceps is engaged, its antagonist, the hamstring is lengthened. Therefore when doing an active asana we can consciously engage the agonist to gain a greater stretch in the antagonist. In Pashimottasana by tightening the quadriceps, we relax and lengthen the hamstrings. Additionally, using the quadriceps we can move the ischium a little farther from the heels, tilting the pelvis forward and lengthening the hamstrings.

Facilitated stretching can also help to increase the elasticity of muscles. Facilitated stretching involves contracting the muscle being stretched during an active stretch. A profound relaxation is created in the muscle after the contraction because it triggers a reflex in the Golgi tendon organ. In Pashimottasana we can contract the hamstrings by pushing the heels into the ground. This downward pushing motion activates the hamstrings and afterwards they relax, deepening the stretch. In this particular exercise there is no risk to the joints, but in many facilitated stretching positions there should only be a gradual, gentle contraction in order to protect the joints.

Both active and passive stretching fall under the category of static stretching- asanas which are held without movement. This type of stretching is most common in hatha yoga. By holding the asana for an extended period of time, muscles are able to relax and elongate. During static stretching small modifications can be made without interrupting the effect of the asana. The movements listed above of tilting the pelvis forward or engaging the quadriceps do not interfere with static stretching, on the contrary, these small changes deepen the effect.

The last type of stretching is dynamic stretching. This involves repetitive movements of the same muscle groups to deepen the stretch. Movement allows the muscles to warm up and ease into more profound stretch. This is particularly important in the morning after muscles have been still in same position for extended periods of time. Sun salutations are beneficial for dynamically stretching the hamstrings. Both Padahasthasana, standing forward fold, and Adho mukha svanasana, down-dog, lengthen the hamstrings. Moving through these asanas in sun salutations awakens the muscles and prepares them to engage in static stretching.

In addition to using different types of stretching, it is important to use different techniques while stretching. One of the most important tools to use is the breath. A general rule of thumb is to extend or lengthen while inhaling and to relax deeper into the asana while exhaling. In Padahasthasana, standing forward fold, the ischium can be lifted and the lower back slightly straightened on the inhale, and on the exhale the upper body can gently release downwards giving into gravity. The relaxation of the body during the exhale is very important to increase the elasticity of muscles. By consciously relaxing the targeted muscle on the exhale we deepen the stretch.

On the same line of thought as using the exhale to relax, we must consciously release the breaks on muscles. Often we tighten muscles when we feel them begin to stretch, almost as a pain response. There are moments when it is good to tense the body in response to pain, but when stretching we must teach the body to respond differently. By recognizing the difference between the sensation of a good deep stretch and that of damaging overstretching, we can train the body to give in to a healthy stretch. A helpful tool in learning this difference could be to isolate individual muscles and consciously let them release. Janu sirasana, head to knee pose, can be beneficial to isolate one hamstring at a time. We can work on consciously releasing the left hamstring and then the right.

There are many asanas which are designed to target the same muscle. By using a combination of asanas to work particular muscles we enrich the stretching experience. Combining the passive Padahasthasana, standing forward fold, the active Pashimottasana, seated forward fold, dynamic sun salutations, and the isolating Janu sirasana, head to knee pose, we engage the hamstrings in different types of stretching, augmenting the effect. As a yoga teacher it is important to know a variety of asanas which target the same muscles in order to best guide students. Sometimes a student has a particular problem affecting the stretch in one position; however they can easily engage the desired muscle in a different asana. For example, a student with a sinus pressure may find it difficult to lower the head below the waist, making Padahasthasana impossible. If they are given the alternative of Pashimottasana, they are able to stretch the hamstrings without suffering from discomfort in the head.

A key element in increasing flexibility is having a consistent daily practice to improve the elasticity of muscles. Practicing yoga one hour a week can have beneficial effects, and is better than not practicing at all, but the effects of the asanas will take a long time to see. If a muscle is stretched on a daily basis, it generally takes 1 ½ months to render it more elastic. Since most of our students will not have time to do an hour practice every day, it is helpful to encourage students to choose a few areas they want to focus on and do a mini yoga practice every day, so they can see results.

In addition to these concepts for stretching muscles I would also like to discuss the importance of strengthening muscles. Our muscles are designed to keep us standing, provide stability and allow movement. If we only stretch our muscles they will become more elastic, but they will also become less effective in their primal purpose, stability. Dhanurasana, bow pose, is a good strengthener for the hamstrings. By adding this to a practice heavily focused on stretching the hamstrings, we can add a strength builder, increasing stability of the hamstrings, which can be useful for avoiding knee injuries.

Massage can also be used to help the elasticity of muscles. Gentle massage allows a muscle to relax and be more receptive to stretching. We can manually massage the hamstrings while easing into Pashimottasana, encouraging them to release tension and stretch. Massage while practicing yoga asanas deepens the effect of both the asanas and the massage, and in fact it has become a popular massage style in larger massage centers in the West. We can gain the same benefits by gently massaging the engaged muscle during a stretching asana. Not only does this relax the muscle, it also brings our awareness to the targeted muscle in each asana, allowing us to mentally release the breaks on the muscle and use the breath on that specific muscle.

In conclusion, I would like to discuss the correct approach to stretching, gentle and gracious to the body. Asanas should be eased into slowly, allowing muscles time to lengthen and adjust to the position. Rapidly entering into a position causes muscles to tense up, similarly to the pain response. This can also increase the risk of over stretching a muscle, causing injury. The focus of yoga is to balance the mind, body and spirit. We should always keep this in mind during our practice. We are not trying to conquer our bodies with our mind, rather unite them along the same peaceful journey. Our bodies are different from one day to the next. It is important to mentally note where we are on each given day without judgement, just accepting awareness. In the end this mindset will help us to relax, release and progress on our journey physically, mentally, emotionally and spiritually.

Resources

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