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WRIT 159A Kenny Smith
31 January 2025

The Stretch Towards Safe Training for Dancers

Dance is a discipline that is almost, if not completely, centered around aesthetics. Throughout my 17-year-long career, I was told countless times to make sure my skills *look* beautiful, *look* effortless, and make people *want to look* at what I'm doing. Having to consider all this while executing some of the most physically demanding movements that the human body can handle is only one of several things that make this sport and art so difficult, and it doesn't even account for all the preparation and training needed to reach an elite level. The dedication and grit it takes to achieve this talent is often overlooked in dance because at the end of the day, our job is to make it look easy. However, it never becomes easier, even if it appears that way. As dancers, we constantly push our bodies to and beyond our limits, both metaphorically and literally.

Flexibility can be a sore subject for many dancers. For a sport so focused on aesthetics and how skills look, many dancers feel discouraged from becoming successful if they are not "flexible enough." I wanted to quit dance when I was 5 because I didn't have my splits! Luckily, my dance teacher reassured my parents that I didn't need to have a perfect split so early into my dance career and that I'd master them over some time and practice. Maybe that was a common response back in 2008, but times have changed since. Nowadays, the expectations in dance are more demanding: Dance educators and families of young dancers pressure students to achieve a skill range beyond their years, with a common demand being related to flexibility range.

In dance, once a normal split at a 180° angle is achieved, students may feel inclined to attempt their oversplits by elevating their legs past hip height to obtain a split beyond that 180° mark. Truthfully, I can maybe count on one hand the number of skills that actually require a static oversplit to master, but this drive to achieve the stretch and increase the degree range in a split comes from a place of wanting to be the best. Growing up, I was known as the "flexible" or "leggy" one in my dance groups, so I was always challenged to learn more advanced leg extensions and push my flexibility range further. This meant that the oversplits were a must in my stretching routine and also meant that I would likely face the consequences of overstretching when I got older. It's safe to say this ended up being true considering I had to take an Advil and massage my hip after a random spasm the other night.

Many of the most talented dancers and prodigies who are viral sensations practice their oversplits as seen in their viral posts and TV appearances in shows like *Dance Moms*, so it is believed that to be successful in dance, you must be able to do these kinds of skills, despite how dangerous they could be and even though they will most likely not be needed in an audition or professional setting (Pellini). We even see Brooke Hyland suffering hip pain in one of the first episodes of *Dance Moms* due to her constantly putting her body through intense stretching and contorting herself into poses that require extreme flexibility (Lifetime). Over a decade later, Hyland is open about the pain she still experiences to this day from her intensive stretch routine. Although the oversplits look impressive and seem to be something that can be worked towards with stretching over time, that doesn't make oversplits a safe dance practice and generally does more harm than good for dancers. When oversplits are held, the body is being stretched in ways it wasn't designed to with no active muscles working, which is why it can be so dangerous (Mills-Hutton). Besides the fact that showing off oversplits allows flexing one's mobility, there's really no need to practice them, especially regularly.

During the execution of a regular split, several key anatomical structures are impacted as the musculoskeletal system undergoes several mechanical and physiological changes. The combined function of muscles, tendons, and joints works together to facilitate this significant range of motion, which requires a balance of strength and flexibility. Stretched tendons, which connect muscle to bone, are merely responsible for maintaining the tension to sustain the pose of the splits while also protecting the joints from overextension. In fact, only the ligaments should be stretched a little, while a tendon shouldn't be stretched much at all, so the pressures on the human body are considerably strong when performing the splits (Scheff et al.). The protection of joints is especially important when practicing splits because they endure a considerable range of motion, which explains why dancers tend to experience stress in joints such as the posterosuperior hip joint (Larson et al.). Splits are an example of a passive stretch, which further harms bodily anatomy and mechanisms as this type of stretching prevents muscles from working through active involvement (Morgan and Allen). This may result in inconsistent stretching in muscle fibers, which causes a loss in tension and risk of injury unless managed with proper training and recovery measures.

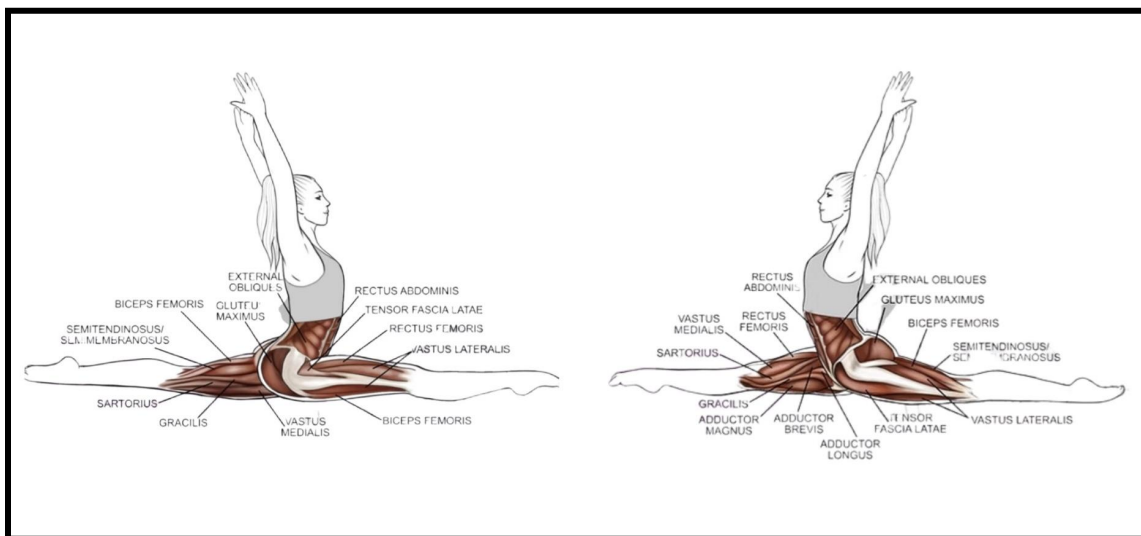


Figure 1: Anatomical diagram of structures activated in a front split (Muscat).

Considering all that takes place anatomically when performing the splits, imagine the added stress when doing an oversplit. Excessive stress is placed on the muscles, tendons, and especially the joints, potentially exceeding what these structures can anatomically handle. With oversplits, muscles in the legs and hips are pushed beyond their typical ranges, risking overstretching. Such excessive stretching can compromise the intricate balance of muscle elasticity and strength, leading to possible microtears and strains in muscle fibers and connective tissue (Morgan and Allen). As discussed in a regular split, tendons play a key responsibility in the execution of the pose as they help maintain the tension of the muscle-to-bone connection. But the risk of losing tendon functionality increases as oversplits are more often practiced and the risks of tendinopathy or tendon ruptures may arise as a result of the extreme stress load. The joints are also more vulnerable to damage as oversplits position them in extreme positions, which may lead to stress on joint capsules, increased likelihood of dislocations, and cartilage damage. Often mistaken as soreness, the potential for muscle damage is a risk associated with oversplits. The human body wasn't designed to maintain such a high degree of oversplits, so once the

body's limit has been reached and pushed past, the body's muscle fibers are susceptible to damage. If the muscle fibers are damaged, one may experience reduced muscle strength and increased muscle stiffness. Not only would this influence a dancer's ability to stretch and maintain flexibility, but it could be so severe that it affects their overall ability to dance and even perform day-to-day activities.



Figure 2: Dance prodigy, Sophia Lucia, demonstrating passive oversplits (Tumblr).

No matter how hard a dancer tries, there are limitations to flexibility and stretching can only get a person so far. The human body wasn't created nor has it evolved into one with a tremendous range of flexibility, so dancers need to protect and safely work with what they have before risking more damage; thus, more limitations. Some of these limitations vary amongst dancers, including internal factors such as body temperature and muscle elasticity, and external factors such as age and gender (MIT). Genetic makeup is responsible for about half of the differences in flexibility seen between individuals, as factors like bone structure at joints, collagen composition, and muscle properties can all be inherited (Myosotis Massidda et al.). The genetic predisposition implies that regardless of effort in stretching, some individuals' range of motion may be limited compared to those who may attain flexibility more easily because of genetic advantages. Even with all the limitations that may be considered to gain flexibility, dancers and dance educators still feel inclined to practice intense stretches like the oversplits in hopes of achieving an extensive range of motion.

Why do people still try so hard even if their flexibility goals may not be attainable for reasons out of their control? Well, it's often forgotten that *everybody* is different, and that *every body* is different. There is no "perfect" body for dance, therefore, dancers must learn how to train accordingly and listen to their own bodies' limits. Because physical limitations vary from dancer to dancer, teachers should help their students recognize their own capabilities rather than assuming them. If this were recognized, there probably wouldn't be several viral pictures and videos on social media of young athletes in distress and tears from the pain they endure in intensive stretching like the oversplits, which they may not even be advanced enough for or even something realistic to attain. Going so far past those limits puts the body at risk for injuries and

conditions such as Generalized Joint Hypermobility (GJH) and Patellofemoral Pain (PFP), both of which lead to muscle weakness as ligaments and joints lose their stability (Steinberg 2021). Conditions such as these raise the likelihood of injury in dancers as negative and weak impacts are placed on the musculoskeletal systems.

There are a handful of practices that dancers and dance educators can utilize to safely maximize their flexibility that doesn't put less strain on the body and musculoskeletal system. Engaging in warm-up exercises that increase heart rate and body temperature should be the first thing in any warm-up, no matter the type of workout or sport played. When stretching in a warm-up, no individual should experience discomfort or pain, and stretches should be held for no more than 30 seconds to preserve muscle efficiency (Mills-Hutton). Focusing on dynamic warm-ups and utilizing controlled stretching techniques like proprioceptive neuromuscular facilitation are also highly effective. For instance, lifting a leg in a pike position or creating circles in the air with a stretched leg are dynamic exercises that balance development in strength and flexibility. To obtain a deeper stretch in the middle splits without forcing oversplits, performing lateral leg raises from a kneeling stance can effectively stretch and strengthen the muscles (FX physical therapy). Additionally, pilates is often advocated for improving flexibility because it incorporates strength training, important for fostering both muscle flexibility and muscle strength (Scheff et al.). By combining strength and flexibility training, pilates not only improves overall body mobility, but also helps prevent injuries by ensuring muscles and joints function smoothly together. These approaches not only prevent injuries, but also support sustained flexibility and anatomical health.

In dance, prioritizing body preservation for longevity should outweigh the drive to push dancers to extreme physical boundaries, particularly through risky techniques such as oversplits. I was probably stretching my oversplits for a decade, a little more than half of my dance career. Sure, the stretch might've made my skill execution easier, but it wasn't necessarily something that was required to do the steps I needed to perform. Practicing this static stretch for so long (and honestly for no reason) likely contributes to the random spasms and pain in my hip that I experience at least once a week. As my dance technique and skill advanced over the years, my body needed to rely on the use of more muscle groups and strength rather than having to rely on greater flexibility range. Dancers and dance educators should be urged to adopt alternative stretching habits that emphasize the balance of strength and flexibility without causing strain. Instead of driving dancers to the brink with overstretching, training should concentrate on what will benefit their health and well-being. These safer methods not only help protect dancers from injury, but also prolong their ability to do what they love.

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