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The Truth Behind Bunions and Their Impact on the Dancing Body

Most people have heard of the common medical condition, known as bunions. Bunions, or scientifically speaking “hallux valgus”, is a deformity that occurs at the first metatarsophalangeal joint, where the first metatarsal meets the first phalanx (Benjamin Ma). In simpler terms, where the big toe connects to the rest of the foot. There are many theories and false claims surrounding bunions, and I have made it my goal to correct these false ideas. So, what is the relationship between dance, genetics, and bunions? What other medical conditions are involved with bunions? Is all metatarsophalangeal joint pain caused by bunions?

I personally have begun developing bunions over the last couple of years, and they have added pain and discomfort to my dancing body. I also come from a family with a history of bunions, even from those who are not dancers. I have also heard many fellow dancers express their experience with bunions and the pain it has caused them. Some common symptoms involved with bunions include swelling, redness, sharp pain sensation, calluses, stiffness, and misalignment of the toe (Benjamin Ma). Another reason I was interested in this topic is because of the other possible conditions that cause pain in the big toe joint, commonly mistaken for being a bunion. Gout is also prevalent in my family, and it is common to experience symptoms of gout in the metatarsophalangeal joint as well. This condition presents similar symptoms to that of bunions, this is why it is often hard to tell the difference. Some other conditions include arthritis,

bursitis, and ganglion cysts (Blitz). Later, we will discuss some of the similarities and differences in these conditions and how to tell them apart.

First, let us dive further into the functional anatomy involved in bunions. According to OrthoInfo, “A bunion forms when the bones that make up the MTP joint move out of alignment: The long metatarsal bone shifts toward the inside of the foot, and the phalanx bones of the big toe angle toward the second toe” (Beahrs et al). As the toes fall out of their alignment, this can change the structure of the connective tissue that surrounds the joints of the foot. Muscles, ligaments, and tendons can become overstretched as the bones shift. In some cases, the patient may develop a condition called “hammertoe”. The Bunion Institute describes this cause by saying, “-misalignment of your toes encourage the abnormal bend of the toe joint associated with hammertoe or mallet toe....” When the toes bend, it can result in them crossing over each other. This will make for discomfort and struggles finding supportive footwear.

Now focusing on the phenomenon surrounding bunions and how they exist on different bodies, we can see how gender plays a role. In America, over 100 million people suffer from bunions, that is around 30% of the population (Graham). It is true that those assigned female at birth are more likely to develop this condition than those who were not. This is due to gender specific shoe wear and hormonal changes in the body (Graham). As result of societal expectations and social norms, women tend to wear heeled, pointy-toed, tight, friction instigating shoes. Whereas men typically wear flat, loose, supportive, round-toed shoes. Thinking of the structure of footwear, men’s shoes allow for an equal distribution of weight. Whereas a lot of women’s shoes force the weight solely onto the metatarsophalangeal joint. This alone contributions to the difference in risk of bunion development.

Genetics is another factor that will put people at a higher risk of developing bunions. There is controversy surrounding the idea that genetics impacts bunions because it is not a simple yes or no answer. Genetics can impact the foot's shape and the structure of the connective tissue that plays a large role in the formation of bunions. According to Fitzpatrick, "However, it's not the bunion itself that is hereditary, it's the traits that are inherited that lead to a bunion. Inherited traits such as the way you stand and the way that you walk are generally due to a similarity in the shape and structure of your parent's feet that has been passed down to you." Essentially, Fitzpatrick is describing the passing on of a bunion to be "indirect." The bunion itself does not come because of genetics, but rather the structural elements that put a person at higher risk can be traced to genetics. Personally, bunions can be traced back through generations of women in my family.

Why is it so common for dancers to develop this deformity throughout their career? When thinking about the role that footwear plays in bunions, most "dance" shoes are structured in a way that forces weight onto the metatarsophalangeal joint. Specifically, pointe shoes place the dancer's weight into the metatarsophalangeal joint and increase friction against it. Some dancers are recommended to place "toe spacers" in between the first and second phalanx, to reinforce the space between the toes. The movement vocabulary of a ballet dancer creates high strain on the big toe joint. For example, they spend a majority of class with the feet laterally rotated, increasing weight in the metatarsophalangeal joint. Jumping requires the joint to repeatedly absorb shock and weight. Turning creates torque that can negatively impact the joint. Finally, dancers spend a lot of time on the balls of their feet, instead of the weight being distributed evenly into a flat foot it is forced into the big toe joint. When looking at all these

movements and how they affect the metatarsophalangeal joint, it is no wonder that dancers commonly develop bunions.

It is also relevant to acknowledge that other conditions can exist in the metatarsophalangeal joint. They may coexist with a bunion, or on their own. Due to the similarities in symptoms, it is hard to differentiate the conditions. Some of these conditions include gout, arthritis, or a ganglion cyst. Gout is a condition that occurs from high uric acid levels, and the symptoms include joint pain, redness, and swelling. Arthritis in the big toe joint is known as hallux rigidus or hallux limitus. It is a result of deteriorating cartilage, bone spurs form on the joint. It is possible that hallux rigidus (arthritis) and hallux valgus (bunions) can coexist. Ganglion cysts are fluid filled sacs that typically form on or around a joint. Although the symptoms are similar, one way to distinguish the differences between bunions and ganglion cysts is that cysts are softer to the touch due to the fluid that fills them. It is important to know which condition you have so that it can be properly treated. Even though the conditions present similar pain, they require different treatments (Blitz).

If you are experiencing pain in the toes or surrounding joints, the best course of action to take is consulting with a primary care provider. If needed, they may recommend you to a podiatrist (doctor who specializes in feet). According to Harvard Health, “To judge how severe a bunion is, clinicians take an x-ray and measure angles between certain bones in the foot, in particular... the angle formed by the first and second metatarsals, called the intermetatarsal angle (IMA).” Due to the various other conditions that present themselves at the base of the big toe, it can be difficult to determine what the root is without the advice of a professional.

At the onsite of bunions, a doctor may recommend inserts that aid in realignment of the first phalanx. These inserts reinforce space between the second and first phalanx, while also supporting the medial side of the metatarsophalangeal joint. These inserts may also provide padding between the bunion and shoe to decrease friction and irritation. The doctor will also likely recommend a change in footwear, urging the patient to abide wearing wide and flat shoes. Medicine may be offered to reduce pain and swelling but they cannot correct the damage.

If the symptoms persist or worsen, the most common solution for bunions is undergoing corrective surgery. This surgery is commonly referred to as a "bunionectomy." According to The Bunion Institute, which helps connect patients with surgeons, if the surgery is performed before 35 there is an elevated risk of the bunion reforming. However, if you get the surgery after age 60, you should expect it to take longer to heal (Bunion Institute Education Team). Considering these recommendations, it can be inferred that the prime time to get the surgery is between 35 to 60 years old. There is a specific type of surgery called a Lapidus bunionectomy. This type of surgery corrects the angle deformity, then uses a screw to force the fusion of the metatarsal and cuneiform bones (Cheney). As with any surgery, there are risks and it is important to talk with a doctor to determine what is the best option for your body. When it comes to surgery recovery, John Hopkins Medicine says, "Your foot may need continuous support from dressings or a brace for 6 to 8 weeks after surgery. Exercises or physical therapy may be recommended to help the foot recover its strength and range of motion after surgery" ("Bunion Surgery"). For dancers, this can be a hard commitment and may result in up to two months off work. When returning to work, there will need to be consideration for how the foot is altered and this may affect the rest of the dancer's body.

Another option for alleviating the pain that comes with bunions includes strengthening and stretching the muscles surrounding the metatarsophalangeal joint. Northwest Foot & Ankle posted a video that offers viewers at home exercises for bunions. In the video they provide stretches that work to lengthen the muscles previously shortened from the shifting of the big toe. This muscle is called the adductor hallucis. This also provides muscles that lengthen and relieve pain and muscle tension. The video also recommends using a resistance band to strengthen the muscles that support the joint. This is a way for those affected by bunions to work on decreasing the pain and discomfort from their own home.

As a dancer and educator, it is important to understand the impact of this condition and the risks factors it can present to different bodies. Cooper explains that "...we want to make sure we warm our feet up well before dancing and choose appropriate fitting dance shoes to ensure minimal strain is placed on the big toe joint." By implementing these strengthening exercises into warm-up/cool-down practices, it can be a way to reinforce strength around the joints in the feet. A change in footwear would make a significant difference in the relationship between dancers and bunions, but I do not see this happening anytime soon. Many shoes are connected to culture and history surrounding dance forms and altering them could remove the authenticity of the movement. However, by wearing supportive shoes outside of the studio I can try to reinforce the natural structure of the foot and encourage my students and colleagues to do the same. It seems the best way to eliminate the pain caused by bunions is to raise awareness. Personally, I was unaware of a lot of information surrounding bunions and was unaware of how to handle the pain. Now that I am aware of the signs, treatment, and preventative measures, I will be able to do as much as possible to keep my bunions under control.

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