DANCERS' HEALTH CORNER

Pointing you in the right direction

BY KATHERINE EWALT

Note: *Dancers' Health Corner is a regular column for DSD written by Katherine Ewalt from Performing Arts and Athletic Restorative Training Specialists (PAARTS) in San Diego. The column presents information and/or advice about dance-related injury and injury prevention. The information is provided as a resource and should not be used to self diagnose or treat. Dancers who experience ongoing pain should seek the advice of a physician or clinician to avoid aggravating current symptoms or potentially causing other more serious injury. Due to legal limitations, no individual diagnosis or treatment plans will be provided through this forum. If you have questions, e-mail them to info@PAARTSsandiego.com.*

Q. I am a professional ballet dancer. Recently my right big toe joint has been hurting and it is hard for me to stand on demi pointe. I have never experienced pain in this area before, and I feel like it may be a bunion acting up. How do I know?

A. A bunion, technically referred to as hallux valgus, describes the lateral (outward) deviation of the end of the great toe (big toe) at the first metatarsophalangeal joint **(figure 1)**. The incidence of hallux valgus in adolescent populations has been reported at 22%-36%, and predominantly in female ballet dancers.[1 2]

The cause is controversial, with both genetic and environmental factors likely contributors. For ballet dancers, factors that may contribute to the lateral deviation of the hallux (big toe) include wearing shoes with a tight toe box (both street and pointe shoes), dancing en pointe, forcing the turnout, having a flat foot structure, excessive pronation of the foot and joint hypermobility. Poor technique, such as forcing the turn out, places additional stress on the joint and creates further laxity (looseness) of the supporting ligaments. In turn, the line of pull for muscles crossing the joint, and possibly their strength, is also altered. These changes may lead to displacement of the sesamoid bones to the lateral (outside) aspect of the joint **(figure 2)**.

As the hallux deviates laterally, pressure on the projecting portion of the bone causes the overlying skin to thicken, thus adding more pres-

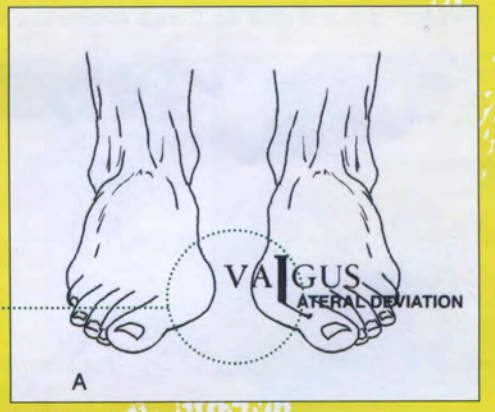

Figure 1

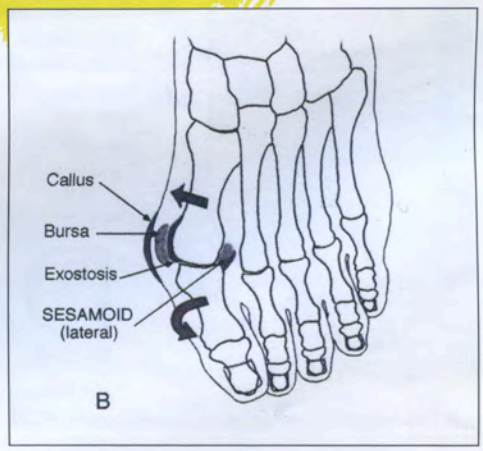

Figure 2

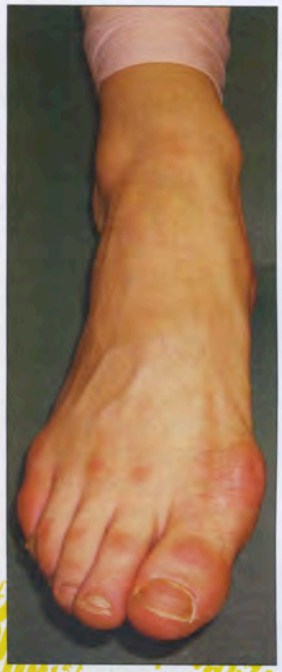

Figure 3

sure. Similarly, as the deviation continues and the protrusion becomes more prominent, the increased friction from tight footwear may lead to a bony growth (exotosis), inflamed bursa and a callus on the overlying skin **(figure 2).** Some bunions do not produce pain, while others can become quite painful, swollen and tender to the touch. Often, a red and swollen bunion is the result of an inflamed bursa **(figure 3)**.

A few considerations for the dancer with or developing bunions include:

- Ensure that shoes (street and pointe) are wide enough across the metatarsals.
- Try padding the bunion or using a toe separator.
- In extreme cases, relief may be obtained by cutting slits in the pointe shoe to relieve pressure.
- Use ice and/or contrast baths (warm and cold) to manage pain and inflammation.
- Address limitations in foot range of motion and strength that contribute to hallux valgus.
- Address dance technique.

These approaches to care can be implemented at any time; however, in the later stages of hallux valgus, pain, loss of motion and the extent of deviation may interfere with the joint mechanics to such a degree that these recommendations may not be effective. For other populations, this is generally the time corrective surgery is recommended. However, in the dance population, this procedure remains controversial due to the loss of hallux extension, which is required for dance (i.e., the ability to stand in demi pointe).

As with any pain or injury, if symptoms continue it is advised the dancer seek the advice of a physician or clinician who can assess the foot/toe to determine the best course of action. Other injuries to this area that should be ruled out include: hallux rigidus, flexor or extensor hallucis tendinosis, a multitude of injuries related to the sesamoid bones, as well as degenerative joint disease of the first metatarso-phalangeal joint. **DSD**

Anatomical figures: Karen Clippinger "Dance Anatomy and Kinesiology." Human Kinetics, 2007, p.329.

[1]Kravits et al. (1986). Bunion deformity and forces generated around the great toe: A biomechanical approach to analysis of pointe dance, classical ballet. In C. Shell (ed.), The dancer as athlete: The 1984 Olympic Scientific Congress proceedings (vol. 8, pp. 213-225). Champaign, IL.: Human Kinetics.

[2]Omey and Micheli (1999). Foot and ankle problems in the young athlete. Medical Problems of Performing Artists, 11: 51-56.

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