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SPECIALISTS' CORNER

Help! My child has flat feet! Is that bad?

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A frequent concern of parents is the shape and size of their child's feet. Acutely aware of what their child's foot look like (as they buy new shoes every year or even more often), parents often wonder what lumps, bumps, and curves are normal or worrisome.

Parents often bring this up at doctor's appointments. Typically, the child is asymptomatic, pain free, running and playing as normal. Unsure of what else to do, Pediatric orthopedic surgery referrals are often made.

The most common diagnosis that must be delineated are flexible or rigid flat feet. The much more common diagnosis is flexible flat feet. This often runs in families, is asymptomatic to the child, and is of little long-term concern. The most common complaint of parents is that the child wears out their shoes in an unusual pattern. Mom, who more typically brings the child into the appointment, may answer positively when asked if anyone else has this shoe wear pattern in their family. Most are just too busy to have thought about it. The important thing about this diagnosis is that the foot remains mobile.

Rigid flat feet, on the other hand, are commonly caused by tarsal coalitions (failure of separation of tarsals of the midfoot into individual bones). They can cause significant pain and limitations to the child and can be of longer term concern. Patients will typically complain of pain around their ankle and lateral foot, blistering with stiff shoes, and difficulties with sports and activities. Arthritis in the joints of the foot and ankle can be a long-term consequence of rigid flat feet.

Thankfully, a few simple physical exam maneuvers can help distinguish between the two.

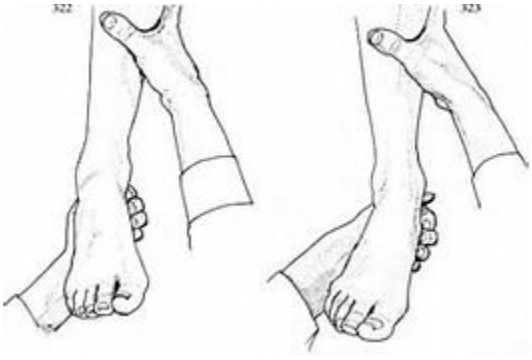
1. Standing heel rise. Have the patient stand in front of you so you can see the hind side (back) of their foot. Ask them to rise onto their tip toes. In flexible flat feet, you will see their calcaneus move from lateral (outside) to medial (inside) into a more normal position as the patient easily rises onto their toes. In rigid flat feet, the heel stays fixed laterally and the patient may not be able to even rise onto their toes.

Hindfoot valgus with weight bearing and hindfoot varus with heel rise. Diagnosis of flexible flat foot.

2. Seated, dangling foot position. Watch the position of the foot as the child moves from standing to sitting with their feet dangling off the side of the bed. In flexible flat feet, you will see their midfoot move from a flat position into a more normal arch position. We call this *arch reconstitution*. In rigid flat feet, the foot remains flat with weight bearing and a sitting, dangling position.

Arch reconstitution when nonweight bearing is a sign of flexible flat feet

3. Subtalar motion (talo-calcaneal motion). Once the child is seated with their feet dangling off the edge of the bed, use one hand to stabilize the distal tibia while the second firmly grabs the calcaneus into a neutral (not plantar flexed) position. The neutral position locks the talus under the tibia and prevents ankle motion from complicating subtalar motion. Attempt to invert and evert the calcaneus under the talus. If motion is present, the flat foot is flexible. If no motion is present, the flat foot is rigid. This exam maneuver can also be done with the child prone and their knees bent to 90 degrees.



These three simple physical exam maneuvers can help you make the diagnosis and reassure the parents of the benign nature of flexible flat feet or refer to a pediatric orthopedist if there is concern of rigid flat feet.