

Guide for Family Physicians: When to refer and to who?

Toe walking is **NOT** a part of normal development and in fact, research shows quite the opposite (1). Generally, once children have been independently walking for 6 months, or by 2 years of age, they should be walking with their heels on the ground. By 3 years of age, children should be walking with a more mature walking pattern, which means that with each step their heel is the first thing to touch the ground and they push off with their toes (2). Therefore, if children are walking on their toes at 2 years of age or beyond, it is important they are referred early to physiotherapy. This can help to reduce the chances of progression of issues associated with toe walking, including long term consequences of pain and dysfunction.

Of primary concern are the orthopedic deformities that are manifested within the first 2-4 years of independent gait. Bony alignment, especially in the foot, is at a greater risk for deformities prior to the age of 4 and skeletal changes are less likely to respond to intervention after 4 years of age (3). As well, research suggests that the processes underlying the maintenance of optimal postural stability are mature by 6 years of age (4).

An early referral for physiotherapy care (ideally by age 3 or younger) is optimal to reduce the potential for significant musculoskeletal complications and the need for more invasive and time consuming interventions downstream. Toe walking left unaddressed in the early years may require serial casting, or even surgical intervention later in the child's life. An electronic Janeway outpatient physiotherapy referral form can be found on EMR and faxed to 777-4499.

References:

1. Berger W, Altenmueller E, Dietz V. Normal and impaired development of children's gait. *Hum Neurobiol.* 1984; 3: 163-170).
2. Sutherland DH, Olshen R, Cooper L, et al: The development of mature gait. *J Bone Joint Surg (Am)* 62: 336, 1980
3. Frost H. *Intermediary Organization of the Skeleton*. Boca Raton: CrC Press. 1986
4. Rival C, Ceyte H, Olivier I. Developmental changes of static standing balance in children. *Neuroscience Letters*. April 2005; 376(2): 133-136).