

# Sensory and Sensibility



Issue #7

## Tip Toes!

### *Idiopathic Toe Walking.*

**Idiopathic toe walking**, sometimes referred to as habitual or behavioral, occurs when a child walks on the balls of their feet for an unknown reason. This term applies to toe walking in a child who has been evaluated by their doctor and no medical reason has been identified.

Some children with idiopathic toe walking are able to walk with their feet flat when asked to do so. Their toe walking is often exaggerated when they walk bare-footed or when they walk on surfaces that have increased tactile sensations (carpet, cold tile, grass). These children typically do not have tightness in their Achilles' tendons (heel cords) early on but prolonged toe walking may lead to tightness in the tendon. This tightness can lead to problems with how their feet and legs line up and can contribute to the development of flat arches and/or outward rotated legs when the child tries to maintain heel contact with the ground.

#### **Features of idiopathic toe walking**

- walk on tip toes on both sides
- are constantly balancing on their toes
- are physically able to keep up with other children their age
- walk with straight knees
- will often be able to stand with their feet flat on the ground

#### **What causes idiopathic toe walking?**

- Many factors may contribute to the development of toe walking in children, these include:
- Tactile processing: an increased response to touch sensations
- Altered proprioceptive processing (sensing the body's position in space)
- Vestibular processing (maintaining balance)
- Flexibility of leg and foot muscles
- Overall body strength

## **Sensory Connection**

*Idiopathic toe walking may be linked to hyper or hyposensitivity. Some children may not like the feeling of different surfaces on their bare feet, which cause them to rise up on their toes to avoid having the full surface of their feet contracting floor. For children who are seeking more input, toe walking increases the force of impact felt during ambulation, as the ground reaction force is distributed through a smaller surface area at the metatarsal heads*

### **Can idiopathic toe walking be treated?**

*Some younger children benefit from physical therapy where they are taught how to stretch their legs, feet and toes. In some cases, idiopathic toe walking may resolve on its own. A stretching program for younger children can be very helpful. The goal is to stretch the calf muscles and strengthen the muscles on the front of the legs. This will help the child to be able to successfully walk with a heel-to-toe pattern.*

### **Sensory Integration Strategies from [dinopt.com/toe-walking/](http://dinopt.com/toe-walking/)**

- Vibratory input
- Encourage barefoot exploration of different surfaces (sand at beach, grass outside, rubber mat at gym, hardwood floors)
- Heavier shoes/high tops with ankle cup to control foot alignment
- **Ankle boots, rain boots, roller skates** all encourage downward input! These are great footwear options-functional and fun!
- Use of auditory input (think, tap shoes) like pennies attached to the bottom of shoes to encourage heel strike.
- Custom made **Grippy Socks!**



### **Shoes for your child**

*Wearing shoes may not correct toe walking. However, appropriate foot wear can help your child bring his heels further down. When selecting shoes for your child, keep in mind the following criteria:*

- Choose a high cut shoe with a wide sole which provides good foot support.
- The shoe should be rigid or firm, not flexible in the middle section.
- The back of the heel should be firm.



## Activities From [www.dinopt.com](http://www.dinopt.com)



*Climbing up playground slide is a great way to target range of motion, strength and weight bearing!*



*As child shifts body weight on **dyna-disc** to maintain balance, the child will experience an active stretch of the affected musculature.*



*Have child walk on dynamic surface without shoes. Some great options are: the **wedge ramp**, **foam balance beam**, and **tactile stepping stones**! This will also help promote active stretch as well as encourage intrinsic plantar muscle activation, as child will be recruiting these smaller muscles to assist with balance*



***Animal walks** are helpful encourage active range of motion while still having fun! Some examples include, **Bear Walk** (with hands and feet on floor, knees not contacting surface).*



**Anterior Compartment Musculature:** we can promote active dorsiflexion using **soft bean bags**, allowing child to flex ankle upward for both strengthening of anterior musculature of leg as well as active range of motion of ankle and foot musculature.



Navigating seated **Scooter Board** helps to engage anterior compartment musculature and provide additional weight bearing element to heel as child propels forward.



Sitting on **therapy ball** or **peanut ball** shifting weight back and front, side to side will help activate abdominals and obliques.



Lunges with **colored spots** or **footprints** for a helpful visual cue are great for range of motion, strength and weight bearing with heels contacting surface.



Sumo squats with **tactile footprint** cues, focusing on weight bearing through full foot contacting floor, knees over toes encouraging child to activate trunk musculature as they lower down into squat and rise to standing.





Wall sits with **incline wedge**, for weight bearing with active stretch through lower extremity musculature as well as engagement of trunk musculature!



Sit to stand from low stool or **cube chair** with visual cues to promote alignment and natural weight shifting on full surface of foot.