

# Relationship between podiatric health and occupation

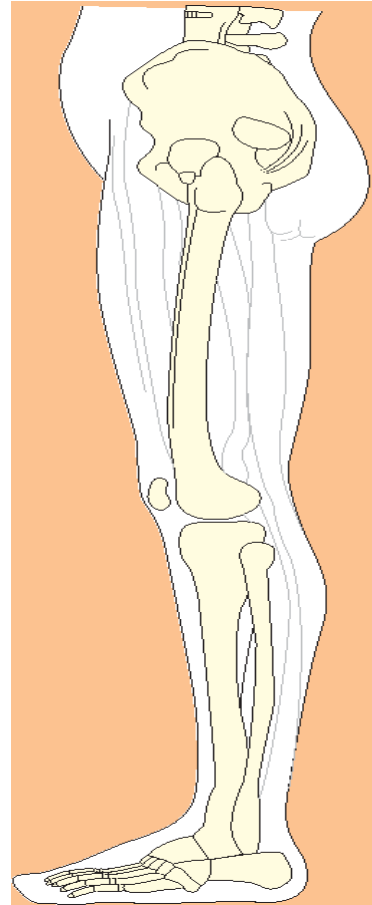
## 1. Correct Standing Posture

Good standing posture is important for health. From a medical perspective good posture means under relaxed conditions the body can still maintain a proper balance line. When standing up, the back is kept straight so that the internal organs can be maintained in the proper position and the burden borne by the back becomes less. Improper standing posture tends to make the lumbar spine curvature excessively, causing pain in the lower back.

Generally, maintaining the neutral spine position while standing up is the proper posture. The chin should be pulled back and eye sight should be held at approximately two to three metres to the front.

Proper standing posture requires strong muscle and joints in both feet. Walking can strengthen the muscles of the feet and it is an effective exercise to maintain proper posture. If one forms a habit of walking in daily life and uses the stair case instead of the lift or escalators in the MTR train stations and department stores, it helps train the muscles and joints of the feet.

Alternatively, standing for a long time also poses health risks. For example it could cause poor blood circulation of the lower limbs. That in turn may cause varicose veins in the legs. Also, the soles of the feet are under pressure for a long time which may result in plantar fasciitis. So people who always have to stand at work, such as teachers, sales persons, waiters etc., should move around or do some stretching exercises when they are standing to improve vein circulation of the lower limbs. Besides, choosing suitable work shoes can also help.

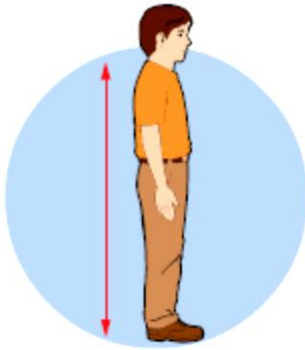


## 2. Understanding the Gait Cycle

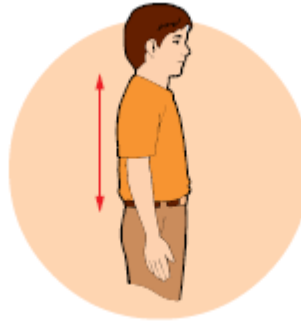
Children start learning to walk at the age of one. Walking seems to be a natural skill but people tend to neglect the importance of proper walking posture. Walking posture not only has a large impact upon podiatric health, it is an important discipline in itself.

Let us first look at the movements of walking. A simple walking motion can basically be divided into six parts. These are:

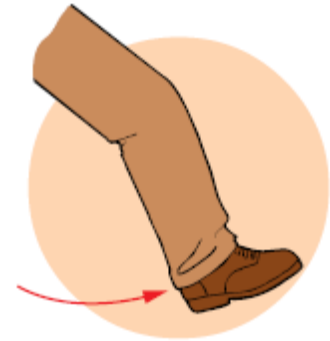
1. *Bearing of the body weight*



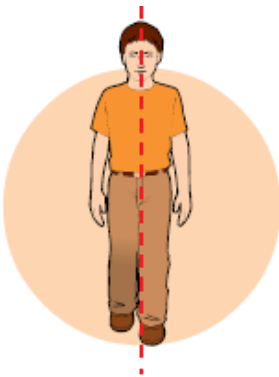
2. *Support of the body*



3. *Stance phase*



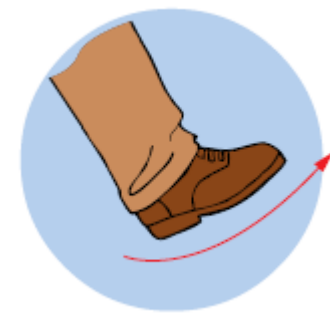
4. *Maintain stability*



5. *Swing phase*



6. *Limb advancement*



This series of basic movements involves rhythmic, alternative movements of the lower limbs, upper limbs with the trunk. Each cycle starts from the heel, touches the ground. Then the posterior outside of the heel and the toes of the other foot both touch the ground in succession bearing the weight of the body. Then the heel is off the ground. The toes are the last to leave the ground. Such sequential motion is called the "Gait Cycle". In terms of human locomotion, this type of "movement" is very important. If one can master each motion correctly it can maintain the stability of the body and one's walking posture will be elegant.

However, if one does not learn to pay attention to maintaining a proper way of walking, different problems can arise.

### 3. Forming proper way to walk

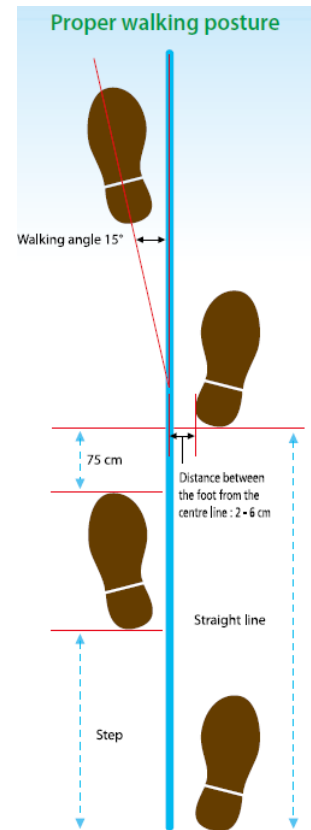
Every day most people walk, on average, approximately six kilometres. That means by the time they reach seventy years old, the total distance walked will be more than four times around the globe. Therefore, if one has not formed a healthy way to walk, serious problems could be brought about with the passage of time.

It is very important to carry out a self-examination on the way we walk. The healthy way to walk is for the knee to be extended while the heel contacts the ground as the toes touch the surface steadily. The heel fully stays on the ground surface and the toes are extended to advance. Actually it is not difficult to master the skills. The simple principle is to maintain suitable steps. Following observations on the streets it has been



The knee is extended and the ankle is neutral

discovered that the steps of a lot of youngsters are relatively narrow. Some of them walk as if they are trawling. Actually as long as we maintain appropriate step width, the heel will touch the ground first and the toes will kick out naturally.



Also, one must pay attention to the details in the distances between steps, the width between the two feet and the angle of walking. The diagram on the right provides some figures for reference.

The feet are sometimes referred to as the second heart by the experts. Many people believe that all that is needed to enhance the functions of the heart is to have normal blood circulation. However, the cardio muscles are not voluntary muscles. The heart cannot be controlled consciously, but the muscles of the feet are voluntary muscles which can be controlled. More walking can effectively enhance blood circulation and improve health greatly.

The feet are at the furthest location from the heart. It takes a considerable time for blood to be transmitted from the heart to the tips of the toes and the path back is also long. The number of times one walks affects blood circulation since the feet perform an important "pumping" function. When a person walks, the feet leave the ground, tips of the toes are flexed, and this motion acts like water pump to boost blood circulation.

Regardless of how strong the body is, the size of one's feet can have a difference approximately 5 to 10% between morning and night. This is because poor vein circulation at night may lead to blockage of blood vessels. It is also an indication of feet fatigue. The symptom of swollen feet can be observed as a result.

If one finds swollen feet when the body is tired, it is wise to do appropriate massage in order

to improve the speed of venous blood flow. When the phenomenon of swollen feet is disregarded, swollenness may spread throughout the entire body, causing chronic fatigue.

Therefore, it stands to reason that people engaging in long hours of walking, such as postmen, deliverymen, etc., should pay more attention to proper walking posture. They need to choose comfortable and light work shoes as well as do more foot stretching exercises and let their feet have adequate rest. Otherwise podiatric health will suffer.

#### **4. The impact of the squatting posture or kneeling posture on the knees**

Some occupations always involve squatting posture or kneeling posture, for instance cleaning workers, automobile repair technicians, renovation workers, and so on. When workers kneel to work, the outer parts of the knees are partially under pressure. Prolonged exposure to pressure may lead to inflammation of muscle tendon such as mucus capsulitis or myotenositis.

In addition the squatting posture or kneeling posture require the knees to bend for a long time. This creates a burden to the joints and may lead to arthritis of the knee joint. Any work which usually involves the bending of the waist can hurt the back easily. Workers should avoid staying in the same posture position for too long and when kneeling, the knees should avoid touching the hard ground.

(Source : Occupational Safety & Health Council – “Good Health Starts With Healthy Feet”)