

Prolong Wearing of High Heeled Shoes Can Cause Low Back Pain

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Abstract

High heeled shoes greatly affect the lumbar curve, increase loading on tibialis anterior muscle and also disturb the center of mass of body. High heels shoes also causing increased weight bearing on toes, ankle sprains and leg and back pain. High heeled shoes wearing also affect the stride length, walking speed, and abnormal gait patterns. Moreover by wearing high heels, posture is not stable and increased risk of fall especially in old population. High heeled shoes also cause increase lumbar lordosis and increase compressive forces on lumbar vertebrae that are leading towards lumbar spondylosis. Body balance, trunk stability, muscles activation of ankle and knee, muscle activation of cervical and lumbar spine, body weight distribution and walking speed are all affected by wearing high heeled shoes. As health professionals, we should identify these hazards create awareness among people. New studies are needed to identify how high heeled shoes contribute to low back pain.

Keywords: High heel; Low back pain; Fashion health

Introduction

Fashion demands in the form of high heels (disturb the calf muscles length and natural curves in spine), hand bags (disturb the carrying angle on elbows), skinny jeans (compress the nerves), squeezing and skin tight trousers all affecting human health [1,2]. Tight and skinny wears can compress the nerves in body where nerves are superficial and having potential areas for compression [3]. High heel wearing is increasing in this era of fashion [4].

Biomechanics of High Heeled Shoes and Low Back Pain

High heeled shoes greatly affects the lumbar curve, increase loading on tibialis anterior muscle and also disturb the center of mass of body [5]. High heeled shoes also causing increased weight bearing on toes, ankle sprains and leg and back pain, also affects the stride length, walking speed, and abnormal gait patterns. Moreover by wearing high heel posture is not stable and increased risk of fall especially in old population.

High heels wearing also cause increase lumbar lordosis and increase compressive forces on lumbar vertebrae that are leading towards lumbar spondylosis. Body mechanics are key factors in current population health and wellness. New studies are needed in which researchers can identify how high heeled shoes are contributing factor for low back pain.

During our clinical practice, it was observed that many women were having low back pain also have history of using high heel shoes during work stations, outdoor market visiting and while attending some function like marriage ceremonies. For this problem we hypothesized that there are biomechanical effects of wearing high heels on lumbar curves and calf insufficiency.

What Evidence and Literature Say

How did high heeled shoes affect the lumbar curve and produce biomechanical changes in standing posture? According to a recent study they concluded that high heel wearing greatly affect the ankle joint kinematics during walking that may causes to abnormalities in foot, parents should take much care for selection of foot wear and avoid the high heel [6]. Another recent study was published in which they compare the biomechanical effects of high heel and low heel on jogging and running and they concluded that there is decrease ROM during stance phase with high heel and also increased weight bearing on ankle, knee and hip joints [7].

According to another study, the women age between 20 and 29 wear high heel and developed hallux valgus in later age [8]. Mechanism of causing back pain by high heeled shoes was explained by Weitkunat and colleagues in their study in which 23 female participants were included and influence of high heeled shoes were investigated on the sagittal balance of the spine and the whole body [9]. In this study they resulted that high heeled shoes cause increase flexion on knee and ankle with increased femoral obliquity. Increase flexion in knee and ankle is compensated by curve in spine.

In another recent study they identified that habitual high heeled shoes affect the isokinetic soleus muscle strength [10]. High heeled shoes also affect the electromyographic activity of lower extremities muscles. In revised high heeled shoes wearing study, they concluded that revised heeled shoes improve the EMG activity of lower limbs muscles and keep the body in normal alignment [11]. Long time wearing of high heeled shoes produces changes in the distribution of body weight on feet, more weight bearing on frontal part of foot [12].

Long term use of high heeled shoes also disrupt the arches of foot that affectively transmit the body weight to ground [13]. High heeled wearing can affect the body balance and functional activity [14]. High heeled shoes affect the activation of cervical and lumbar muscle and also on postural control [15,16]. Postural and balance control required by activation of trunk muscles. Trunk muscles provide stability during

conditions that challenging the balance of the body. With high heeled shoes, there is an increase disturbance of body balance and trunk muscle has to work more for maintaining body balance.

Conclusion

High heel wearing greatly affect the ankle joint kinematics during walking that may causes to abnormalities in foot. High heels are contributing low back pain among women of age between 20 and 29. Body balance, trunk stability, muscles activation of ankle and knee, muscle activation of cervical and lumbar spine, body weight distribution and walking speed are all affected by wearing high heeled shoes. As a health professional, we should identify these hazards and should be create awareness among people. Parents should take much care for selection of foot wear and avoid the high heels. Body mechanics are key factors in current population health and wellness. New studies are needed in which searcher can identified how high heel is contributing factor for low back pain.

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