

Oral Presentation

Track 3: Musculoskeletal systems and Performance - Joint ISB/ESB Track

3.2. Locomotion and Falls - Mechanisms, Injuries and Interventions

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**Novel: comparing vibratory threshold in relation to musculo skeletal (dynamic) analysis of two types of foot. Comparative study of dynamic foot analysis and vibratory threshold of foot between flat and normal foot females**

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The interface between body and ground in the foot is subjected to tremendous stresses and loads during gait, making it a frequent site for disorders like musculo skeletal, pathological, neuropathies and loss of vibratory sensation. Excessive pronation during push off phase causes foot to be unstable at a time when the foot needs to be a rigid lever leading to increase in contact area, compressive and shear forces and increases foot vibratory threshold.

Purpose were to correlate the dynamic foot parameters during walking over the treadmill, to compare the static and dynamic foot parameters. 60 female students of mean age of 20.88(2.57) years of S.B.S.P.G.I. were included. In Group A 30 flat foot and in Group B 30 normal foot subjects were included according to Foot Print Mat method. Informed consents were obtained from them. Reflectors were placed on the exposed leg at head of fibula, lateral malleolus, head & base of 5<sup>th</sup> metatarsal, Centre of Calcaneus, Achillis tendon, mid calf, medial malleolus, navicular tuberosity and head of 1st metatarsal. After familiarization session, subjects were made to walk for 6 minutes at 4-5 km/hr on the treadmill. Three calibrated cameras were focused on medial, lateral and posterior aspects of foot. Then their skin vibratory threshold for the sole of foot was taken at head of plantar aspect of 1st & 5th metatarsal and midpoint of heel. Analyses of the dynamic foot parameters were done using **SIMI** Software. Comparison between the dynamic analysis and vibratory threshold was done using SPSS Software. Results will be discussed in the congress conference. The data of the current study can be clinically used as a early measures for prevention of podiatric conditions including diebetics so that occurrence of plantar ulcers can be reduced. These can be extended to the proper prescription of foot orthosis considering the foot parameters in normal as well as atheletic population.