Persistent pain is the most common complaint reported by those with chronic symptoms following ankle sprain with its prevalence peaking in middle-aged adults. Despite the high prevalence rate and associated adverse effects on mobility, quality of life, and physical activity, the influence of persistent ankle pain on lower extremity function during gait in middle-aged adults has not been examined.

PURPOSE: To identify the modifiable lower extremity kinematic dysfunction during walking gait associated with persistent ankle pain in middle-aged adults.

METHODS: Ten individuals with persistent ankle pain (9F, 1M; 55 ± 6.52 years; 166.80 ± 6.73 cm; 78.24 ± 25.05 kg) and nine matched uninjured controls (8F, 1M; 53.0 ± 5.79 years; 168.2 ± 6.06 cm; 75.81 ± 24.46 kg) volunteered for the study. Three-dimensional lower extremity kinematics and kinetics were collected during five barefoot walking trials at a self-selected speed. Lower extremity sagittal and frontal joint positions were calculated from joint ROM and maximum joint position during 1st double-limb support, single-limb support, and 2nd double-limb support. Position at initial contact in the sagittal and frontal plane was also calculated. MANOVA tests assessed group differences with an alpha level of p<0.05. Significant tests were followed by independent t-tests with Bonferroni corrections.

RESULTS: Rearfoot ankle inversion is significantly increased in those with persistent ankle pain compared to controls during overground walking (p<0.05). Persistent ankle pain subjects were in an inverted position at initial contact (3.75 ± 3.25°), while controls were in an everted position at initial contact (-3.5 ± 3.0°). No other group differences were noted.

CONCLUSIONS: Persistent ankle pain subjects demonstrate significant increases in rearfoot inversion at initial contact compared to controls. This altered movement pattern may result in further stress of the ankle joint structures, which may contribute to their persistent ankle pain. Additional research with a larger sample size and greater male representation is needed to further explore the effects of ankle pain on gait.

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F-14 Rapid Fire Platform - Mental Health & Athletic Performance

Friday, May 31, 2019, 1:00 PM - 2:20 PM
Room: CC-Hall WA2

2778 May 31 2:45 PM - 3:00 PM
Subjects with Chronic Ankle Instability Exhibit Less Loading Absorption After Drop Jump and Drop Landing
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Chronic Ankle Instability (CAI) is a condition characterized by neuromuscular, range of motion, and postural control deficits that predispose subjects to reinjury. Different kinetic landing strategies have been identified in people with CAI when compared to healthy controls. Whether these adaptations result in similar loading patterns than those without CAI, has not been documented. This knowledge would be of much use for programming physical rehabilitation protocols to prevent the progression of CAI.

PURPOSE: To compare ground reaction force (GRF) parameters between subjects with and without CAI, after a drop jump (DJ) and a drop landing (DL).

METHODS: After informed consent was obtained, 19 young participants (height 166.4 ± 7.4 cm; body mass 68.1 ± 12.0 Kg) were assessed, classified in a group of subjects with CAI (CAI, n = 14) and a control group (CON, n = 5), according to the recommendations of the International Ankle Consortium. Groups were similar in height, body mass and gender distribution. Each participant performed 5 DJ and 5 DL from a platform of 40 cm height, landing on a force plate recording GRF at a frequency of 100 Hz. The order of all 10 jumps for each subject was determined by an online random generator. The signal corresponding to the vertical GRF was low pass filtered (4th order Butterworth, 20 Hz), normalized to body weight, and then processed to calculate the maximal GRF (FMax) and the loading rate (LR) from the time of initial contact to when FMax was achieved. Comparisons among groups were performed using unpaired t test with normal distributed data; otherwise Mann-Whitney test was used. A p value <0.05 was considered as significant.

RESULTS: FMax was larger for CAI after DJ (CAI: 3.35 ± 0.57 N*N/s; v/s CON: 3.03 ± 0.29 N*N/s; p<0.01), but was not different from CON after DL (CAI: 3.50 ± 0.59 N*N/s; v/s CON: 3.39 ± 0.39 N*N/s; p=0.57). LR was larger for CAI after both DJ (CAI: 35.74 ± 13.26 N*N/s; v/s CON: 24.54 ± 10.01 N*N/s; p<0.01) and DL (CAI: 41.33 ± 10.43 N*N/s; v/s CON: 35.03 ± 5.94 N*N/s; p<0.01)

CONCLUSION: According to our preliminary results, subjects with CAI exhibit less GRF absorption after dropping from a medium altitude, which might contribute as a risk factor for ankle reinjury. Patients with CAI might benefit from including loading absorption strategies in their rehabilitation protocols.

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Friday, May 31, 2019, 1:00 PM - 2:20 PM
Room: CC-Hall WA2

2779 May 31 1:00 PM - 2:20 PM
Chair: Aaron J. Stegner. Univ. of Wisconsin, Madison, WI.
(No relationships reported)

2780 May 31 1:00 PM - 1:10 PM
Changing the Tide: Psychological Outcomes Among Active Duty Service Members Following a Surf Therapy Program
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(No relationships reported)

Surf programs for individuals with psychological conditions exist; however, data evaluating such programs are limited.