

Rehabilitation Science Presentation



Harshvardhan Singh, Ph.D.
Assistant Professor
Department of Physical
Therapy
University of Alabama at
Birmingham

Bone Microarchitecture, Muscle Quality, and Potential Novel Rehabilitation Techniques in Ambulatory Children with Cerebral Palsy

Studies have shown that trabecular bone microarchitecture, which is an important feature of bone, is a robust predictor of bone strength and fracture. It can identify individuals who are at a greater risk for fracture who otherwise have normal bone mineral density. Although there is a lot of evidence on underdeveloped bone microarchitecture in children with moderate-to-severe cerebral palsy, the state of bone in ambulatory children with mild cerebral palsy remains elusive due to limited research. Furthermore, the level of deficit in the distal femur and the distal tibia which are the common fracture sites in children with cerebral palsy is unknown. An attractive research tool to examine skeletal properties in children is magnetic resonance imaging. It does not expose them to ionizing radiations and can be utilized to assess trabecular bone microarchitecture. My studies have shown that ambulatory children with mild spastic CP exhibit an underdeveloped bone architecture, low bone strength and a greater infiltration of fat in the bone marrow and surrounding musculature compared to typically developing children. In our future studies we aim to utilize novel exercise techniques such as muscle lengthening exercise for musculoskeletal rehabilitation in children with cerebral palsy.

UAB SCHOOL OF
HEALTH PROFESSIONS
Knowledge that will change your world

EVENT DETAILS

Free to UAB
students, faculty and
clinicians.

DATE/TIME

October 9th, 2018
3:30-4:30pm

LOCATION

LRC 210

CONTACT

For more information
contact Dr. David
Brown.
975-2788
dbrownpt@uab.edu