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Basics of biomechanics of the neuromusculoskeletal system and research opportunities

Muhammed Wasif Rashid Chaudhary Ahalia Hospital, United Arab Emirates

B iomechanics is the study of mechanics (loads, motion, stress, and strain of solids and fluids) applied to biological systems. Musculoskeletal Biomechanics specifically focuses these methods for studies of the musculoskeletal system. This includes studies of the form and function of tissues including bone, cartilage, ligament, tendon, muscle, and nerve, at multiple scales ranging from the single cell to whole body. My presentation will provide a general overview of the biomechanical principles associated with the neuromusculoskeletal system. In particular I will review, the structure and properties of the neuromusculoskeletal system, and show how the various components of this system can be idealized and described in mathematical terms. The presentation begins with an overview of the mechanical properties of muscle, tendon, ligament, and cartilage, finishing off with a review of the ongoing research opportunities in Biomechanics, including a brief look at musculoskeletal tissue engineering, ergonomics, musculoskeletal adaptation, and tissue mechanics.

Biography

Muhammed Wasif Rashid Chaudhary, MBBS, MBA, CSSGB, CTQM, CPHQ is working as Asst. Medical Director in United Arab Emirates. He has 15 years of experience in healthcare field. He had worked also as Medical Superintendent and Quality Manager 8 years in the same health care facility. His interest is in continuous quality improvement and patient safety. He is licensed general practitioner and continuing his responsibility as a physician. He is certified professional in healthcare quality (CPHQ). That credential covers field of quality, case/care/disease/utilization and risk management and emphasizes how all these programs and processes integrate into an effective system.

drwasifch@yahoo.co.uk

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