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A REVIEW ON LOWER APPENDICULAR MUSCULOSKELETAL SYSTEM OF HUMAN BODY

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Abstract

Rehabilitation engineering plays an important role in designing various autonomous robots to provide better therapeutic exercise to disabled patients. Hence it is necessary to study human musculoskeletal system and also needs to be presented in scientific manner in order to describe and analyze the biomechanics of human body motion. This review focuses on lower appendicular musculoskeletal structure of human body to represent joints and links architectures; to identify muscle attachments and functions; and to illustrate muscle groups which are responsible for a particular joint movement. Firstly, human lower skeletal structure, linking systems, joint mechanisms, and their functions are described with a conceptual representation of joint architecture of human skeleton. This section also represents joints and limbs by comparing with mechanical systems. Characteristics of ligaments and their functions to construct skeletal joints are also discussed briefly in this part. Secondly, the study focuses on muscular system of human lower limbs where muscle structure, functions, roles in moving endoskeleton structure, and supporting mechanisms are presented elaborately. Thirdly, muscle groups are tabulated based on functions that provide mobility to different joints of lower limbs. Finally, for a particular movement action of lower extremity, muscles are also grouped and tabulated to have a better understanding on functions of individual muscle. Basically the study presents an overview of the structure of human lower limbs by characterizing and classifying skeletal and muscular systems.

Keywords

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