Move your body

Code: M_BMYB19
Type: Optional
Period: Semester 1
Credits: 24.0
Language of instruction: English
Faculty: VUmc School of Medical Sciences
Coördinators: Mrs. drs. L.A. Bonouvrié, mrs. dr. M.M.E.H. Witbreuk
Examinator: Mrs. drs. L.A. Bonouvrié, mrs. dr. M.M.E.H. Witbreuk
Mode of delivery: Face-to-face
Learning activities and teaching methods: Lectures, practicals, physical examination, working groups, scientific meetings.
Level: 300

Target audience
Bachelor’s students of VUmc School of Medical Sciences and external (and international) students with a (bio)medical background.

Course content
The minor Move your Body will start with defining and analyzing normal movement and musculoskeletal health and fitness. There will be focus on the prevention of sedentary behavior and physical inactivity and the moving healthy body during sports and physical performance. We will continue with clinical biomechanics covering ‘clinical gait analysis’ as a diagnostic tool to assess deviations in walking performance, aiming for the identification of its etiology, i.e. dysfunction of part(s) of the neuro-musculo-skeletal system to inform clinical decision making in patients who experience walking problems. Next, we will address how to optimize movement and physical performance of adult patients and children with musculoskeletal and neurological disorders, with an emphasis on disturbed motor function of the lower and upper limbs, and its consequences for daily life. Consequences of disorders, such as osteoarthritis, fractures, bone and joint deviations, multi-trauma, multiple sclerosis, Parkinson’s disease, stroke, and amputations will become apparent at the three WHO-ICF levels of functioning: impairments in function of body structures (tissues and organs), limitations in functional activities, and restrictions in daily life. In children, the diseases of primary interest are cerebral palsy, spina bifida, obesitas and orthopedic problems such as clubfoot and scoliosis. Diagnostics of the body in motion, surgical and therapeutic options to optimize movement and physical performance, will be presented by both physicians and researchers from several clinical fields.
Learning outcomes
After this minor the student can:

1. demonstrate knowledge and acquired skills in diagnostics of the body in motion, physical examination, musculoskeletal imaging, clinical movement analysis, and their clinical applications from the perspectives of traumatology, orthopedics, rheumatology, and rehabilitation medicine.
2. explain and judge the consequences of anatomical, physiological and biomechanical age- and gender-related differences in traumatology, orthopedics, rheumatology, and rehabilitation medicine.
3. recognize the phases of gait, and what general principals of gait are, what joint kinetics of normal gait are, how to assess joint kinetics using augmented reality, what muscle coordination during normal gait is, governing low energy cost of walking.
4. understand and discuss the principles and essence of exercise in medicine.
5. apply the rules for critical reading and scientific writing of papers and grants in this field of research.

Assessment methods and criteria
Writing assignment, research proposal writing, oral presentation, debate, two central exams.

Recommend or required reading and other learning resources/tools
This minor is supported by a corresponding CANVAS course, which contains all of the required information of this minor including an overview of the required articles and assignments. The CANVAS course will also be used to post announcements relevant to the minor. You will automatically have access to the CANVAS course.

Prerequisites
Knowledge on all Bachelor courses of year 1 and year 2 courses are required.