

MASTER I IDRETTSMEDISIN 2024/2026

MASTER I IDRETTSFYSIOTERAPI 2024/2026

INDIVIDUAL HOME EXAM

IN

MA 453- PHYSICAL ACTIVITY AND HEALTH

Information

Start of exam: Thursday March 6. 2025 at 12.00 p.m

Final deadline: Thursday March 20. 2025 at 2.00 p.m. in WISEflow

The submission must be in pdf format.

Aids: When using AI tools

According to APA-7 in the chapter on AI-generated text, you should briefly describe how you have used the tool. In addition, you should attach a screenshot of your chat as an attachment.

QUESTION 1

Provide an overview and synthesize the current evidence from intervention studies examining the effects of breaking up prolonged sitting with short bouts of physical activity on biomarkers related to cardiovascular health (e.g., adiposity, blood pressure, blood lipids, glucose, insulin). Discuss potential moderators of these effects, such as age, sex, fitness, and medical history. Critically evaluate the methodological quality of the studies you include and address any limitations in the current evidence base.

QUESTION 2

Provide an overview and synthesize the findings from prospective cohort studies examining the associations of both occupational and leisure-time physical activity with all-cause and/or cardiovascular disease mortality. Compare and contrast the observed relationships, considering potential explanations for any differences. Discuss factors that may modify or confound the effect of occupational physical activity on mortality (e.g., physical fitness, ergonomic factors, socioeconomic status, work hazards). Critically evaluate the methodological limitations of the studies you include in your answer.

QUESTION 3

Provide an overview and critically evaluate the evidence from observational studies and intervention trials on the dose-response relationship between physical activity and mental health outcomes (e.g., depression, anxiety, stress, cognitive function). Discuss whether different sub-populations (e.g., age groups, individuals with pre-existing mental health conditions) may require different "doses" of physical activity to achieve optimal benefits. Assess the methodological strengths and limitations of the studies you include in your answer.

QUESTION 4

Critically analyze the challenges and opportunities associated with implementing public health recommendations for reducing sedentary behavior across different populations (e.g., children, adolescents, adults, older adults) and settings (e.g., schools, workplaces, communities). Discuss potential intervention strategies that could be used to promote reductions in sedentary time, considering factors such as feasibility, acceptability, sustainability, and cost-effectiveness. Provide an overview of existing research evaluating the effectiveness of such strategies and identify key research gaps.

QUESTION 5

Disordered eating behaviors and eating disorders occur relatively frequently in certain sports. Explain possible risk factors related to the development of eating disorders. Provide an overview of studies that have investigated the prevalence of disordered eating behaviors and/or eating disorders in sports. You may choose the competitive level, sports groups, and gender. Discuss the methodological quality of the studies you include.

QUESTION 6

The literature reports health and performance-related consequences associated with relative energy deficiency in sport (REDs). Provide the evidence related to health and/or performance-related issues and discuss the methodological quality of the studies you include.

QUESTION 7

Many postmenopausal women develop osteoporosis. Clarify what osteoporosis is, the prevalence of osteoporosis, the risk factors for osteoporosis, and the risk factors for fractures in this population. Explain and discuss the evidence for lifestyle factors as risk factors for osteoporosis. Present a case of a postmenopausal woman with osteoporosis and clarify why and how you would implement physical activities and exercises for the treatment and prevention of falls. Present and discuss the evidence for exercise recommendations and the precautions for specific exercises.

QUESTION 8

Osteoarthritis is a common joint illness and disease in middle-aged and older individuals. Clarify what osteoarthritis is, the prevalence, and the risk factors for developing osteoarthritis. Explain and discuss the evidence for physical activity and exercises for people with osteoarthritis. Present a case of a middle-aged person with knee osteoarthritis and clarify why and how you would implement exercises as treatment and prevention of pain, symptoms and dysfunctions.

QUESTION 9

Describe and analyze the effect found in randomized controlled trials (RCTs) of pelvic floor muscle training on urinary incontinence postpartum. Report and discuss interventional and methodological quality of the RCTs.

QUESTION 10

Describe and analyze the effect found in randomized controlled trials (RCTs) of exercise in prevention of gestational diabetes during pregnancy. Report and discuss interventional and methodological quality of the RCTs.

QUESTION 11

Cancer-related lymphedema can affect patients' function and quality of life, and limited treatment options are available. Over the last two decades, activity recommendations have shifted from refraining from activities that involve the affected body part to being physically active within their limitations. Some guidelines also recommend resistance training of the affected body part. Based on today's literature, develop exercise guidelines for treating cancer-related lymphedema and discuss the strengths and limitations of the current literature for clinical exercise guidelines development.

QUESTION 12

Several studies indicate that chemotherapy treatments reduce cardiorespiratory fitness (CRF), a variable linked to physical function and longevity. Hence, effectively restoring or increasing CRF following cancer treatment may be a key objective for several cancer survivors. Based on the current literature, discuss the effects of moderate-intensity endurance training versus high-intensity interval training and their effects on CRF in cancer survivors (i.e., after chemotherapy treatment). Also, discuss the strengths and limitations of the studies that you include.

QUESTION 13

Lung screening

Many endurance athletes report respiratory limitations; however, systematic lung screening is not always included as part of health assessments in sports.

- Explain which lung diseases may affect endurance performance and the physiological mechanisms behind their impact.
- Describe the methods used for lung screening in sports medicine and discuss the advantages and limitations of different measurement techniques.
- Critically evaluate the evidence on whether lung screening can contribute to the prevention of lung disease in athletes.
- Assess the methodological quality of the most significant studies in the field.

QUESTION 14

Respiratory muscle training and exercise-induced breathing problems

Respiratory muscle training is used to enhance athletic performance.

- Outline different methods of respiratory muscle training and their physiological effects.
- Analyse the evidence supporting the effectiveness of respiratory muscle training in managing the most common exercise-induced breathing problems.
- Discuss the specific application of respiratory muscle training in the management of exercise-induced laryngeal obstruction (EILO).
- Evaluate the methodological quality of the most important studies in this field.