

PHYSICAL ACTIVITY AND HEALTH EDUCATION

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Introduction, Health education, Physical
activity and health

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AIM OF THE MODULE

- * Students will acquire the basic knowledge and competencies that will enable them to explain and change people's healthy and unhealthy behaviors.
- * They will gain an understanding of the theories, principles, and practices of health as related to exercise and physical activity promotion.

LEARNING OUTCOMES

At the end of this module you should:

- Be familiar with theories explaining healthy and unhealthy behaviors
- Be able to think critically about issues in the context of health education and health behaviors
- Be able to generate a structured behavior change plan in order to demonstrate their knowledge of health behavior change theory and how it can be utilized to inform an intervention to change a target behavior and produce outcomes of interest.

EVALUATION

Course learning outcomes will be assessed by 2 exam assignments. Your grade will be determined by the number of accumulated grades from the two assignments:

- * Assignment A (Individual Report) = 40%
- * Assignment B (Group Project plan) = 60%

E-CLASS SUPPORT

https://eclass.uth.gr/courses/PE_P_167/

Part of the slides from Digelidis N.

Health Education

Definitions and aims

Health is: A state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity (WHO, 1948).



Definitions and aims

Health behavior is:

- * Any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behavior is objectively effective towards that end.
- * **Health behavior:** An action that helps prevent illness and promote health.

Definitions and aims

Health development is:

- * Health development is the process of continuous, progressive improvement of the health status of individuals and groups in a population.

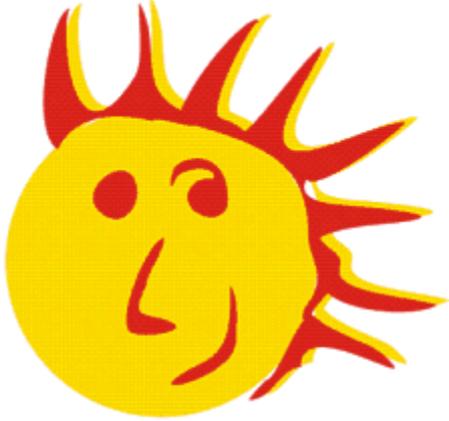


Definitions and aims



Health education is:

- * The education of health behaviors that bring an individual to a state of health awareness.



Health Education

- * **Health education** is the profession of educating people about health issues.
- * Health education aims in teaching people (individuals or groups) to behave in a manner conducive to the promotion, maintenance, or restoration of health.
- * Education that increases the awareness and favorably influences the attitudes and knowledge relating to the improvement of health on a personal or community basis.

Definitions and aims



Determinants of health

- * The range of personal, social, economic and environmental factors which determine the health status of individuals or populations.



- * **Empowerment for health:**

is a process through which people gain greater control over decisions and actions affecting their health.

- * **Health promotion:**

The promotion of healthy ideas and concepts to motivate individuals to adopt health behaviors.

Most of the times, health education is related with CHANGE

- * The ultimate aim of Health Education is **Positive Behavioral Modification**
- * Its **aim** is to develop in people a sense of responsibility for health conditions for themselves as individuals, as members of families, and as communities.





Health education teaches:

- * prevention and basic health knowledge
- * conditions ideas that **re-shape everyday habits of people with unhealthy lifestyles**

For long term effects ...

- * Health education must be included in the school curriculum at all levels
- * A comprehensive ***health education curriculum consists of planned learning experiences which will help students achieve desirable attitudes and practices related to critical health issues.***



Application areas

- * Schools
- * Hospitals
- * Worksites
- * Individual
- * Community – public health agencies
- * Universities
- * Military



Physical Activity and Health Epidemiology & Physical activity recommendations

Lecture 1

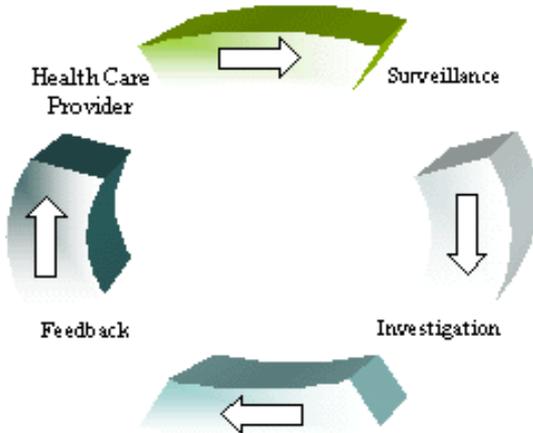
Hassandra Mary, PhD.

Physical activity epidemiology

Light and moderate physical activity lowers early death risk

Definition - epidemiology

- * Epidemiology is the study of the distribution of disease and other health events in a population.
- * Behavioural epidemiology is the observation and study of behaviours that lead to disease or premature death and of the distribution of these behaviours



(Dishman, Washburn & Heath, 2004)

Definition - Physical activity epidemiology

- * Physical activity has endured as an important part of hygiene in many cultures since antiquity.
- * Physical activity epidemiology is a branch of behavioural epidemiology which composed of two main features:
 - * Study of relationships between PA and physical inactivity and disease using the traditional methods of epidemiology
 - * Study of the distribution and determinants of PA in a population.

Summary of PA effects on health

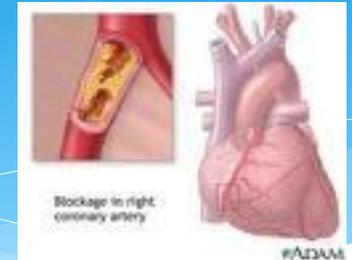
TABLE 3.5 SUMMARY OF EVIDENCE FOR DOSE-RESPONSE EFFECTS OF PHYSICAL ACTIVITY ON HEALTH

Health outcome	Strength of the evidence	Consensus conclusion
All-cause mortality	Moderate	Inverse and roughly linear reduction, with a threshold around 1,000 kcal/wk
Coronary heart and vascular disease	Moderate	Inverse and linear reduction in incidence and mortality
Blood pressure (normotensive and hypertensive participants)	Substantial to strong	Window of benefit: about 50%–70% of capacity; no apparent dose gradient
Blood lipids (+HDL-C; -LDL-C; -triglycerides)	Substantial	Window of benefit: about 50%–80% of capacity; no apparent dose gradient
Hemostatic factors (-platelet adhesion; -fibrinogen; +tPA)	Moderate to substantial	No evidence for dose response
Overweight and obesity	Strong	Linear reduction in weight in studies lasting 4 months or less with controlled diet; no dose response in studies lasting 6 months or more
Type 2 diabetes	Moderate	Inverse linear reduction
Osteoporosis	Substantial Strong	No evidence for peak bone mass No evidence for slowing bone loss after menopause
Cancer	Moderate	Inverse linear reduction for colon cancer
Depression	Moderate to substantial	No evidence for dose response

Physical activity and disease mortality

The slide features a solid blue background. At the bottom, there are several overlapping, wavy, light blue shapes that create a sense of motion or a horizon line. The text is centered in the upper half of the slide.

All cause & coronary heart disease (CHD) mortality



- * Evidence: there is a **protective effect** of PA against CHD
- * Reduced risks are **independent of most other major risk factors**
- * The protective factor of PA operate also **indirectly by positively affecting other biological risk factors** (blood pressure, body weight, etc)
- * There is a dose response relationship between PA and rates of CHD but **the optimal protection dose remain controversial**
- * General rule: **Something is better than nothing**
- * Experimental confirmation that Physical inactivity directly causes CHD will never be obtained because:
 - * Cost of population based RCT is too great
 - * Unethical to assign individuals to a sedentary control group

EVIDENCE...

- * Cardiovascular disease: **main cause of death** in developed nations and third in developing (20% of all deaths worldwide)
- * **Physical inactivity** accounts for 200.000 deaths from CHD, second only to the 440.000 deaths now attributed to **tobacco use**.
- * Leisure time PA during middle age **cuts the risk of CHD in half** for both men and women.

Cerebrovascular disease and Stroke

- * There is a **reduced risk** of ischemic stroke in PA individuals **regardless of age, sex and ethnicity**, after adjustment for other risk factors
- * **Not clear** classification of **types of stroke and mechanisms** by which PA might protect against ischemic, embolism or reduced perfusion





Physical activity and risk factors



Physical activity and hypertension



- * **Regular PA** has potential for reducing or **preventing mild hypertension**
- * **Difficult to separate the independent effects** of PA dietary and weight changes because hypertension, hyperlipidemia and obesity are intricately related to each other.
- * The benefit of moderate PA appears sufficiently independent, consistent temporally logical and biologically plausible to support that **PA represents an effective adjuvant in the prevention and treatment of hypertension**

Physical activity and hyperlipidemia

- * Physical activity can help **increase the HDL-C levels and decrease LDL-C and triglyceride levels**, independent of age, sex and weight loss.
- * Biological mechanisms are not fully understood



Physical activity and obesity

- * People who are overweight or obese have increased risk of developing several diseases.
- * Because **PA is the most variable aspect of energy balance** has great potential for helping people avoid becoming overweight & obese
- * The effects of exercise can be **similar to the effects of dieting on weight loss** (reduction in caloric intake & increased PA)
- * Regular PA reduce the primary and secondary risk of becoming overweight or obese



Physical activity and obesity

- * Difficult to separate the independent effects of PA from those of dietary & weight changes
- * Impossible to prevent fat loss during increased PA without increasing calorie intake
- * **PA represents an effective adjuvant in the prevention & treatment of overweight & obesity**
- * The ultimate goal is weight loss or risk reduction?
 - * **Moderate physical fitness is perhaps a more important health goal for overweight** (but not obese)





Physical activity and chronic diseases

Physical activity & diabetes

- * Moderate PA is associated with a **reduction in the risk of developing type 2 diabetes, independent of age, sex and ethnic** groups; and biologically plausible.
- * Not clear whether the effect of **PA is independent of BMI, fat loss and diet**
- * Vigorous PA 2/3 times per week provide **glucose control**
- * Benefits of **improved insulin sensitivity** with daily moderate PA can occur through fat weight loss.



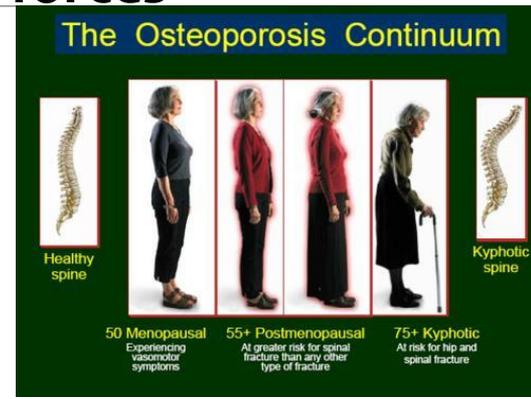
...and then a second instrument reads your blood sugar level.



The Hughston Foundation, Inc. ©2007

Physical activity & osteoporosis

- * The prevention & treatment of osteoporosis and fractures should be directed at maximizing peak bone mass by:
 - * Optimizing dietary calcium & Vit. D
 - * Normal menstruation or sex hormones replacements
 - * **Using vigorous PA that involves high peak forces** (resistance exercise)





Physical activity cancer and immunity

Physical activity and cancer

- * The reduction in rates of colon cancer among PA people ranged from 20%-75%
- * Reduction in breast cancer risk with increased PA (lack of explanation of the biological mechanisms)
- * Evidence is inconclusive about the independent effect of PA against prostate cancer



FIT TO FIGHT

Physical activity and the immune system

- * Moderate PA can have a **positive influence on cancer survivors**, increase fitness among **HIV people**, reduction in risk of upper **respiratory infections**
- * In contrast, **exhausting exercise** & heavy endurance training associated with **increased risk of infection**
- * More studies required to clarify the health implications of short- & long-term PA on overall immune function, resistance to infection and cancer risk.





Physical activity and special concerns

Physical activity and mental health



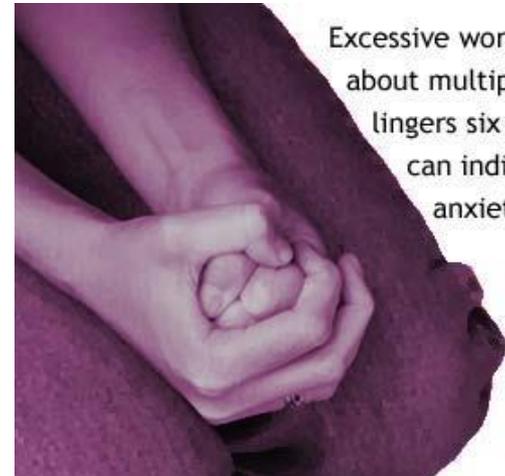
PA & Depression

- * **Moderate** exercise is associated with **reduced risk of depression** symptoms
- * Being **sedentary** increases the risk for depression
- * There is a need to determine whether the relationship between PA and & depression is consistent across:
 - * Age
 - * Sex
 - * Race
 - * Ethnicity
 - * Education level
 - * Socioeconomic level
 - * Mental status



PA & anxiety disorders

- * **Physical inactivity** is associated with a small to moderate increase in the risk of depression symptoms among adults
- * Not human studies have yet tested whether **neurobiological** responses and adaptations can **help explain** the antidepressant and antianxiety effects of PA



Excessive worry or anxiety about multiple issues which lingers six months or more can indicate generalized anxiety disorder

Physical activity and disability



The disability consequences of inactivity

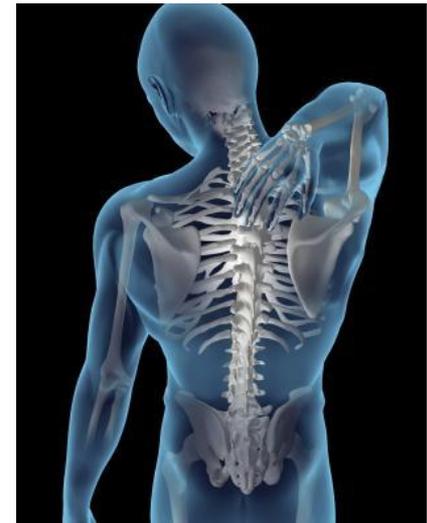
- * Overweight and obesity
- * Coronary heart disease
- * Deep vein thrombosis
- * Osteoporosis

Regular PA, sports participation & active recreation are essential for the prevention of disease, promotion of health, maintenance of functional independence & quality of life

Hazards of Physical activity

“Both excessive and defective exercise destroys the strength”

-Aristotle



Host factors

- * Age
- * Sex
- * Physical activity experience
- * Injury history
- * Body mass
- * Pre-exercise stretching

Features of the agent: PA

- * Total exposure
- * Frequency
- * Duration
- * Intensity
- * Type of PA

Environmental factors

- * Exercise surface
- * Temperature
- * Urban environment features

Myocardial infarction & sudden death

- * Main causes:
 - * Congenital abnormality in young subjects
 - * Atherosclerotic coronary disease in adults
- * Even though exercise carries a short-term risk, **its long-term benefits still outweigh the risks of being sedentary**

Psychological hazards

- * Disordered eating
- * Muscle dysmorphia
- * Exercise abuse





Alcohol & Fats

It's a relief to know the truth after all those conflicting medical studies.

The Japanese eat very little fat and suffer fewer heart attacks than the British or Americans.

The French eat a lot of fat and also suffer fewer heart attacks than the British or Americans.

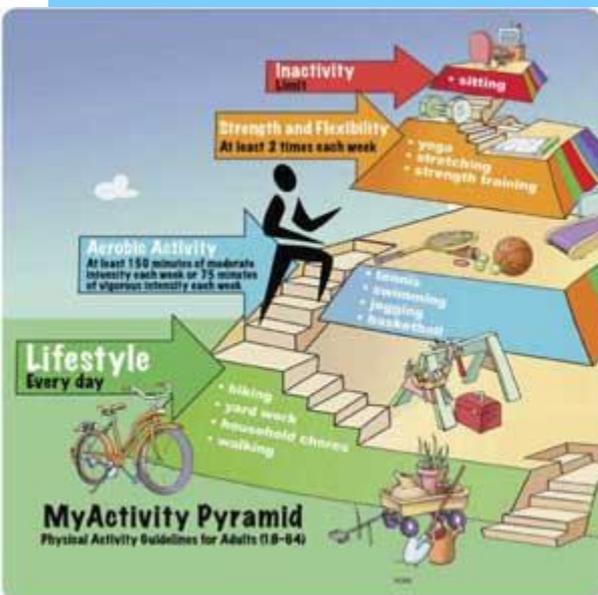
The Japanese drink very little red wine and suffer fewer heart attacks than the British or Americans.

The Italians drink excessive amounts of red wine and also suffer fewer heart attacks than the British or Americans.

The Germans drink a lot of beer and eat lots of sausages and fats and suffer fewer heart attacks than the British or Americans.

Conclusion: Eat and drink what you like. Speaking English is apparently what kills you.

Physical activity recommendations



National agencies & Professional organizations

WHO

EU

American College of Sports Medicine

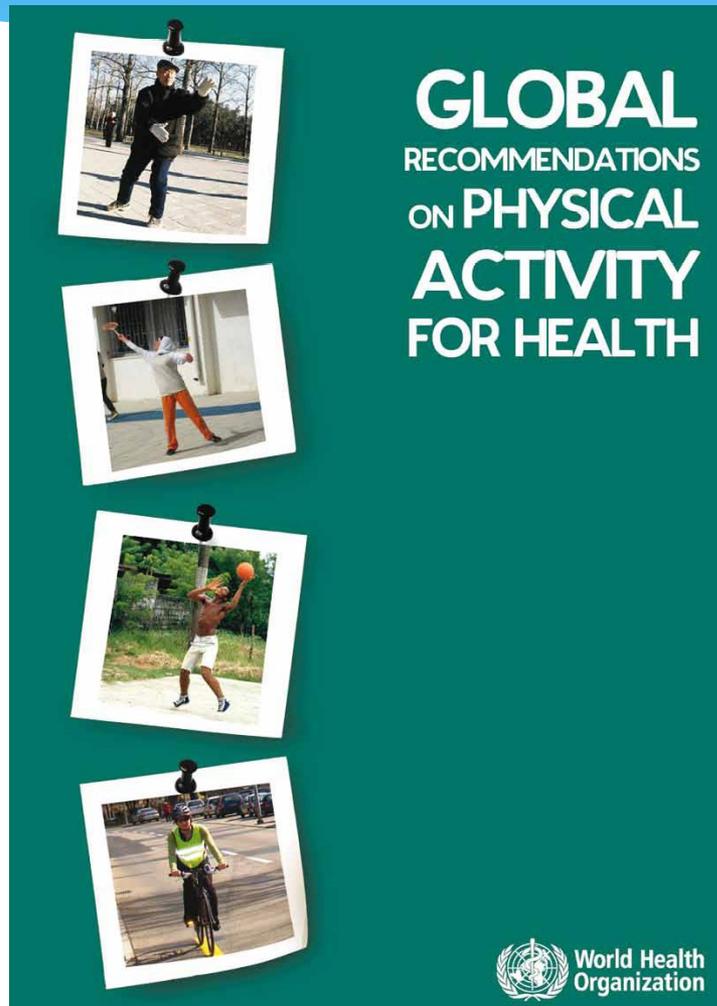
American Heart Association

Australian Government

From:

- * World
- * Europe
- * USA
- * Australia

WHO recommendations



The WHO Recommendations From 5-17 years old:



- * 60 minutes of moderate to vigorous intensity physical activity have to be accumulated on a **daily** basis.
- * Beyond this level, every physical activity will provide **additional health benefits**.
- * The majority of these activities should be **aerobic**.
- * In addition, vigorous activity at least 3 times per week.

The WHO Recommendation 18-64 years old:



- * At least **150** minutes of **moderate** intensity aerobic physical activity **or 75** minutes of **vigorous** intensity physical activity should be undertaken **per week**.
- * Both types of activity can also be **combined**.
- * In order to increase health benefits, physical activity could be raised to 150 minutes of vigorous intensity physical activity and 300 minutes of moderate intensity physical activity.
- * **Every session** should last **at least 10 minutes**.
- * Two additional days should be used for muscle-strengthening activities.

The WHO Recommendations From 65 years old and above :

- * At least 150 minutes of moderate intensity aerobic physical activity or 75 minutes of vigorous intensity aerobic physical activity per week (or a combination of both).
- * In order to increase the health benefits, the physical activity could be raised as such : 150 minutes of vigorous intensity physical activity and 300 minutes of moderate intensity physical activity.
- * Every session should last at least 10 minutes
- * Persons with poor mobility should train and **strengthen their balance** in order to prevent falls during 3 or more days per week.
- * Two additional days should be used for muscle- strengthening activities.
- * If all these recommendations are difficult to accomplish because of health conditions, people are encouraged to be **as physically active as possible.**



Get the new info from the report

- * Physical Activity Guidelines Advisory Committee Recommendations for update 2018
- * <https://health.gov/paguidelines/second-edition/report/>

Thank you ...
Brake...