

Assessing Health & Functional Fitness

INTRODUCTION TO THE MODULE



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University of Wales
Trinity Saint David

Assessing Health and Functional Fitness



To develop the skills, techniques and knowledge to conduct basic health and fitness assessments.



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Exercise and Training

“Those who think they have no time for bodily exercise will sooner or later have to find time for illness.”

Edward Stanley



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Health promotion

'the process of enabling people to exert control over the determinants of health and thereby improve their health.'

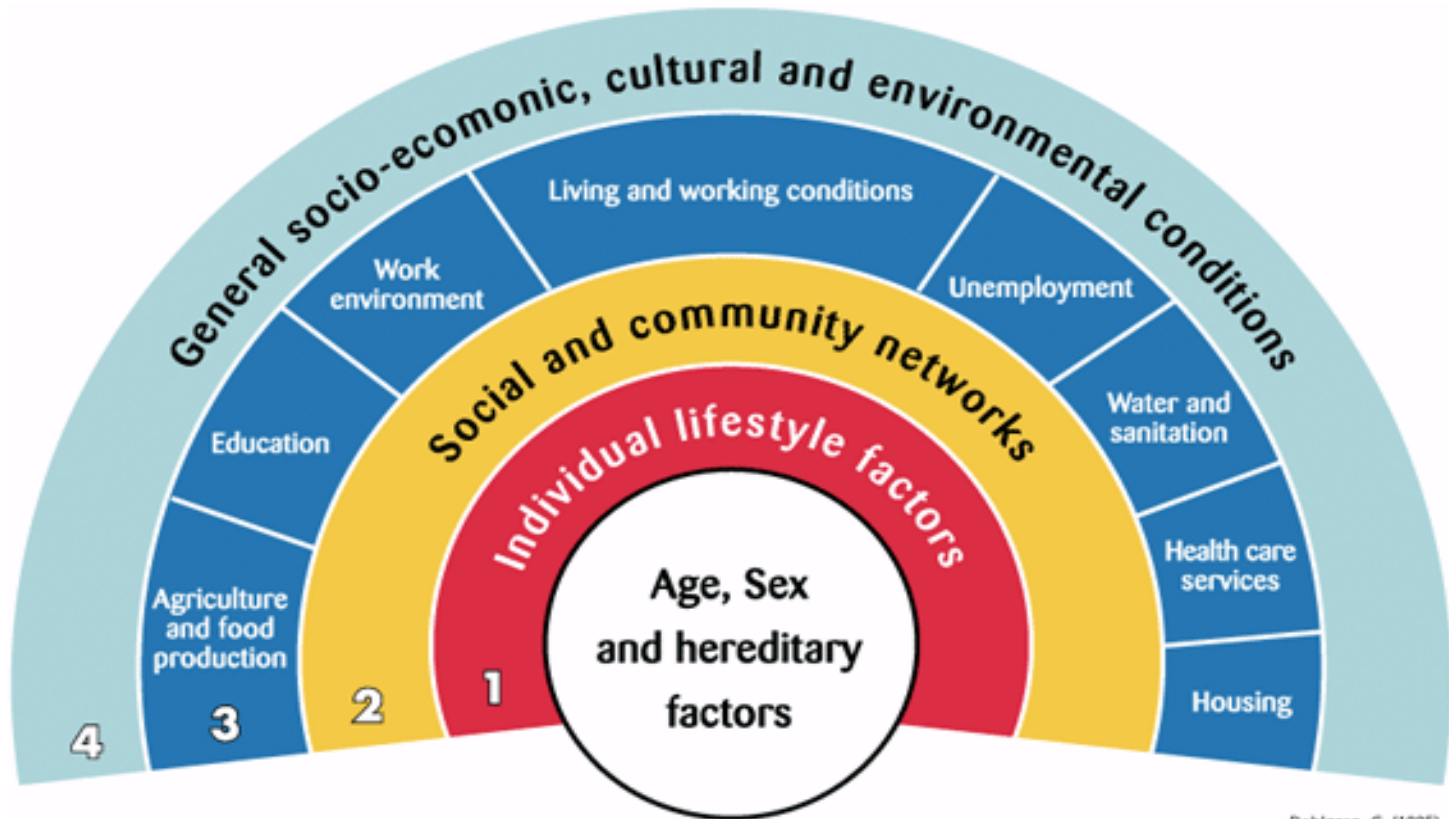


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Roles of the Graduate



Models of Health & Health Promotion



Dahlgren, G. (1995)
European Health Policy Conference:
Opportunities for the Future. Vol 11 - Intersectoral Action for Health.
Copenhagen: WHO Regional Office for Europe



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Healthy Life Styles

Diet



Activity

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**"You'll lose weight on any strict diet,
but it's mostly water...from crying."**

Choices

Stress Reduction Kit

Stress

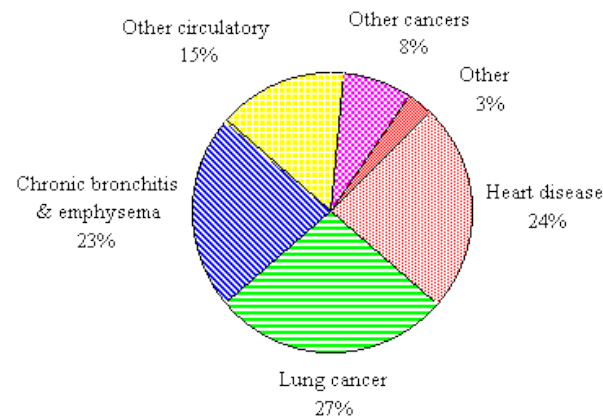


Directions:

1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.

AHAJOKES.COM

Figure 3.1: Proportion of deaths from smoking by disease group



Source: compiled from English and Holman et al.⁴

Individual Factors Affecting Health

- Diet
- Exercise – Overtraining – Injury
- Stress & mental health
- Sleep
- Illness
- Work
- Personality
- Personal organisation
- Alcohol & substance misuse
- Regular health / fitness checks



Life Choices – e.g. Smoking

1. Heart attacks (coronary thrombosis or myocardial infarct);
2. Angina;
3. Hardening of the arteries;
4. Blockage of the blood vessels leading to the feet, causing poor circulation and sometimes gangrene;
5. Impotence;
6. Stroke;
7. Kidney trouble;
8. High blood pressure;
9. Lung cancer; Cancer of the mouth, throat, cervix;
10. Smoker's lung - long term inflammation of the air passages;
11. Chronic obstructive pulmonary disease ('Obstructive Airways Disease');
12. Ulcers and indigestion.
13. Loss of eye sight



Sleep

- Need 7-8 hours per night
- During sleep the brain forms pathways necessary for learning and creating memories and new insights.
- Without enough sleep, you can't focus and pay attention or respond quickly.
- A lack of sleep may cause mood problems.
- Growing evidence shows that a chronic lack of sleep increases the risk for developing obesity, diabetes, cardiovascular disease, and infections.
- <http://www.bbc.co.uk/guides/zwwpycw>



Dietary Concerns

- Obesity - Anorexia
- Coronary Heart Disease – Hypertension
- Stress – Depression
- Joint / soft tissue disorders / concerns
- Diabetes, asthma, cancer etc



Recommendations



5+ portions per day



"I wonder if we're getting enough fibre?"

5+ portions per day



2-4 servings per day



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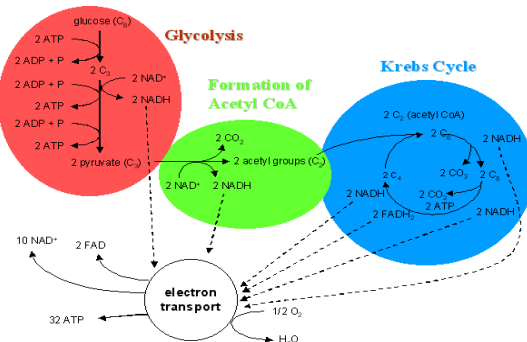
Recommendations



1.0 g / 2.0 per kg body weight



3-4 lts per day



25 – 40 kcals per kg per day



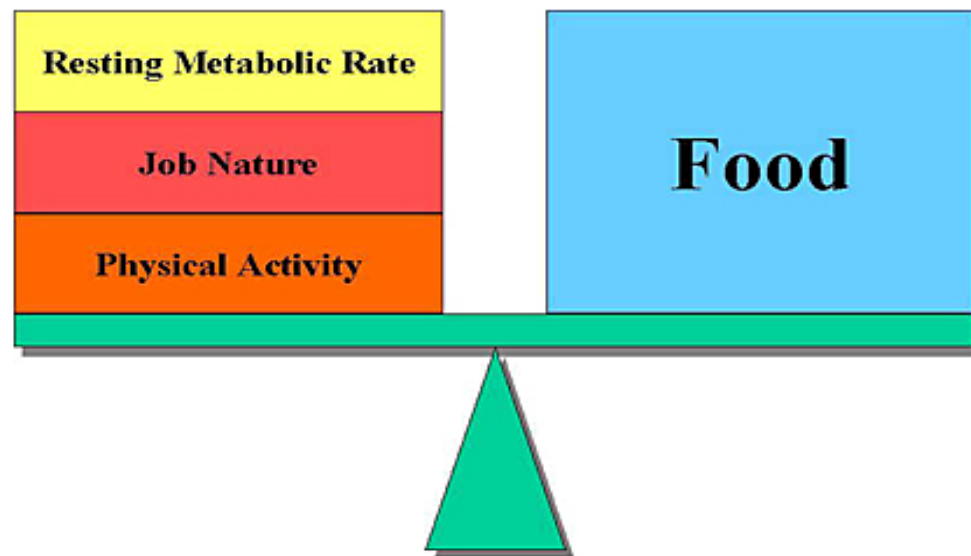
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Other requirements

- Vitamins
- Mineral
- Low sodium
- Low caffeine
- Low alcohol
- Reduced saturated fat
- High anti-oxidants low free radicals
- Cooking methods



Activity



Resting metabolic rate



- The amount of energy required to fulfil all body functions whilst at rest
- Approximately 0.02 kcal/kg/min



Work energy requirements

■ Sleeping



0.01 kcal/kg/min

■ Cooking



0.045 kcal/kg/min

■ Office work



0.028 kcal/kg/min

■ Moderate activity

0.1 kcal/kg/min



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Recreation energy requirements

■ Aerobics 0.105 kcal/kg/min

■ Running 0.23 kcal/kg/min

■ Swimming 0.15 kcal/kg/min

■ Football 0.132 kcal/kg/min



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Activity recommendations

Health benefits have been shown to come from

- 30 minutes per day
- 4-5 times per week



Additional exercise may improve fitness but not induce
further health benefits



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Stress

- “The way in which we perceive and react to the environment in which we live”?
- Psychological
- Physical
- Psychosomatic



Manifestations of Stress

- Anxiety / depression
- Illness
- Lack of concentration
- Fatigue
- Headaches
- Heart stress
- Ulcers
- Eczema



Reduction of Stress

- Relaxation techniques
- Exercise
- Organisation and planning
- Stress awareness



Health Risks of Physical Inactivity

- Physical inactivity is a major risk factor for CHD
(7th leading cause of premature death - WHO)
- Individuals who are inactive are 1.9 times more likely to have a heart attack
- 37% of CHD deaths can be attributed to physical inactivity
- 19% are attributed to smoking
- 13% are attributed to high blood pressure



Potential Savings

Northern Ireland Physical Activity Strategy

- Reduce sedentary population from 20% to 15%

- This will result in:

At least 121 saved lives per year among under 75 years

An associated economic benefit of £131 million



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Potential Savings

Physical Activity Strategy for Scotland

- Estimated that £85.2 million could be saved if levels of inactivity were reduced by 1% each year for the next 5 years
- These economic benefits are associated with the number of life years saved through preventing premature death from CHD, strokes and colon cancer



Benefits of Increasing Activity

- 9% of CHD could be avoided if sedentary and lightly active became more moderately active.
- Regular moderate physical activity has the potential to reduce half the incidence of hip fractures in over 45 year olds.
- Risk of death in men who walk more than 1 mile a day is 0.55 times that of men who walk less than 1 mile a day



National recommendations for physical activity

Health Education Authority

- 30 minutes of moderate intensity physical activity, such as a sustained brisk walk, on at least five days of the week
- Ideally these 30 minutes should be one period of sustained activity, but shorter bouts of 15 minutes, are also beneficial

(Killoran et al., 1995, Moving on, HEA)



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Measuring Activity Levels

- Exercise self report questionnaire

e.g. How often do you exercise each week

0 1-2 3-4 5

- Exercise analysis

e.g. fill in what your main activity was during the day.

<u>time</u>	<u>activity</u>
9.00-9.30	driving
9.30 -10.00	walking slowly
10.00-10.30	sitting And so on.

- Fitness & Health Assessing – fitness & Functional Fitness



Benefits of Exercise

- Reduce the risk of premature death
- Reduce the risk of developing and/or dying from heart disease
- Reduce high blood pressure or the risk of developing high blood pressure
- Reduce high cholesterol or the risk of developing high cholesterol
- Reduce the risk of developing colon cancer and breast cancer
- Reduce the risk of developing diabetes
- Reduce or maintain body weight or body fat
- Build and maintain healthy muscles, bones, and joints
- Reduce depression and anxiety
- Improve psychological well-being
- Enhanced work, recreation, and sport performance



Contra-indications to exercise

Most people will benefit from some level of exercise but some people will need special attention or referral from a medical professional;

Cardiovascular disease

Injuries

Stroke

Epilepsy / fainting

Diabetes

Pregnancy

Asthma / pulmonary

Hypertension

Rheumatoid arthritis

Osteoporosis

Obesity

Mental health

Cancer
disease



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Fitness Assessment

Gives an objective set of information from which to base a physical activity programme.



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Fitness Assessment

1. Why do we want to assess?
2. How do we assess?
3. What does the information mean?
4. How can the information be used?



Why Conduct An Assessment

1. Establish current physical capacities
2. Monitor changes in capacity
3. Determine areas for training
4. Determine issues that may affect training
5. Motivation in training
6. Establish 'norm' or reference values



A Diagnostic Tool

The data is used to prescribe exercise but;

- You are not qualified to diagnose any medical condition.
- You can indicate a predisposition to a condition.
- You should refer a client to a medical professional for diagnosis if you suspect any condition that may be aggravated by exercise.



How do we Assess?

□ Pre-assessment information

- Lifestyle?
- Medical?

□ Selection of assessments

- Needs or activity analysis

□ Protocols

- Validity
- Reliability
- Reproducibility
- Accuracy
- Sensitivity
- Techniques

□ Other factors

- Equipment
- Environment
- Health and Safety Issues



What does the information mean?

- Comparison to norms
 - Actual data
 - Mathematical manipulations
- Comparison to previous data
 - Actual data
 - Mathematical manipulations



How is the information used?

- Design training programmes
- Monitor and Adjust training programmes
- Limit training and exercise
- Referral to other exercise or medical professionals.
- Job and team selection
- Others?

