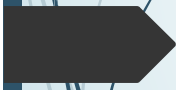


Module: Introduction to Physiology BMHP5003

Assessment:1

Topic: Cardiovascular disease

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INTRODUCTION

The concept of health was first defined in 1948 by World Health Organization (WHO) as “**a state of complete physical, mental and social well-being, and not merely the absence of disease**” (WHO, 2022).

The presentation focuses on:

- Anatomy and Physiology of heart
- Health style questionnaire of Patient A
- Health risks in terms of Patient A's lifestyle
- Recommendations to support Patient A



This presentation is about the importance of measuring lifestyle-related health information in health and social care.

It provides an overview of the anatomy and physiology of the cardiovascular system. The presentation also includes a general health style questionnaire and a Health style questionnaire of Patient A.

The presentation shows the health risks in terms of Patient A's lifestyle and health behaviour choices that may increase chances of developing cardiovascular disease (CVD), including why changing unhealthy lifestyle habits avoid heart disease.

Finally, it provides the care interventions from Public Health England (PHE) and National Institute for Health and Care Excellence (NICE) to support Patient A and how these can reduce his chances of developing CVD.

The concept of health was first defined in 1948 by World Health Organization (WHO) as “a state of complete physical, mental and social well-being, and not merely the absence of disease” (WHO, 2022).

For each of us, being healthy is the key to success in life and standard working capacity. Health is the essential value in life. It cannot be bought, but it can be saved with some effort. Health status depends on lifestyle, daily habits, and nutrition. Millions of people follow unhealthy lifestyles. This leads to various diseases, disability and even death. An unhealthy lifestyle can cause a problem like cardiovascular disease.

Anatomy and Physiology of Cardiovascular system

The cardiovascular system is made up of three components: **the heart, the blood vessels** and **blood**.

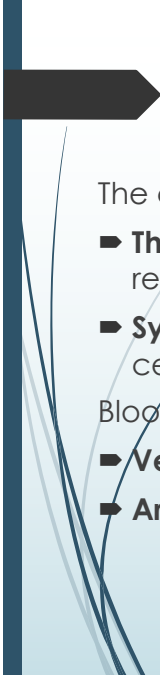
The heart has:

- **Four Hollow chambers** - contract in order allowing the heart to pump blood from the body
- **Two atria** - upper chambers
- **Two ventricles** – lower chambers
- **Septum** – divided left and right side of the heart
- **Three layers of tissue** – endocardium, myocardium and pericardium.



The cardiovascular system comprises three components: the heart, blood, and blood vessels. The heart is positioned in the chest in the median cavity, between the lungs, and displaced to the left side.

The heart is a smooth muscle (Editors, 2019). It is divided into four hollow chambers which, in precise order, these heart contractions pump blood from the body to the lungs and vice versa. The heart is divided into two atria, the upper chambers and two ventricles, the lower chambers. The right and left sides of the heart are divided by the septum. The heart has three layers of tissue. The inner layer is the endocardium. The endocardium is a smooth and thin membrane that lines the inside of the heart's chambers, forming the surface of the valves; there are four valves. Next is the myocardium, which is the muscular wall of the heart. The third layer is the pericardium. The pericardium is a thick, fibrous, double-layered sac that lines the heart. Thanks to "pacemaker" cells that regularly activate nerve impulses, the heart muscle contracts.



Anatomy and Physiology of Cardiovascular system

The circulatory system has two circuits (sth, n.d.):

- **The pulmonary circuit** transport deoxygenated blood to the lungs to receive oxygen
- **Systemic circuits** send oxygenated blood and nutrients to the body cells while removing wastes

Blood vessels:

- **Veins** flowed blood to the heart
- **Arteries** flowed blood from the heart

The heart is a pump that pushes blood throughout the body through the circulatory system (qcs, n.d.).

The circulatory system is composed of two circuits:

the pulmonary circuit, which carries blood to and from the lungs.

The systemic circuit carries blood to and from the body.

The circulatory system is composed of all the organs, which, thanks to their functions, support the circulation of blood in all the body, allow the supply of oxygen, nutrients to cells and tissues; the transport endocrine hormones for signalling between different organs and the recovery of carbon dioxide and waste substances to be eliminated. The mechanism (motor) of the circulatory system is the heart.

Lifestyle questionnaire

To date, to evaluate the effectiveness of future interventions to improve people's well-being and health, use **the Lifestyle Questionnaire**.

The main aspects included in the Lifestyle questionnaire are:

- **Levels of activity**
- **Alcohol consumption**
- **Smoking**
- **Family history**



Improving people's health and advising them to take control of their lives is the primary goal of well-being promotion programmes.

To date, to evaluate the effectiveness of future interventions to improve people's well-being and health, use the Lifestyle Questionnaire. It provides essential information related to people's lifestyles. The main aspects included in this questionnaire are levels of activity, alcohol consumption, smoking, family, and medical history.

Lifestyle health-related information of the patient A

■ Smoking

Patient A is a current smoker and smoke 20 cigarettes daily

■ Alcohol

Patient A drinks 1-2 glasses of wine on weekends

■ Family history

Patient A's father was diagnosed with CVD when he was 44years old

■ Physical activity

Patient A does not have any exercise and spends most of his time at work sitting

Patient A completed the lifestyle questionnaire. He is a 56-year-old man. He is a smoker, has been smoking for about 30 years, plus-minus a pack of cigarettes a day. He drinks 1-2 glasses of wine on weekends. Family history of early heart attack (father). Patient A has never had a heart attack or stroke. Lately, he has had shortness of breath when climbing stairs, feels weakness all over his body and sometimes pain in his chest. He works as a manager in a construction company. For most of the working day, he sits in front of the computer. He arrives at work by car. He doesn't play sports and spends weekends on the sofa reading.

Risks factor for Cardiovascular disease

According to the NHS, **cardiovascular disease (CVD) is a general term for conditions affecting the heart or blood vessels** (NHS, n.d.).

The origin of cardiovascular disease is not precisely clear, but many things can increase its risk. There are called "**risk factors**" (cdc, 2017).

The risk factors identified in Patient A are:

- **Smoking**- dangerous substances in tobacco narrow blood vessels.
- **Family history** of early heart disease is an indicator of the development of CVD.
- **Physical inactivity** can increase to cholesterol blood pressure levels and promote weight gain.

Understanding the risk of cardiovascular disease is the first step to human health. The origin of the cardiovascular disease is not precisely clear, but many things can increase its risk. There are called "risk factors" (cdc, 2017). The chance of developing the disease depends directly on the number of risks factors in a person: the more of them, the higher the possibility of developing CVD in the future. According to the NHS, cardiovascular disease (CVD) is a general term for conditions affecting the heart or blood vessels (NHS, 2021).

Based on Patient A's responses to the Lifestyle questionnaire, several risk factors were identified in Patient A, which indicate the possibility of developing cardiovascular disease in the future. Some risk factors—such as smoking or being physically inactive — can be changed through heart-healthy lifestyle changes. Some others risk factors cannot be changed, such as gender, ethnicity, genetics, and family history (NHLBI, 2022).

The risk factors identified in Patient A are:

- Smoking- dangerous substances in tobacco damage and narrow blood vessels.
- A family history of early heart disease is an indicator of the development of CVD.
- Physical inactivity in the future can also increase to cholesterol and blood pressure levels and promote weight gain.

These unhealthy habits can eventually lead to the development of coronary heart disease. An unsalutary lifestyle conducts to the accumulation of plaque in the heart's blood vessels.

Recommendations

Public Health England (PHE) Health matters: preventing cardiovascular disease (Gov.uk, 2019)



National Institute for Health and Care Excellence (NICE) (NICE, 2020)

- *Reduce the consumption of salt by the population*
 - *Lower general consumption of saturated fat*
 - *Smoking cessation*
 - *Physically active travel to and at work*

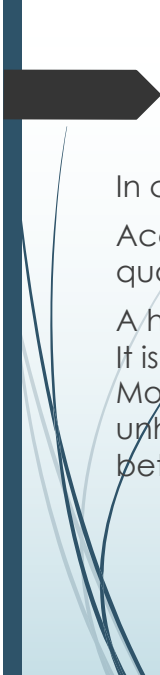
Cardiovascular disease (CVD) is a significant public health problem.

Public Health England (PHE) and NHS England agreed on primary prevention targets to reduce cardiovascular disease over the next ten years (Gov.uk, 2019). Preventing strategies aimed at changing the behavioural factors associated with the disease. Health professionals and local authorities should educate people about the many risk factors that can harm their heart health and encourage people to change bad habits into healthy ones, such as:

- a healthy diet -more fruits, vegetables, fibre, oily fish, less salt, and sugar.
- Physical activity - at least 20 minutes of moderate activities a day.
- Reduce alcohol consumption.

NICE has released official guidelines for the prevention of CVD (NICE, 2020). Some current guidelines support interventions to change people's unhealthy habits into healthy lifestyles, such as:

- Reduce the consumption of salt by the population. The high salt content in the diet is directly related to high blood pressure, leading to stroke and coronary heart disease.
- Lower general consumption of saturated fat is crucial to preventing CVD
- Smoking cessation
- Guidance to support physically active travel to and at work, walking and cycling as modes of transport.



Conclusion

In conclusion, lifestyle is necessary component in well-being.

According to WHO, 60% of related factors to individual health and quality of life are correlated to lifestyle (Ziglio, 2004).

A healthy lifestyle is what a progressive society and a person strive for.

It is a healthy, long life full of vivid impressions without bad habits.

Most people experience illness and disability because they lead an unhealthy lifestyle. It is vital to take in to account the connection between lifestyle and health.

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