



Programme: BSc (Hons) Health and Social Care Level 5

Module: Introduction to Physiology {BMHP5003

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OBESITY

Definition

Obesity is extreme fat accumulation from an imbalance between energy consumption and energy use. It is usually relating to increased weight-for-height. (NHS, 2019). World Health Organization (WHO) suggested that the best method to check obesity is Body Mass Index (BMI), if a BMI greater than or equal to 30 is obesity. (WHO, 2021). It is estimated to affect around 1 in every 4 adults and around 1 in every 5 children aged 10 to 11 in UK (NHS, 2019).

Risk Factors

- Food and drink consumption: consuming food high in sugar and fat, oversized portions of calorie-dense foods, and excessive alcohol (more than 2 drinks per day).
- Physical inactivity: less time engaging in physical activities such as exercise.
- Genetic factor: there are 25–70% of the variation in adiposity of genetic defects which can influence an individuals' metabolism and behaviour that predispose to obesity. (NICE,2017)

Case Study: Patient A

According to the lifestyle questionnaire, Patient A is 48 years old female, she has 86kg, height of 165cm, 31.5 BMI, high blood pressure of 1180/90, eats chips and fries regularly, drinks alcohol between 3 and 6 units a day, come from the family with history of high cholesterol and she do not exercise at all, that indicated she is obese. Because she consumes high amounts of energy, but she does not burn off this energy by exercising, thus those extra energy will be stored as body fat (NHS, 2019).

Intervention

- Eating healthy by swapping fast, processed, salt food, sugary drinks and excessive alcohol for plenty of fruits, vegetables, and proteins.
- Following balance diet by reducing energy intake by 600 calories a day which is not more than 1,400 calories a day.
- Doing simple to intensity exercise, such as walking, playing football or netball, running, cycling, recreational swimming, and dancing, for at least 30-60 minutes a day. (NHS, 2019)

Physiology

- Obesity reduced blood flowing to the brain because the higher the BMI the lower blood flow to the brain which significantly increases the risk of stroke and mental health such as Alzheimer's diseases, depression and poor self-esteem.
- Being obese makes the body's cells resistant to insulin, resulting in high blood sugar which raises an individual's risk of having type 2 diabetes.
- Fat stored around the neck can loads the chest wall which increases the risk of both expiratory flow limitation and airway closure that make breathing difficult at night (sleep apnea) (Sethi, 2020)

References

National Health Service. (2019). Obesity. <https://www.nhs.uk/conditions/obesity> (Accessed on 17/07/2021 at 10:09 pm).
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Sethi. S. (2020). How Does Obesity Affect the Body? <https://www.healthline.com/health> (Accessed on 19/07/2021 at 12:28 pm).
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SPEAKER NOTES

Obesity is extreme fat accumulation from an imbalance between energy consumption and energy use, thus most people, obesity happens slowly by taking in more energy than their body burns over time, and this extra energy is stored as body fat (National Health Service, 2019). Now a day Obesity has become global epidemic, it is affected one in four adults and one in five children aged 10 to 11 in the UK (National Health Service, 2019). Therefore, obesity is usually relating to increased weight-for-height as lifestyle questionnaire completed on patient A indicated, she has 86kg and her height is 165cm, thus she has more weight than her height permissible, according to National Health Service (NHS) the ideal healthy weight range for her height should be between 50.4kg to 68.1kg (National Health Service, 2018). According to WHO the best method to check obesity is Body Mass Index (BMI), if a Body Mass Index more than or equal to 30 is considered as obesity, as patient A who has 31.5 BMI which indicate that she is obese because she has more than 30 BMI (World Health Organization, 2021).

Obesity develops gradually from poor diet and lifestyle choices, as patient A is eating and drinking more energy food and drinks, such as meats, chips, fries, and alcohol (3 to 6 unit a day), which contains a lot of calories without nutritional benefits without doing any type of physical activity, such as exercises, so she is taking more energy than her body burns, and that energy is stored as body fat. Also, genetic influence is one of a risk factors for obesity, whereby there are 25–70% of the variation of genetic defects inherited from the parents that can influence an individuals' body ability turns food into energy and behaviour that predispose to obesity, as patient A indicated that she comes from a family with a history of high cholesterol which can increased risk of her to become obese (National Institute for Health and Care Excellence, 2017).

Being obese affect insulin to carry sugar from the blood to the cells which resultant in high blood sugar that will raise an individual's risk of having type 2 diabetes. Also, Obesity reduced blood flowing to the brain because the higher the BMI, the lower the blood flow to the brain which significantly increases the risk of high blood pressure, as patient A indicated she has high blood pressure of 1180/90 which can lead to the risk of stroke and mental health such as Alzheimer’s disease, depression, and poor self-esteem. And Fat stored around the neck can make the chest wall to become heavier and decreases functional residual capacity (FRC) which will rise the risk of the limitation of expiratory flow and closure of airway that can reduce respiratory well-being and make breathing difficult at night (Sethi, 2020).

However, there are some interventions that can help Patient A to manage with her condition (obesity), this includes eating healthy food by swapping fast, processed, fat food, sugary drinks, and alcohol for plenty of fruits, vegetables, and proteins, and consume alcohol responsible as NHS recommended not to take more than 2 unit of alcohol a day. Also, she must follow balance diet by reducing energy intake by 600 calories a day which is not more 1,400 calories a day. And doing vigorous to intensity exercise, such as walking, running, playing football or netball, cycling, swimming, and dancing, for at least 30-60 minutes a day (National Health Service, 2019).

REFERENCES

National Health Service. (2018). BMI healthy weight calculator. <https://www.nhs.uk/live-well/healthy-weight/bmi-calculator/> (Accessed at 02/08/2021 at 07:00am)

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