TAKE-HOME NOTES:

# Feeling better – Lifestyle management for chronic mental disorders

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In this module we have learned about three risk factors associated with poor physical health: overweight, lack of physical activity and smoking. All three factors are more common in patients with chronic mental disorders than in the general population and may be associated with a tangible reduction of life expectancy.

First we explored potential pharmacological mechanisms of weight gain, disturbances of the glucose and fat metabolism and commonly used dietary interventions and pharmacological options for weight loss. Then we looked at the role of physical activity in regard to weight control and glucose metabolism. We learned about the principles of exercise prescribing, the physiology of aerobic and anaerobic exercises and pre-exercise health screening. Finally, we explored the epidemiology of smoking in patients with chronic mental illness, behavioural and pharmacological strategies for smoking cessation.

**Dietary interventions and pharmacological options for weight loss**

- Many psychotropic drugs are associated with weight gain. Atypical antipsychotics are particularly implicated. Clozapine and olanzapine are the two agents most likely to be associated with insulin resistance and dyslipidaemia.

- Restriction of calorie intake is the most intuitive way of weight control. However, calorie restriction alone will not have the desired effect if the offending drug alters the fat and glucose metabolism so that weight gain can even occur independently of food intake.

- Diets reducing carbohydrate intake or encouraging carbohydrates with a low glycaemic index may be of potential benefit to patients at risk of insulin resistance. However, diets based on the exclusion of food types such as carbohydrates or fats may lead to adverse health outcomes.

- Whereas behavioural programmes have been shown to be of some benefit, specific dieting methods have not been studied systematically in patients with severe mental illness. Orlistat remains the only licensed pharmacological option at present.

- Licensed slimming drugs are used as an adjunct to diet and exercise treatment in obese or overweight patients with associated complications such as type 2 diabetes or dyslipidaemia. Unfortunately, their applicability in patients with mental illness remains limited. Rimonabant has been withdrawn due to concerns about an increased suicide risk. Sibutramine has been withdrawn due to concerns about an increased risk of non-fatal cardiovascular events.

**Physical activity**

- Pre-exercise health screening is used to identify those patients who are at risk of serious damage from physical activity. Health screening is particularly used to identify those patients who are at risk of serious cardiovascular complications including cardiac arrest. This includes patients on medication prolonging the QT interval.

- Aerobic exercises (endurance) are of moderate intensity for a longer time involving many muscle groups. They can lead to overall weight loss, increased cardiovascular efficiency and increase insulin sensitivity. Aerobic activity relies on the oxidative phosphorylation of lipids and glucose.

- Anaerobic exercises (speed) are of high intensity, short duration and often involve few selected muscle groups. They increase strength and reduce body fat. They rely on immediate ATP generation and non-oxidative glucolysis.

- Physical activity should be paced and overtraining avoided.

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**Smoking**

- Treatment strategies for patients with mental illness do not differ from strategies for the general population and comprise behavioural and pharmacological options.
- Licensed pharmacological treatments include nicotine replacement, bupropion, a noradrenaline-dopamine reuptake inhibitor, which is also a nicotine receptor antagonist, and varenicline, a partial nicotine agonist.
- For both agents, bupropion and varenicline, black box warnings have been added concerning the risk of serious neuropsychiatric side effects including depression, suicidal ideation, suicide attempt and completed suicide. Recurrences of mania and psychosis may occur in both drugs. Additionally, bupropion decreases the seizure threshold.
- In patients with depression, nortripytiline may be an alternative. However, nortryptiline is not licensed for smoking cessation. Co-administration with other antidepressants may increase the risk of serotonin syndrome.
- Patients need to be made aware that smoking cessation may be associated with weight gain and offered appropriate advice on how to prevent this.
- Patients may require more intensive and more continuous psycho-educational support during treatment of smoking cessation than the general population.

**Reflection**

(1.2) Which factors are important to consider in Peter's case?

(1.4) Can you think of mechanisms of action by which psychotropic drugs may increase body weight?

(1.15) Can you think of different pharmacological interventions to counter weight gain?

(2.1) Think of the benefits of regular physical activity. Are there any associated risks?

(2.4) Can you think of medications – psychotropic and other – associated with QT prolongation?

(2.9) There are generally two types of exercise: aerobic and anaerobic exercise. Can you give examples for both?

(3.2) Which factors are important in Susan's case?

(3.13) Can you think of undesirable side effects of bupropion, varenicline and NRT in the treatment of nicotine addiction in patients with schizophrenia, bipolar affective disorder and depression?

**Tables and figures**

(1.5) Mechanisms of weight gain

(1.12) Comparison of four diets: weight loss at 28 weeks

(1.14) Foods according to their glycaemic index

(1.16) Pharmacological interventions for weight gain

(1.17) Licensed slimming drugs: limitations

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[(1.18) Slimming drugs recently withdrawn, suspended or recommended for suspension by the European Medicines Agency]

[(2.6) Examples of drugs associated with QT prolongation]

[(2.10) Aerobic and anaerobic exercise]

[(3.8) Interventions for smoking cessation – non-pharmacological approaches]

[(3.10) Interventions for smoking cessation – pharmacological approaches]

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