Lecture Notes:

- Stress: The physical and psychological response to internal or external stressors.
- **Stressors:** Specific events or chronic pressures that place demands on a person or threaten her well-being.
- **Health psychology:** The subfield of psychology that examines the relationship between physical health and psychological health.
- There is a high correlation between psychological stress and physical illness.
- Not all stressors are equal in predicting how our bodies will react to them. We can
 examine how stressors affect our health using stress scales. These stress scales
 operate by summing points for various stressful life events.
- There are two major stress scales that we'll discuss in this course:
 - 1. The Holmes and Rahe Stress Scale:
 - a. The more famous stress scale.
 - b. Created for middle aged adults.
 - c. The most common stress scale was developed by psychiatrists, Thomas Holmes and Richard Rahe. They asked patients to self-report stressful events (stress scale). Then, they compared their scores on stress scale to their actual medical records.
 - d. The stress scale has been tested for validity in multiple populations, but some stressful events are more or less stressful in some cultures than in others.

2. College Undergraduate Stress Scale (CUSS):

- Most of the stressors listed on a stress scale are one-time stressful events.
- Many individuals suffer from **chronic stressors** which are sources of stress that occur continuously or repeatedly.
- Chronic stress often causes greater physical harm than one-time stress.
- Repeated long-term stress changes the way that our body deals with stressors.
- **Stress** is an evolved response to threat.
- Normally, when we're stressed, our adrenal glands are activated.
 E.g. Increase heart and respiration rate → more oxygen in the bloodstream.
 E.g. Increase in cortisol → more glucose in the bloodstream.
 These processes allow us to flee danger.
- Repeated, chronic stress causes a **constant stress response** and after a while, our body loses the ability to cope with the heightened level of physiological response. This constant stress response can result in **general adaptation syndrome**:
 - 1. Alarm phase: Initial, healthy reaction to stress.
 - 2. Resistance phase: Body adapts to high stress. Non-stress-related processes are shut down.
 - 3. Exhaustion phase: Body cannot cope with other processes being shut down. Illness, injury, or death can occur.



- One of the biggest reasons for individual differences in stress response is control. We are more stressed by events that we cannot control. This is true even if we don't exercise that control.
- An experiment done in 1972 by Glass and Singer placed individuals into a room and asked them to complete difficult puzzles. One group did so with intermittent, unpredictable loud noise that they could not control while another group did so with intermittent, unpredictable loud noise that they could turn off, but did not. The group without control suffered in performance. Our perceived control of a stressor affects our stress response.
- Another big reason for individual differences in stress response is how we appraise stressors. There are 2 ways we can appraise stressor.

Primary appraisal is determining if a stimulus is a threat.

Secondary appraisal is determining if you can handle the stressor.

If you have the coping mechanisms to deal with it, then it causes less stress. Otherwise, it's a stressful event.



- There are 4 coping mechanisms that we will look at:

1. Repressive Coping:

- We engage in **repressive coping** when we avoid situations or thoughts that remind us of a stressor.
- E.g. Going to sleep or watching Netflix when we're stressed.
- Often this includes artificially positive viewpoints.
- Some people are better repressors than others, so this works well for them. However, if repression is challenging, it can make the problem worse.

2. Rational Coping:

- This is facing the stressor and working to overcome it.
- For many people, rational coping works better than repressive coping does.
- Rational coping is the opposite of repressive coping.
- There are 3 parts to rational coping: Acceptance: Coming to realize that the stressor cannot be wished away. Exposure: Attending to the stressor, seeking it out. Understanding: Working to find the meaning of the stressor in your life.

3. Reframing:

- Also called **cognitive restructuring** or **cognitive reframing**.
- This is when we change the way that we think about a stressor.
- One particular type of reframing is **stress inoculation training**, which is developing repetitive, positive ways to think about a stressor.

4. Mediation:

- Involves the absence of thought, or focusing on one unstressful thought. This is called the **practice of intentional contemplation**.
- There are many different meditation practices, but most involve at least some silence.
- **Mindfulness meditation** is one type of meditation focused on immediate experience, rather than faraway thoughts, including stressors.
- Meditation changes the way that our brains are structured. There is increased myelination and increased connectivity between areas of the brain responsible for rational thought and areas responsible for emotion.
- Expert meditators may be better able to regulate their emotions.
- Active health risk increasing behaviours require the individual to do the behaviour.
- **Passive risk increasing behaviours** involve the individual not doing a recommended/health behaviour.
- Health outcomes are frequently modified by both of these factors.
- Smoking causes 5 Million deaths per year. It is the leading preventable cause of death in North America. About 1000 Canadians die each year from secondhand smoke. In 2012, about 20% of Canadians smoke.
- Obesity increases the risk of mortality and morbidity. It is becoming more prevalent in Canada.
- According to the WHO, 3 million people die per year from vaccine preventable diseases and 1.5 million of these deaths are children under the age of 5.
- 24-45% of Canadians vaccinate for the flu each year. There are 302 deaths from the flu per year in Canada. There are 28-55K cases of people getting the flu per year over the last 3 years.

- The worst behaviour for health is not exercising.
- Some factors why people make poor health choices include:
 - Media Exposure
 - Peer Pressure
 - Environmental Exposure
 - Science communication
 - Resource access
 - Image based warnings>text only warnings
 - Media
 - SES
 - Heuristics
- Evidence Based Medicine/Care is the best available evidence. It uses clinician experience and patient choice and beliefs.
- Patient centered care is about empathy (sharing their experience as if it is ours, though it is not), acceptance (having respect and warmth for another as a human, regardless of who they are/what they've done) and genuineness (being ourselves without front or façade. Essential for building trust).
- Theory of Change (Transtheoretical Model):
 - Precontemplation
 - Contemplation
 - Preparation/determination
 - Action/Willpower
 - Maintenance
 - Relapse

Textbook Notes:

- Module 14.1 Behaviour and Health:

- Smoking:
- One of the most widely studied health behaviours is tobacco use.
- Smoking cigarettes causes life-shortening health problems including lung, mouth, and throat cancer, heart disease, and pulmonary diseases such as emphysema.
- Recent reports indicate that 21% of all deaths in Canada over the past decade were due to smoking-related illnesses.
- The life expectancy of the average smoker is between 7 and 14 years shorter than that of a nonsmoker. This number depends upon how much, and for how long, a person smoked. Quitting by the age of 30 greatly reduces the likelihood that a person will die of smoking-related cancers.
- Tobacco use causes an estimated 5 million deaths worldwide each year.
- Cigarette smoking is the leading preventable cause of death in North America.
- One in five Canadian deaths is due to cigarette smoking.
- Close to 1000 Canadians die each year as a result of second-hand smoke.
- Efforts to Prevent Smoking:
- In the 1990s, several countries added written warnings to cigarette packages in an attempt to reduce smoking rates. Unfortunately, these labels have had relatively little effect.
- In 2001, Canada became the first country to require companies to include graphic pictorial warnings on cigarette packages. These images included rotting teeth, black lungs, diseased hearts, and sick children. They were also paired with a verbal message. Researchers found that the image-based warnings were much more likely to be noticed

by both smokers and non-smokers than were text-only messages. They were also more useful than text-only messages in educating people about the risks associated with smoking.

- Image-based warnings on cigarette packages are now used in over 30 countries.
 Numerous studies have shown that these warnings are quite memorable and are having the desired effect.
- Defining Healthy Weights and Obesity:
- When discussing weight, psychologists and healthcare workers must also factor in a person's height. To account for height differences, people use the **body mass index** (BMI), a statistic commonly used for estimating a healthy body weight given an individual's height.
- The BMI is calculated by dividing the person's weight (kg) by the square of the person's height (in metres).
- E.g. If a person were 180 cm tall and weighed 100 kg, their BMI would be 100/1.8². The outcome of this equation is 30.9.
- The BMI is used to screen people for weight categories that indicate whether they are considered normal weight, underweight, overweight, or obese. Someone in the healthy weight range would have a BMI between 18.5 and 24.9. People with a BMI that is less than 18.5 are considered to be underweight and may be at risk of having an eating disorder. A BMI of 25–29.9 is considered overweight, and a BMI over 30 is considered obese.
- Genetics and Body Weight:
- Twin, family, and adoption studies all suggest that genes account for between 50% and 90% of the variation in body weight.
- Genetic factors influence body type, metabolism, and other physiological processes that contribute to body weight and size.
- Some researchers have suggested that genes contribute to the development of a **set point**, a hypothesized mechanism that serves to maintain body weight around a physiologically programmed level.
- The set point is a relatively small range encompassing 10% to 20% of one's weight. Your initial set point is controlled by genetic mechanisms, but your actual weight can be modified by environmental factors, namely, what and how much you eat.
- The Sedentary Lifestyle:
- Although there are number of activities that could increase the likelihood of someone being obese, data from the 2007 Canadian Community Health Survey (CCHS) suggest that television is the biggest culprit.
- Social Factors:
- In addition to genetics and activity levels, obesity rates are also affected by social factors, including influences from one's family. Similarities in body weight among family members are naturally influenced by what and how much they are eating. What children eat is largely based on what their parents provide and allow them to eat, and eating patterns developed in childhood are generally carried into adulthood.
- Furthermore, food advertisements trigger eating.
- Psychosocial Influences on Health:
- The environments where we work, live, and play and the people with whom we interact influence both our physical and mental health.

- Poverty and Discrimination:

- Health and wealth increase together, and it appears that socioeconomic factors have numerous positive and negative effects.
- People who live in affluent communities not only enjoy better access to healthcare, but also have a greater sense of control over their environments and have the resources needed to maintain a lifestyle of their choosing.
- Individuals who lack this sense of control live in circumstances that can compromise their health.
- People who experience poverty, discrimination, and other social stressors have higher incidences of depression, anxiety, and other mental health problems.
- Furthermore, health problems are magnified by stress. Heart disease is prevalent in socioeconomically disadvantaged populations, and children who experience adverse socioeconomic circumstances are at greater risk for developing heart disease in adulthood. This relationship likely reflects the compound effects of stress, as well as the poorer diet that is often found among individuals residing in communities of low socioeconomic status.
- Discrimination is another stressor that can compromise both physical and mental health. This kind of stressor is particularly problematic because it is often uncontrollable and unpredictable. Being a target of prejudice and discrimination is linked to increased blood pressure, heart rate, and secretions of stress hormones, which when experienced over long periods of time compromise physical health.
- Family and Social Environment:
- **Social resilience**, the ability to keep positive relationships and to endure and recover from social isolation and life stressors, can protect individuals from negative health consequences of loneliness and social isolation.
- Marriage is typically the primary social relationship that people establish and has been shown to have long-term health benefits. However, marriage can also be a considerable source of stress.
- Social Contagion:
- The social groups that we belong to can also have a large effect on our health-related behaviours. Scientists have found that unhealthy behaviours such as smoking or having a poor diet spread throughout one's social group.
- **Social contagion** is the often subtle, unintentional spreading of a behaviour as a result of social interactions.
- Module 14.2 Stress and Illness:
- **Stress** is a psychological and physiological reaction that occurs when perceived demands exceed existing resources to meet those demands.
- What Causes Stress?:
- **Appraisal** refers to the cognitive act of assessing and evaluating the potential threat and demands of an event.
- These appraisals occur in two steps. First, the individual perceives a potential threat and begins the **primary appraisal** by determining if a stimulus is a threat. If the answer is no, then the individual will not experience any stress. But, if the answer is yes, the individual will experience a physiological stress reaction as well as an emotional reaction. As these events unfold, the secondary appraisal begins. Here, the individual determines if they can handle the stressor. If the individual thinks they can handle the stressor, they will not feel much stress. Otherwise, the physiological and emotional reactions to the stress will continue.

- Stress and Performance:

- Some level of stress can actually be helpful. Without it, the motivation to perform can decline.
- Research found that the link between stress and performance could vary with the task being performed. Researchers noted that stress has positive effects on performance when the tasks being completed are relatively simple, but, if a task is complex, stress will harm performance.
- Importantly, the stress levels associated with these graphs are not the same for everyone. Everyone has an individual zone of optimal functioning (IZOF), a range of emotional intensity in which he or she is most likely to perform at his or her best.
- Physiology of Stress:
- The **fight-or-flight response** is a set of physiological changes that occur in response to psychological or physical threats.
- The **general adaptation syndrome (GAS)** is a theory of stress responses involving stages of alarm, resistance, and exhaustion.
- As GAS illustrates, a stressful event first elicits an alarm reaction. Alarm consists of your recognition of the threat and the physiological reactions that accompany it, including increases in blood pressure, muscle tension, heart rate, and adrenaline release. As the stressful event continues, the individual enters the second part of this adaptive response, known as resistance. Resistance is characterized by an individual using his or her physical and mental resources to respond to the stressor in an appropriate way. However, a person can't maintain this level of energy use forever. The third and final stage of the GAS is often referred to as exhaustion. This occurs when the stressful experience depletes your physical resources and your physiological stress response, and thus your ability to cope, declines.
- The Stress Pathways:
- The nervous system consists of the central nervous system (brain and spinal cord) and the peripheral nervous system, which includes the ANS. In response to stress, the hypothalamus stimulates part of the ANS known as the sympathetic nervous system, which then causes the inner part of the adrenal glands known as the adrenal medulla to release epinephrine and norepinephrine. These chemicals then trigger the bodily changes associated with the fight-or-flight response.
- Another physiological system involved in the stress response is the hypothalamic-pituitary-adrenal (HPA) axis, a neural and endocrine circuit that provides communication between the nervous system (the hypothalamus) and the endocrine system (pituitary and adrenal glands).
- When you perceive that you are in a stressful situation, the hypothalamus and pituitary gland work together to stimulate the release of **cortisol**, a hormone secreted by the adrenal cortex that prepares the body to respond to stressful circumstances. Cortisol may stimulate increased access to energy stores or lead to decreased inflammation.
- Oxytocin: To Tend and Befriend:
- Researchers have suggested that whereas men are more likely to react to stress or threats with a fight-or-flight response, women are more likely to have a more social tend-and-befriend response.
- The tend-and-befriend reaction may be promoted by the release of **oxytocin**, a stress-sensitive hormone that is typically associated with maternal bonding and social relationships. Oxytocin influences a number of behaviours including the contraction of

the uterus when a woman is in labour, romantic attachment, social bonding, trust, wound healing, and orgasm.

- Working the Scientific Literacy Model: Hormones, Relationships, and Health:
- Social relationships can be a major source of both positive and negative stress, and they can provide a great deal of support during our most stressful times.
- Two hormones, oxytocin and vasopressin, are involved in social behaviour and bonding. Oxytocin has been shown to inhibit activity in the amygdala, a brain region involved with fear and threat responses. It may also prevent the release of cortisol. Vasopressin also has stress-reducing functions. Like oxytocin, the release of vasopressin is controlled by the hypothalamus and pituitary gland, and affects the levels of stress hormones released by the adrenal gland. People with high vasopressin levels tend to report better relationship quality with their spouses. However, oxytocin and vasopressin have health functions that go beyond improving social bonds. Both of these hormones interact with the immune system, specifically to reduce inflammation.
- Stress, Immunity, and Illness:
- **Psychoneuroimmunology** is the study of this relationship between immune system and nervous system functioning.
- Stress also has dual influences on immunity. Acute stressors tend to activate the immune system, whereas chronic exposure to stress generally causes suppression of the immune system.
- Stress, Personality, and Heart Disease:
- In addition to making people more prone to catching viruses, high stress levels appear to put people at greater risk for developing **coronary heart disease**, a condition in which plaques form in the blood vessels that supply the heart with blood and oxygen, resulting in restricted blood flow.
- The **Type A personality** describes people who tend to be impatient and worry about time, and are easily angered, competitive, and highly motivated. In contrast, the **Type B personality** describes people who are more laid back and characterized by a patient, easygoing, and relaxed disposition. Studies have revealed that people who fall in the Type A category are far more likely to have heart attacks than are Type B people.
- People who have a Type A personality also engage in behaviours that compromise physical health, such as drinking large quantities of alcohol, smoking, and sleeping less than people with a Type B personality. Thus, numerous correlated factors may explain the relationship between Type A personality and risk of coronary heart disease. People with Type A personalities are often successful. However, they are also much more likely to experience heart attacks and strokes than are more relaxed, less hostile individuals.
- Stress, Food, and Drugs:
- Stress influences heart functioning in indirect ways as well. Research has consistently shown that people are drawn toward sweet and fatty foods when they are stressed.
- Stress, The Brain, and Disease:
- Although stress is often linked to cardiovascular problems like heart attacks and strokes, its negative effect on the immune system makes stress a factor in other conditions as well. E.g. Stress levels can affect the progression of cancer.
- Module 14.3 Coping and Well-Being:
- Coping:
- **Coping** refers to the processes used to manage demands, stress, and conflict. Coping strategies can include problem-focused coping and emotion-focused coping.

- Positive Coping Strategies:
- **Positive psychology** uses scientific methods to study human strengths and potential.
- Although it may seem difficult to imagine experiencing positive emotions during times of stress, doing something simple like watching a funny movie can actually help you cope with stress and negative life experiences.

- Optimism and Pessimism:

- Closely linked to positive emotions is the concept of **optimism**, the tendency to have a favourable, constructive view on situations and to expect positive outcomes. People who are optimistic tend to initially perceive situations in a positive way and are also more likely to find positive elements in situations.
- In contrast, pessimism is the tendency to have a negative perception of life and expect negative outcomes. These individuals often have what is known as pessimistic explanatory style, which is the tendency to interpret and explain negative events as internally based (i.e., as being due to that person rather than to an external situation) and as a constant, stable quality.
- Pessimism is also often linked with **negative affectivity**, the tendency to respond to problems with a pattern of anxiety, hostility, anger, guilt, or nervousness.
- Resilience:
- **Resilience** is the ability to effectively recover from illness or adversity. Resilient people tend to have one or more factors stacked in their favour.
- **Post-traumatic growth** is the capacity to grow and experience long-term positive effects in response to negative events.
- Biofeedback:
- **Biofeedback** is a therapeutic technique involving the use of physiological recording instruments to provide feedback that increases awareness of bodily responses.
- Meditation and Relaxation:
- Many people report significant benefits by using relaxation and meditation techniques to cope with stress and life's difficult periods. Both techniques are designed to calm emotional responses as well as physiological reactions to stress.
- **Meditation** is any procedure that involves a shift in consciousness to a state in which an individual is highly focused, aware, and in control of mental processes.
- In some types of meditation, the individual focuses his or her attention on a chosen object, such as a point on the wall or a physical sensation like the feeling related to breathing. This technique is known as focused attention (FA) meditation.
- A second type of meditation is open monitoring (OM) meditation. This technique also uses focused attention to train the mind and to reduce the influence of distractions.
- **Mindfulness-based stress reduction (MBSR)** is a structured relaxation program based on elements of mindfulness meditation. The primary goal of MBSR is to help people to cope and to relax by increasing the link between one's body and one's mind.
- Exercise:
- Researchers discovered that the students who engaged in intense exercise had increased levels of dopamine, epinephrine, and brain-derived neurotrophic factor (BDNF), a protein in the nervous system that promotes survival, growth, and the formation of new synapses.
- Perceived Control:
- The most stressful of circumstances are the ones that people have little or no control over.

- **Learned helplessness** is an acquired suppression of avoidance or escape behaviour in response to unpleasant, uncontrollable circumstances.
- Working the Scientific Literacy Model Compensatory Control and Health:
- Many people cope with stressful life events through **compensatory control**, psychological strategies people use to preserve a sense of nonrandom order when personal control is compromised.

Definitions:

- **Biofeedback:** A therapeutic technique involving the use of physiological recording instruments to provide feedback that increases awareness of bodily responses.
- **Body mass index (BMI):** A statistic commonly used for estimating a healthy body weight given an individual's height.
- **Brain-derived neurotrophic factor (BDNF):** A protein in the nervous system that promotes survival, growth, and formation of new synapses.
- **Compensatory control:** Psychological strategies people use to preserve a sense of nonrandom order when personal control is compromised.
- **Coping:** The processes used to manage demands, stress, and conflict.
- **Coronary heart disease:** A condition in which plaques form in the blood vessels that supply the heart with blood and oxygen, resulting in restricted blood flow.
- **Cortisol:** A hormone secreted by the adrenal cortex (the outer part of the adrenal gland) that prepares the body to respond to stressful circumstances.
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- **Meditation:** Any procedure that involves a shift in consciousness to a state in which an individual is highly focused, aware, and in control of mental processes.
- **Mindfulness-based stress reduction (MBSR):** A structured relaxation program based on elements of mindfulness meditation.
- **Negative affectivity:** The tendency to respond to problems with a pattern of anxiety, hostility, anger, guilt or nervousness.
- **Optimism:** The tendency to have a favourable, constructive view on situations and to expect positive outcomes.
- **Oxytocin:** A stress-sensitive hormone that is typically associated with maternal bonding and social relationships.
- **Pessimism:** The tendency to have a negative perception of life and expect negative outcomes.
- **Pessimistic explanatory style:** The tendency to interpret and explain negative events as internally based (i.e., as being due to that person rather than to an external situation) and as a constant, stable quality.
- **Post-traumatic growth:** The capacity to grow and experience long-term positive effects in response to negative events.

- **Psychoneuroimmunology:** The study of the relationship between immune system and nervous system functioning.
- **Resilience:** The ability to effectively recover from illness or adversity.
- Set point: A hypothesized mechanism that serves to maintain body weight around a physiologically programmed level.
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- **Social resilience:** The ability to keep positive relationships and to endure and recover from social isolation and life stressors.
- **Stress:** A psychological and physiological reaction that occurs when perceived demands exceed existing resources to meet those demands.
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