Wintering the Pandemic

Models of Stress

Four Common Ways of Describing Stress

1. Stress as a Response

2. Stress as a Stimulus

3. Stress as a Transaction

4. Stress as a Holistic Health Phenomenon

Stress as a Response

This approach focuses on homeostasis and the “Internal Environment”

Stress as a Stimulus

This approach focuses on stressful life events and other environmental demands which negatively affect our physical health

Stress as Appraisal

This approach focuses on the *perception of threat* in determining whether or not the event is experienced as physiological stress

Stress as a Holistic Health Phenomenon

This approach looks at 6 Dimensions of Wellness and Focuses on over-all functioning in stress management

1. Physical Wellness
2. Social Wellness
3. Intellectual Wellness
4. Emotional Wellness
5. Spiritual Wellness
6. Environmental/Occupational Wellness

Wintering the Pandemic

Stress as a Response Part 1

Four Common Ways of Describing Stress

1. Stress as a Response
2. Stress as a Stimulus
3. Stress as a Transaction
4. Stress as a Holistic Health Phenomenon

Stress as a Response

This approach focuses on homeostasis and the “Internal Environment”

- Walter Cannon and the “fight or flight” response. Internal physiological processes are set into motion automatically
- Hans Selye and the G.A.S. (General Adaptation Syndrome)
- Shelley Taylor (Tend and Befriend Response)

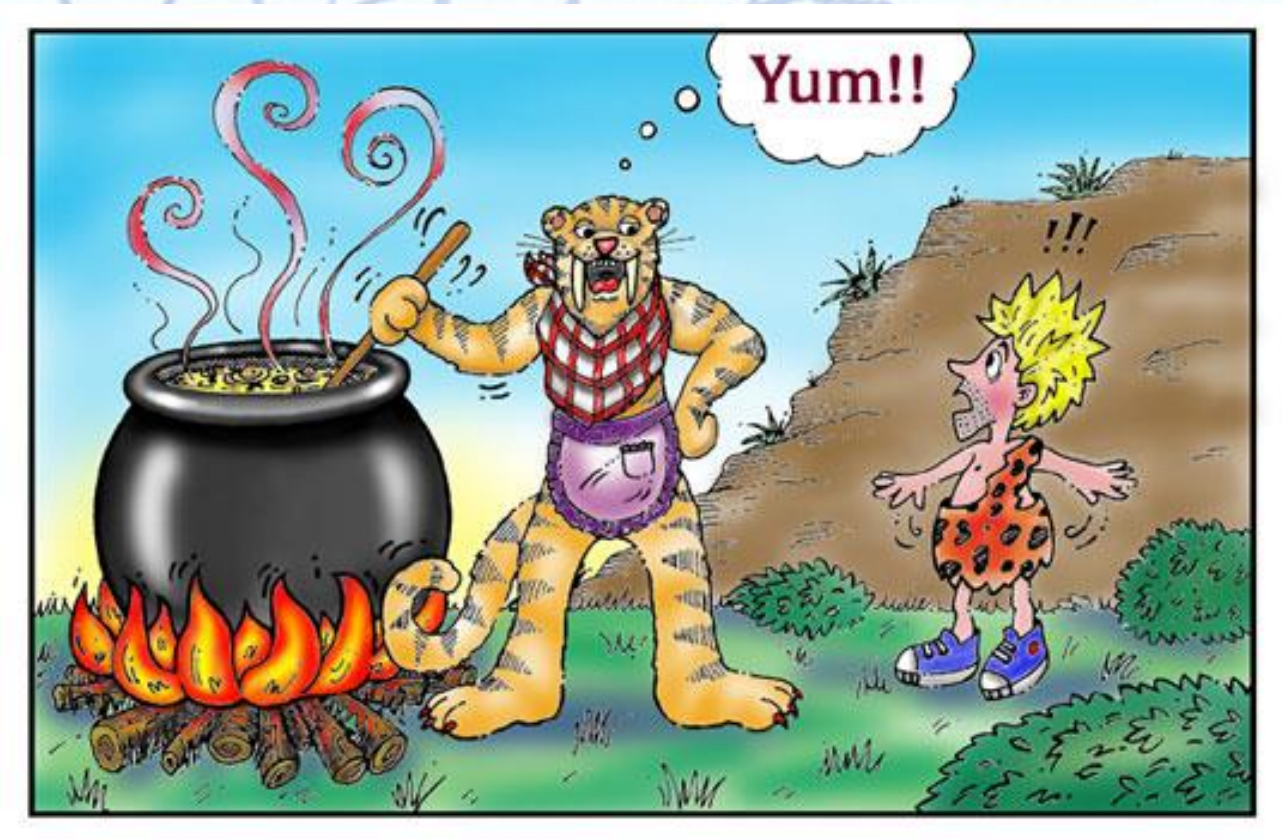
The Stress Response is the Body's 911 System

Acute Stress Response-Fight or Flight (Cannon)

- Panic is perhaps the most intense and the most challenging of all human emotions. What is panic, and how can we best understand it?

- Panic comes from the "fight-or-flight" response that all of us have and that has been key to our survival as a species. In prehistoric times, when a saber-toothed tiger or neighboring cannibal tribe wanted to have us for dinner, the fight-or-flight response kicked in. Instantly, we would have superhuman strength and speed, to either fight or flee.

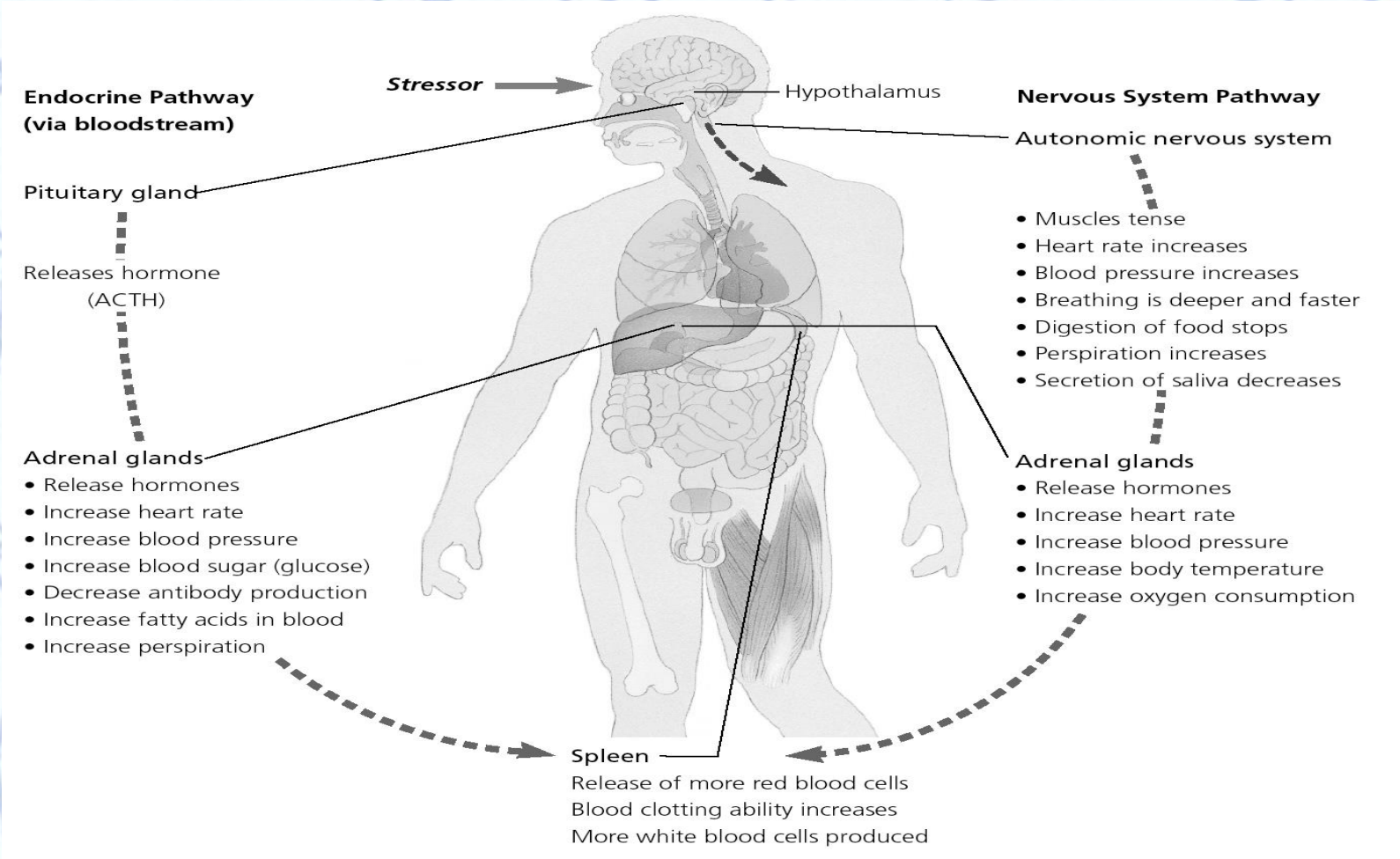
Acute Stress Response-Fight or Flight (Cannon) (continued)



Acute Stress Response-Fight or Flight (Cannon) (continued)

Fight or Flight Reaction (continued)

Fight-or-Flight Reaction



Physical Response to Stressors Fight-or-Flight Reaction

- Nervous system
  - Autonomic nervous system = branch of the peripheral nervous system that controls basic body processes
  - Sympathetic division = division of the autonomic nervous system that reacts to danger or other challenges by accelerating body processes
  - Parasympathetic division = division of the autonomic nervous system that moderates the excitatory effect of the sympathetic division

Autonomic Nervous System

Sympathetic

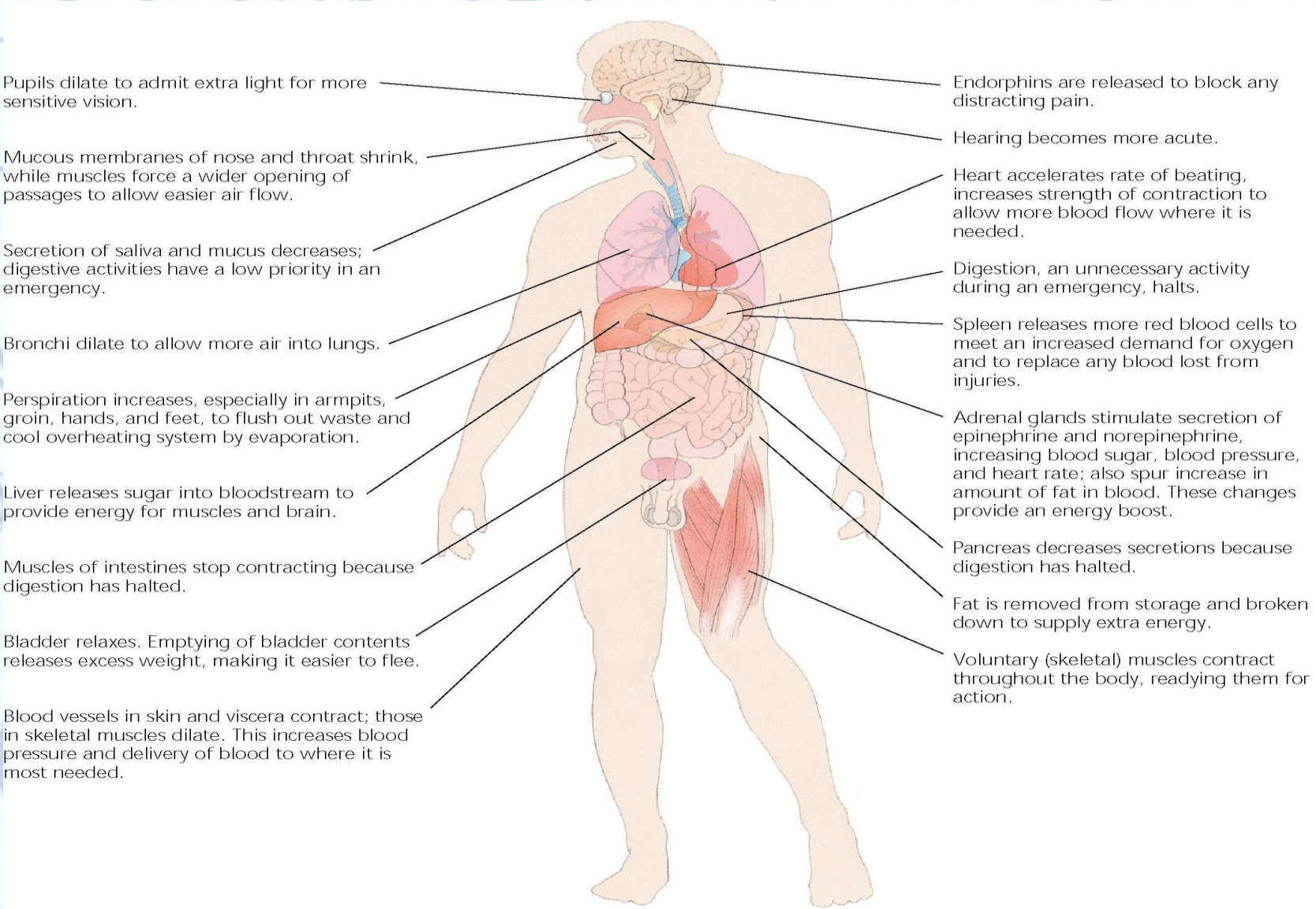
- Increased HR, BP, RR
- Muscles tense
- Brain becomes more alert
- Liver increases blood glucose level
- Digestion inhibited
- Pupils dilate

Parasympathetic

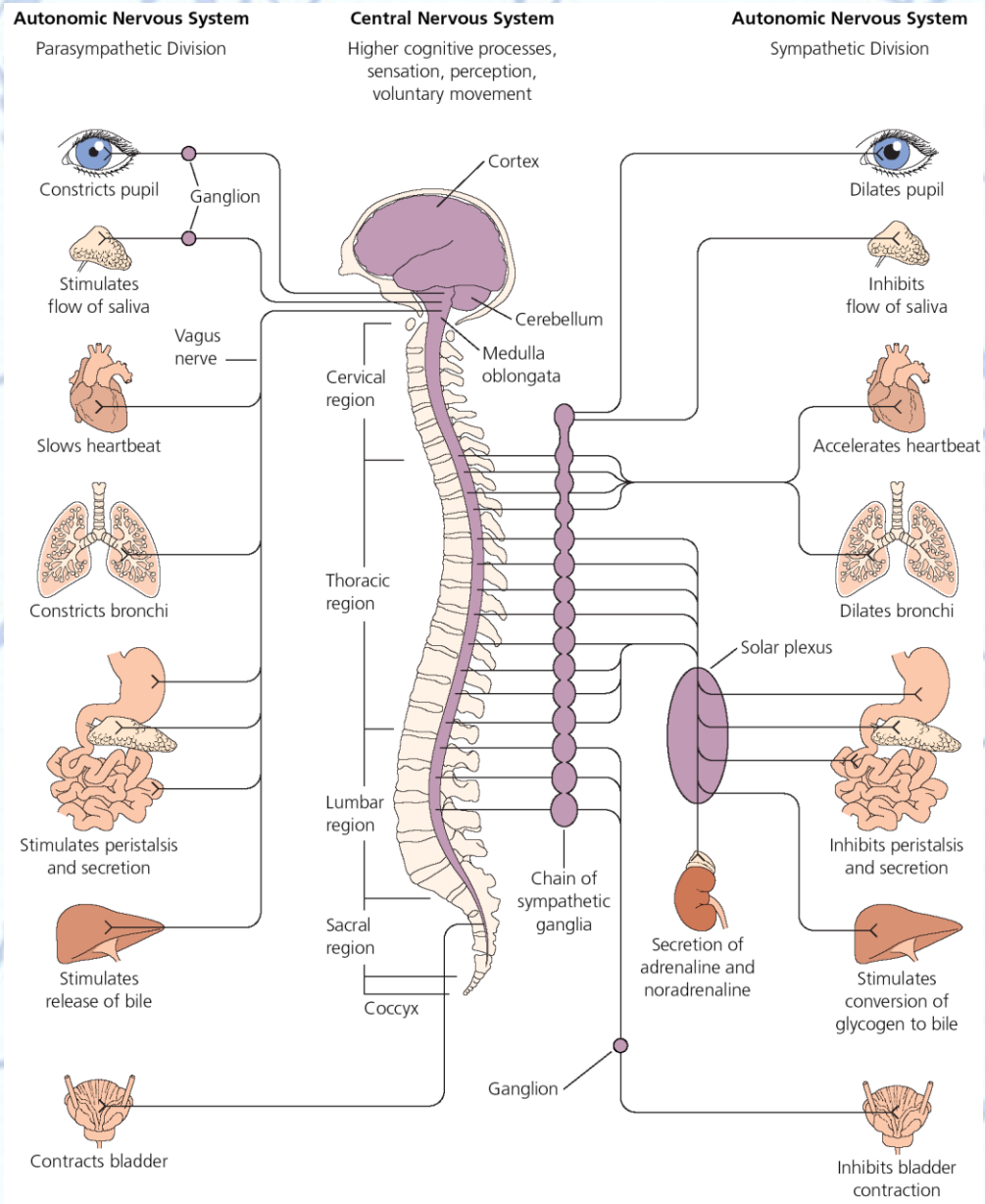
- Muscles relax
- Energy storage
- Promotes growth
- Mediates calm
- Pupils constrict

The Autonomic Nervous System

Structure	Sympathetic Stimulation	Parasympathetic Stimulation
Iris (eye muscle)	Pupil dilation	Pupil constriction
Salivary Glands	Saliva production reduced	Saliva production increased
Oral/Nasal Mucosa	Mucus production reduced	Mucus production increased
Heart	Heart rate and force increased	Heart rate and force decreased
Lung	Bronchial muscle relaxed	Bronchial muscle contracted
Stomach	Peristalsis reduced	Gastric juice secreted; motility increased
Small Intestine	Motility reduced	Digestion increased
Large Intestine	Motility reduced	Secretions and motility increased
Liver	Increased conversion of glycogen to glucose	
Kidney	Decreased urine secretion	Increased urine secretion
Adrenal medulla	Norepinephrine and epinephrine secreted	
Bladder	Wall relaxed Sphincter closed	Wall contracted Sphincter relaxed


Pupils dilate to admit extra light for more sensitive vision.
Mucous membranes of nose and throat shrink, while muscles force a wider opening of passages to allow easier air flow.
Secretion of saliva and mucus decreases; digestive activities have a low priority in an emergency.
Bronchi dilate to allow more air into lungs.
Perspiration increases, especially in armpits, groin, hands, and feet, to flush out waste and cool overheating system by evaporation.
Liver releases sugar into bloodstream to provide energy for muscles and brain.
Muscles of intestines stop contracting because digestion has halted.
Bladder relaxes. Emptying of bladder contents releases excess weight, making it easier to flee.
Blood vessels in skin and viscera contract; those in skeletal muscles dilate. This increases blood pressure and delivery of blood to where it is most needed.
Endorphins are released to block any distracting pain.
Hearing becomes more acute.
Heart accelerates rate of beating, increases strength of contraction to allow more blood flow where it is needed.
Digestion, an unnecessary activity during an emergency, halts.
Spleen releases more red blood cells to meet an increased demand for oxygen and to replace any blood lost from injuries.
Adrenal glands stimulate secretion of epinephrine and norepinephrine, increasing blood sugar, blood pressure, and heart rate; also spur increase in amount of fat in blood. These changes provide an energy boost.
Pancreas decreases secretions because digestion has halted.
Fat is removed from storage and broken down to supply extra energy.
Voluntary (skeletal) muscles contract throughout the body, readying them for action.

Actions of the Sympathetic and Parasympathetic Divisions



SOURCE: Schwartz, S. 2000. Abnormal Psychology: A Discovery Approach. Mountain View, Calif.:

Physical Response to Stressors = Fight-or-Flight Reaction

- Endocrine system = system of glands, tissues, and cells that secrete hormones into the bloodstream; influences metabolism and body processes
- Key chemical messengers during the stress response
  - Norepinephrine = neurotransmitter released by the sympathetic division to increase body functions; increases attention, awareness, alertness
  - Epinephrine = hormone secreted by the inner core of the adrenal gland
  - Cortisol = steroid hormone secreted by the outer layer of the adrenal gland
  - Endorphin = brain secretions that have pain-inhibiting effects

Physical Response to Stressors: Fight-or-Flight Reaction

- Together, the nervous system and the endocrine system prepare the body to respond to a stressor
- The physiological response is the same regardless of the nature of the stressor
- Once a stressful situation ends, the parasympathetic division returns the body to homeostasis—a state of stability and consistency in an individual's physiological functioning
- The fight-or-flight reaction is often inappropriate for dealing with the stressors of modern life, many of which do not require a physical response

Emotional and Behavioral Responses to Stressors

- Emotional responses may include anxiety, depression, and fear

- Behavioral responses are controlled by the somatic nervous system = branch of the peripheral nervous systems that governs motor functions and sensory information; largely under conscious control

The Stress Response Experience as a Whole

Physical, emotional, and behavioral responses are interrelated

Symptoms of excess stress

- **Physical symptoms:** dry mouth, excessive perspiration, frequent illnesses, gastrointestinal problems, grinding of teeth, headaches, high blood pressure, pounding heart, stiff neck, aching lower back
- **Emotional symptoms:** anxiety or edginess, depression, fatigue, hypervigilance, impulsiveness, inability to concentrate, irritability, trouble remembering things
- **Behavioral symptoms:** crying, disrupted eating or sleeping habits, harsh treatment of others, problems communicating, sexual problems, social isolation, increased used of tobacco, alcohol or other drugs

Chronic Stress

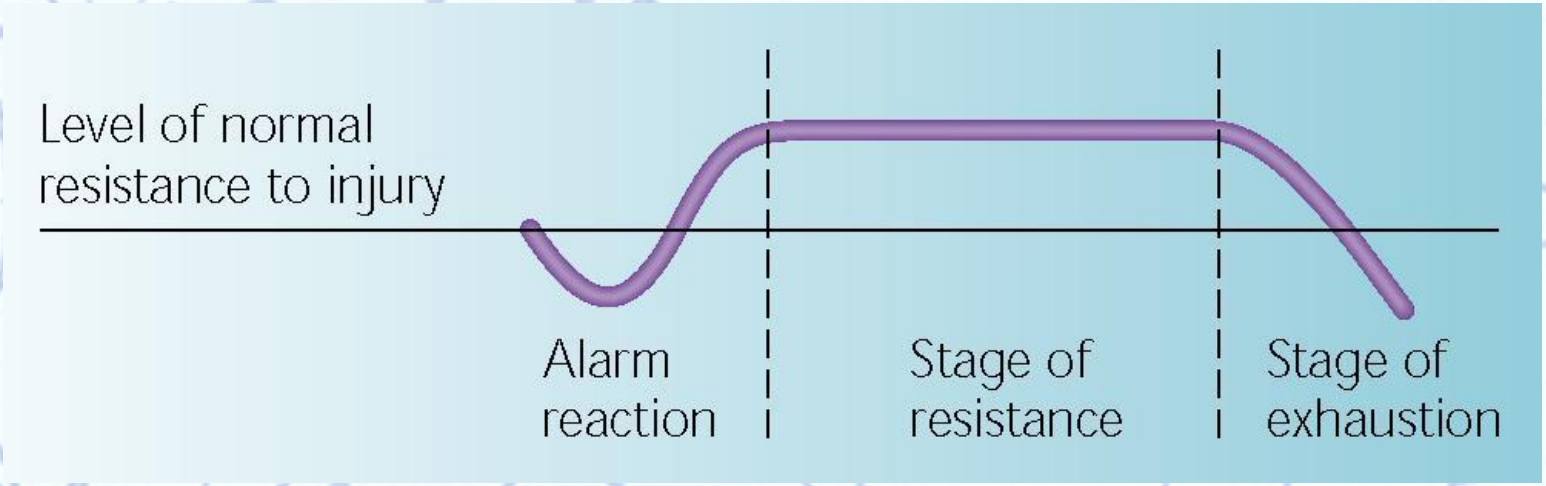
"….stress is the nonspecific response of the body to any demand, whether it is caused by, or results in pleasant or unpleasant conditions."

Hans Selye, MD

The Stress Response-Selye

- The **G**eneral **A**daptation **S**yndrome **(GAS)**
  - Eustress = stress triggered by a pleasant stressor
  - Distress = stress triggered by an unpleasant stressor
- Stages of GAS
  - ***Alarm*** = fight-or-flight reaction
  - ***Resistance*** = new level of homeostasis characterized by increased resistance to stress
  - ***Exhaustion*** = life-threatening physiological exhaustion

General Adaptation Syndrome



General Adaptation Syndrome

Stage I - Alarm Reaction

- The “fight or flight” response which causes you to be ready for physical activity

- However, it decreases the effectiveness of the immune system which makes you more susceptible to illness

General Adaptation Syndrome

.....continued

Stage II – Stage of adaptation

- If stress continues, the body adapts to the stressors it is being exposed to
- If the stressor is starvation, the person experiences a reduced desire for physical activity to conserve energy, and the absorption of nutrients from any food intake is maximized

General Adaptation Syndrome
.....continued

Stage III – Stage of Exhaustion

- Stress persists for a long time
- The body's resistance may be reduced or collapse quickly
- People who experience long-term stress may have heart attacks, severe infections, or chronic pain or illness

Short Term Physical Stress Response Symptoms

- Dry mouth
- Cool skin
- Cold hands and feet
- Increased sweating
- Rapid breathing
- Faster heart rate
- Tense muscles
- Feelings of nausea
- Butterflies in your stomach
- Diarrhea
- A desire to urinate

Long Term Physical Stress Response Symptoms

- Insomnia
- Change in Appetite
- Sexual disorders
- Aches and pains
- Frequent colds
- Feelings of intense and long-term tiredness
- Prone to illness

Links Between the Stress Response and Specific Conditions

- Cardiovascular disease
- Altered functioning of the immune system
- Other health problems
- Behavioural & Emotional Stress Symptoms

The Good News!
Inducing the Relaxation Response..

In times of stress, the relaxation response of the parasympathetic nervous system (PNS) can be induced through a variety of relaxation; breathing exercises and other mindfulness techniques that relax your body and/or your mind.

The Good News!
Inducing the Relaxation Response..

....continued

Throughout this series, we will be practicing some of the most effective and convenient strategies for inducing the relaxation response in your body if you're unable to experience it automatically.

Practice these, and you'll find it easier to relax during times of stress and minimize the amount of time your body & mind spend in its stress response

Some Evidence-Based Relaxation Techniques we will be presenting throughout this course…

- ❑ **Progressive Muscle Relaxation**
- ❑ **Meditation**
- ❑ **Mindfulness Exercises**
- ❑ **Abdominal Breathing**
- ❑ **Visualization**
- ❑ **Yoga Nidra**
- ❑ **Autogenic Training**
- ❑ **Abdominal Breathing**
- ❑ **Music**
- ❑ **….and more**

This week's Relaxation Response exercise….

- √ Progressive Muscle Relaxation
- ❑ Meditation
- ❑ Mindfulness Exercises
- ❑ Abdominal Breathing
- ❑ Visualization
- ❑ Yoga Nidra
- ❑ Autogenic Training
- ❑ Abdominal Breathing
- ❑ Music
- ❑ ….and more

Progressive Muscle Relaxation

Dr. Edmund Jacobson invented the technique in the 1920s as a way to help his patients deal with anxiety.

The technique involves tightening one muscle group while keeping the rest of the body relaxed, and then releasing the tension.

Several studies show that progressive muscle relaxation may help lessen the stress response

……to be continued

Progressive Muscle Relaxation Basics

- **Progressive muscle relaxation.** In this relaxation technique, you focus on slowly tensing and then relaxing each muscle group.
- This can help you focus on the difference between muscle tension and relaxation. You can become more aware of physical sensations.
- In one method of progressive muscle relaxation, you start by tensing and relaxing the muscles in your toes and progressively working your way up to your neck and head. You can also start with your head and neck and work down to your toes. Tense your muscles for about five seconds and then relax for 30 seconds, and repeat.

……to be continued