



# ***Mismatched: Your Brain Under Stress***

## Educational Unit

### **Overview**

People today understand and experience stress in a variety of ways. This concept is not a new one, but one that each of us can relate to and have experienced. Stressors are everywhere, presenting themselves in a variety of forms. We can experience stress at work, at home, at school, and everywhere in between. Stress can be caused by the people around us or created inside our own minds.

Stress is defined as our reactions to change. Stress turns on our 'fight or flight' response creating a physiological response including the release of hormones designed to keep us alert and ready to deal with whatever is happening or about to happen. While this natural response can be appropriate for short-term stress that requires a physical response, we were not designed to continually experience and manage long-term, high-stress situations. Our brains have evolved, but not as fast as our world is changing. This creates a mismatch with our environment. While we cannot always control the causes of our stress, we can control the way we react to it. *Mismatched: Your Brain Under Stress* is designed to help understand stress and learn effective techniques to manage stress, in order to live a more peaceful, productive life.

Produced by The American Institute of Stress, the video series called *Mismatched: Your Brain Under Stress* is a six-part documentary by Justin Smith featuring some of the world's leading experts on stress. Their collective experience stretches from the first experiments done on the mind/body connection to the latest research into unravelling the unconscious mind.

These modules will introduce you to ways to recognize and cope with stress. Each module contains a description, learning objectives, vocabulary terms, discussion topics, a video covering a different topic, and a quiz to check for understanding.



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## **Modules**

### **Module 1: Stress and Health**

Stress has always been a part of life, but is it getting worse? Are we more stressed today than before? Why are we mismatched?

### **Module 2: Mind/Body Connection**

Our mind controls our physical health. Monks in the Himalayan mountains can use their mind to control their body temperature so much so that they are able to dry soaking wet sheets on their backs in a freezing cold room.

### **Module 3: Mind/Body Connection II**

We are all different. What one person finds stressful; another person finds exhilarating. When we do find something stressful, what are the cascade of events that can ultimately destroy our health? This process starts in the brain with our perception of stress.

### **Module 4: Resilience for First Responders**

What are the unique stressors experienced by police officers and other first responders? The tools and techniques discussed here can also apply to all of us.

### **Module 5: Stress is a Funny Thing**

Humor is one of the best ways to combat stress.

### **Module 6: Unlock the Power of the Unfocused Mind**

Focus is great, and necessary, but it is during unfocused times that eureka moments occur.



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## **Introduction to Stress**

The term STRESS, as it is currently used was coined by Hans Selye, MD, PhD, in 1936, who defined it as “the non-specific response of the body to any demand for change” (Selye, 1936).

Stress was generally considered as being synonymous with *distress*. Stress is difficult to define because it is a subjective sensation associated with varied symptoms. In addition, stress is not always a synonym for distress. Certain situations can cause fear and anxiety for some, yet prove highly pleasurable for others, such as riding roller coasters. Winning a race or election may be more stressful than losing it - although this is good stress.

Increased stress increases productivity – up to a point, after which things rapidly deteriorate, and that level differs for each of us.

## **The Effects of Stress on Your Body**

Stress is a natural physical and mental reaction to life experiences. Everyone experiences stress from time to time. For immediate, short-term situations, stress can be beneficial to your health. It can help you cope with potentially serious situations. Your body responds to stress by releasing hormones that increase your heart and breathing rates and ready your muscles to respond. This is often referred to as the *fight or flight* response.

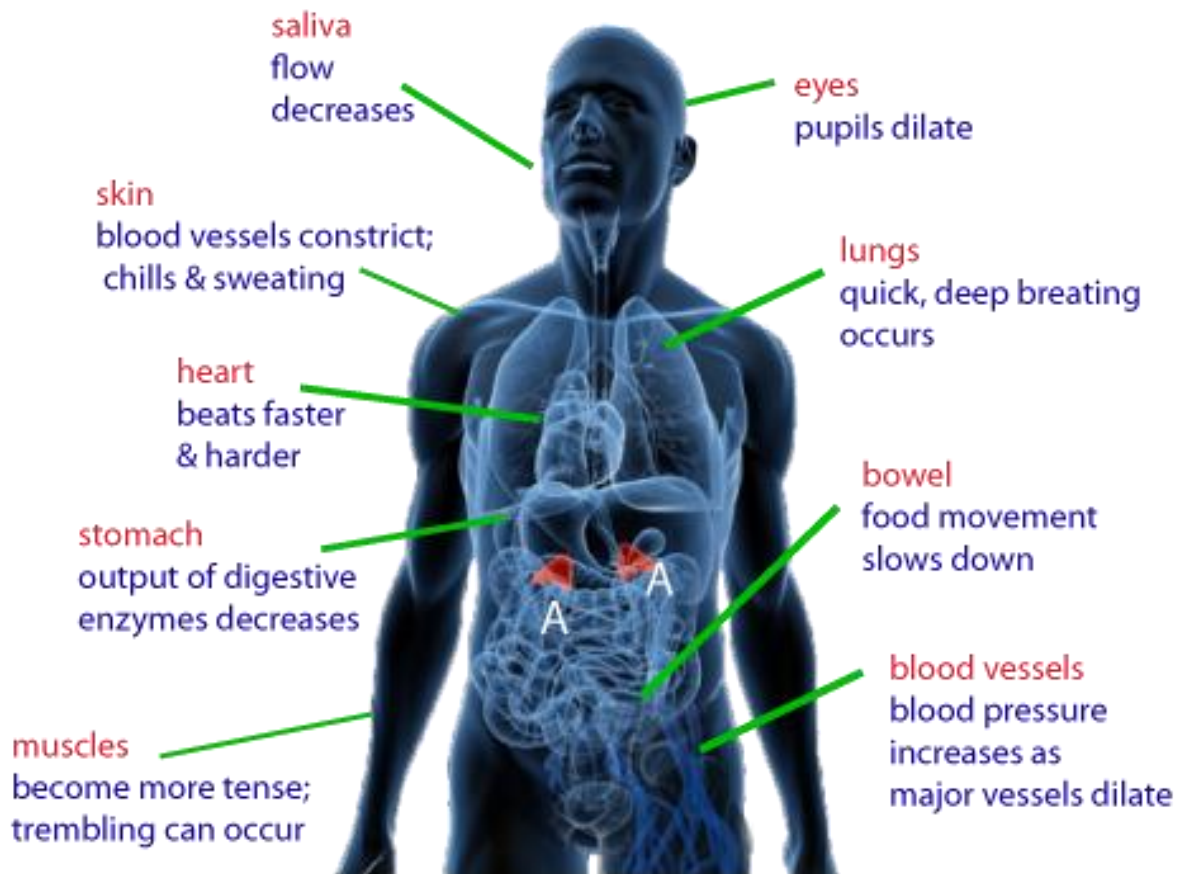
However, if your stress response does not stop and these stress levels stay elevated far longer than is necessary for survival, it can take a toll on your health. Chronic stress can cause a variety of symptoms and affect your overall well-being. Symptoms of chronic stress include:

1. Insomnia
2. Anxiety
3. Depression
4. Irritability
5. Heart palpitations
6. Inability to concentrate
7. Sugar cravings
8. Abdominal fat accumulation
9. Shortness of breath
10. Constipation and/or diarrhea

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## Fight or Flight Response





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## **Learning Objectives**

Upon completing this course, the participant will be able to:

1. Demonstrate a basic knowledge of stress and its effects.
2. Identify the aspects of the 'Fight or Flight' response.
3. Show an understanding of the topics discussed in each module of the documentary *Mismatched*.
4. Discuss the effects of stress on our body and ways to combat stress effectively.
5. Understand the contribution to medical science made by Professor Hans Selye.

## **Vocabulary**

Stress

Anxiety

Chronic

Eustress

Cortisol

Hypothalamus

## **Discussion Topics**

Have you ever experienced situations you felt were stressful?

What emotional response(s) did you experience?

What physical response(s) did you experience?

## **Activities**

**Activity #1: Read and discuss the introduction to stress.**

Participants will read the Introduction to Stress and discuss the questions.



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## **Activity #2: Complete the Pre-Test**

When all 6 modules are completed, you may be asked to take this same test again to assess your learning.

### **Pre-Test/Post-Test: *Mismatched***

Directions: Please circle the correct answer.

- 1. The term STRESS, as it is currently used, was coined by:**
  - a. Hans Selye
  - b. Albert Einstein
  - c. Louis Pasteur
  - d. Jonas Salk
  
- 2. Stress is difficult for scientists to define because:**
  - a. It does not exist
  - b. You cannot feel it
  - c. It is a subjective sensation
  - d. It has no side effects
  
- 3. Many forms of meditation have a common feature at their core – they are designed to break the train of everyday thought facilitated using repetition.**
  - a. True
  - b. False
  
- 4. Continual activation of the HPA axis in modern society is caused by:**
  - a. Acute stress
  - b. Chronic stress
  - c. Consistent Stress
  - d. Obtuse stress
  
- 5. “Stress is literally the \_\_\_\_\_ of life.”**
  - a. Death
  - b. Spice
  - c. Love
  - d. Stress



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- 6. One top sign/symptom of negative stress is:**
  - a. Heart palpitations
  - b. Slow calm breathing
  - c. Lack of anxiety
  - d. A good night's sleep
  
- 7. Yoga is a movement practice with regulated breathing where the breathing helps to still the body and the mind.**
  - a. True
  - b. False
  
- 8. What is a gland that releases the stress hormone?**
  - a. Thyroid
  - b. Adrenal
  - c. Parathyroid
  - d. Hypothalamus
  
- 9. One of the first things you notice when you are stressed is:**
  - a. Muscle tension
  - b. Headache
  - c. Sleepiness
  - d. Earache
  
- 10. People in the workplace are working less and enjoying life more.**
  - a. True
  - b. False
  
- 11. Sleep is major concern for first responders because:**
  - a. They must work nights
  - b. They must work rotating shifts
  - c. They are not as attentive if sleep deprived
  - d. All of the above
  
- 12. The 'Fight or Flight' response is an automatic physiological reaction to an event perceived as:**
  - a. Enjoyable
  - b. Imaginary
  - c. Stressful or frightening
  - d. Calming



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**13. How old is meditation said to be?**

- a. 50 years
- b. 500 years
- c. 1000 years
- d. 7000 years

**14. The part of the body that reacts to stress first is:**

- a. The brain
- b. The heart
- c. The feet
- d. The liver

**15. The Amygdala plays a role in:**

- a. Releasing hormones directly into the bloodstream
- b. Making the heart beat faster when stressed
- c. Processing emotions
- d. Activating the mind/body connection

**16. What are the forms of mindfulness?**

- a. Resistance and exclusion
- b. Alarm reaction and calm reaction
- c. Focus awareness and open monitoring
- d. Adaptation and response

**17. Teaching people how to harness humor and leverage laughter can be an effective strategy for relieving stress in the workplace.**

- a. True
- b. False

**18. How does humor effect stress and pain?**

- a. It increases stress and pain
- b. It decreases stress and pain
- c. It has no effect on stress and pain
- d. Stress and pain stay the same

**19. What is one disadvantage of being focused?**

- a. It makes us more productive
- b. It can be painful
- c. It drains energy
- d. It can cause us to have too much energy





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## **20. What does NOT decrease during Meditation?**

- a. Blood pressure
- b. Heart rate
- c. Oxygen use
- d. Blood sugar levels