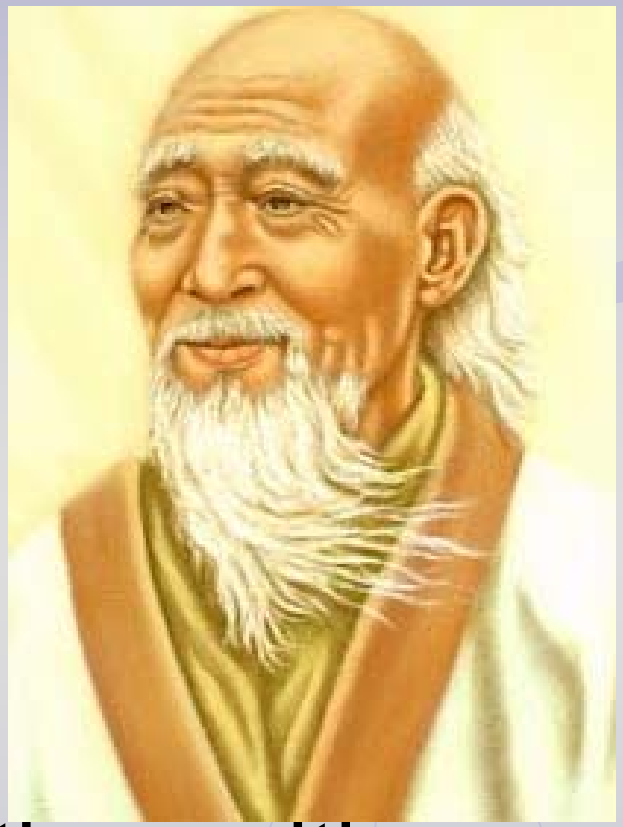
Managing Stress

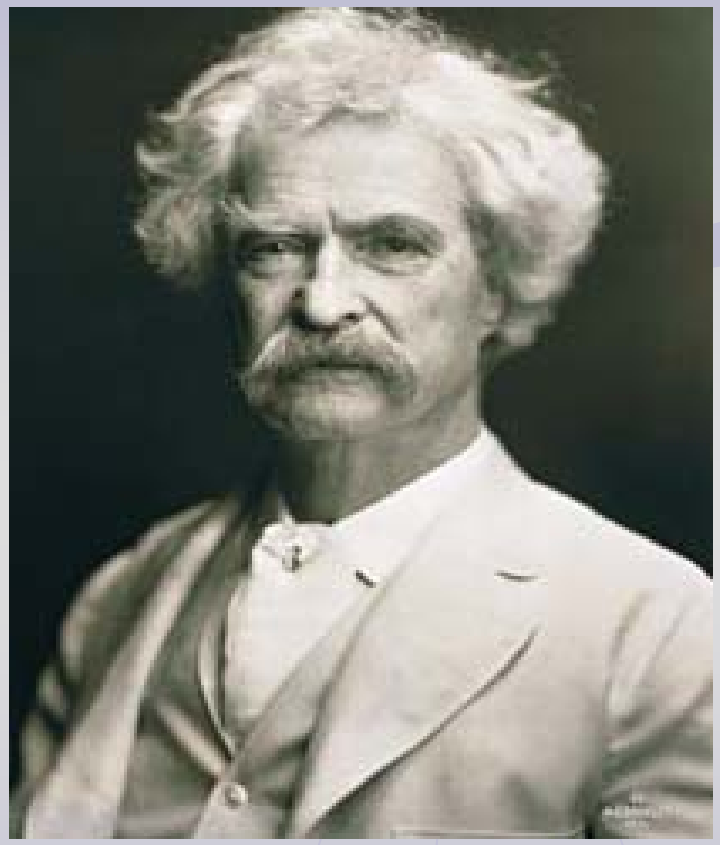
No, no I'm good! Nothing wrong here.

Lao Tzu



Water aspirations with worry and produce weeds that choke the life from your dream. Water them with optimism and solutions and cultivate success.

Mark Twain



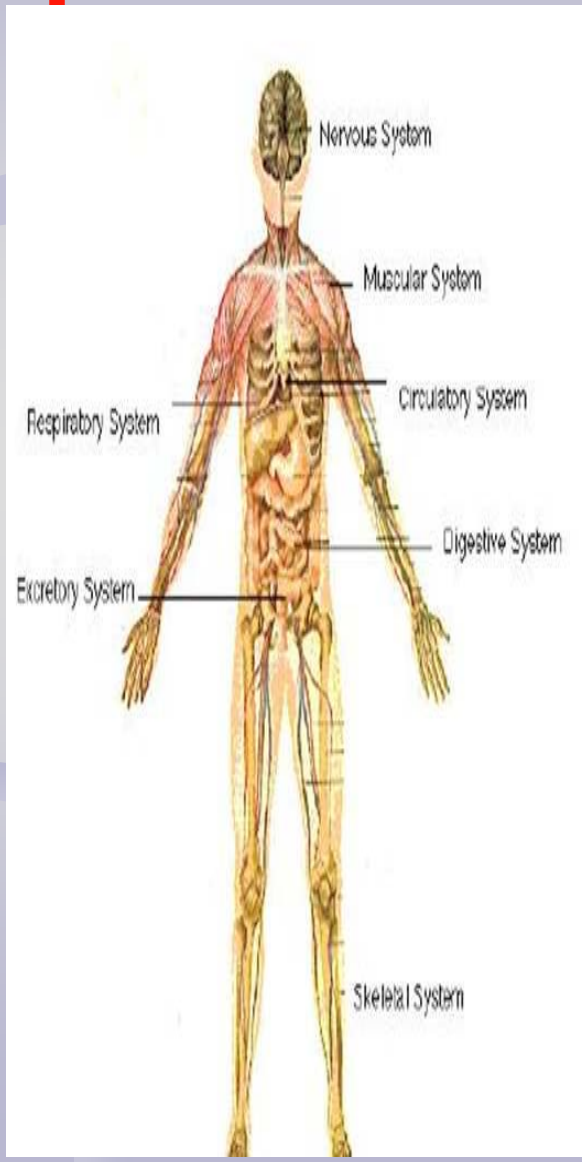
I'm an old man and had many worries, most which never happened.

Goals

- **Body Stress Response**
- **Causes of Stress**
- **Stress Symptoms**
- **Ways to Reduce Stress**

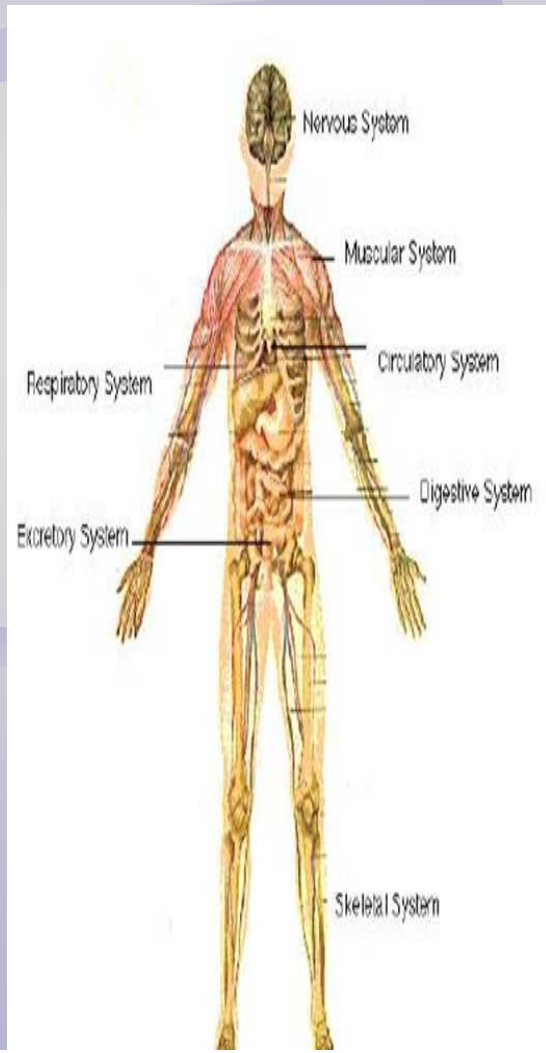
Body Stress Response

- **Prepares for emergency reaction**
- **Fight or Flight**
- **Stress Hormones like adrenaline**
- **Increase heart flow and blood rate**



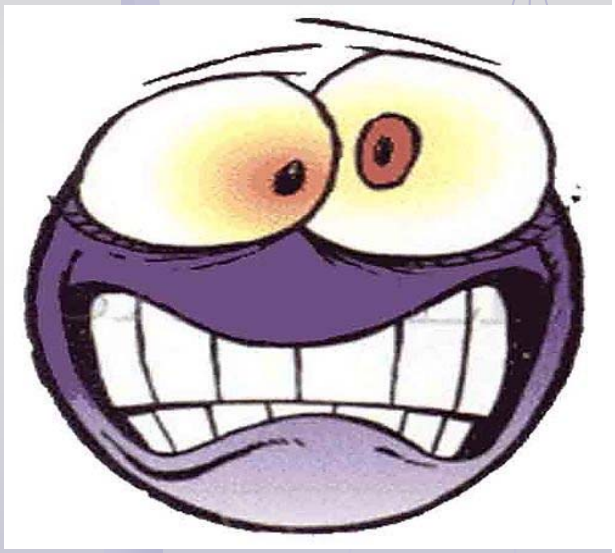
Body Stress Response

- Run and fight better
- Pupils dilate
- Extra energy
- Digestive/Reproductive Systems Slow Down
- Immune system reduced
- Long Term Problems

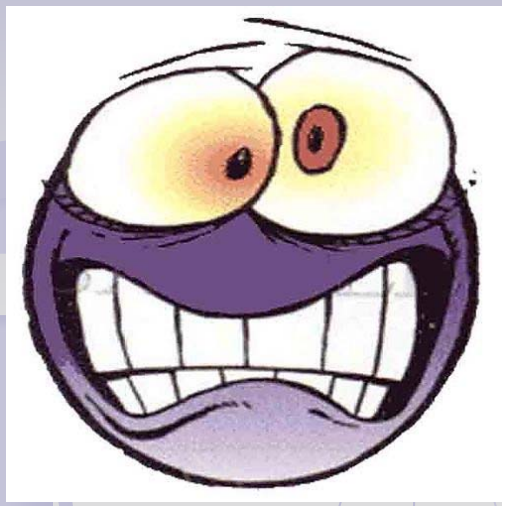


Top Ten Stressors

10. **Changing Schools**
9. **Body Image**
8. **Procrastination**
7. **High Expectations**
6. **Negative Self-Esteem**



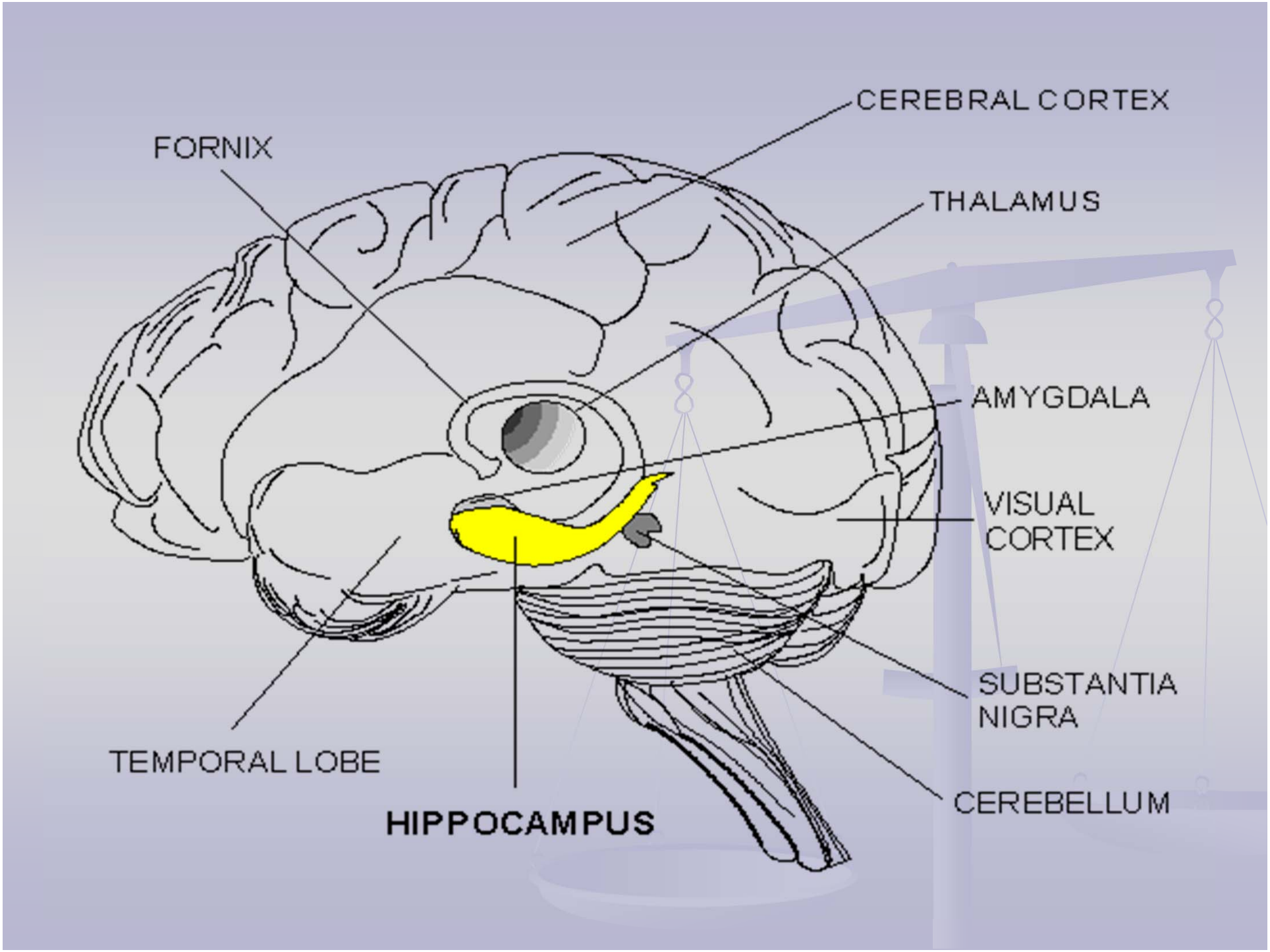
Top Ten Stressors



5. School Performance
4. Problems with Friends
3. Severe Illness/Family Problem
2. Unsafe Living Environment
1. Death of a Loved One

Formative Assessment

- What is the purpose of today's presentation.
  - **Body Stress Response**
  - **Causes of Stress**
  - **Stress Symptoms**
  - **Ways to Reduce Stress**


CEREBRAL CORTEX
FORNIX
THALAMUS
AMYGDALA
VISUAL CORTEX
SUBSTANTIA NIGRA
TEMPORAL LOBE
HIPPOCAMPUS
CEREBELLUM

Attack of the Adrenals

- The ambulance siren screams it's warning to get out of the way. You can't move your car because you're stuck in a bumper-to-bumper traffic jam that reaches as far as the eye can see. There must be an accident up ahead. Meanwhile the road construction crew a few feet from your car is jack-hammering the pavement. You are about to enter the stress zone.
- Inside your body the alert goes out

“Attack of the Adrenals” A Metabolic Story

- Attention all parasympathetic forces. Urgent. Adrenal gland missile silos mounted atop kidneys have just released chemical cortisol weapons of brain destruction. Mobilize all internal defenses. Launch immediate counter-calm hormones before hippocampus is hammered by cortisol."

“Attack of the Adrenals”-A Metabolic Story

- Hormones rush to your adrenal glands to suppress the streaming cortisol on its way to your brain. Other hormones rush to your brain to round up all the remnants of cortical missiles that made it to your hippocampus. These hormones escort the cortisol remnants back to Kidneyland for a one-way ride on the Bladderhorn. You have now reached metabolic equilibrium, also known as homeostasis.

Inside Homeostasis

- When a danger finally passes or the perceived threat is over, your brain initiates a reverse course of action that releases a different bevy of biochemicals throughout your body. Attempting to bring you back into balance, your brain seeks the holy grail of "homeostasis," that elusive state of metabolic equilibrium between the stimulating and the tranquilizing chemical forces in your body.

Inside Homeostasis

- If either the one of the stimulating or tranquilizing chemical forces dominates the other without relief, then you will experience an on-going state of internal imbalance. This condition is known as stress. And it can have serious consequences for your brain cells.

Parasympathetic and Sympathetic Nervous System

- The sympathetic nervous system (SNS) turns on the fight or flight response. In contrast, the parasympathetic nervous system (PNS) promotes the relaxation response.
- Like two tug-of-war teams skillfully supporting their rope with a minimum of tension, the SNS and PNS carefully maintain metabolic equilibrium by making adjustments whenever something disturbs this balance.

Parasympathetic and Sympathetic Nervous System

- The strongmen on these teams are hormones, the chemical messengers produced by endocrine glands. Named after a Greek word meaning "to set in motion," hormones travel through the bloodstream to accelerate or suppress metabolic functions.

Parasympathetic and Sympathetic Nervous System

- The trouble is that some stress hormones don't know when to quit pulling. They remain active in the brain for too long – injuring and even killing cells in the hippocampus, the area of your brain needed for memory and learning. Because of this hierarchical dominance of the SNS over the PNS, it often requires conscious effort to initiate your relaxation response and reestablish metabolic equilibrium.

Getting Back to Normal

- After a perceived danger has passed, your body then tries to return to normal. But this may not be so easy, and becomes even more difficult with age. Although the hyperactivating sympathetic nervous system jumps into action immediately, it is very slow to shut down and allow the tranquilizing parasympathetic nervous system to calm things down.

Getting Back to Normal

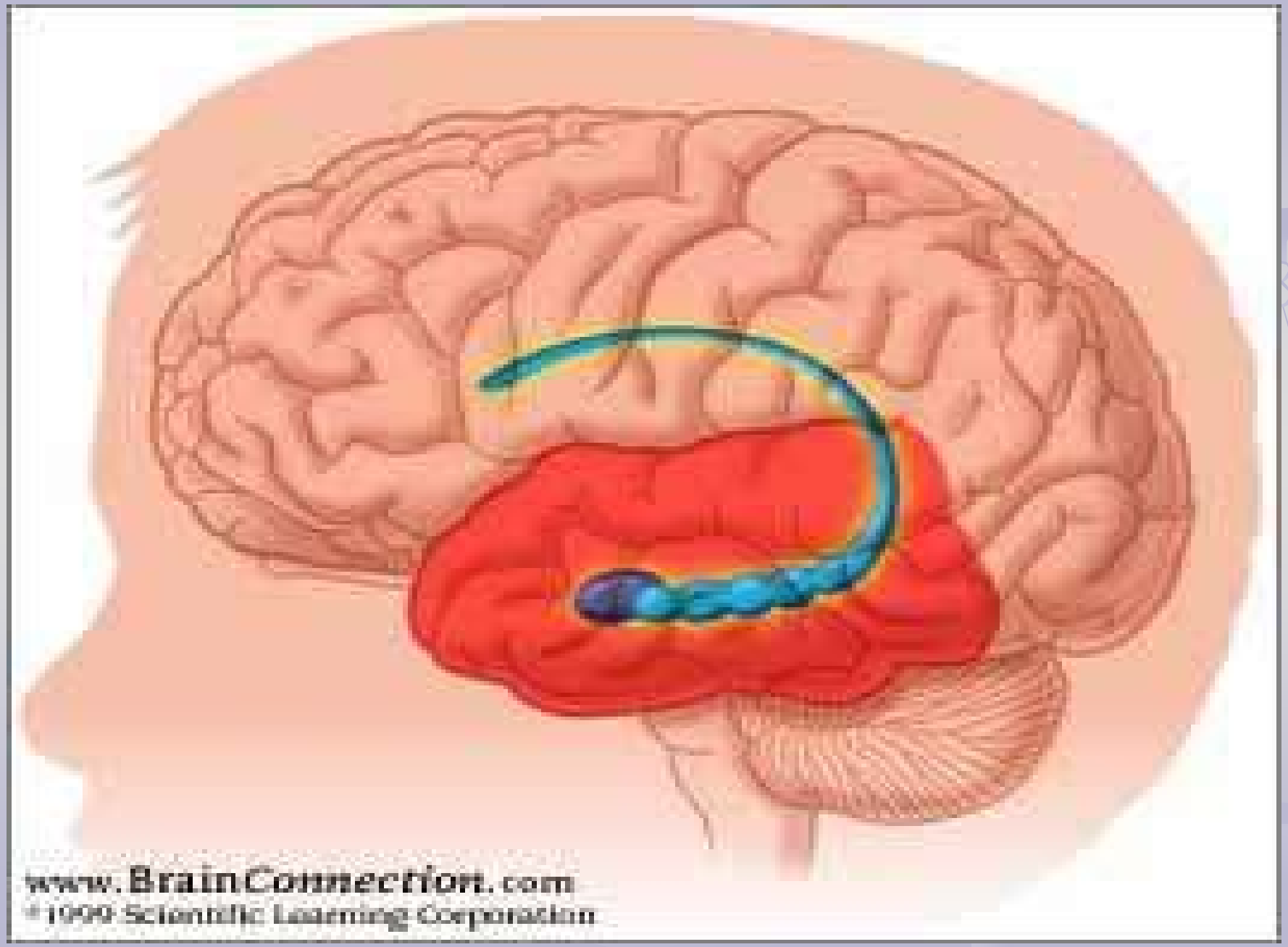
- Once your stress response has been activated, the system wisely keeps you in a state of readiness.

Stress is Not All Bad

- Bear in mind that an appropriate stress response is a healthy and necessary part of life. One of the things it does is to release norepinephrine, one of the principal excitatory neurotransmitters. Norepinephrine is needed to create new memories. It improves mood. Problems feel more like challenges, which encourages creative thinking that stimulates your brain to grow new connections within itself.

Stress is Not All Bad

- Stress management is the key, not stress elimination. The challenge in this day and age is to not let the sympathetic nervous system stay chronically aroused. This may require knowledge of techniques that work to activate your relaxation response.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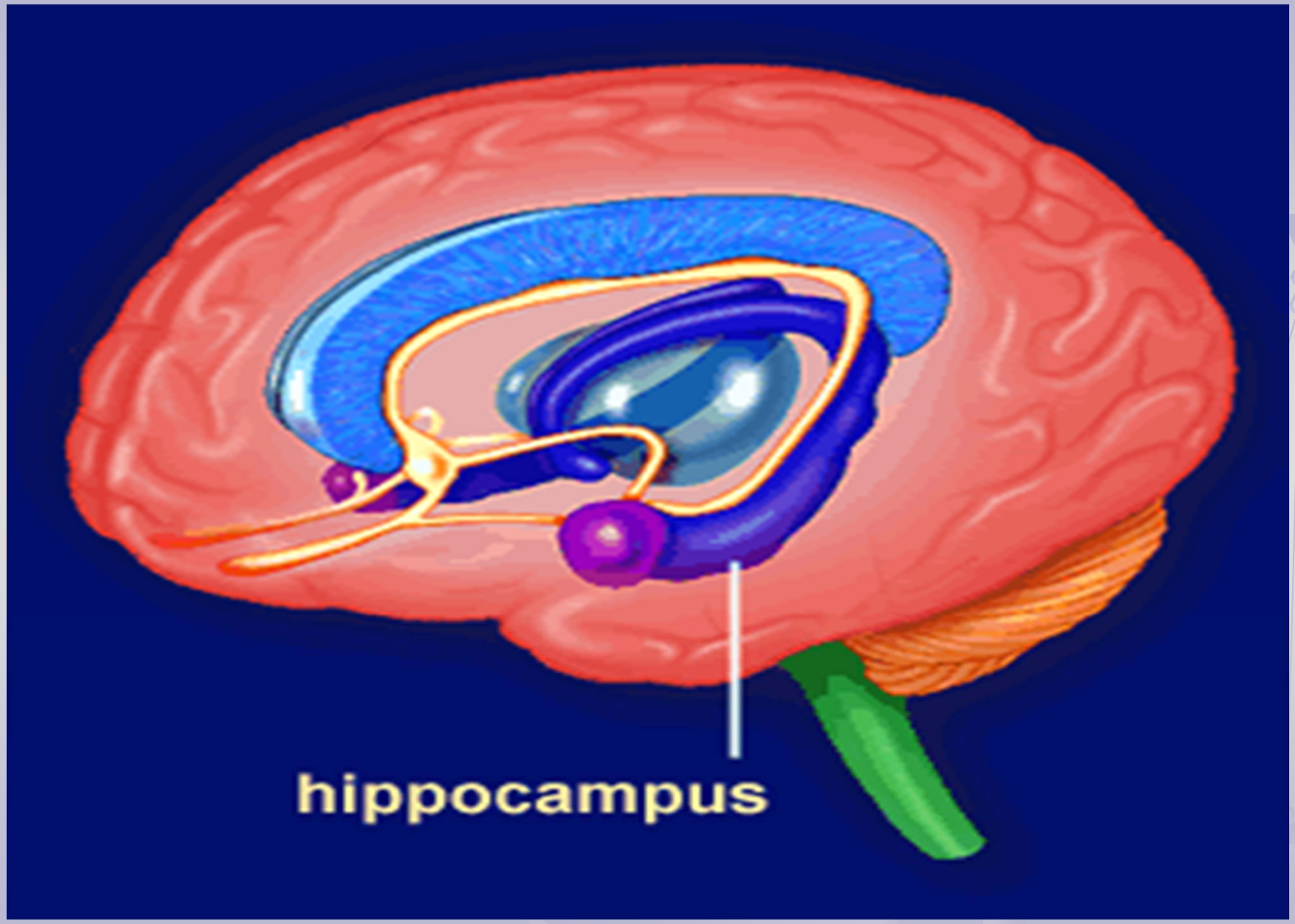
Hippocampus:



http://www.mayoclinic.com/health/meditation/MM00623