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# Chronic Stress and Your Health

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The following document serves as a bulleted note set summarizing the information lectured. Cornerstone Family Chiropractic, LLC is a chiropractic practice focused on family wellness, maintenance of health and prevention of disease through chiropractic, lifestyle changes and education in order to serve as "...the Foundation to Your Family's Health."



**1) Objectives of this information**

- a) Identify stress and identify its natural and intended role
- b) Discover how long-term stress is affecting you and causing major health problems
- c) Identify daily stressors that can contribute to physical, chemical and emotional distress
- d) Uncover methods to strengthen our bodies and mind to better adapt to the stressors we face everyday
- e) ***To think about health in a NEW perspective and know how to make positive changes...***

**2) What is stress?**

- a) Definition developed by pioneer in research, Hans Selye, MD.
  - i) *"Stress is the non-specific response of the body to any demand."*
- b) A stressor is anything positive or negative that urges you to make a change.
  - i) May be emotional, physical or even chemical/nutritional!
- c) Reactions to stressors are always physical, chemical AND emotional.

**3) What is the intended role of stress?**

- a) Stress prepares our bodies for impending doom in order to survive.
  - i) (i.e. being chased by a tiger, preparing for the "big" meeting, etc.)
  - ii) The stress response is a very primitive response with a purpose
- b) The stress response happens to be a very nice gift from Mother Nature!

**4) Two sides to stress...**

- a) Positive Stress
  - i) Short-term stress encouraging alertness, efficiency and productivity
- b) Negative Stress
  - i) Chronic stress lasting a long time will only exhaust the body and rendering it an absence of health and wellness and *occurs way too often!*
- c) There is a direct link between the certain amount of stress and optimal human productivity within the workplace.

**5) World Health Organization Targets Non-Communicable 'Lifestyle' Diseases**

- a) "Lifestyle-related diseases [**cancers, cardiovascular diseases and diabetes**] are now the leading cause of death worldwide, killing 36 million people a year."
  - i) BBC News "WHO targets non-communicable 'lifestyle' diseases." 19 September 2011.  
<http://www.bbc.co.uk/news/health-14970547>
- b) Remember: "lifestyle-related" means **preventable**.
- c) These leading killers are the result of long-term stress and even our world leaders realize this!

**6) Physiology of the Stress Response**

- a) Your nervous system detects a stimulus (i.e. a tiger leaping at you while at the watering hole, thinking about a big meeting tomorrow, etc.)

- b) The nervous system sends the information to your sympathetic (fight/flight) system in the spinal cord.
- c) The sympathetic nervous system directly influences visceral function by controlling chemicals called hormones and neurotransmitters.
  - i) These chemicals activate all systems necessary for survival.
  - ii) These chemicals also deactivate those which are not necessary for *immediate* survival (i.e. **digestion, sexual functions, immunity**).
  - iii) Other hormones suppressed include growth hormone, testosterone, luteinizing hormone, etc. which are utilized for **growth, repair and reproduction**.
- d) The adrenals glands sitting on top of your kidneys are stimulated to release cortisol and catecholamines which have a variety of effects on different organs of the body.
- e) Catecholamines will affect the following:
  - i) Increase blood pressure
    - (1) Why?
    - (2) To allow rapid delivery of the stress response chemicals
  - ii) Stimulate the emotional/anxiety centers of your brain
    - (1) Why?
    - (2) To remember to look for the tiger the next time we are at the water hole.
  - iii) Inhibit factual learning and focusing of attention
    - (1) Why?
    - (2) Because it is not important to study things like physiology when a tiger is chasing you!  
Get away from that tiger, and then go learn something!
  - iv) Release fats and lipids into the blood
    - (1) Why?
    - (2) To provide the body with fuel and energy for the fight/flight response
- f) Cortisol will affect the following:
  - i) Promotes the liver to release sugar into the blood
    - (1) Why?
    - (2) To provide the body with fuel and energy for the fight/flight response
  - ii) Promotes the breakdown of protein stores (including muscle) into amino acids for availability in the blood stream
    - (1) Why?
    - (2) To provide the body with fuel and energy for the fight/flight response
    - (3) **(Definitely not an appropriate long-term source of energy!)**
  - iii) Stimulates the liver to increase LDL (poorly named "bad cholesterol") and to decrease the effect of HDL (poorly named "good cholesterol")
    - (1) Why?
    - (2) LDL contains a significant percentage of cholesterol to be used for making stress hormones, healing wounds which might have occurred during the fight/flight response, regulating moods.
    - (3) Yes, cholesterol IS VERY IMPORTANT and should be eaten in your regularly diet.
- g) Catecholamines and cortisol together affect the following:

- i) Decrease the effect of insulin hormone in the body
  - (1) Why?
  - (2) Insulin is an "energy-storage" hormone. Yet, during moments of stress, we need resources to burn energy. So short-term, this is appropriate.
  - (3) Think about how long-term cellular resistance to insulin with exhaustion of the pancreas can contribute to diabetes.
- ii) Increases clotting factors and plasmin in the blood
  - (1) Why?
  - (2) To prepare for a potential wound occurred during the fight/flight response.
- h) Noradrenaline does the following:
  - i) Increases sensitivity of our sensory systems
    - (1) Why?
    - (2) To improve the chances of fight/flight by making you more like Rambo
    - (3) "Stress sharpens the signal detection system at the cost of concentration," Michael Meaney Ph.D.
    - (4) In other words, the stressed person is easily distracted. Sound like ADHD?
  - i) The hypothalamus in the brain is stimulated to promote the further release of more catecholamines and cortisol.
    - i) Why?
    - ii) To keep the stress response active as long as necessary to ensure survival of the organism.

## **7) Summary of the Effects of Stress Response**

- a) Increased cardiac output (blood pressure, heart rate)
- b) Increased fats in blood
- c) Increased sugar in blood
- d) Increased insulin resistance
- e) Muscle breakdown
- f) Decreased HDL; increased LDL
- g) Increased clotting factors
- h) Decreased cellular immunity
- i) Decreased anabolic (building/repairing) hormones
- j) Bone loss
- k) Increased stress/fear/anxiety/depression
- l) Decreased short-term memory/concentration
- m) Increased sensitivity of sensory systems

## **8) Summary of the Signs/Symptoms of Chronic Stress**

- a) Back or neck pain
- b) Lowered immunity: **cancers**, cold/flu, infections
- c) **Cardiovascular diseases**
- d) High blood pressure
- e) **Diabetes**

- f) Mood swings
- g) Skin problems
- h) Constipation/Diarrhea
- i) Low self-esteem
- j) Anxiety
- k) Tiredness
- l) Accelerated aging
- m) Fibromyalgia
- n) Headaches
- o) Poor concentration
- p) Weight gain/loss
- q) Changes in eating patterns
- r) Poor memory
- s) Sinus problems/allergies
- t) Digestive problems (i.e. indigestion, ulcers, etc.)
- u) Muscle tension
- v) Lack of enjoyment or sense of humor
- w) Low sex drive / low fertility
- x) ADHD
- y) ***ARE ALL OF THESE "DISEASES" OR MERELY STATES OF ADAPTION?***
- z) ***WHAT IS THE CONVENTIONAL "TREATMENT" FOR ANY OF THESE? DOES IT ANSWER THE CAUSE, OR JUST AN EFFECT?***

**9) Remember...**

- a) We are innately designed to be healthy ("innate intelligence" aka God, Mother Nature, etc.)
  - i) Our genes are NOT designed to be sick, but to be healthy!
  - ii) Geneticists estimate that only 5% of the whole population have a truly "genetic disorder".
  - iii) The rest of us are in the 95% meaning that our genes are blueprints for health. What determines if we are sick or not is the environment (physical, nutritional/chemical, mental/emotional) in which we consistently place ourselves.
    - (1) Correct! The "cancer gene" does not stand ground for the whole population, nor does "obesity run in my family" mentality. See the pattern?
- b) Our bodies are created to *always* strive for balance ("homeostasis")
- c) The stress response is an innately intelligent and impressive response designed for short-term use to save your life!
- d) Instead, consider a "disease" as an innately intelligent adaption to some stress with which we are constantly faced.
- e) EVERY choice – physical, nutritional/chemical, mental/emotional – we make moves us either toward health (ease) or away from health (dis-ease).

**10) What are everyday stressors you face?**

- a) There are two states of stressors:

- i) **Deficiencies** in the required nutrients to maintain homeostasis
- ii) **Toxicities** that drive cell function away from homeostasis
- b) There are three major categories in which these two stressor states may exist:
  - i) Emotional (Thoughts)
    - (1) Negative perception of reality
    - (2) Failure to forgive
    - (3) Occupational
    - (4) Financial
    - (5) Home & Family
    - (6) Traumatic Events
  - ii) Physical (Traumas)
    - (1) Sedentary life-style (**epidemic!**)
    - (2) Lack of sleep
    - (3) Macrotraumas: sports injuries, accidents, falls, heavy/improper lifting
    - (4) Microtraumas: repetitive motions or work activity, poor posture, **sitting**
  - iii) Nutritional/Chemical (Toxins)
    - (1) Consuming foods genetically incompatible to body
    - (2) Drugs & Alcohol
    - (3) Smoking
    - (4) Not enough sunshine and outdoor exposure
    - (5) Caffeine
    - (6) Environmental toxins
    - (7) Contacted toxins: major brand name cleaning products and cosmetics

**11) What are applicable ways to deal with stress and strengthen our bodies?**

- a) *Take charge of your life.*
- b) Take time to reflect on major stressors affecting your life.
- c) Understand which stressors you are able to prevent.
- d) Know which are totally out of your control and accept that fact.

**12) Effective Nutritional Habits**

- a) Eat **WHOLE, REAL**, organic foods when possible.
- b) We are LIVING organisms and should be eating LIVING foods. (For example, foods that are physiologically compatible and congruent to our genetic make-up.)
- c) Fruits (lots!), vegetables (lots!), meat (grass-fed, organic), eggs (organic), nuts.
- d) Drink water as your primary beverage.
- e) Avoid the following on a regular basis:
  - i) Sugar and refined carbohydrates (“white trash”)
  - ii) Processed foods (“dead”)
  - iii) Unhealthy fats: hydrogenated, trans, margarine
  - iv) Soda, many juices, sports drinks
  - v) Artificial sweeteners

- vi) High fructose corn syrup
- vii) Caffeine
- viii) Alcohol
- f) Regular supplements that EVERY single person should be taking regardless of age or gender without exception:
  - i) Omega-3 Fish oil that is highly purified and minimally processed  
(1) <http://www.innatechoice.com/faq.cfm?cat=2>
  - ii) Probiotic to reline our guts with the NECESSARY good bacteria  
(1) <http://www.innatechoice.com/faq.cfm?cat=5>
  - iii) Vitamin D3  
(1) <http://www.innatechoice.com/faq.cfm?cat=7>
- g) Majority of your shopping at the grocery store should be done around the perimeter as anything within the perimeter is usually processed, DEAD food with added chemicals.

### **13) Effective Physical Maintenance**

- a) Part of the natural design of our bodies is to be in ***motion***.
- b) We are hard-wired neurologically to require motion as a nutrient.
- c) With a sedentary lifestyle when motion is deficient, there are several effects to the whole body.
  - i) Plus, chronic sitting to the spine biomechanically is like sugar to your teeth. Sitting puts harmful stress on spinal structures.
- d) Motion stimulates neurological receptors in the body and inhibits the stress response through pathways via the cerebellum.
- e) Remember, some of the products of the stress response are provided to help us move (fight/flight). We need to move!
- f) Exercise and physical activity should be daily.
  - i) Running
  - ii) Swimming (terrific)
  - iii) Yoga, Pilates
  - iv) Martial Arts
  - v) Sports
  - vi) Dancing
  - vii) General increase of day-to-day activities whenever possible (taking the stairs instead of elevator, parking away from store for a longer walk, etc.)

### **14) Positive Mental Attitude**

- a) Think of a lemon...close your eyes. Imagine picking up a fresh lemon and cutting it in half. Take one half, hold it up to your nose and smell it. Imagine what the scent is. Stick out your tongue and taste the lemon. Imagine how it stimulates your taste buds.
  - i) At the end of imagining this, open your eyes. Was your mouth watering?
- b) You have the power to change your body's physiology with your thoughts alone! Thoughts are not separate from the rest of your body. You collectively are a body-mind. They are one unit.
- c) Our mental thoughts affect our physical well-being.

- i) Yes, "stinkin' thinkin'" leads to decreased health.
- d) Be careful what you think about as your thoughts create a reality.
- e) ***We may not always be able to change our situations or environment, but we can change our perception.***
- f) The messages you tell yourself are frequently the real producers of stress rather than the situation itself.
- g) The left prefrontal cortex (front portion of brain) has the ability to consciously decrease the stress response.
  - i) Not easy at first, but gets stronger with time.
- h) "There is nothing good or bad, but thinking makes it so." ~Shakespeare

### **15) Adequate Sleep**

- a) When we sleep, our bodies heal.
- b) 6-8 hours/night is recommended for adults on a firm mattress.
- c) Sleeping on side:
  - i) Knees bent with pillow between legs to support spinal alignment.
  - ii) Pillow thickness should equal the distance from the base of your neck to the tip of your shoulder.
- d) Sleeping on back:
  - i) Pillow should support normal neck curvature while maintain neutral position. It should not push your head up.
  - ii) Another pillow should be placed under knees to help de-stress spinal joints in lower back.
- e) NEVER sleep on your stomach as it places a considerable torquing stress on your neck when turned to maintain breathing.

### **16) Healthy Functioning Nervous System**

- a) "The nervous system coordinates all functions of the body." ~ Gray's Anatomy, 29<sup>th</sup> Edition, Page 4.
- b) Chiropractors focus on maintaining proper alignment and motion of each individual bone (vertebra) within the spine.
- c) If a vertebral segment has aberrant motion due to misalignment with another segment, it interferes with neurological pathways and the bi-directional communication with brain and body leading to improper homeostatic coordination of not only movement, balance and coordination, but also **stress hormones** levels, cognition and learning, emotions, degeneration of joints and muscles, and viscera (organ function) including immune organs.
  - i) The chiropractor calls this relationship of one vertebra with aberrant motion and misalignment with another interfering with neurological communication a "vertebral subluxation complex".
- d) Pain is a long-term indication that there is a vertebral subluxation complex.
- e) As long as a vertebral subluxation complex is present, optimal health cannot exist. Furthermore, chiropractic treatment helps to inhibit chronic stress response in the human ecosystem.



**17) Final thoughts...**

- a) Our bodies want to be in and constantly strive for balance (homeostasis).
- b) The stress response is *not the disease or pathology*, but rather a beautifully intelligent and intended response when we chronically place our bodies in a stressful environment (emotional, nutritional/chemical, physical).
- c) The environment is the pathology. Change the environment as much as possible!
- d) Strengthen your body in other ways to handle what we can't change.
- e) **Love your mind-body. It is a temple. It wants only what's best.**