

THE CONSEQUENCES OF CHRONIC STRESS

Brain fog, IBS, allergies, high blood pressure, heart attacks, strokes, anxiety, depression and weight gain can ALL result from the physiological response to stress in your body! Learn what you can do to protect yourself from the dangers of stress.

**TUESDAY, SEPTEMBER 19TH
AT 6PM**





The consequences of chronic stress

From a functional medicine approach

Your Dietitian: Cassandra Sampson MS, RD, LDN, MIEP

What is functional medicine?

Functional medicine addresses the root cause of a medical issue.



It looks to answer, "What was happening before the diagnosis?"



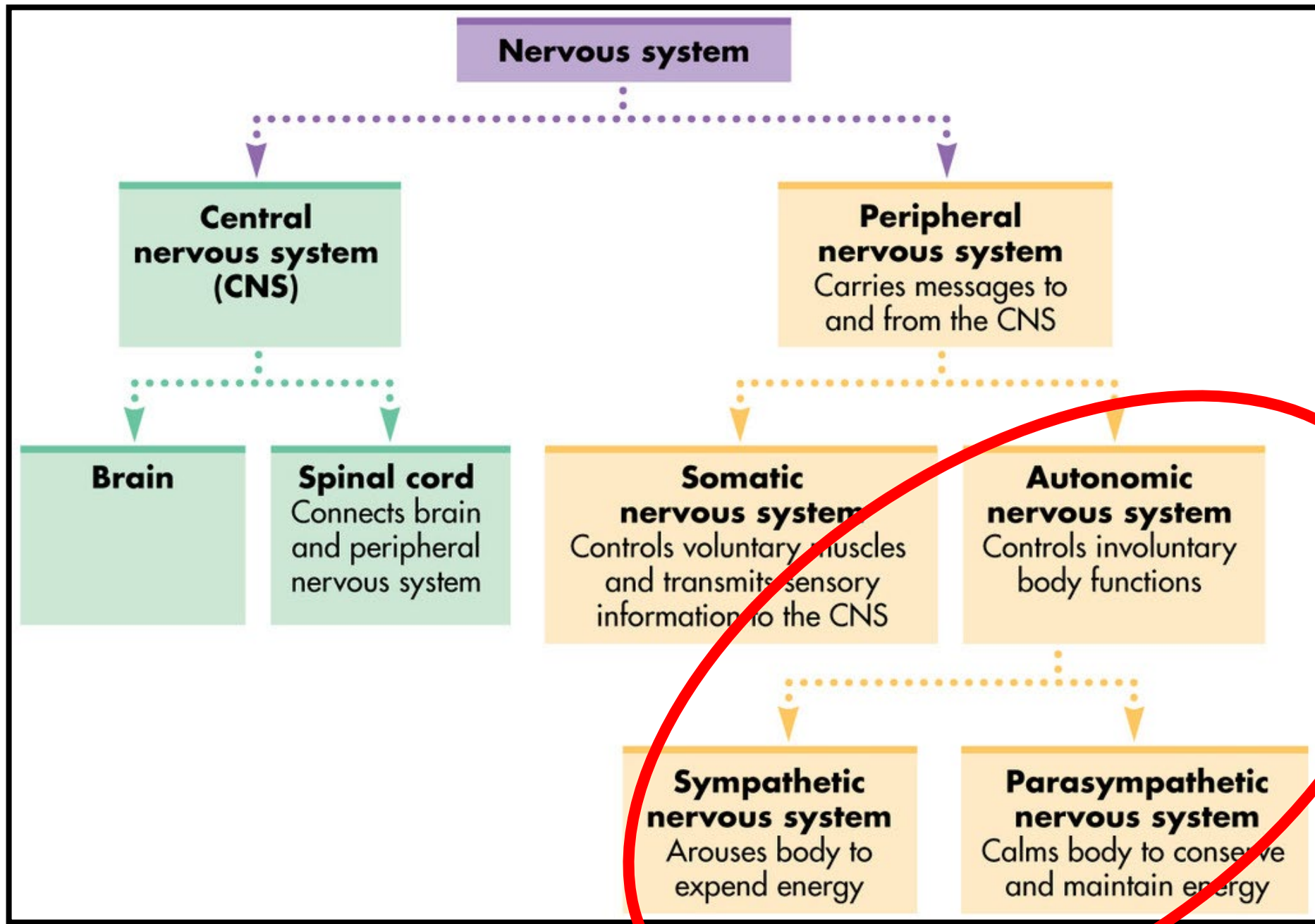
The functional medicine approach looks upstream to lifestyle choices.



You can have a predisposition to a disease because of genetics **but it is our day-to-day to day lifestyle choices that will prime the symptoms to the point of diagnosis.**

Lifestyle Choices: FOOD, TOXINS & STRESS





The Sympathetic Nervous System



The sympathetic nervous system is about **promoting survival.**



It helps us fight, fly, or hide in the name of survival.



This system increases focus, alertness, blood pressure, blood sugar, it fuels metabolic activity in a way so that we can do tremendous feats like run really quickly, lift very heavy objects in emergencies, etc..



This system increases epinephrine, norepinephrine, and the cortisol hormone all to help us be hypervigilant and responsive.



However, it is designed for short term, limited purposes, in the name of survival.

The stress response

Triggered by:

- An environmental stressor: such as a having work deadline
- A psychological stressor: such as persistent worry about losing a job

The stress response releases a cascade of stress hormones that produce very specific physiological changes.

For example, a stressful incident can make your heart beat fast, your breathing quicken, your muscle tense and beads of sweat appear.

The stress response can also be triggered by more emotionally charged threats, like abuse, neglect, discrimination, unhealthy relationships, loneliness, poverty, poor sleep and trauma.

The stress response

The "fight-or-flight" response:

- It is an involuntary survival mechanism, enabling people and other mammals to react quickly to life-threatening situations.
- The carefully orchestrated sequence of hormonal changes and physiological responses helps us fight off the threat or flee to safety.
- Unfortunately, the body can also overreact to stressors that are **not** life-threatening, such as traffic jams, work pressure, and family difficulties.

Relying on the
sympathetic
nervous system
(the fight-or-
flight response)
comes at a
COST.



What is the cost?

The sympathetic nervous system purposely downregulates our digestive process and immune response..

There are fundamental processes in our body that simply DO NOT work well if the sympathetic nervous system is our primary system.

Menstrual cycle, fertility, digestion and immune function are all **suppressed** to prioritize survival in the most primal way.

The brain fog, the IBS, the constant challenges with allergies, the constant sickness, the WEIGHT GAIN, etc. are all a result of this.

Repeated activation of the stress response can cause serious health conditions.

Research suggests that chronic stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, raising the risk of heart attacks and stroke AND causing brain changes that may contribute to anxiety, depression, and addiction.

The concern with cortisol

- Known as the “stress hormone”. Cortisol is released when the body senses stress.
- Some stress on the body is good, in that it causes your body to respond & build back stronger.
 - However, when chronically elevated, high cortisol can lead to weight gain, disruptions in the immune response and increase the risk of chronic disease.
- Why?
 - Cortisol affects the metabolism of proteins, carbohydrates and fats
 - Cortisol participates in the regulation of water and electrolyte balance, blood pressure, body temperature, mineralization of the bones and the immune response.
- Additionally, it acts on mood and behavior, appetite and pain perception.

The concern with cortisol

Cortisol imbalances can lead to:


- Blood sugar imbalances
- Weight gain
- Immune system suppression
- Gastrointestinal issues
- Increases in blood pressure
- Other Issues: long-term very high stress and elevated cortisol may also be linked to insomnia, chronic fatigue syndrome, thyroid disorders, dementia, depression, and other conditions.

Managing cortisol

SLEEP	Get enough sleep on a regular basis
EXERCISE	Exercise consistently (for endorphins and stress release!)
FOOD	Eat your fruits and veggies daily (for antioxidants) and follow a mostly anti-inflammatory diet
VITAMIN D	Make sure you're getting vitamin D to help with immunity, mood and digestion (either from fortified foods, supplement or sun exposure)
EXTREME DIETS	Avoid extreme calorie restriction
STRESS	Make stress management techniques part of your daily routine
LIMIT	Limit alcohol and caffeine

NUTRITION TO REDUCE CORTISOL

Cortisol is a stress hormone released by the adrenal glands.



High levels for long periods of time cause negative effects on weight, immune function and chronic disease risk.

Strategies to Reduce Cortisol:

- optimal vitamin D levels
- adequate sleep
- probiotics and prebiotics
- managing stressors
- exercise
- antioxidants
- anti-inflammatory foods
- minimize alcohol consumption
- elimination of trans fats

Signs Cortisol is High:



- high stress & stressors
- diet high in trans fat
- high blood pressure
- repeated < 5 hours sleep
- inconsistent fueling pattern
- mood disturbances
- digestion issues
- sudden changes in heart rate

Signs your cortisol is likely high



High blood pressure or other cardiovascular chronic inflammatory conditions



Chronic low sleep (< 5 hours per night every night)



Mood disturbances



Frequent illnesses



Sudden changes in heart rate



Digestion issues



Cravings for high-calorie foods

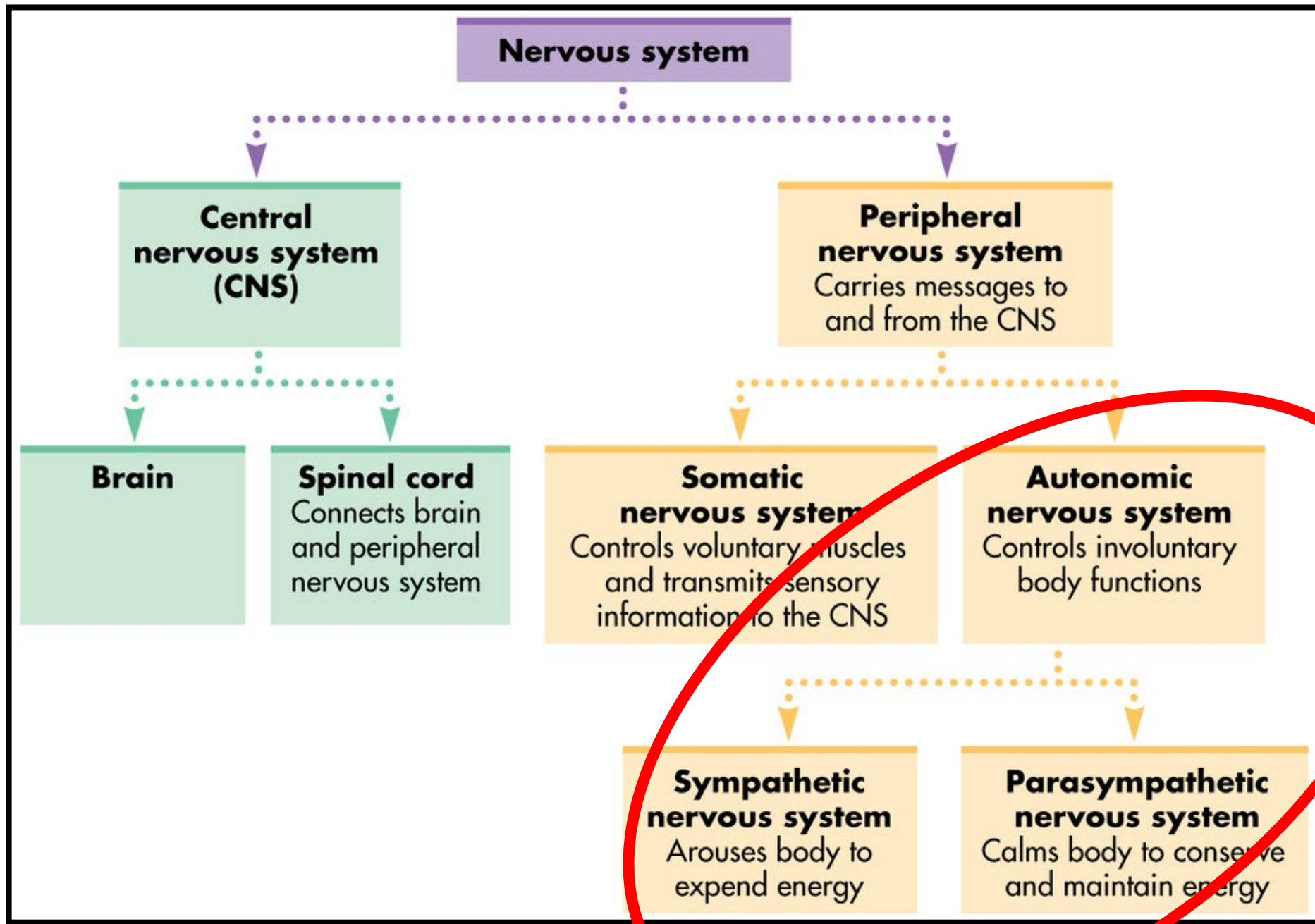


High blood sugar levels (because cortisol makes it harder for insulin to do its job)

Survival mode is not a healthy place to be

- So many people are living in a complete state of sympathetic nervous system activation without even realizing it
- This comes from living under constant intense emotional and/or physical stress
- This creates massive oxidative stress and catabolism on the body, which is priming the body for diseases





The Other Side:

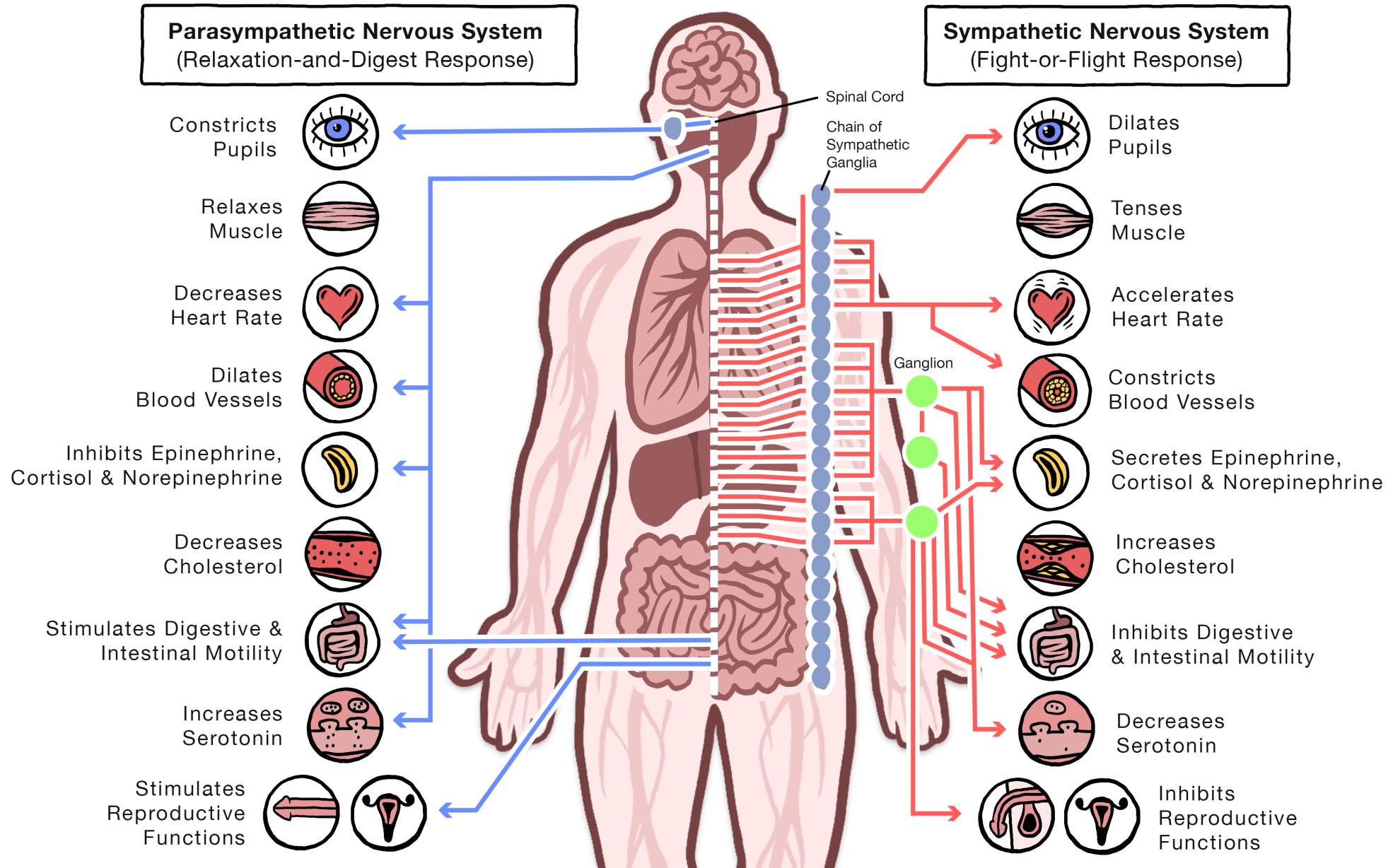
The Parasympathetic Nervous System

- The thriving side of the autonomic nervous system is the parasympathetic nervous system.
- We are designed to live HERE most of the time.
- We are not meant to be living in emotional and physical stress all day everyday!

Not all stress is bad:

- Exercise is a controlled purposeful physical form of stress.
- Adapting challenges and motivation are controlled purposeful form of emotional stress.

AUTONOMIC NERVOUS SYSTEM



Your habits make ALL the difference

What you do most often
are the things that make
up your lifestyle

Your lifestyle is going to
determine how your
body responds:
emergency mode OR
thriving mode

If you are usually living in
survival mode, constantly
stressed and triggering your
emergency response system –
this is greatly going to affect
your ability to manage and
fight off diseases.

However, if you live in the state of
thriving with your
parasympathetic nervous system
activation, you are building health
resiliency to be able to get
through the challenges that will
enter your life.

What is the solution?

How do I make my body respond to stress in the healthiest way?

First, become aware of this dynamic.

Understand the danger that you could be living in, without even realizing it.

If you are constantly emotionally and physically stressed, overworked, exhausted, etc. – your lifestyle is creating the perfect setting for disease or worsening disease states.

Next, begin to make shifts to adopt the activation of your parasympathetic nervous system.

We can create autonomic balance in our nervous system with our **lifestyle choices (food, toxins and stress).**

What is the solution?

- Purposefully choose lifestyle habits that tell your nervous system that we do not have to be in emergency mode.
- Yoga, tai chi, stretching, belly breathing, box breathing and counting exhalations are simple ways to reduce stress!
- People can use exercise to release the buildup of stress in several ways.
 - Taking a brisk walk shortly after feeling stressed deepens breathing but also helps relieve muscle tension.
- Control your thoughts and change your perspective so your body doesn't always feel like it is fighting to survive!
- This doesn't happen on accident; it has to be intentional and consistent.

The Vagus Nerve

- The vagus nerve is part of your parasympathetic nervous system.
- It carries electrical signals between your brain and body.
- Its main role is to control automatic functions, such as breathing, heart rate and digestion.
- That makes it an important connection between your mind and body.
- The parasympathetic nervous system and vagus nerve bring you back to a stable state when the stress or emergency is over.

The Vagus Nerve

- With vagus nerve stimulation, you intentionally **counteract** the signals that cause anxiety.
- Basic healthy living strategies help activate your vagus nerve.
- Consistent exercise, healthy balanced diet, adequate sleep
- Breathing exercises, meditation, tai chi, yoga

Take time to intentionally breathe

BOX BREATHING:

- Make sure that you're seated upright in a comfortable chair with your feet flat on the floor.
- Keep your hands relaxed in your lap with your palms facing up, focus on your posture. You should be sitting up straight. This will help you take deep breaths.
- Close your eyes. **Inhale slowly for a count of four.** Allow the air to fill your lungs, until your lungs are completely full and the air moves into your abdomen.
- **Hold your breath for another slow count of four. Exhale through your mouth for the same slow count of four.**
- **Hold your breath for another slow count of four.**

Ideally, you'll want to repeat the box breathing cycle four times in one sitting.

The best part is – you can do it pretty much anywhere and this exercise has been proven to help engage the parasympathetic nervous system so our body can THRIVE.

Progressive Muscle Relaxation

Our bodies respond automatically to stressful situations thoughts by becoming tense. The opposite relationship also works: a good way of relaxing the mind is to deliberately relax the body.

In a progressive muscle relaxation each muscle group is tensed in turn, and the tension is then released. This relaxes the muscles and allows you to notice the contrast between tension and relaxation.

Relaxaton should be enjoyable so if any part of the exercise is too difficult skip it for the moment. If you have any injuries you may wish to leave out that part of the exercise.

Preparation

Lie down flat on your back, on a firm bed, a couch, or on the floor. Support your head and neck with a pillow or cushion. Alternativelty sit in a comfortable chair with your head well-supported. Close your eyes if you are comfortable doing so.

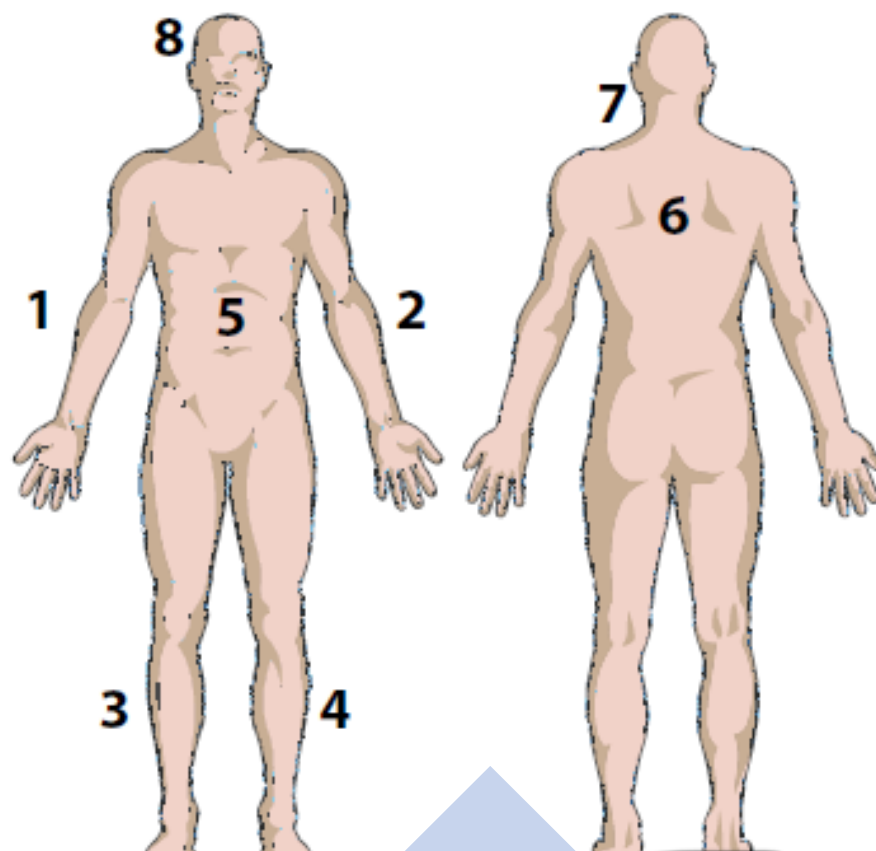
Instructions

Focus your attention on different parts of your body in sequence. Go through the sequence three times:

- 1) *Tense & release: Tense that body part, hold it for a few moments, then relax*
- 2) *Lightly tense & release: Tense that body part with just enough tension to notice, then relax*
- 3) *Release only: Just pay attention to each muscle group and decide to relax it*

Recommended sequence

- 1 Right hand & arm
(clench the fist & tighten the muscles in the arm)
- 2 Left hand & arm
- 3 Right leg
(tense the leg, lifting the knee slightly)
- 4 Left leg
- 5 Stomach & chest
- 6 Back muscles
(pull the shoulders back slightly)
- 7 Neck & throat
(push the head back slightly into the pillow/surface)
- 8 Face
(scrunch up the muscles in your face)



Your thoughts control everything

- Your thoughts control your actions, which lead to your habits and makeup your lifestyle.
- Our thoughts control the nervous system response in the body.
- It's your thoughts that tell your body whether to ignite our emergency response system (the sympathetic nervous system).
- Our nervous system is eavesdropping on everything our thoughts are saying.
- Our fears, our judgments, our speculations & our worries are ultimately controlling what's happening with our nervous system.



Self-talk COUNTS



- We have to get serious about the impact of our self talk.
- Self talk and mindset needs to be the CENTER of our healthcare conversations.
- **Our thoughts are not separate from our physiology.**
 - If your thoughts are running crazy, leading to feeling overwhelmed and anxious – the psychological stress can trigger the entire stress response. It starts with your thoughts.
- You can't fake out your nervous system. Purposefully activating your parasympathetic nervous system response **is just as or even more important** than a healthy diet and minimizing toxins!

Stress Eating

- One thing WLS can't do is stop the stress in your life.
- When the fight-or-flight system is activated (the sympathetic nervous system response), **cortisol** is released.
- When cortisol is released, **the craving for highly palatable foods (high in fat and sugar) increases**. These cravings are meant to help us survive, just in case a famine is coming on OR the case where we need extra calories to take action in an emergency.
- The urge to use food as a way to cope through stress, anxiety, fear, emotions, etc. will likely still be there after surgery. Implementing healthy coping strategies needs to be a **PRIORITY** to prevent complications, weight loss stalls and weight regain.

Diet and Mental Health

Omega 3s are the one nutrient that really stands out when it comes to mental health benefits.

Omega-3s are most well known for protecting the heart – but omega 3s have also been shown to be helpful for inflammatory diseases (such as arthritis, ulcerative colitis, crohn's disease, lupus), mood-related disorders such as depression and anxiety.

Food Sources:

Fatty fish: salmon, cod, herring, sardines, anchovies, mackerel

Oysters, seaweed and algae

Seeds: flaxseed, chia seeds, hemp seeds

Edamame

Walnuts



Diet and Mental Health

Nutritional psychiatry tells us that there are also foods that have the ability to change our mood in a negative way.

Pro-inflammatory foods are connected to a negative mood:

1. Added sugar
2. Refined or processed carbs (little to no fiber or protein)
3. Foods with high amounts of sodium
4. Processed Meats

*There is a significant association between these pro-inflammatory foods and increased risk of depression.

Supplements for Stress

Omega 3s:

- DHA and EPA are heart-healthy fats that may improve mood and decrease feelings of anxiety.
- Research has shown that those who suffer from increased stress or anxiety tend to have lower omega-3 levels. Therefore, getting more omega-3 rich foods or taking a supplement may help.

Supplements for Stress

Ashwagandha:

- An adaptogenic herb native to India. An adaptogen is an herb that may reduce levels of anxiety, stress, and fatigue.
- In a 2019 randomized trial, those taking 240 mg of ashwagandha extract saw greater reductions in stress, anxiety, and depression. ([21](#))
- Another 2019 study involved giving an [ashwagandha supplement](#) for 60 days, which was shown to be safe and effective for relieving stress. ([21](#))
- **Since ashwagandha is considered an herbal extract, there is no known RDA for the amount to be taken at this time.**
- Ashwagandha is found in supplements only. In most studies, 200–300 mg of ashwagandha was given with minimal side effects.
- Check with your doctor if you're considering taking ashwagandha to determine what's best for you.

Nutrients for Stress

Vitamin D:

- Low vitamin D levels have been linked to increased levels of anxiety, depression, and stress to such an extent that we recommend each and every patient experiencing any of these situations have their vitamin D levels evaluated.
- Study after study indicates the direct link between vitamin D levels and mental health is so strong that adding just 1,000 IU of vitamin D per day can reduce:
 - Fatigue
 - Feelings of Depression or Anxiety
 - Joint Pain
 - Mood Swings
 - Muscle Cramps
 - Weakness

Nutrients for Stress

Magnesium:

- Several studies demonstrate the potential for magnesium to help manage anxiety by regulating brain function and improving neurotransmitter communication, which can help the body better respond to stress.
- Food sources: leafy greens, avocado, legumes, whole grains, nuts, seeds, and dark chocolate.
- Be aware that magnesium chloride, carbonate, or oxide can cause diarrhea and is used as a laxative. Stick to magnesium glycinate, threonate and sulfate to assist with anxiety.

B vitamins

Food sources: whole grains, legumes, dairy, meats, eggs, and leafy greens

If you are eating these types of foods regularly and also taking your bariatric multivitamin, you likely do not need an additional supplement

Final thoughts

- The stress response is triggered by:
 - An environmental stressor: such as a having work deadline
 - A psychological stressor: such as persistent worry about losing a job
 - Emotionally charged threats: abuse, neglect, discrimination, unhealthy relationships, loneliness, poverty, poor sleep and trauma
- The stress response causes rapid heart rate, increases in your blood pressure, it causes your breathing quicken, your muscle tense and beads of sweat appear to become prepare your body for survival.
- Being in that stressful 'fight-or-flight' state will wear out your body and increase the risk of many diseases and chronic health conditions.
- The parasympathetic nervous system and vagus nerve bring you back to a stable state when the stress is over.

Final thoughts



When the fight-or-flight system is activated (the sympathetic nervous system response), **cortisol** is released.



When cortisol is released, **the craving for highly palatable foods (high in fat and sugar) increases.**



These cravings are meant to help us survive, just in case a famine is coming on OR the case where we need extra calories to take action in an emergency.



The solution is to implement the lifestyle behaviors that will allow your body to rely on the parasympathetic nervous system rather than the emergency-response system.

THE CONSEQUENCES OF CHRONIC STRESS

Brain fog, IBS, allergies, high blood pressure, heart attacks, strokes, anxiety, depression and weight gain can ALL result from the physiological response to stress in your body! Learn what you can do to protect yourself from the dangers of stress.

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