

Diaphragmatic Breathing & Stress Management

How & Why It Works

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Diaphragmatic Breathing - Why?

aka “Belly Breathing”

Benefits:

Engages the Diaphragm Muscle

Maximizes Lung Capacity

Increases Oxygen Intake

Improves Breathing Efficiency

Slows Heart Rate

Reduces Blood Pressure

Boosts Relaxation

Reduces Stress, Pain, Anxiety

Autonomic Nervous System* - 3 branches

- **Sympathetic Nervous System (SNS)**: Manages the "fight-or-flight" response, preparing the body for stress or danger by increasing heart rate, dilating airways, and releasing energy.
- **Parasympathetic Nervous System (PNS)**: Manages the "rest-and-digest" response, conserving energy and calming the body after stress, promoting digestion, and slowing the heart rate.
- **Enteric Nervous System (ENS)**: Manages the gastrointestinal system directly.

*Automatic/ Involuntary - without conscious thought

Vagus Nerve

Longest Nerve in the ANS
Cranial Nerve #10
(brainstem to chest/ abdomen)

Stimulates PNS - brain, heart, digestive system
("Rest & Digest")

Stimulation Via

Deep & slow breathing (diaphragmatic breathing)

Cold exposure (cold water on the face, plunges)

Singing, humming, or chanting (effect on throat muscles)

Massage (especially neck or foot massages)

Meditation

Other ANS Functions

Heart Rate & Blood Pressure: Cardiovascular regulation

Respiration: Breathing rate

Digestion: Gastrointestinal motility & secretion

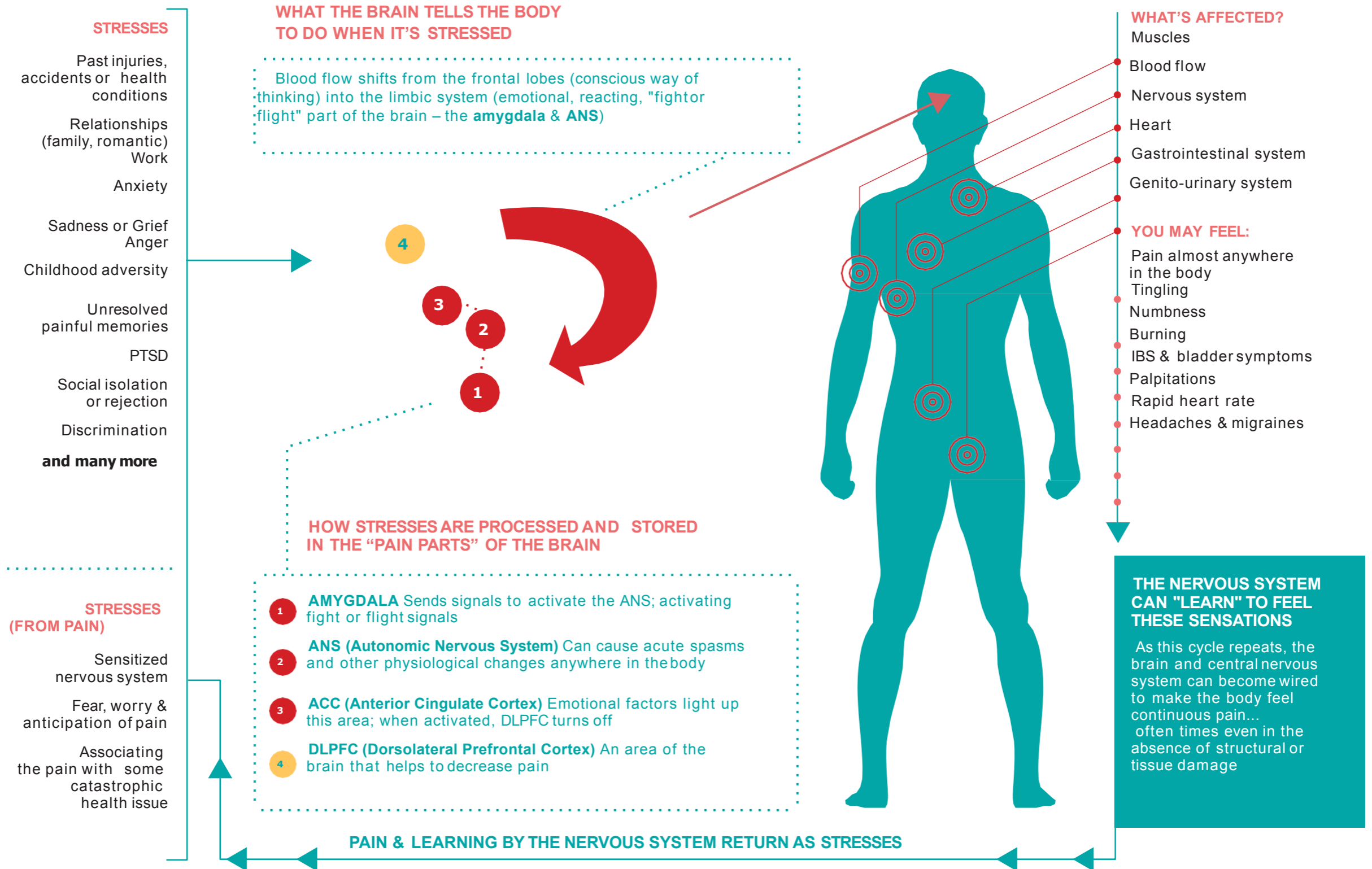
Temperature Regulation: Sweating

Pupillary Response: Pupil dilation & constriction

Urination and Sexual Arousal: Sexual & urinary function

Breaking the Cycle of Stress & Pain

NEUROSCIENCE EXPLAINS the EFFECTS of STRESS on the Body & Brain (Curable.com)



Physical Therapy - Strategies to Break the Cycle of Stress & Pain

Stress & Resilience

Positive Aspects

Stress & Resilience are interconnected

They are essential components of long-term success

Stress is a necessary pressure for growth

Resilience provides capacity to adapt to, manage, and recover from that pressure

Enables focus during adversity

Improves performance

The key is to be able to return to “baseline” ANS function

Breath-Holding Exercises

BENEFITS:

Increasing tolerance for CO₂
Physical and Mental Relaxation
Lower Heart Rate
Cardiovascular System Efficiency
Lung Capacity/ Volume

TECHNIQUE:

- Deep Diaphragmatic Breath
- A. Hold after filling lungs completely - 60+ sec goal
(Pulmonary Capacity)
 - B. Hold after complete exhale - 30+ sec goal
(Pulmonary Reserve)

PRECAUTIONS:

Stop and breathe normally if you're feeling dizzy or have any of the symptoms of **oxygen deprivation**

Diaphragmatic Breathing Technique - How

Relax Neck & Shoulders

(“accessory” breathing muscles used for “fight or flight”)

Palms-Up (“open posture”)

Breathe with diaphragm (tummy rising & falling, deeper)

Breathe in/out via your nose*

in-4, hold-7, out-8 ratio for exaggerated training (4/7/8)

Continue x2 min cycle

2/4 ratio for general breathing patterns

It's Natural! - Lying Down, Sitting, Standing

Before Bedtime, Meals, Driving, Daily Activities

*maintains %SaO₂ at 90

MOVE for **HEALTH**
PHYSICAL THERAPY

Sleep Hygiene - “Rest & Digest”

~7.5 hours/night: metabolic waste products removed (“autophagy”) during non-REM sleep via CSF & ISF

Circadian Rhythm - same sleep/ wake pattern 7 days/week

***Cool, dark, quiet bedroom - avoid screens at least 1 hour**

***Natural Sunlight (AM, vitamin D, infrared)**

Regular pattern of exercise & meals

(+/-) Napping, <1 hour intervals

Separation of 2-3 hours between last meal & bedtime

(+/-) Supplements: Melatonin & Magnesium

Sleep Apnea: 34% M & 17% W; home test 80% Sp/ Sn

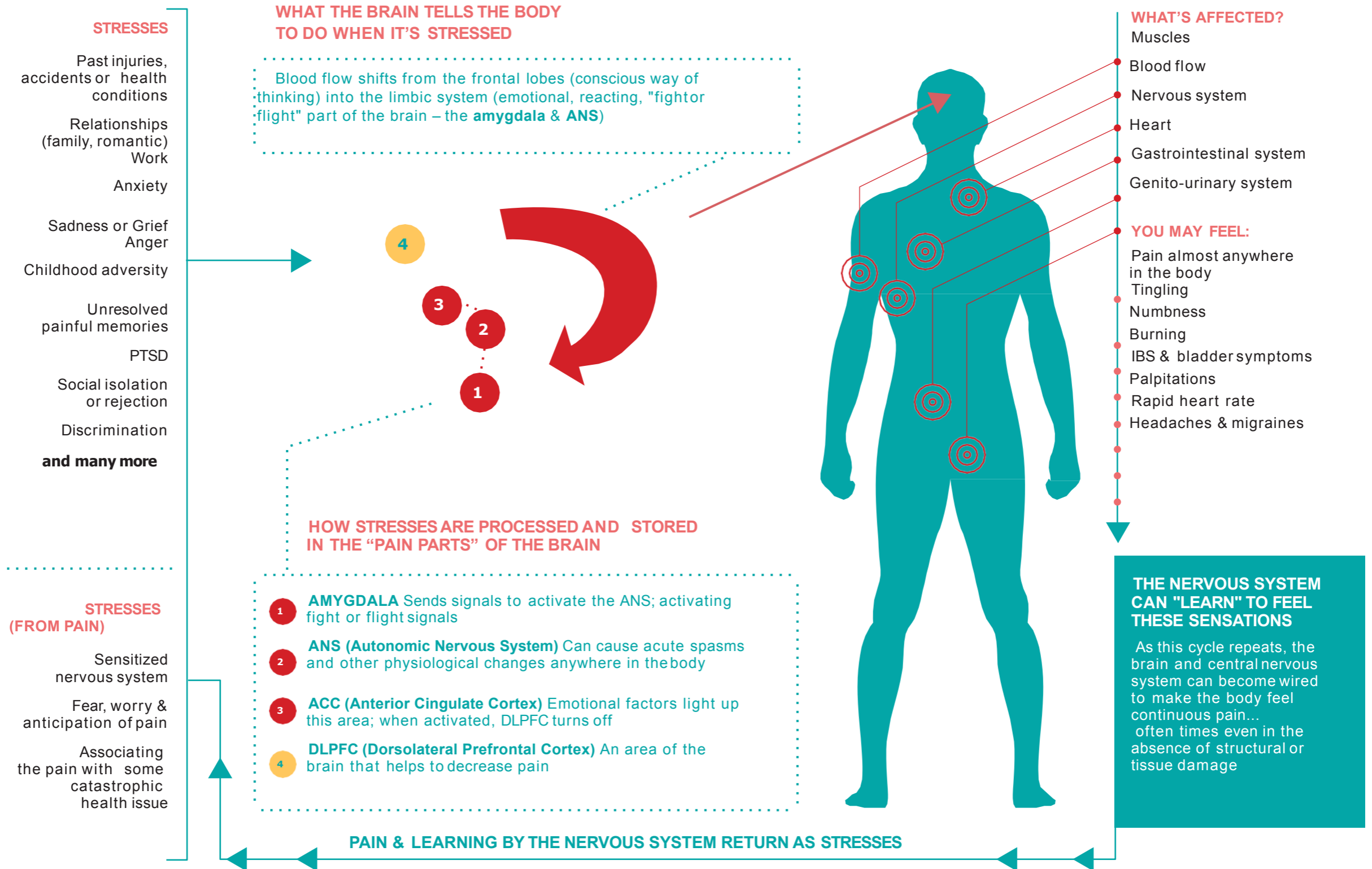
Decreasing Sympathetic Nervous System Engagement

Trigger Point Releases

- Tennis Ball Accupressure Technique (lying down or sitting)
 - <5-10 lbs of pressure with relaxation (no pain)
 - Sustained until trigger points release/ relax
- Enhanced body awareness & relaxation
- Perform before bedtime & periodically during the day
 - Prevent muscle tension, spasms, cramps
 - Body relaxation into pillow and mattress
- Incorporate Sleep/Rest Positions – individualized
- Trigger Point Dry Needling (TPDN)

Breaking the Cycle of Stress & Pain

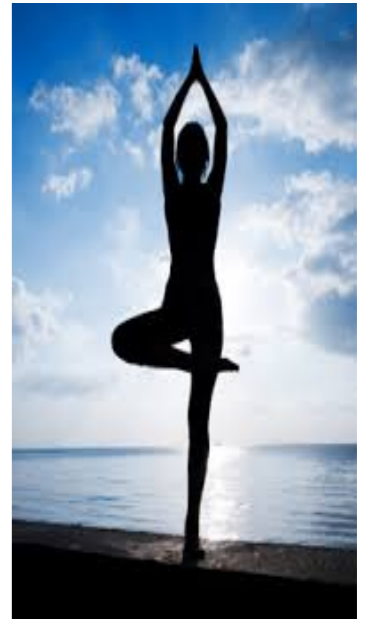
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Physical Therapy - Strategies to Break the Cycle of Stress & Pain

A Physical Therapy Approach – Stress Management

- Diaphragmatic Breathing
- During Function/ Exercise & Activity
- Mind & Body Awareness
- Pain-Free Movement
- Body Mechanics/ Technique
- Intentional & Reflexive Patterns
- New Habits for Healthy Movement



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access via email invitation

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