

Dynamics of Breathing for Stress Reduction

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Fulton State Hospital,
New Outlook Program

Missouri Institute of Mental
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Breathing Exercises:

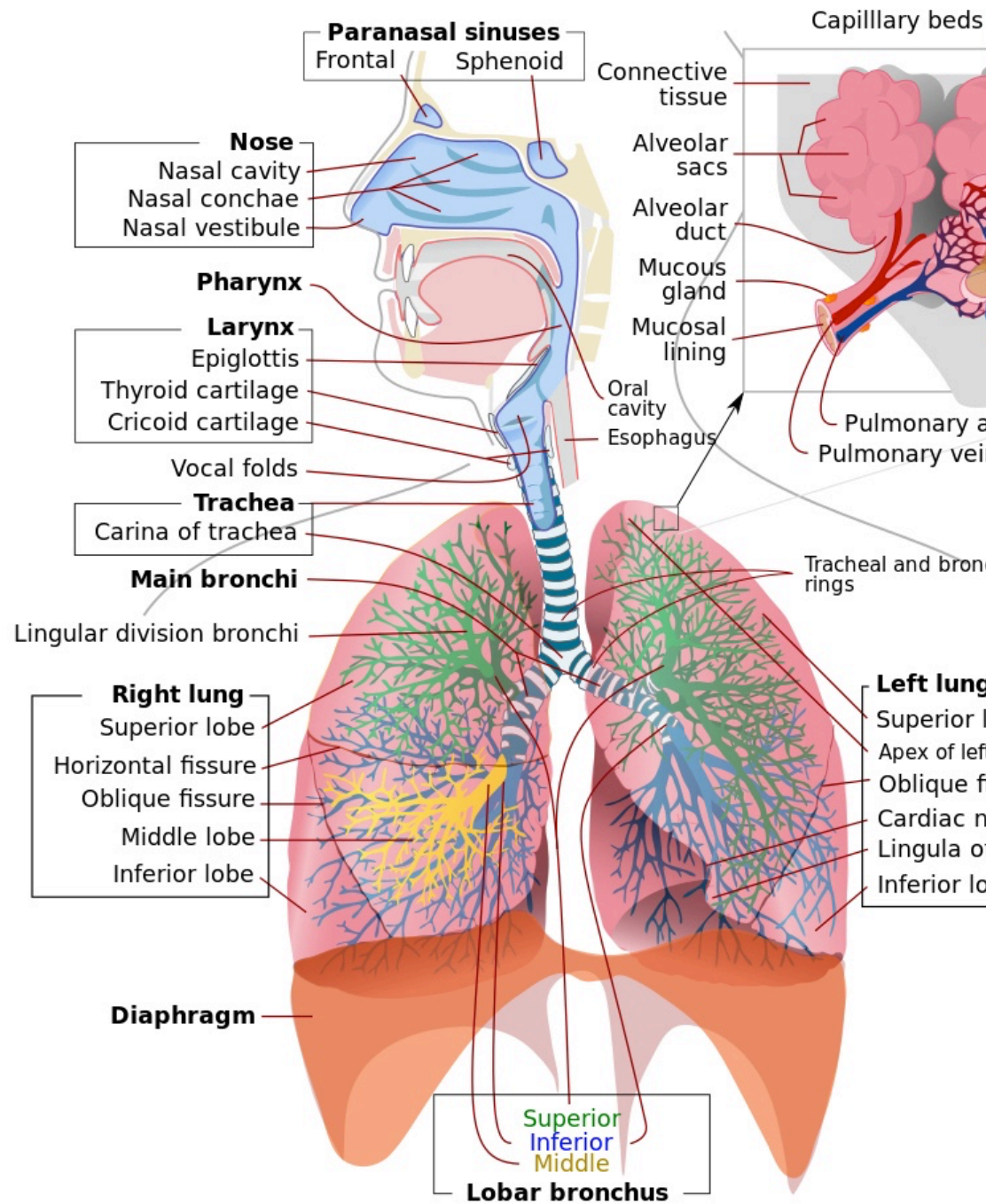
1. Deep Breathing with Movements
2. Tapping - Improves Oxygenation
3. Pranayama and Qigong



“Brain imaging studies reveal breath-activated pathways to all major networks involved in emotion regulation, cognitive function, attention, perception, subjective awareness, and decision making. Specific breath practices have been shown to be beneficial in reducing symptoms of stress, anxiety, insomnia, posttraumatic stress disorder, obsessive-compulsive disorder, depression, attention deficit disorder, and schizophrenia.”

Breathing Practices for Treatment of Psychiatric and Stress-Related Medical Conditions, Richard P. Brown, MD, Patricia L. Gerbarg, MD, Fred Muench, PhD, Psychiatric Clinics of North America, March 2013

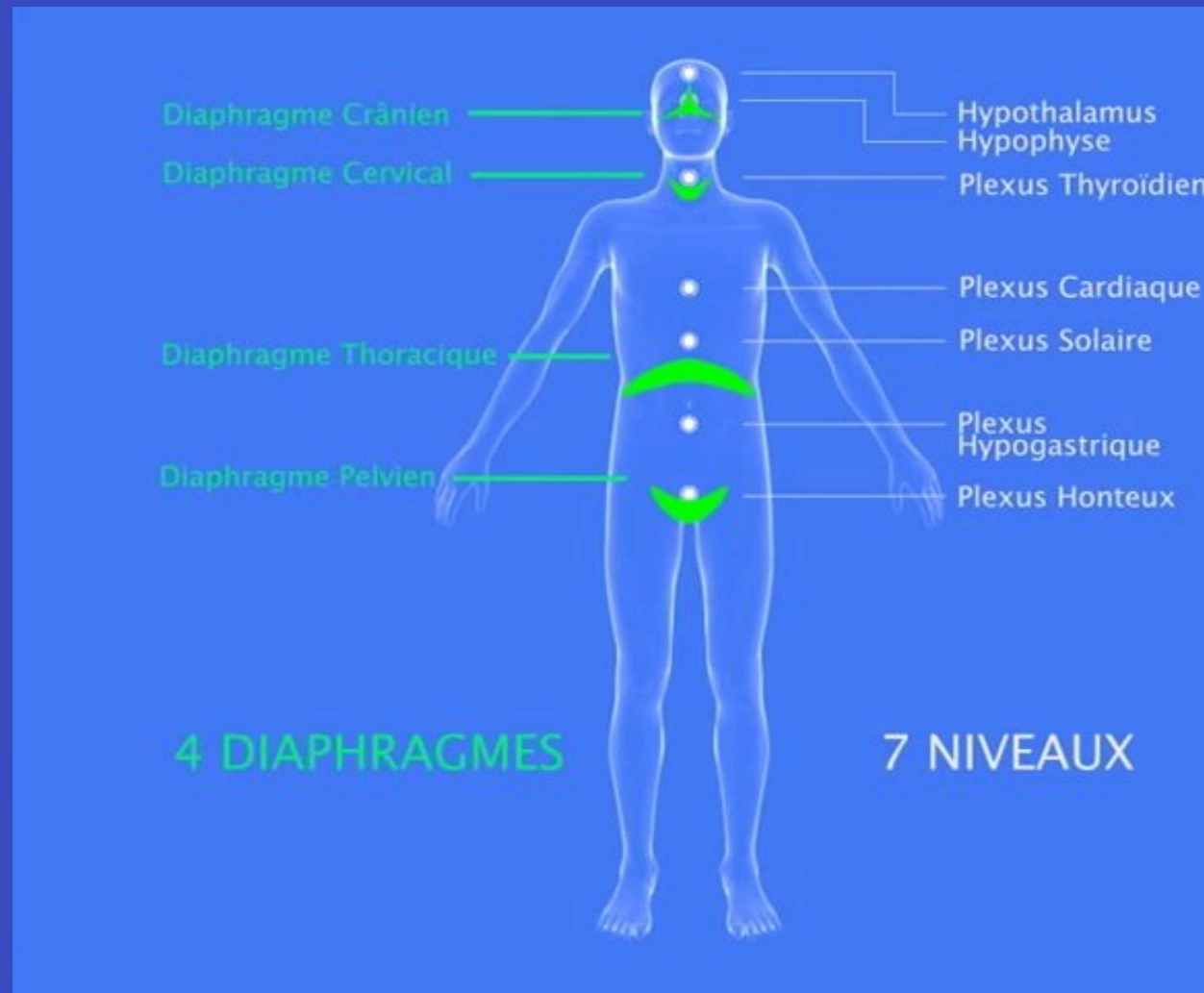
Respiratory System

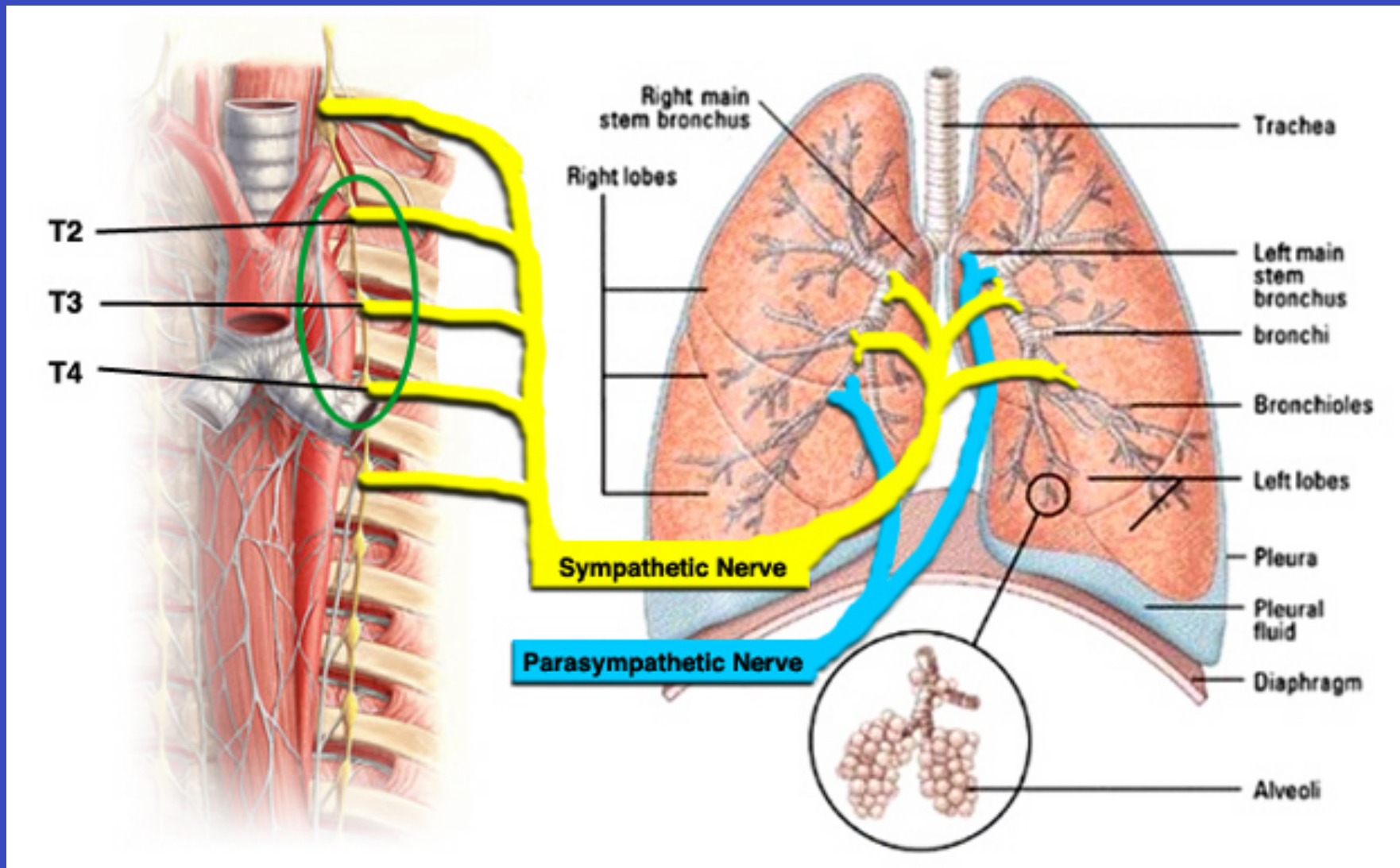


Video: Total Respiration

Animated film that shows the
lungs as bellows that pump
lymphatic fluid and massage
internal organs.

YouTube video by Roger
Mammetti





FIGHT

or

Flight

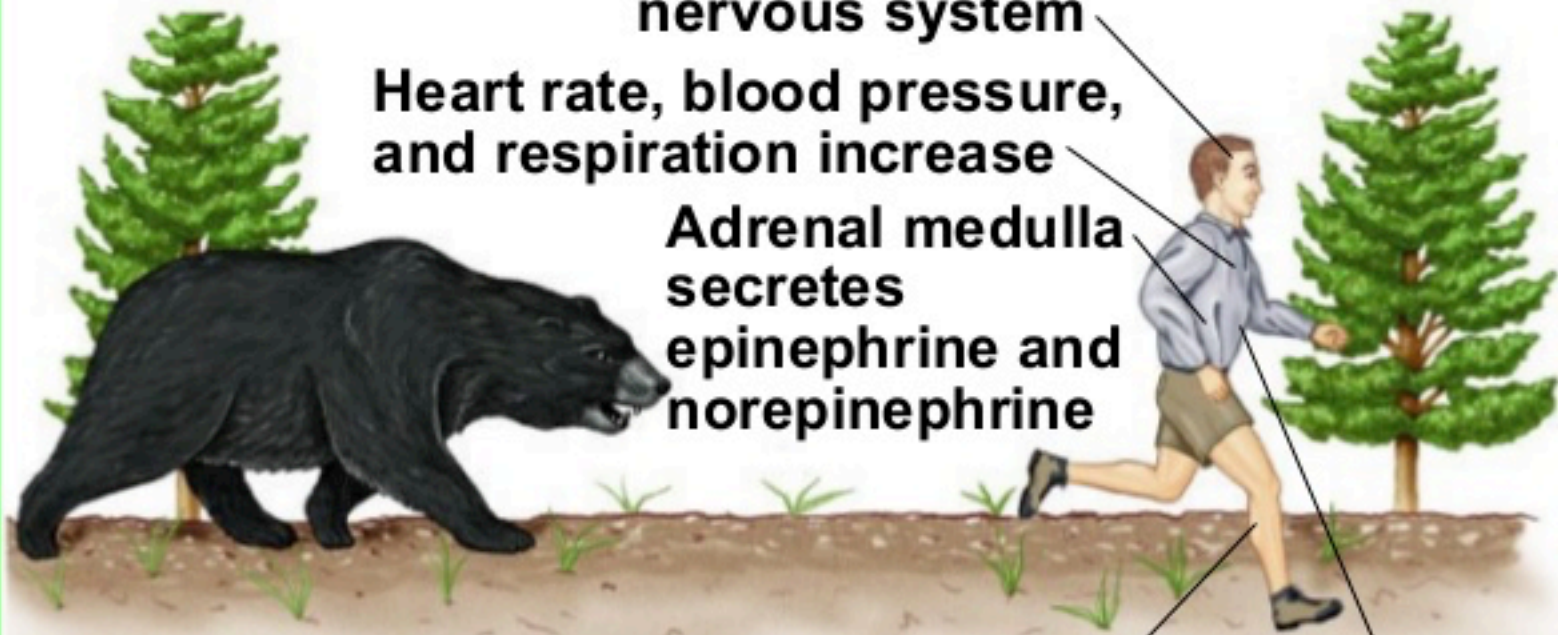


Uncertainty, Paralysis,
Powerlessness, Avoidance

**Hypothalamus activates
sympathetic division of
nervous system**

**Heart rate, blood pressure,
and respiration increase**

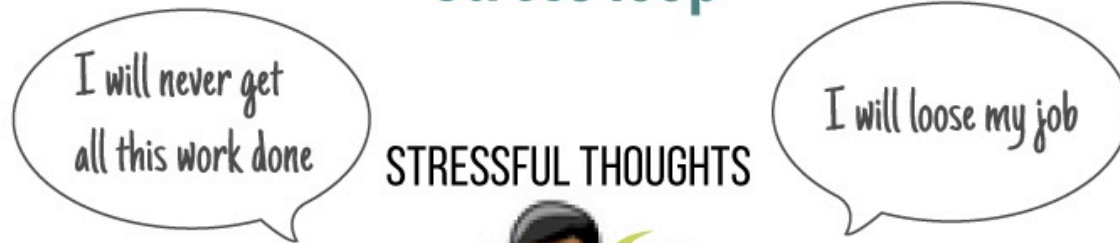
**Adrenal medulla
secretes
epinephrine and
norepinephrine**



**Blood flow to
skeletal muscles
increases**

**Stomach
contractions
are inhibited**

Stress loop



STRESS HORMONES ARE RELEASED INTO THE BODY



BODY TENSION TELLS THE MIND "YES, THERE IS DANGER"

AND IT GOES ON, AND ON, A

BIOLOGICAL STRESS RESPONSE,
BODY TENSES UP

Trauma Affects Stress Response Systems

Autonomic Nervous System

Hypothalamic Pituitary Adrenal Axis

Anxiety, depression, insomnia, PTSD, emotion dysregulation, behavioral dysregulation, stress-related medical conditions (metabolic syndrome, cardiovascular, cerebrovascular, GI) are all associated with malfunctions in stress response systems.

Mind-body practices, especially breathing practices, have the potential to correct stress-related disorders of these systems.

Slide courtesy of Patricia Gerbarg, MD, 2016 APA Course

How to interrupt the stress loop?

Video: The Fly and the Samurai



“When the mind is agitated, break
up the patterns of breath.”

Patanjali sutras

How to interrupt the stress loop?

Parasympathetic Nervous System:

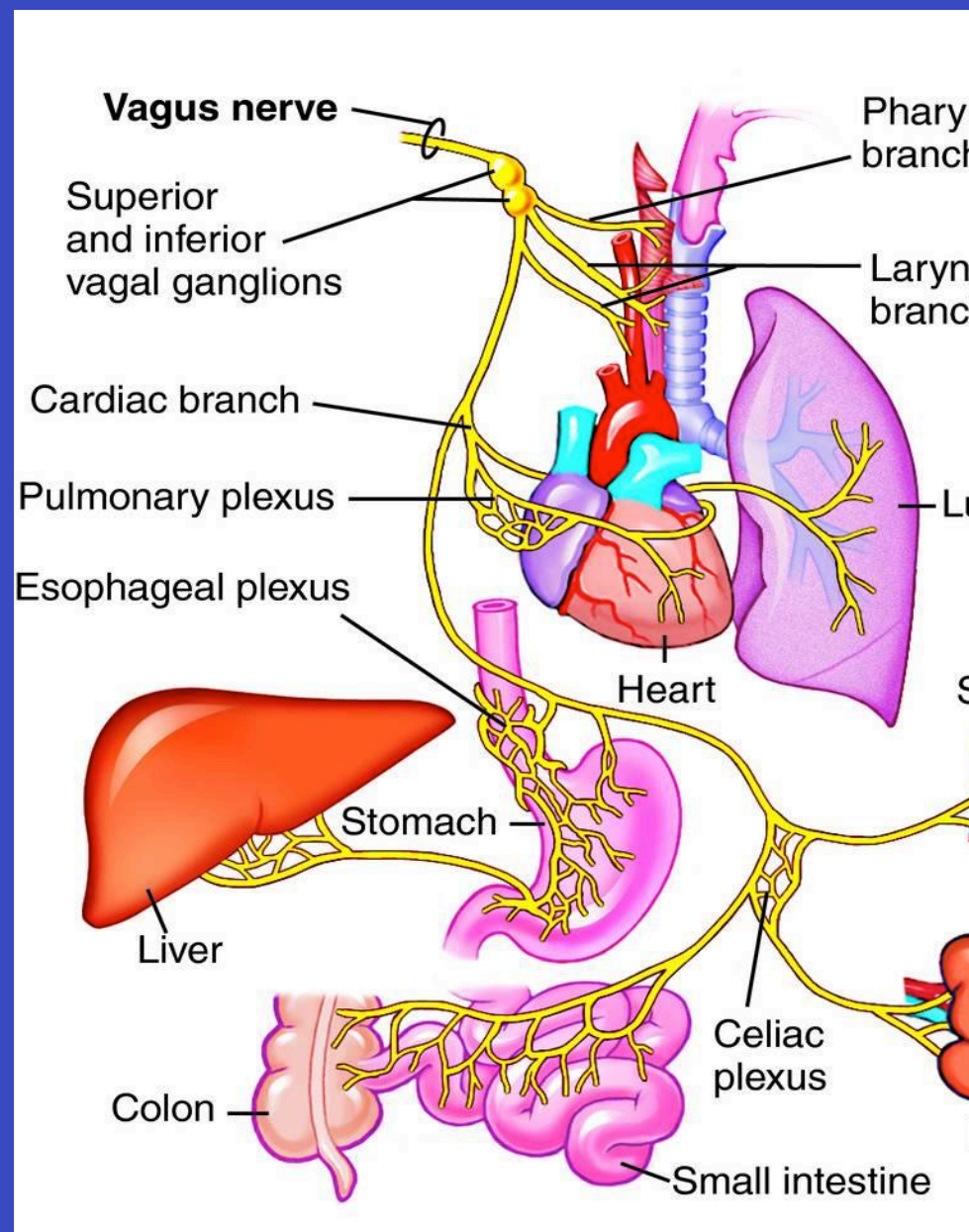
Rest and Digest

Main component is Vagus Nerve.

Deep Breathing activates stretch

receptors in the lungs that activate

PNS and interrupt stress loop.



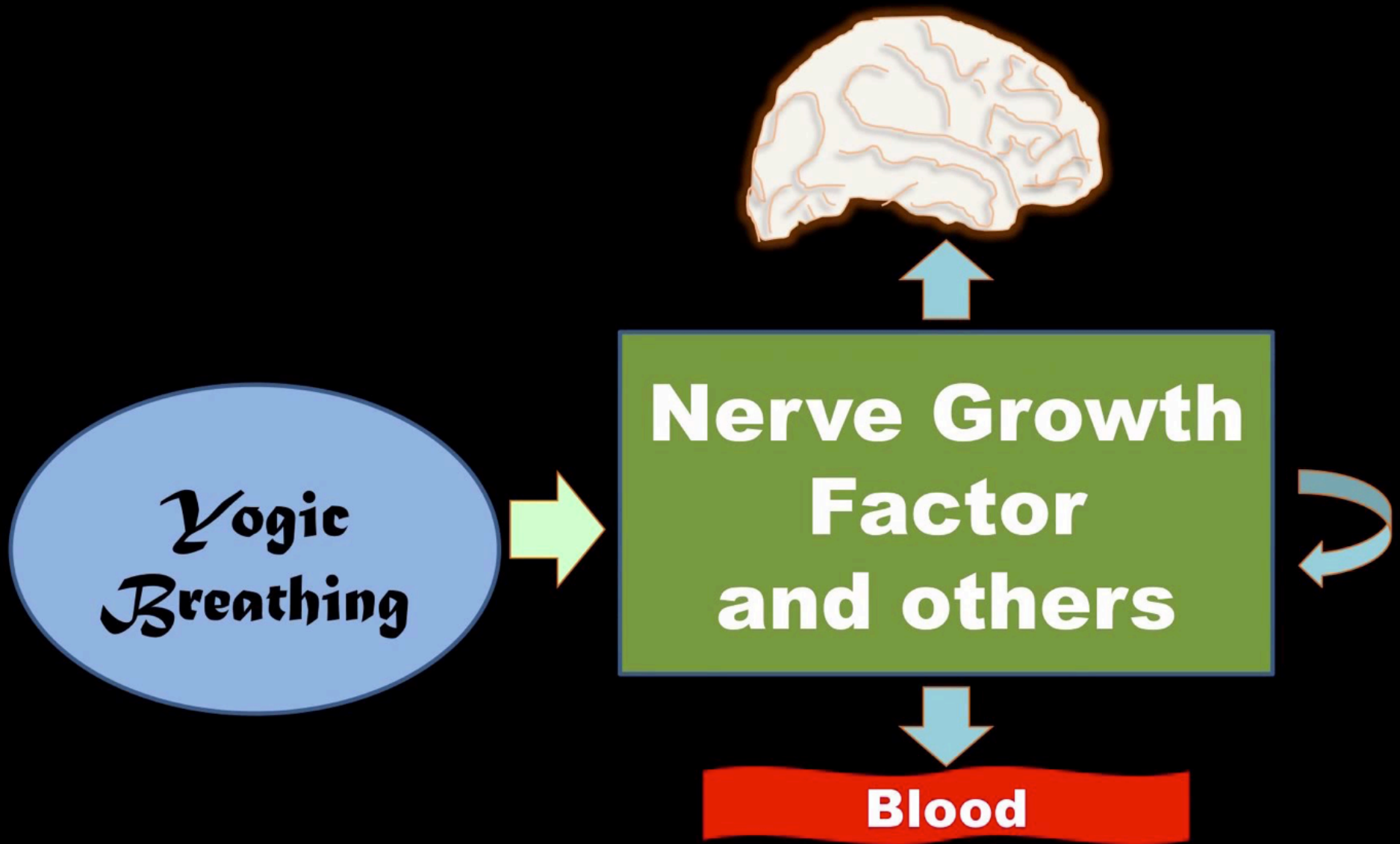
Breath and Emotion

- ❖ Specific emotions induce breath patterns
- ❖ Voluntary changes in breath pattern induce specific emotions
- ❖ Breathing activates the vagus nerve
- ❖ Voluntary change in pattern of breath can alter the activity of
vagus nerve

(Philippot P, Gaetane C, & Blairy S. Respiratory Feedback in the Generation of Emotion. *Cognition and Emotion*. 2002. 16(5):605-607) Slide courtesy of Patricia Gerbarg, MD

Fear is excitement without the breath.

Fritz Perls



Research by Sundar Balasubramanian

What is the single
most beneficial
breathing exercise?

Slow, deep breathing is the most beneficial breathing exercise.

What is the normal respiration rate (number of breaths per minute)?

The normal respiration rate is
12 to 20 breaths per minute.

Slow, Deep Breathing

- ❖ Breathing rate is less than 12 bpm
Ideal rate is 5 bpm, which is called
Coherent Breathing
- ❖ Breathing is even
(inhalation and exhalation are equal)
- ❖ Breathing is gentle

How can we practice slow, deep breathing?

Also called Conscious Breathing, Paced Breathing,
Qigong Breathing.

When the rate is the ideal rate of 5 bpm (breaths
per minute), it is called Coherent Breathing.

(continued)

How to Practice Slow, Deep Breathing?

- ❖ Simply enjoy some slow deep breaths anytime.
- ❖ Or you can count silently to yourself to pace your breathing. For example, count to 6, or to whatever number is comfortable, on the in-breath and on the out-breath. (continued)

How to Practice Slow, Deep Breathing?

You can use an app, download, or YouTube video to pace your breathing.



Breathing Zone App

Exercise:
Paced Breathing with
Breathing Zone app

Total Relaxation In Just 5 Minutes.

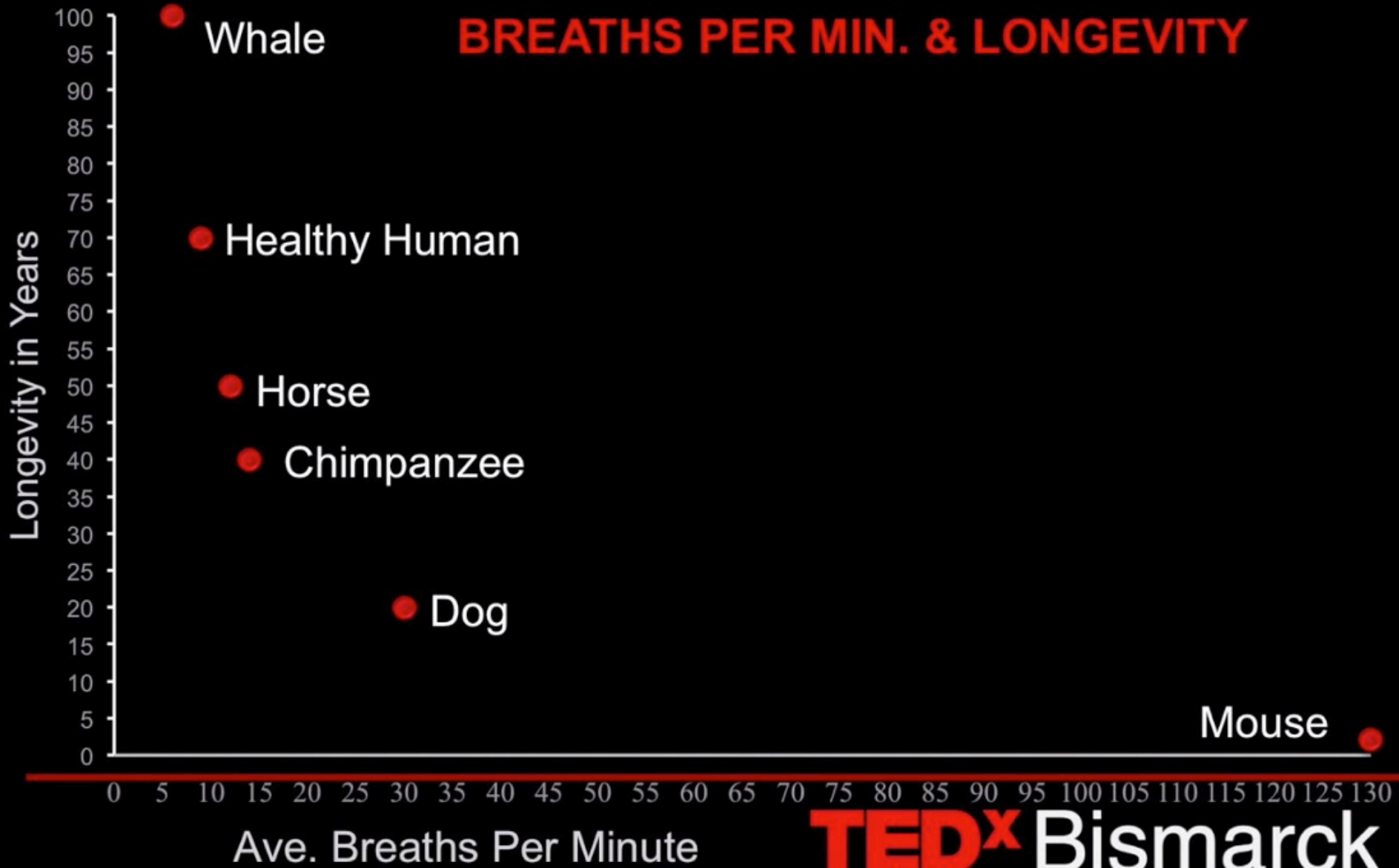
- Relieve Stress
- Reduce Anxiety
- Manage Hypertension



What is the recommended amount of time to practice slow, deep breathing each day?

Recommended amount of time is at least 20 minutes once or twice a day. However shorter practice times are also beneficial.

BREATHS PER MIN. & LONGEVITY



TED^x Bismarck

x = independently organized TED event



Research Has Shown Many Benefits
from Slow, Deep Breathing:

Improved mental clarity and focus

Decreased depression

Decreased anxiety

Improved energy and vitality

Decreased symptoms of PTSD

"Poor posture, restrictive clothing, diets that lead to high blood pressure and racing hearts, increasingly rapid and emotionally stressful lives, lack of exercise, multitasking, polluted environments, and slouching in front of computers are just a few of the things that literally take our breath away, creating a lifestyle that's incongruent with proper breathing." Don Campbell

Modern life causes the average person to use about a third of the natural lung capacity.



Dynamics of Breathing for
Stress Reduction:
Percussive Massage
Increases Oxygen Supply
at the Cellular Level



Massage Tools will be available for use at the end of this session, and also available to use in the Self-Care Station on the 7th floor throughout the conference.



Massage scalp and face
through towel.

Massaging over jaw
stimulates gums and
improves dental health.



Radiant Mind Breathing Exercise: Kapalabhati

1. Exhale and Inhale through the nose.
2. Each exhalation is short and vigorous, using the abdominal muscles to actively expel air.
3. Let the inhalation happen on it's own. Pay attention to the exhalation, and don't worry about the inhalation.

Complete 3 rounds, each round of 20 breaths, with a brief rest between rounds.

Compassionate Abiding: Breathing Practice for Emotional Health

“A question that has intrigued me for years is this: how can we start exactly where we are, with all our entanglements, and still develop unconditional acceptance of ourselves instead of guilt and depression? One of the most helpful methods I’ve found is the practice of compassionate abiding.” Pema Chodron (continued)

Compassionate Abiding

“The next time you realize that you’re hooked [on a painful emotion], you could experiment with this approach. Contacting the experience of being hooked, you breathe in, allowing the feeling completely and opening to it. The in-breath can be deep and relaxed—anything that helps you to let the feeling be there, anything that helps you not push away.” Pema Chodron (continued)

Compassionate Abiding

“Then, still abiding with the urge and edginess of the feeling, as you breathe out you relax and give the feeling space. The out-breath is not a way of sending the discomfort away but of ventilating it, of loosening the tension around it, of becoming aware of the space in which the discomfort is occurring.”

Pema Chodron

Compassionate Abiding

“A paradox is central to the practice of Compassionate Abiding: the less we fight against that which is disturbing us, the less disturbing these experiences become.”

Richard E. Schultz, Ph.D.

“Whenever I feel blue, I start
breathing again.”

L. Frank Baum



Alternate Nostril Breathing: Nadi Shodana
Balances and relaxes the nervous system

Alternate Nostril Breathing

Can be done sitting or lying down (helps to improve sleep)

Use thumb to gently close right nostril.

Take 10 breaths in and out through open nostril.

Breathe gently, allowing each inhale and exhale to be relaxed and full.

Then switch sides. Use fingers to gently close left nostril.

Take 10 breaths in and out through open nostril.

Repeat and continue alternate nostril breathing every 10 breaths for 3 to 5 minutes or longer.

Another Technique for Alternate Nostril Breathing

1. Close off one nostril, and take one gentle breath (exhale and inhale) through the open nostril
 2. After one breath, switch sides, closing off the other nostril and taking one full exhale and inhale through the open nostril
 3. Switch to the other nostril after each full exhale and inhale
- Tip: Always begin with the exhale and switch nostrils after each completing the inhale

“The empiric literature on therapeutic breathing for psychiatric disorders is expanding along with the breath retraining technologies. Clinicians interested in integrating breath practices into their work will be able to choose applications that they find most suitable to their patient population and to their own practice style.”

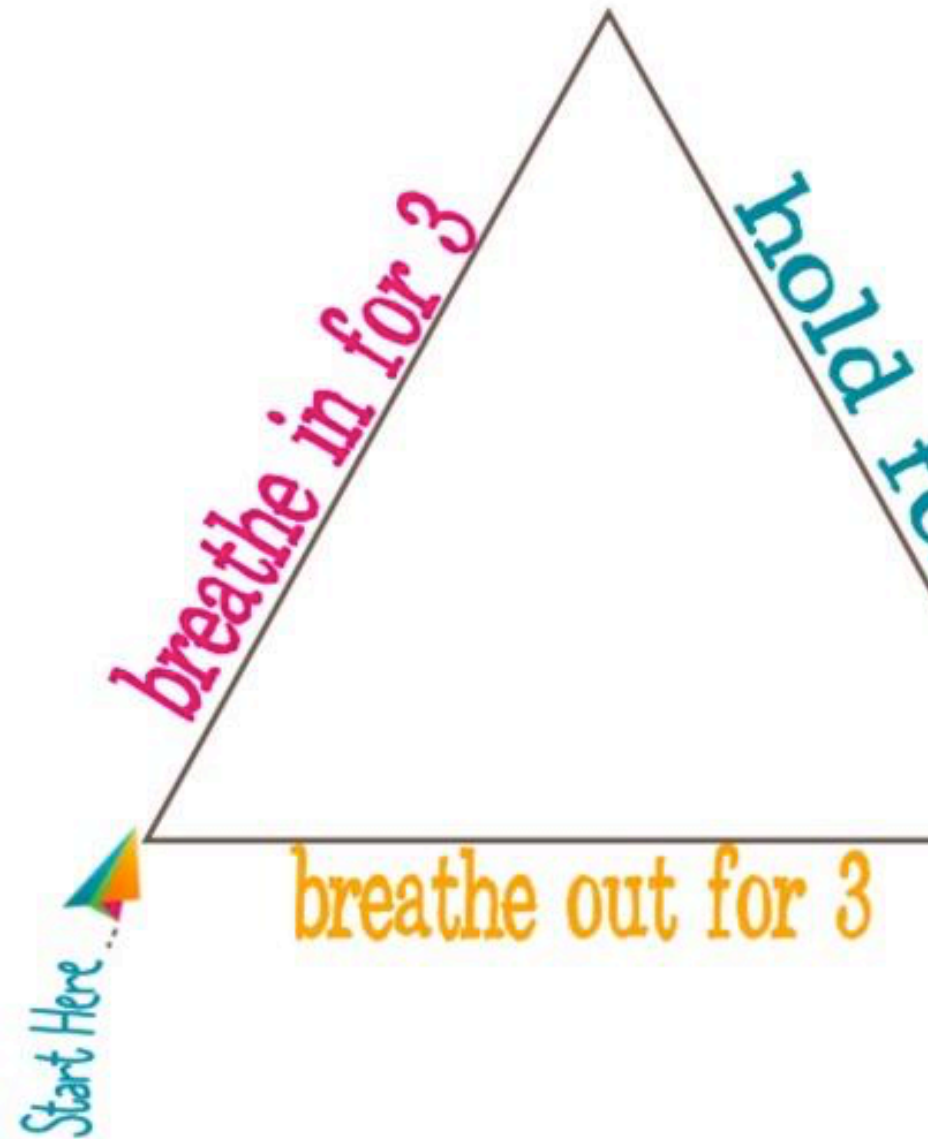
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Dynamics of Breathing
for Stress Reduction:
Improve breathing by keeping
upper airways open by daily
Nasal Irrigation with Saline Rinse,
such as Nasopure



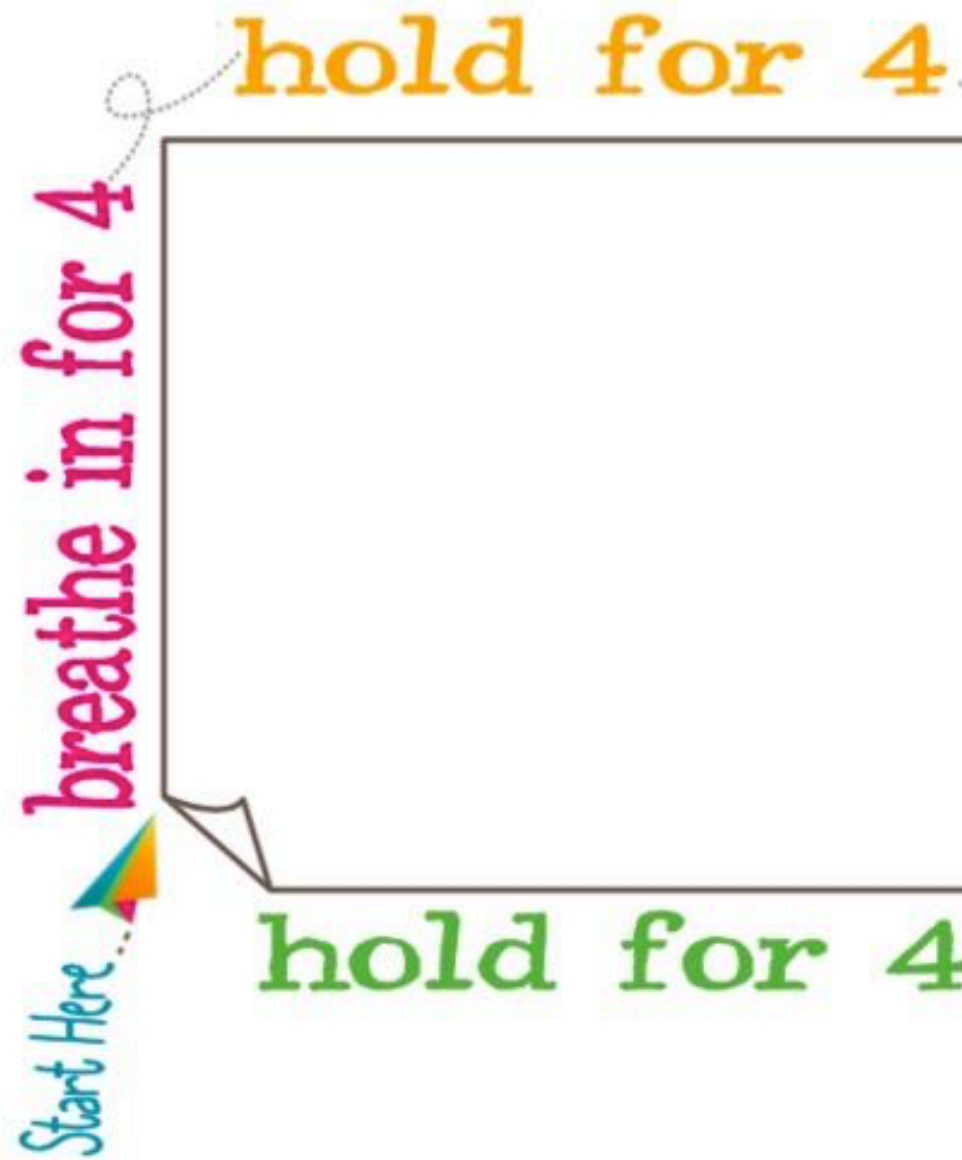
Triangle Breathing

Deep Breathing Printables
Download for free from
Encourage Play.com



Square Breathing

Deep Breathing Printables
Download for free from
Encourage Play.com



“Inhale, and spirit approaches you.

Hold the inhalation, and spirit remains with you.

Exhale, and you approach spirit.

Hold the exhalation, and surrender to spirit.”

Krishnamacharya

“Breathing is the greatest pleasure in life.”

Giovanni Papini

Conscious Breathing is
a powerful resource to
improve vitality and
emotional well-being.



Recommended Resources

1. The Healing Power of the Breath. Book and CD by Richard P. Brown MD and Patricia Gerbarg MD.
 2. www.Breath-Body-Mind.com by Richard P Brown MD and Patricia Gerbarg MD. Workshops and information about Coherent Breathing and other mind-body practices.
 3. Qi Gong for Self-Healing, DVD by Lee Holden
- Questions: email Colleen.Loehr@dmh.mo.gov