

Treating Stress without Pharmaceuticals

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LECOM Integrative & Lifestyle Medicine
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Objectives:

- Review practical approaches to stress management within clinical practice.
- Create a historical framework of lead clinicians who have pioneered important work in the stress arena.
- Discuss what Osteopathy brings to the conversation about stress.
- Encourage us physicians to care for our own stress patterns.









Practical Stress Management

Maximizing self-care focus:

- Improved sleep hygiene
- Regular exercise
- Addressing pain patterns
- Making healthy food choices
- 2,000IUs Vitamin D3/D
- Meditation/Breathing techniques
- Connectivity



Sleep Hygiene

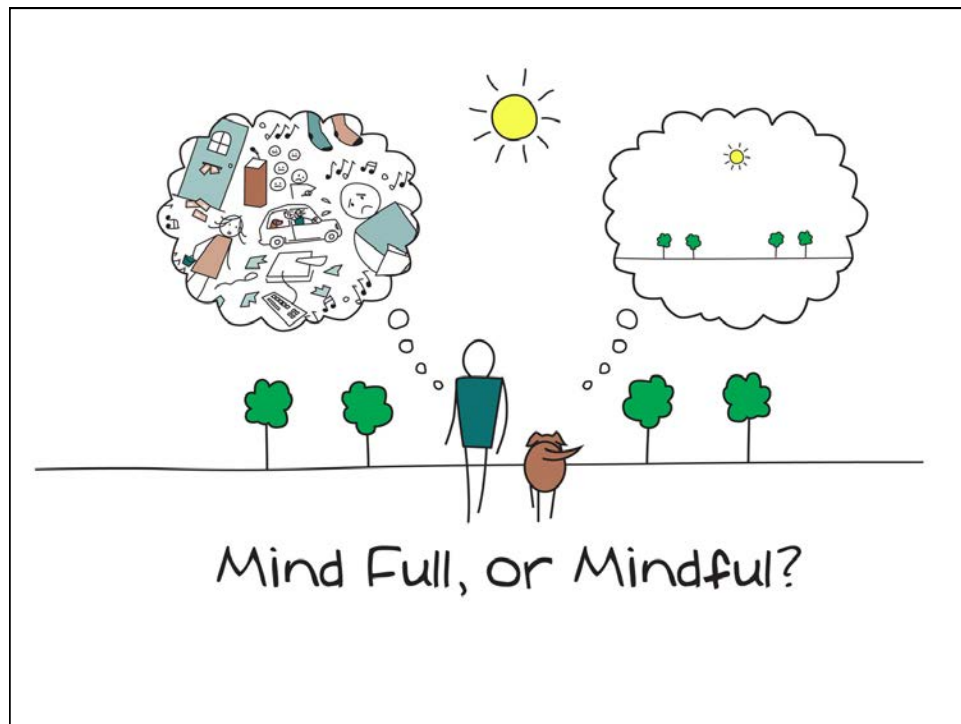
10 Steps to Set the Stage for a Good Night's Sleep

- **Be mindful of the basic rhythm of life.** Establish regular rising, bed, meal, and exercise times. Try to receive early morning light upon awakening and dim evening light before bed. Spend some time outside each day even on cloudy days.
- **Manage caffeine, nicotine, alcohol, and other drugs.** Caffeinated foods and drinks can have long lasting effects even up to 12 hours in some individuals. Avoid these foods and drinks after 4:00 pm.
- **Regular cardiovascular exercise helps us to sleep.** Although, it is important to avoid vigorous exercise 3-4 hours before bed.
- **It is better not to have a large meal before bed.** Consider a small amount of complex carbohydrates (e.g., whole grains, lentils, beans, brown rice, bananas, dried fruit or nuts) as a bedtime snack. It's important to avoid foods that dramatically raise blood sugar.
- **A completely dark, cool and quiet sleep environment promotes sleep.** The room needs to be a comfortable and safe place with clean air and nontoxic bedding. If your mattress is very old or uncomfortable consider purchasing a new one.
- **Avoid clock watching in bed.** Clock watching can bring you back to wakefulness. Position your clock where you are not able to read it from your bed. Also, if the clock gives off light you may want to reposition it to maintain darkness.
- **Consider your stress related anxieties or worries and address them.** Make a to do list for the next day before you go to bed so you don't lay in bed worrying about yesterday or tomorrow. Understand that letting go and surrender are key in getting to sleep. It cannot be forced.
- **Manage bed and bedroom stimulation by only using the bed for sleep and intimacy.** Go to bed only when sleepy and get out of bed after long periods (15-20 minutes or more) of wakefulness until becoming sleepy again.
- **Are you concerned with early waking?** Don't nap in the late afternoon or evening. Also, engage in some kind of stimulating activity in the evening to keep awake until bedtime.
- **Develop a consistent bed time routine.** Having a regular, peaceful and pleasant bedtime routine signals to our bodies and minds that it is time to slow down and prepare for sleep. Going for a walk, reading a book, having a cup of herbal tea, taking a bath... find what works for you. Remember to dim the lights in the evening as part of this process.

Integrative Considerations for Stress Management

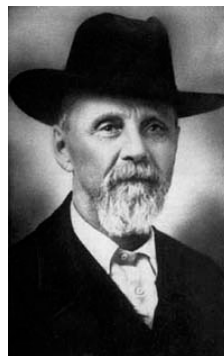
- Osteopathic Manual Medicine
- Psychological Support
- Acupuncture
- Regenerative Injection Therapies
- Aromatherapy
- Music Therapy
- Yoga Therapy
- Aqua Healing
- Mindfulness Based Stress Reduction (MBSR)
- Heart Math





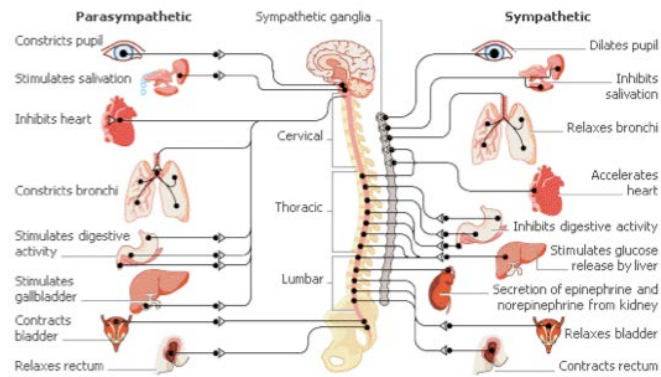
Clinical Pioneers in Stress

- Andrew Taylor Still, DO
- Hans Selye, MD, PhD
- Jon Kabatt-Zinn PhD
- Rachel Remen, MD
- Dean Ornish, MD
- Herbert Benson, MD
- Andrew Weil, MD
- David Posen, MD

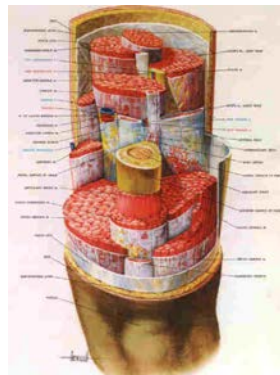
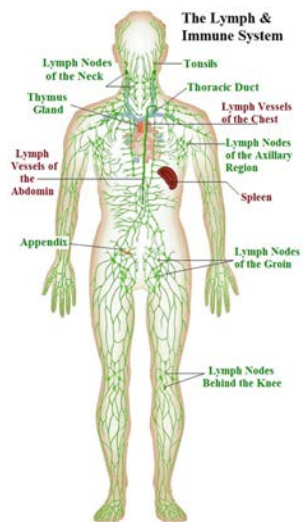


CRISIS
 危机
 A time of danger;
 机会
 A time of opportunity;

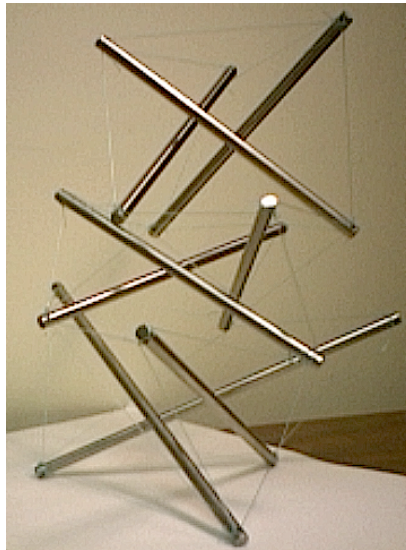
Autonomic Nervous System



Fascia and Lymphatics



Tensegrity



Hans Selye, MD, PhD

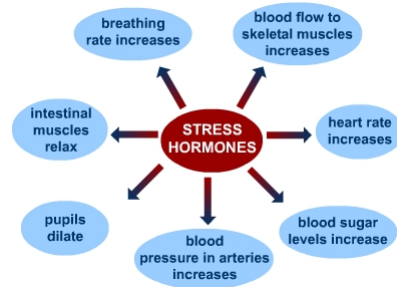
The Canadian Journal of Continuing Medical education, April 1995



- Father of the stress theory defined stress as “the nonspecific response of the body to any demand made upon it.” General Adaptation Syndrome
- The “demand” can be a threat, a challenge or any kind of change which requires the body to adapt.
- The response is automatic, immediate.
- Stress can be good (eustress) when it helps us perform better, or it can be bad (distress) when it causes us dysfunction and sickness.

Stress Reaction

- Adrenaline
- Cortisol
- Norepinephrine
- These changes are intended to be protective.
- “Fight or flight” because it provides the strength and energy to either fight or run away from danger.



Common Symptoms of Stress?

The Canadian Journal of Continuing Medical education, April 1995

- Physical: fatigue, insomnia, muscle aches/stiffness, heart palpitations, chest pains, abdominal cramps, nausea, trembling, cold extremities, flushing or sweating and weakened immune system.
- Mental: decrease in concentration and memory, indecisiveness, mind racing or going blank, confusion, loss of sense of humor.
- Emotional: anxiety, nervousness, depression, anger, frustration, worry, fear, irritability, impatience, short temper.
- Behavioral: pacing, fidgeting, nervous habits (nail-biting, foot tapping), increased eating, smoking, drinking, crying, yelling, swearing, blaming, and throwing things or hitting.



Herbert Benson, MD



- A pioneer in Mind Body Medicine, and one of the first Western physicians to bring spirituality and healing into medicine. Throughout his 40+-year career, Dr. Benson has worked to build awareness of Mind Body Medicine, to validate it through research, and to bridge the gap between Western and Eastern medical practices. Dr. Benson is the Director Emeritus of the Benson-Henry Institute (BHI), and Mind Body Medicine Professor of Medicine, Harvard Medical School.
- ***The Relaxation Response***

Thomas Keating

The Human Condition

- “All of us have been through the process of being born and entering this world with three essential biological needs: security and survival, power and control, affection and esteem. Without adequate fulfillment of these biological needs, we probably would not have survived infancy. These three instinctual needs are all we have to build a program for happiness.”



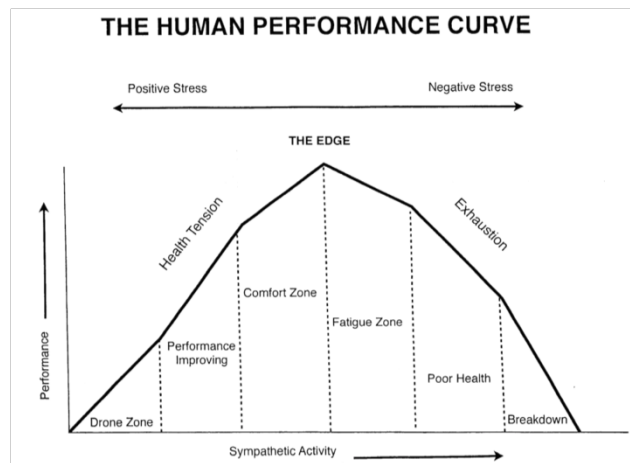
Bill Wilson

12 Steps of Alcoholic Anonymous



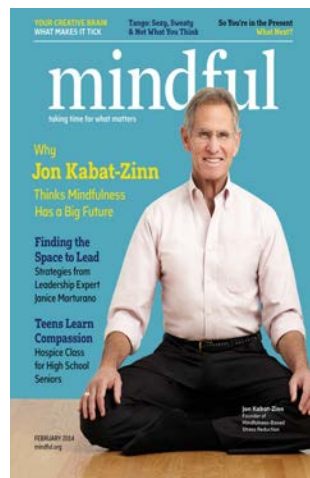
- 1. We admitted we were powerless over alcohol —that our lives had become unmanageable.
- 2. Came to believe that a Power greater than ourselves could restore us to sanity.
- 3. Made a decision to turn our will and our lives over to the care of God *as we understood Him*.
- 4. Made a searching and fearless moral inventory of ourselves.
- 5. Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
- 6. Were entirely ready to have God remove all these defects of character.
- 7. Humbly asked Him to remove our shortcomings.
- 8. Made a list of all persons we had harmed, and became willing to make amends to them all.
- 9. Made direct amends to such people wherever possible, except when to do so would injure them or others.
- 10. Continued to take personal inventory and when we were wrong promptly admitted it.
- 11. Sought through prayer and meditation to improve our conscious contact with God *as we understood Him*, praying only for knowledge of His will for us and the power to carry that out.
- 12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs.

THE HUMAN PERFORMANCE CURVE



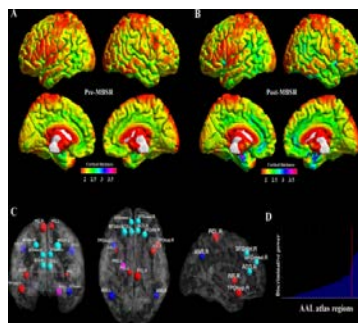
Dr. Jon Kabat-Zinn

- Founder UMass Stress Reduction Clinic.
- Mindfulness Based Stress Reduction (MBSR).
- “The awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment.”
- ***Full Catastrophe Living***
- ***Wherever You Go There You Are***

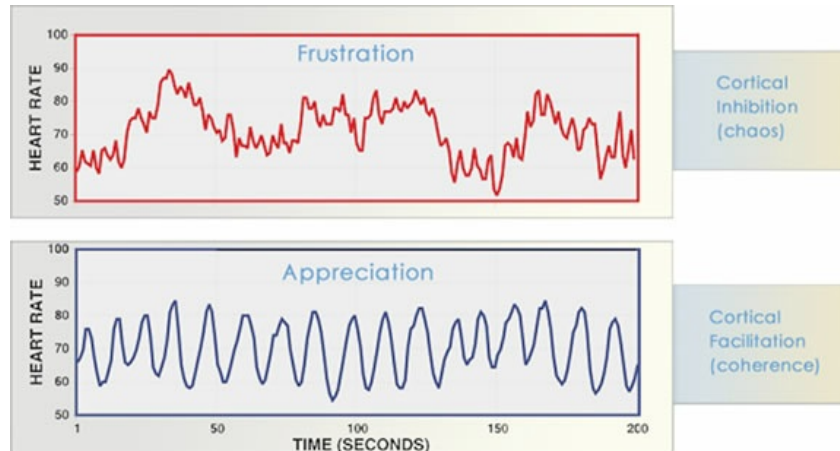


Physiologic Effects of Meditation

- Research conducted at the University of Wisconsin-Madison suggests a positive correlation between meditation practice and left-sided prefrontal cortex activity, which is associated with positive affective mental states.
- In this study, meditation was associated with increases in antibody titers to influenza vaccine suggesting correlation among meditation, positive emotional states, localized brain activity, and improved immune function.

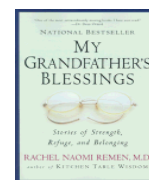
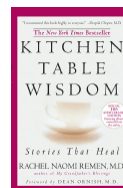


Heart Rate Variability



Rachael Remen, MD

- **Remen Institute for the Study of Health and Illness**
Wright State University
Boonshoft School of Medicine.
- Emphasis on enhancing medical student training through an experiential curriculum called— Finding Meaning in Medicine.

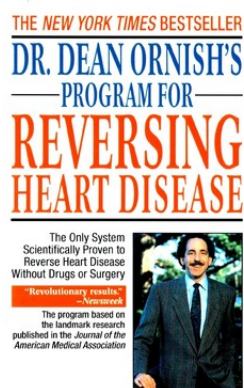


The Power of Our Wholeness to Heal

— *by Rachel Naomi Remen, M.D.*

- “In 1962 when I graduated from Medical School the goal of medicine was cure. Anything less was considered failure. Yet many things that bring people to us cannot be cured. Fortunately cure is not the only successful outcome of our relationships to our patients. There is a great deal more to personal wholeness than physical health and more that medicine can offer beyond the curing of disease.”

Lifestyle Medicine

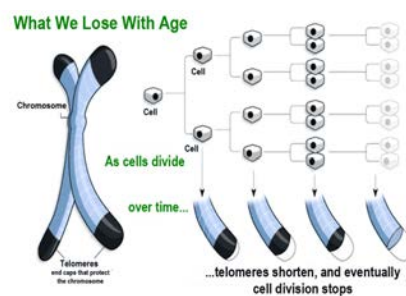


Lancet Oncology

- September 17, 2013 first-ever data from Preventive Medicine Research Institute and the University of California, San Francisco.
- Dr. Elizabeth Blackburn –awarded the noble prize (2009) in medicine by discovering telomerase--Telomerase is a cellular ribonucleoprotein reverse transcriptase enzyme that adds telomeric DNA to shortened telomeres, protects and repairs telomeres. Lifestyle changes have the potential to reverse aging on a cellular level.
- Comprehensive lifestyle changes may increase the length of telomeres, an indication of biological age over time.



Telomeres



- End of the chromosomes that control cellular aging.
- They help keep our DNA from unraveling.
- As they get shorter our lives often become shorter and the incidence of heart disease and cancer increases.

Telomere Study

- 10% increase in the length of the telomere in the study group that made lifestyle changes. Whereas 3% shorter in the control group.
- The more people changed their lifestyle the longer the telomeres became at any age.
- The same lifestyle changes were included for research with the heart, prostate and diabetes.

Telomere: Fountain of Youth?

- The study allowed an expansion of understanding that telomeres could lengthen.
- Other studies have looked at “one moment in time” and found runners had longer telomeres and smokers had shorter telomeres. People who are chronic caregivers and under chronic emotional stress (parents with Alzheimer's or Autistic children) had shorter telomeres too.
- This study intervened and gave a lifestyle program, with a control group to compare to, and found that overall the telomeres became longer in the intervention group that made the lifestyle changes.

Dean Ornish, MD

- “We tend to think of advances in medicine as a new drug, a new laser—something really high tech and expensive. What we have done in our studies over the past 35 years is use these sophisticated, expensive scientific measures to prove how powerful these simple, low tech, low cost, interventions can be.”
- “Our bodies often have a remarkable capacity to begin healing themselves and much more quickly than we once realized—if we simply make the lifestyle changes that are really the primary determinants for our health and wellbeing.”

Lifestyle Changes

- Whole foods (food that has been processed or refined as little as possible and is free from additives or other artificial substances) low fat, plant based diet.
- Moderate exercise (20-30 minutes of cumulative walking per day).
- Stress management techniques via yoga and meditation.
- More social support and intimacy.



Lancet Oncology Prostate Cancer Study

- The greater the lifestyle change the longer the telomeres became. The more participants changed the more improvements were seen. This is consistent with the past 36 years of research completed by Ornish.
- The more people changed, within the prostate cancer study, the more it slowed, stopped or even reversed the progression of prostate cancer or changed the gene expression.

Realities of Stress

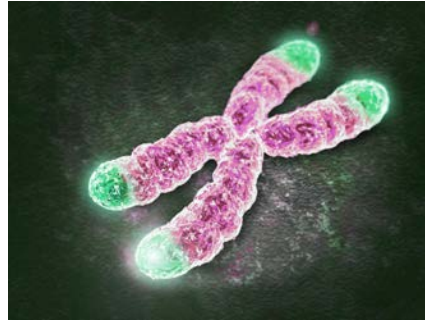
- “Seeps into the cells and impact hundreds of biologic processes including rate of aging.”

Elissa Epel, PhD



UC-Davis Study

- 3 months of meditation training in Colorado.
- Compared cell aging and found slowed cell aging in the meditation group.
- Mind wandering and presence of mind measures resulted in shorter telomeres of mind wandering people.
- “Our cells are listening to our thoughts.”



Blackburn et.al

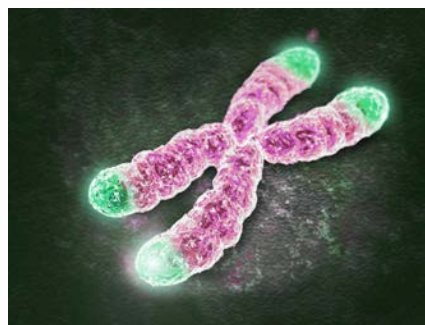
- Study of the malleable stress factors that affect cell aging.
- Extreme stress of mothers caring for chronically ill children and compared their telomere length to mothers of low stress children.
- Telomeres were dramatically shorter in the stress group. The study is being expanded to anxiety, depression and trauma.
- “It appears our cells are listening to our suffering.”

Measuring chronic stress

- A different kind of R&R.....Red & Rumination.
- Threats to our ego coupled with carrying around stressful thoughts long after an event happened.
- The “stickiness of negative thoughts” and how we carry them with us. This keeps the stress response alive and dwindle our telomeres.

Stress & Telomeres

- Telomeres act as the pacemaker of the cells life.
- Stress accelerates telomere loss
- Short telomeres may be the best biomarker of health and disease risk. The monitoring of telomere length may be a powerful tool for better health.
- The upregulation of telomerase genetically can reverse a decline in telomere shortening.
- What are we doing to leverage telomere biology in healthcare?

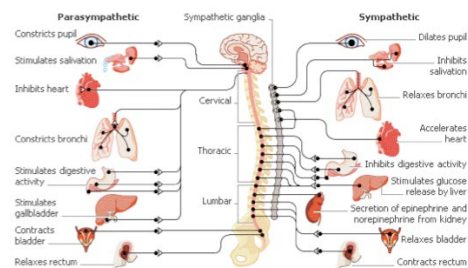
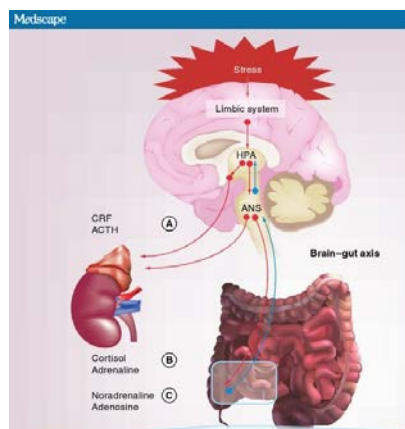


Take Home Points for Stress Management

- Decrease caffeine use
- Regular exercise
- Improved sleep hygiene
- Address pain patterns
- Make healthier food choices
- Ensure normalization of 25-OH Vitamin D (2,000IU Vitamin D3/D)
- Meditation
- Heart Math
- Consider counseling



Balancing the ANS



Adaptogens:

- Ashwagandha: is also used as an "adaptogen" to increase resistance to environmental stress, and as a general tonic. 2-3 grams/day.
- Rhodiola: is used for increasing energy, stamina, strength and mental capacity; and as a so-called "adaptogen" to help the body adapt to and resist physical, chemical, and environmental stress. It is also used for improving athletic performance. 200mg/day.

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RESULTS OF CONSUMERLAB.COM TESTING OF OMEGA-3 MARINE OIL SUPPLEMENTS
Click on a product name, beneath a product name to find a vendor that sells it. To find retailers that sell some of the listed products click here.

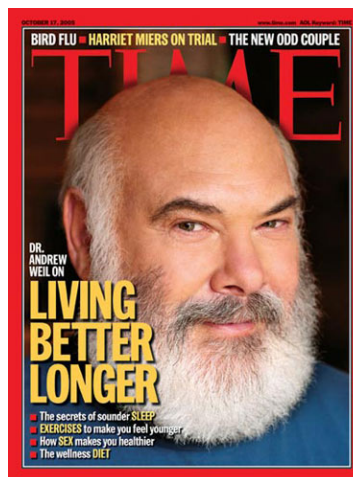
TEST RESULTS

Product Name and Key Ingredients	Labeling Accuracy	Contaminant Levels (ppm)	Purity (mg Omega-3 per serving)	Pharmaceutical Reference	Supplement Reference	Price Point
Product Name: Omega-3 Marine Oil Supplement	Labeling Accuracy: 100%	Contaminant Levels: 0.01	Purity: 1000 mg	Pharmaceutical Reference: 1000 mg	Supplement Reference: 1000 mg	\$2.19
Product Name: Omega-3 Marine Oil Supplement	Labeling Accuracy: 100%	Contaminant Levels: 0.01	Purity: 1000 mg	Pharmaceutical Reference: 1000 mg	Supplement Reference: 1000 mg	\$2.19
Product Name: Omega-3 Marine Oil Supplement	Labeling Accuracy: 100%	Contaminant Levels: 0.01	Purity: 1000 mg	Pharmaceutical Reference: 1000 mg	Supplement Reference: 1000 mg	\$2.19
Product Name: Omega-3 Marine Oil Supplement	Labeling Accuracy: 100%	Contaminant Levels: 0.01	Purity: 1000 mg	Pharmaceutical Reference: 1000 mg	Supplement Reference: 1000 mg	\$2.19
Product Name: Omega-3 Marine Oil Supplement	Labeling Accuracy: 100%	Contaminant Levels: 0.01	Purity: 1000 mg	Pharmaceutical Reference: 1000 mg	Supplement Reference: 1000 mg	\$2.19

Breathing Techniques to Reduce Stress

4-7-8 Breath

- Inhale for 4 seconds- hold for 7 seconds-exhale for 8 seconds.
- Place the tip of your tongue against the ridge of tissue behind your upper front teeth. You will be exhaling through your mouth around your tongue; try pursing your lips if this seems awkward. Exhale fully through your mouth, making your abdomen work to get all the breath out.

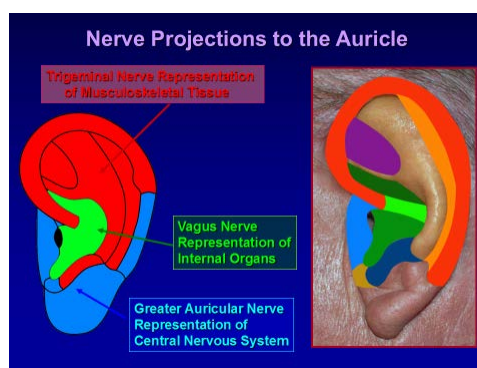
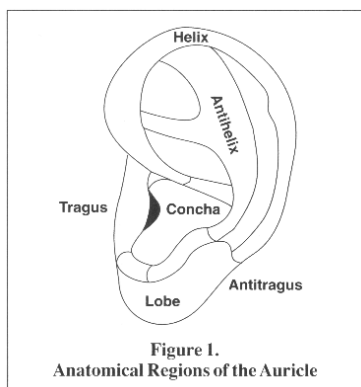


Battlefield Acupuncture

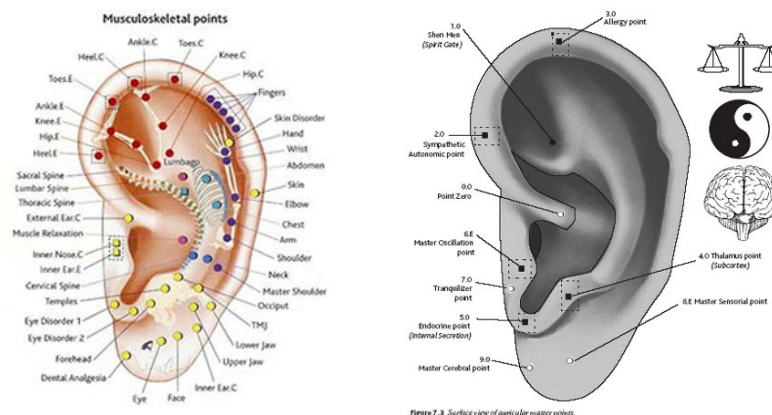
- Developed by Richard Niemtzow, MD in 2001
- Treatment for pain
- Acupoints:
 - Cingulate gyrus
 - Thalamus
 - Omega 2
 - Point Zero
 - Shenmen



Auricular Acupuncture



Auricular Treatments for Stress & Pain



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