

# *Life is Your Best Medicine*



## Tieraona Low Dog, MD

Founder: Medicine Lodge Ranch

National Geographic's: *"Life Is Your Best Medicine," "Healthy At Home,"*  
and *"Fortify Your Life"*

[www.DrLowDog.com](http://www.DrLowDog.com)

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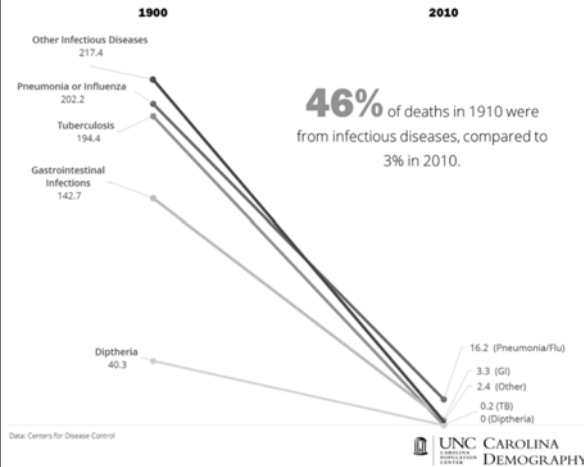
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## The Times They Are A-Changing

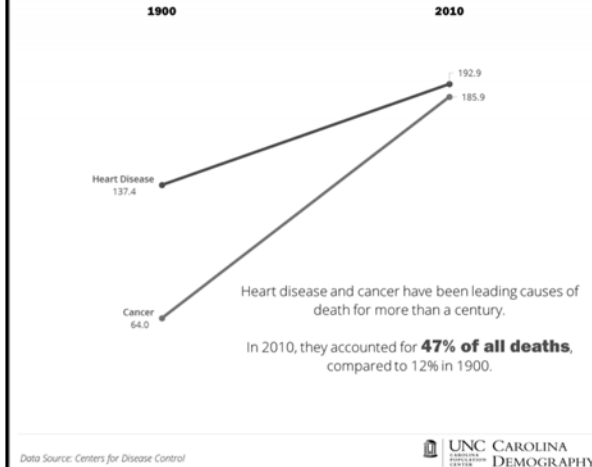
### Mortality from Infectious Disease, USA, 1900 vs. 2010

(Rates per 100,000)



### Mortality from Heart Disease and Cancer, USA, 1900 vs. 2010

(Rates per 100,000)



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## Epigenetics



- Mapping of **human genome** one of greatest scientific undertakings of past century, **detailing with incredible accuracy the blueprint of our species.**
- Paved way for **epigenetics**, which has shown that when it comes to our genes, ***nurture* is inextricably linked with *nature*.**
- That it is the ***way we live our lives - from the moment of conception to our last breath - that influences the expression of our genes.***

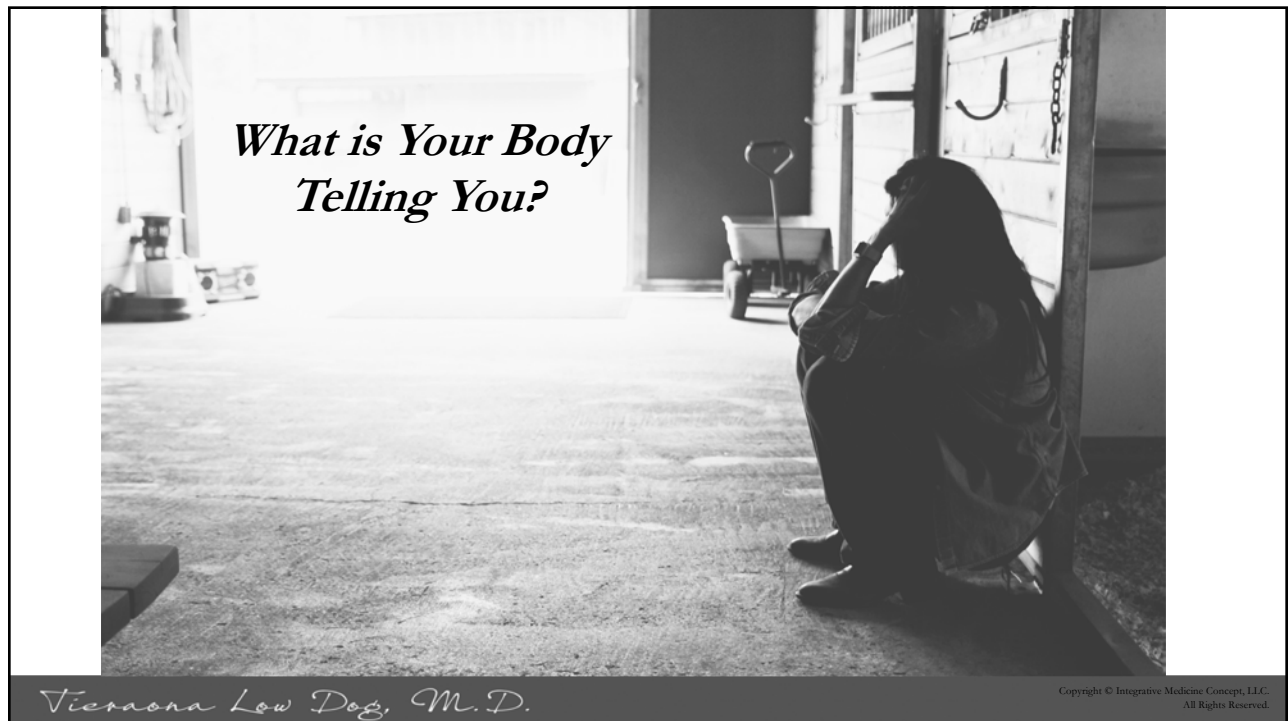
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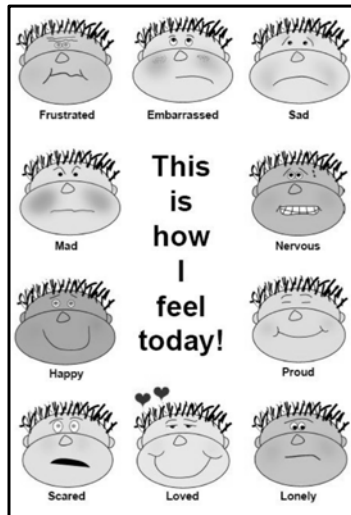


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## Emotion



- A conscious mental reaction (such as anger or fear) subjectively experienced as strong feeling usually directed toward a specific object and typically accompanied by *physiological and behavioral changes in the body.*

Merriam Webster Dictionary

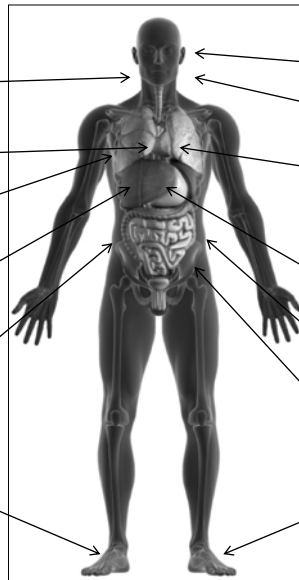
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### Parasympathetic

- Stimulates flow of saliva
- Slows heartbeat
- Lowers blood pressure
- Stimulates release of bile and aids in digestion and elimination
- Inhibits release of stress hormones
- Increases blood flow to extremities



### Sympathetic

- Pupils dilate
- Salivary production inhibited
- Heart rate and blood pressure goes up
- Mobilize fats and glucose; make more glucose
- Inhibit digestion and elimination
- Secrete "stress" hormones – adrenalin, noradrenalin and cortisol
- Reduce blood flow to fingers and toes

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**High levels of stress hormones** linked to high blood pressure, high cholesterol, high blood sugar, insulin resistance, insomnia, weight gain, headaches, mood swings, depression, and increased risk of infections.

*Scientists believe that prolonged elevation of stress hormones may shorten our lifespan by 15 years.*



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## It All Starts With.... YOU

- Unlike many medical problems, there are **no x-rays or lab tests that can give you a diagnosis** when it comes to emotional wellbeing.
- It all comes down to the story, **to your story**. Your **dreams** for the future, how well you are **eating**, how well you are **sleeping**, your level of **happiness**, your ability to **focus**, your **relationships**, and more.
- If given enough information - **you can find your path to wholeness and well-being.**

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## Seek Help When Needed

- **Depression** can make it hard to find pleasure, focus, get out of bed.
- **Anxiety** makes your heart race, makes it hard to concentrate.
- **Mania** takes you off center, makes it hard to sit still and rest.
- **ADHD** makes it hard to focus, stay organized, accomplish tasks.
- *Ask yourself: could I be suffering from an illness or other condition that is making it hard for me to live my life. If yes, get help.*
- *And if you are taking medication and things have shifted, seek help in case your treatment needs to be adjusted.*

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## Reflection

- The story I like to tell about myself is \_\_\_\_\_
- I could lose all sense of time when I \_\_\_\_\_
- I am living my passion when \_\_\_\_\_

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## Energy Is Life.....



### Things that sap energy:

- Poor diet/dehydration
- Nutrient deficiency
- Lack of physical activity
- Chronic stress
- Too many demands on time
- Anxiety or depression
- Poor sleep
- Chronic disease

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## Wholesome Nutrition



- Fuel your body, not your emotions
- Dietary pattern of **minimally processed foods**, rich in plants and **balance of macronutrients** results in better mood and energy.
- **DASH, vegetable-based, glycemic load-based, ketogenic and Paleo** diets may improve mood more than the others.

Low Dog, T. The role of nutrition in mental health. *Altern Ther Health Med* 2010; 16(2):42-6.

Arab A, et al. *Psychiatry Res* 2019; 428-37

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## Caffeine and Anxiety

- **Randomized, double blind caffeine challenge:** 28 patients with panic disorder (PD), 25 patients with generalized social anxiety disorder (GSAD), 19 patients with performance social anxiety disorder (PSAD), and 26 control subjects.
- On two occasions 7 days apart, **480 mg of caffeine and a caffeine-free solution** were given to participants and anxiety scales administered before and after test.
- ***Panic attack was induced in 60.7% PD patients, 52.6% PSAD patients, and 16.0% GSAD patients.***
- No one in control group had a panic attack after taking caffeine and none of the patients or controls had a panic attack after drinking the caffeine-free solution.

Nardi AE, et al. *Psychiatry Research* 2009;169(2):149-53

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## Glycemic Load and Mood

- **82 healthy weight and healthy overweight or obese** adults enrolled in randomized, **crossover controlled feeding study.**
- Compared to a low GL diet, consumption of **high GL diet** resulted in:
  - 38% higher score for **depressive symptoms** ( $P = 0.002$ )
  - 55% higher score for **total mood disorder** ( $P = 0.05$ )
  - 26% higher score for **fatigue/inertia** ( $P = 0.04$ ), compared to low GL diet.



Breymeyer KL, et al. *Appetite* 2016; Dec 1;107:253-259.

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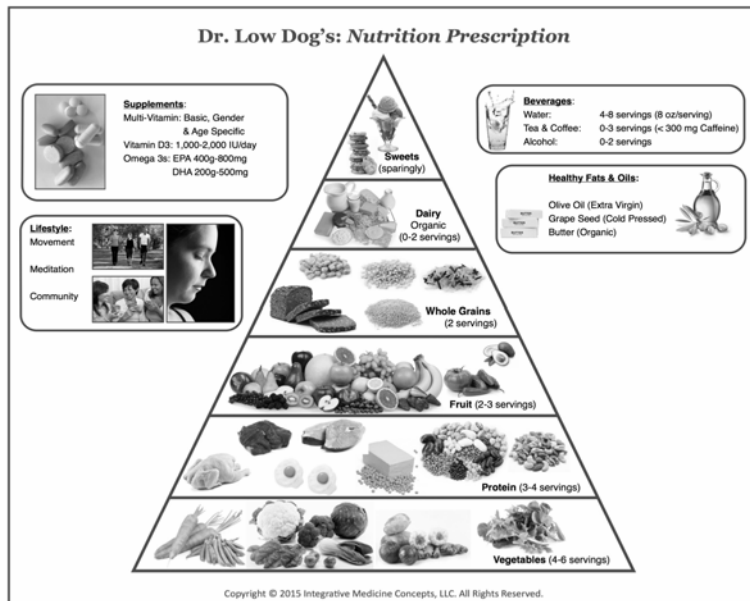


"THE FOOD YOU EAT  
CAN BE EITHER  
THE SAFEST  
&  
MOST POWERFUL  
FORM OF MEDICINE  
*or*  
THE SLOWEST  
FORM OF POISON."

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## Take a Basic Multivitamin....

- **90 million** Americans are **vitamin D** deficient (using the Endocrine Society guidelines  $< 20\text{ng/mL}$ )
- **30 million** are deficient in **vitamin B6**
- **18 million** people have **B12** deficiency
- **~16 million** have very low serum **vitamin C**
- **13% Latinas and 16% African American, and 8% white women** (ages 12-49) are **iron deficient**
- Women 25-39 overall have **borderline iodine insufficiency**



*CDC: 2<sup>nd</sup> National Report on the Biochemical Indicators of Diet and Nutrition in the U.S. population*

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## Position on Nutrient Supplementation by the Academy of Nutrition and Dietetics

- Nutrient supplementation can be used to help meet nutrient requirements for those:
  - **Older** adults
  - **Pregnant** women
  - People who are **food insecure**
  - **Alcohol** dependent individuals
  - **Strict vegetarians and vegans**
  - Those with **increased needs** due to a **health condition or the chronic use of a medication** that decrease nutrient absorption/increase metabolism or excretion.

Marra and Boyar. *J Am Diet Assoc* 2009

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## Position on Nutrient Supplementation by the Academy of Nutrition and Dietetics

- Restricting energy intake for **weight loss/control**
- **Not consuming an adequate amount of food** to meet energy requirements as a result of poor appetite or illness
- **Eliminating one or more food groups** from their diet on a regular basis
- **Consuming a diet low in nutrient rich foods despite adequate or excessive energy intakes.**

Marra and Boyar. *J Am Diet Assoc* 2009

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*Eating alone will not keep a man well. He must also take exercise.*

*Hippocrates*



- Higher risk for heart disease, type 2 diabetes, certain cancers, Alzheimer's disease and increase lower back pain, depression and anxiety.
- Half of baby boomers in the US report having **NO** exercise.
- **80 million** Americans over the age of 6 years of age are **entirely inactive**

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## **Movement: *Sound Body = Sound Mind***

- Movement **increases blood flow** to brain, promoting growth of **new blood vessels and nourishing neurons**.
- Stimulates **endorphins** that **diminish pain**, and **compounds** that **elevate mood and reduce tension**.
- Regular exercise **increases energy levels and eases fatigue**. *20 minutes three times per week of moderate exercise can improve energy levels in just four weeks!*
- Fatigue, low energy, pain and depressed mood all impact our emotional wellbeing. Make movement a habit!

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## Movement is Life.....

- Relationship between physical activity and **cardiovascular, metabolic, neurological, immunological and bone health** well-established.
- **Shown to reduce the harmful effects of stressors** when performed at moderate intensities.
- Meta-analysis of **398 studies** consistently shows **exercise benefits mood, depression and anxiety.**
- **Use a fitness tracker, find your passion. *JUST DO IT***

*Deslandes, et al. Neuropsychobiology 2009; 59(4):191-8*  
*Rebar AL, et al. Health Psychol Rev 2015; Mar 5:1-78*



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## Yoga

- Literally, “**union of the divine,**” yoga has been practiced in India for thousands of years.
- Yoga incorporates **breathing exercises, different postures, stretches, and meditation** in order to **help one gain greater acceptance, compassion and centering.**
- Yoga eases **stress, anxiety, pain; improves mood.**
- Many forms of yoga, find the one you like.
- If you are a beginner, consider Gentle Yoga by Jane Adams. Super soothing.

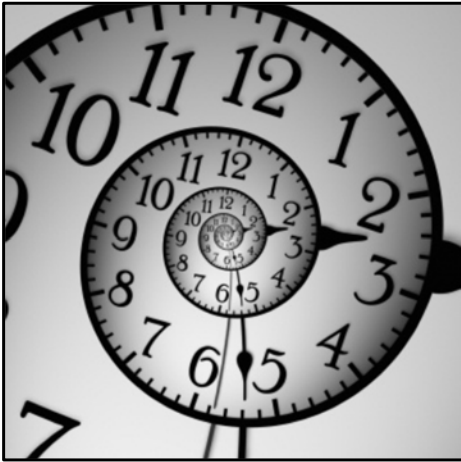


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## The Biological Clock



- Most important regulator of sleep wake cycle is our biological clock.
- Responsible for **24 hour fluctuations** in **hormone secretion, body temperature and other bodily functions.**
  - Deepest sleep is generally around 2 AM
  - Lowest body temp around 4:30 AM
  - High alertness 10 AM
  - Highest body temperature ~ 7 PM
  - Melatonin secretion starts ~8-9 PM

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## The Need for Sleep

- Biological requirement for life
- **Sleep quality genetically driven** (lay down to sleep, sleep at night) and **environmentally driven** (working late at night, excessive caffeine or alcohol consumption).
- **An abrupt shutdown of our perceptual interaction with environment.**



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## Sleep Stages

- **Stage 1:** Few minutes: light and easy to wake from. Muscle twitching common.
- **Stage 2:** Light sleep, ~20 minutes brain waves begin to slow, blood pressure and body temperature decrease.
- **Stages 3 and 4:** Move into deeper sleep that's harder to wake from. Body repairs itself and boosts immune function. Known as "delta" sleep.
- **Rapid eye movement (REM):** Final stage in sleep cycle, brain becomes more active and dreams occur. Brain is processing information and storing long-term memories. Heart rate and breathing increases. **Gets longer and longer through the night - can last up to one hour.**
- **REM suppressors:** alcohol, nicotine, blood pressure and anti-depressant meds

*This cycle repeats ~90 minutes. As sleep progresses, REM cycles increase in length.*

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## Consolidated vs Segmented Sleep

- **Roger Ekirch** (Virginia Tech) published seminal paper, showing humans **slept in 2 distinct chunks.**
- ***At Day's Close: Night in Times Past*** has more than **500 references to a segmented sleeping pattern** - in diaries, court records, medical books, etc.
- **First sleep** began ~two hours after dusk, followed by **waking period of 1-2 hours; then a second sleep.**
- For many reasons, **by the 1920s, the idea of a first and second sleep disappeared from our social lives.**



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## Consequences of Long-Term Sleep Disruption

- Chronic sleep problems can lead to weight gain, obesity, diabetes (33% increased risk), heart disease, mood disorders.



Shan Z, et al. *Diabetes Care* 2015;38(3):529–37.

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## Brighter Mornings Make For Better Nights!



- Landmark 1989 study found when participants with seasonal affective disorder were exposed to either ***simulated sunrise*** or ***simulated sunrise and sunset for several days*** their depression resolved or was greatly reduced. Circadian ***rise and fall of melatonin*** occurred earlier with sunrise simulation.
- Dawn simulation devices can be very **good for those who have a hard time falling asleep (e.g. teenagers!)**
- Pricey – *Philips Wake-Up Light* with **Colored Sunrise Simulation** is top rated.

Terman M, Schlager D, Fairhurst S, et al. Dawn and dusk simulation as a therapeutic intervention. *Biol Psychiatry*. 1989;25:966-970.

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## Cognitive Behavioral Therapy

- CBT has emerged as a recommended *first-line therapy for insomnia*. Digital CBT has been shown to be effective for improving sleep, as well as mental health and well-being.
- CBT typically consists of:
  - Psychoeducation about sleep and insomnia
  - Stimulus control
  - Sleep restriction
  - Sleep hygiene
  - Relaxation training
  - Cognitive therapy



Luik AI, et al. Digital cognitive behavioral therapy for insomnia: a state of the science review. *Curr Sleep Med Rep* 2017; 3(2): 48–56

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## Dietary Considerations

- **Watch caffeine.** Drink water and **herbal teas with a calming, relaxing effect.**
- **Cut back** or eliminate **alcohol** if having trouble sleeping.
- **3 drinks can disrupt melatonin secretion and REM sleep.** Can increase excitatory neurotransmitters.
- **Increase magnesium and tryptophan foods** (e.g., poultry, eggs, milk, dark green leafy vegetables, pumpkin seeds).
- **Consider magnesium supplements (200-300 mg per day at night)**



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## The Basics

1. Set a **sleep schedule** and stick to it.
2. Make your bedroom **dark, quiet and cool**.
3. Turn off electronics and or use **blue light blocking technologies**.
4. Watch the **caffeine**. Discontinue by noon if trouble sleeping.
5. **Power naps**: can be good if 20-30 minutes in duration
6. **Limit alcohol** intake.
7. **Don't go to bed hungry**.
8. Find ways to **deal with "worries"**.....
9. Get **sleep evaluation** if sleep disruption and/or daytime fatigue continues
10. **Controlled-release melatonin** recommended as first-line agents in older adults. (2 mg sustained release for 4-6 weeks and re-evaluate).

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## To Fall, to Let Go, to Open.....

**To fall asleep is an act of faith**, a deep trust that whatever is going on in life, you can let it go, put it on hold so that you can **sleep** deeply and **awaken with the energy** and **resilience** to face whatever lies ahead.

When body is **overstimulated**, brain is flooded with **neurochemicals that keep us awake**, making it difficult to wind down at night. This leads to **poor sleep, bad dreams, and being tired during day**.

**Letting go can be hard** when you think you are responsible for everything.

If you find it hard to delegate to others or things won't get done right. **When one's "faith" is in themselves.**



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## Sleep Evaluation

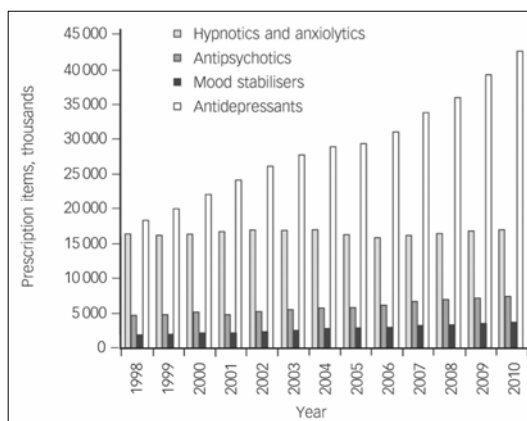
- **Numerous medications** can impair sleep (e.g., beta blockers antidepressants, steroids, ADHD meds, possibly statins, etc.) Do some online research and/or **talk to your pharmacist**. If you are taking medication that disrupts sleep, talk to your health care provider.
- **Restless leg syndrome** impacts many people. Talk to provider, could be due to low iron, vitamin D or meds— though cause is really not known.
- **Sleep apnea** is a condition where breathing is interrupted during the night. A sleep study can be ordered and treatments are available (e.g., CPAP, dental appliances which reposition lower jaw and tongue)

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**Trends in prescriptions of major classes of psychiatric drugs 1998–2010.**



Stephen Ilyas, and Joanna Moncrieff BJP  
2012;200:393-398

THE BRITISH JOURNAL  
OF PSYCHIATRY

- **400% increase** in anti-depressant prescriptions since 1980s. Rates of anxiety/depression in adolescents and young adults **skyrocketing**.
- JAMA review: For **severe depression**, **benefit** of medications over placebo is **substantial**; however, magnitude of benefit may be **minimal or nonexistent**, on average, for those with **mild or moderate** symptoms.

Fournier, et al. JAMA. 2010;303(1):47-53

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## Many Factors at Play..... All Must be Addressed...



- Processed, **nutrient depleted** diet
- Poor **gut health**
- **Poor sleep** and inadequate rest
- Lack of **physical activity**
- Increased exposure to **environmental toxins**
- **Social isolation** and soul pain
- Strong focus on **image**, money, high achievement, having “stuff”
- Weaker personal and **community networks**

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## The World Today

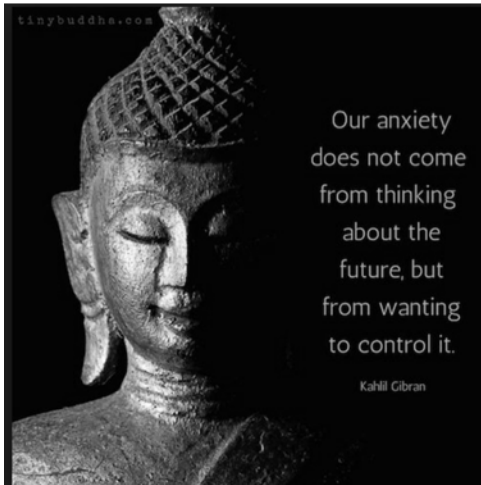
- We strongly emphasize **biological explanation** for depression and anxiety, as evidenced by **extensive use of antidepressants and anxiolytics**.
- There remains **little** focus on **physiological, nutritional, societal, communal, familial and spiritual underpinnings**.
- “I take my Effexor and go to a **job I hate** and then home to a house full of **kids** that are **out of control** and a husband that **barely talks to me**. Is my depression better? **Yea, I guess.**”
- **Complex world**. We often have unrealistic expectations. **Isolation** is common, **financial** problems, **lack of purpose, meaning**, a sense of **despair, hopelessness** – the world has less color and texture.

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## Self Soothing



- A good way to deal with **anxiety and high stress** is to **occasionally sidestep the analytical part of your brain** by practicing **relaxation, meditation and/or using guided imagery.**

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## Progressive Muscle Relaxation

- Focused exercise that has you **relax, contract and relax the muscles of your body.**
- Lots of CDs and apps that can help you learn to do this.
- Great way of **releasing tension we hold in our muscles.**



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## Favorite Resources for Muscle Relaxation

- ***Progressive Scan Meditation*** by Unyte Health (iTunes) Free
  - Great app for doing body scan and relaxing muscles. Also has lovely meditations ranging from 6-30 minutes.
- ***Autogenic Training and Progressive Muscle Relaxation***
  - Great app for deep muscle relaxation. \$2.99 one time (iTunes)
- ***Relax Me*** is for Android, I haven't used it but patients like it.
- ***Progressive Relaxation and Autogenic Training*** by Carolyn McManus
  - Audio CD or MP3, excellent for muscle relaxation

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## Guided Imagery: *Imagine Yourself.....*

- An **immersive, deeply relaxing intervention** that uses calming words, soothing music and positive images to structure a healing experience.
- Like meditation, it **focuses attention and calms the mind**, working on those parts of the brain where the emotional self dwells.
- Clinical trials show can **reduce stress, anxiety, and depression; help with sleep; lower blood pressure, and ease posttraumatic stress.**
- I have found guided imagery a fabulous tool for myself, kids and patients. Very helpful for those with ADHD, anxiety, depression, pain, insomnia.

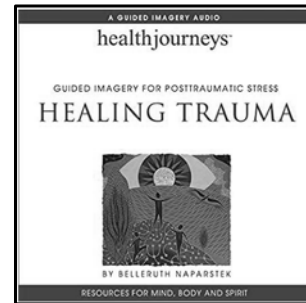
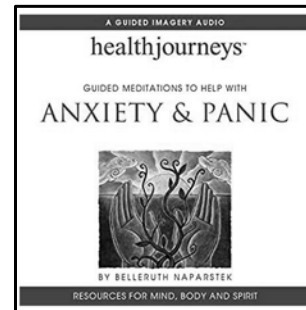
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## Belleruth Naparstek

- Love, love, love her. Something for everyone.
- She has Guided Imagery Meditations for:
  - Anxiety and Panic
  - Anger and Forgiveness
  - Depression
  - Healing Trauma
  - Ease Grief
  - Relieving Stress
  - Undergoing Surgery
  - Chemotherapy and Radiation



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## Mindfulness Meditation

- Helps with **stress perception and pain intensity, elevates mood.** Quiets stream of thoughts.
- Long-time meditators have greater activation of areas responsible for **sustaining attention, processing empathy, integrating emotion and cognition.**
- Review of **47 trials** found that meditation improves:
  - Anxiety
  - Depression
  - Pain



Goyal M, et al. *JAMA Intern Med* 2014; 174(3):357-68

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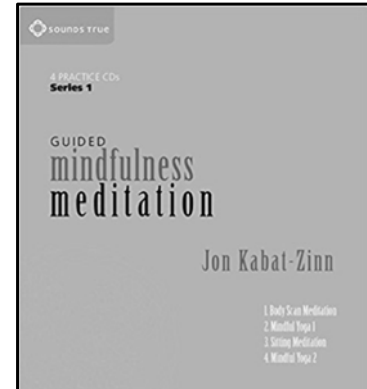
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*Guided Mindfulness Meditation: A Complete Guided Mindfulness Meditation Program* from Jon Kabat-Zinn

- Four-part home course, **one of best ways to learn about mindfulness meditation.**
- Might be great choice if you feel **anxious**, are living with **chronic pain**, **stress is off the charts**, or just interested in **learning how to meditate** without the spiritual overtones found in many other teachings.
- Pairs nicely with his book *Full Catastrophe Living*.

[www.betterlisten.com/pages/jonkabat-zinnseries123](http://www.betterlisten.com/pages/jonkabat-zinnseries123)



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## Meditation Resources

- ***Calm*** – great app for guided meditation, bedtime stories, breathing exercises (free to \$60 annual subscription)
- ***Insight Timer*** - ~4,000 guided meditations >1,000 teachers (self-compassion, nature, stress, podcasts). Music tracks (free to \$5/mo)
- ***Headspace*** – meditation, videos, meditations music (free basic course, \$12.99 mo, \$95/year)
- ***10% Happier*** – performance enhancement. Busy people, stressed lives. (Free one week intro, then \$100 per year).
- ***Buddhify*** - for the more advanced meditator. Can sort by location, activity and/or emotion. (small monthly fee, premium is \$30/yr).

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## Music is Good For Your Brain.....

- Enhances **neuroplasticity** - brain's **ability to adapt to change and experiences.**
- Can **improve attention, concentration, and memory.**
- Learning music **modifies structure and function of left temporal lobe**, area responsible for mental processing of speech.
- Music training **significantly increases verbal memory in children.**



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## Music and Mood

- Researchers at McGill University used **functional MRI** to monitor changes in brain when study participants listened to music.
- They found the ***intense pleasure experienced*** in response to music is due to the release of ***dopamine*** from nerve cells in the part of our brain associated with *pleasure*.
- What music **MOVES** you?



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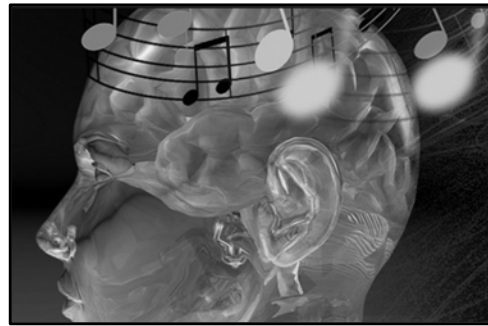
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## Music and Quality of Life

- After evaluating **52 music-intervention studies**, Cochrane Collaboration reviewers **reported that music could reduce anxiety and pain and improve mood and quality of life in people with cancer.**

Bradt J, et al. *Cochrane Database Syst Rev* 2016 Aug 15;(8):CD006911.



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*“Music can lift us out of depression or move us to tears - it is a remedy, a tonic, orange juice for the ear.*

*But for many of my neurological patients, music is even more - it can provide access, even when no medication can, to movement, to speech, to life.*

*For them, music is not a luxury, but a necessity.”*



*Oliver Sacks, MD*

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## Ted Talks

- My favorite is by a young woman who speaks about how music is the metaphor for life.  
 • [https://www.ted.com/talks/anika\\_paulson\\_how\\_i\\_found\\_myself\\_through\\_music](https://www.ted.com/talks/anika_paulson_how_i_found_myself_through_music)
- Brilliant and beautiful TED talk about how music can transform and soothe us by Robert Gupta.  
[https://www.ted.com/talks/robert\\_gupta](https://www.ted.com/talks/robert_gupta)
- Awesome talk on how sound impacts us and how to restore our deep relationship with it. Great stuff.  
 • [https://www.ted.com/talks/julian\\_treasure\\_shh\\_sound\\_health\\_in\\_8\\_steps](https://www.ted.com/talks/julian_treasure_shh_sound_health_in_8_steps)

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## Loneliness, Social Isolation & Your Health

- Poor social relationships associated with **29% increase in risk of heart disease and 32% increased risk of stroke.**
- **148 studies** on the effects of social isolation on health found it is:
  - As bad as **smoking** 15 cigarettes a day
  - As dangerous as being an **alcoholic**
  - As harmful as **never exercising**
  - Twice as dangerous as being **obese**



- Valtorta NK, et al Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies. *Heart*. 2016 Jul 1;102(13):1009-16.
- Cacioppo JT, et al. *Ann N Y Acad Sci* 2011; 1231:17-22

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*Call it a clan, call it a network, call it a tribe, call it a family.*

*Whatever you call it, whoever you are, you need one.*

*~ Jane Howard*



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## Meaning and Purpose

- What truly gives a person a sense of *meaning and purpose* in life?
- How does one feel the oneness, find the *holy and sacred* in the mundane?
- “If I only had one day left to live, I’d want to \_\_\_\_\_.”

Listen.  
Are you  
breathing  
just a little  
and calling  
it a life?

~ Mary Oliver

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# GRATITUDE

*To speak gratitude is courteous and pleasant,  
to enact gratitude is generous and noble,  
but to live gratitude is to touch Heaven.*

Johannes A. Gaertner, quoted in *Words of Gratitude*

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*“But until a person can say  
deeply and honestly, “I am  
what I am today because of  
the choices I made yesterday,”  
that person cannot say, “I  
choose otherwise.”*

*Stephen Covey*



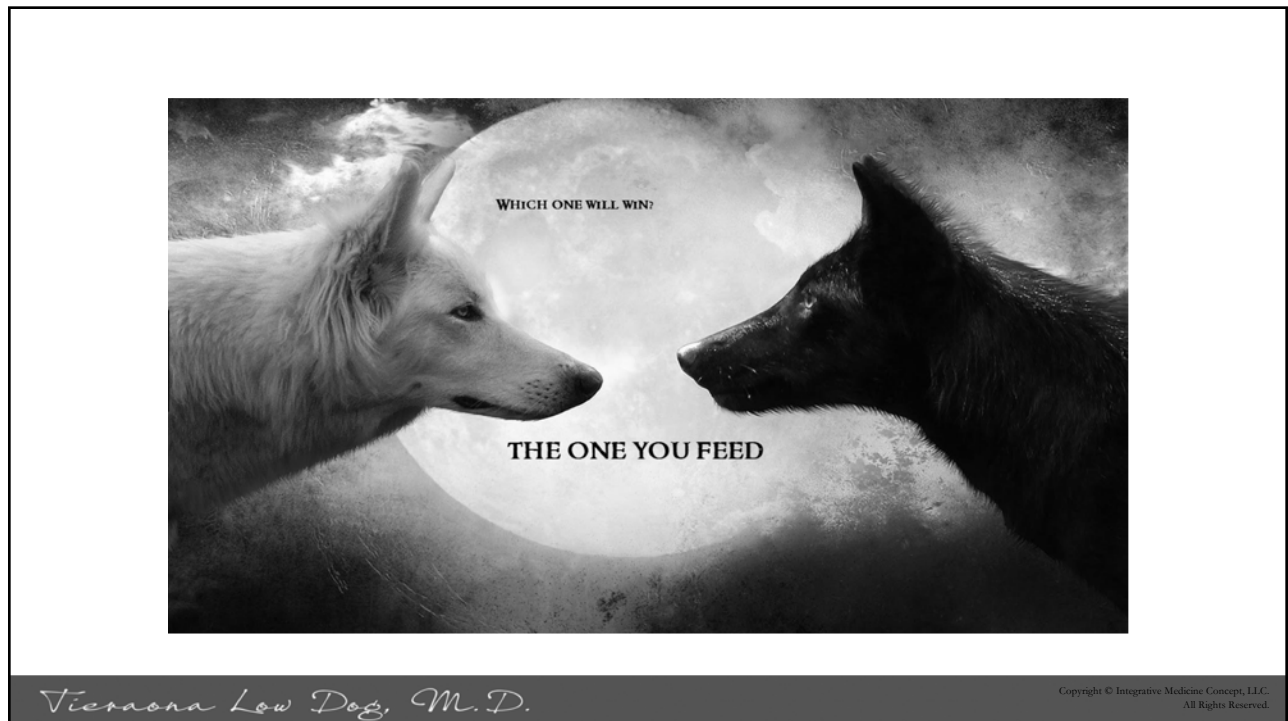
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1. **Move more.** Whether it's the 7 minute workout, cycling, yoga, or taking long walks - one of surest ways to maintain heart, brain, bone and muscle health is daily exercise. It's not optional. ***Just do it.***
2. Eat food. Minimally processed, **low glycemic load**, diverse, and largely **plant** based diet. **Organic, local, and/or humanely raised** when possible,
3. **Meditate.** Meditation widens the gap between trigger and response, allowing you to feel a greater calm and awareness. It's a **game changer** for almost anyone.
4. **Stay connected.** Social isolation and loneliness is as dangerous as being an alcoholic or being obese. **Invest in your friends and family.**
5. **Take a multi.** Many lack when it comes to key micronutrients. A food based multi can be insurance against the gaps. **Age and gender** appropriate.
6. Be tech smart. Technology makes life easier and more complex. Use **blue light blocking glasses** at night, make one day each week **tech free**, and **limit email in the evening.**
7. **Nurture spirit.** The search for meaning and purpose is a fundamental part of being human. A **richly nourished inner life** is a source of strength during hard times. **Look inward. Honor mystery.**

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