


Living a Longer, Healthier Life – Is It Your Choice?




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Robert Lufkin MD
Former Clinical Professor UCLA and USC School of Medicine

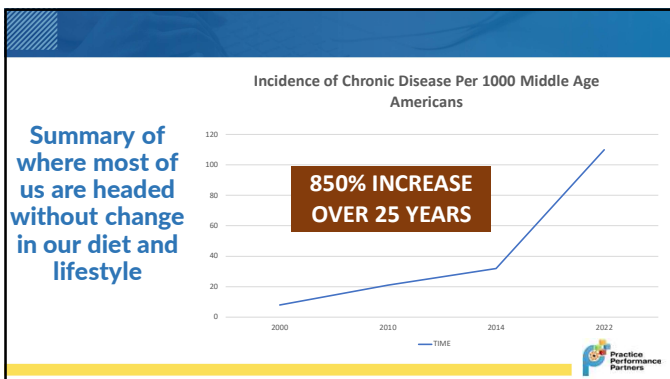
Two Eye-Opening Quotes

“Modern medicine is lying to you!”

*“Metabolic dysfunction is the root of our major chronic disease, including aging and ultimately death itself. You are better equipped to do something about that than any doctor is. **YOU CAN PREVENT WHAT MEDICINE CAN ONLY TREAT.** Every day, every meal, you have a choice to live better and live longer. *What will you choose?”**

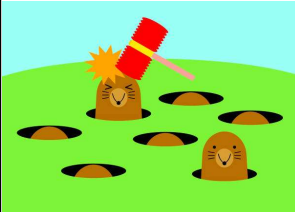


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State of US Allopathic Medicine




Whack a Mole Medicine

NO emphasis on prevention or cause, just treat each symptom/disease as they “pop up”

RESULT: US ranks 49th in the world in lifespan – never in the top ten best healthcare

“only 6% of US physicians feel optimistic about the US healthcare system”
Businesswire 1.30.2023



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SUMMARY
THEY DON'T EVEN PAY ATTENTION TO THEIR OWN RESEARCH – ESPECIALLY IF IT RESULTS IN LESS PRESCRIPTION DRUGS BEING PRESCRIBED OR MORE TIME COUNSELING A PATIENT!!!

Allopathic Medicine Report Card on Disease Prevention





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Early attempts at cure

Remember this statement - **“There is little money in a cure”?** **THAT WAS FALSE!!!**

2021: Bluebird’s Gene Therapy Skysona for Brain Disease Receives Accelerated Approval

- Stops fatal cerebral adrenoleukodystrophy – at least for 7 years studied
- FORTY cases worldwide per year
- Cost? **\$3,000,000 for a single dose (takes TWO)**

But we can’t fix our most common diseases – hypertension, diabetes, cancer, arthritis, dementia




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Is there hope at all???

Jones MD, Heallo News: 11.20.23

- ✓ NEW (?) terms – Complimentary, alternative, functional, lifestyle, integrative, Ayurveda, Qigong, Reiki, Asian, **whole-person**...call it what you want but **72% of patients surveyed felt offering this kind of care was “extremely important”**
- ✓ Call to direct healthcare money to **“salutogenesis” (better health through risk reduction and resultant disease prevention)** not pathogenesis (“disease treatment”)
- ✓ Estimated result? **Redirection** of health care dollars with eventual staggering **reduction** in health care expenditures on chronic disease and potential **bankruptcy** in the pharm industry (*oh how sad...*)




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Is there hope at all???

Jones MD, Heallo News: 11.20.23

BUT... The current/future?

- ☹️ **“We know pills and procedures remain the mainstays of health care and probably always will as long as money is to be made”**
- ☹️ **Less than 40% of physicians surveyed felt there was any evidence to support whole-person care**



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What Can Optometry Do?

Is it time we step out as a REAL primary health care specialty and start becoming knowledgeable of lifestyle implications on systemic and ocular health and discussing those with our patients?

Does a Nutrition or Lifestyle counseling sub-specialty have a place in your practice?



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What Can YOU Do?

- ✓ Stop believing everything allopathic medicine and the pharmaceutical industry cram down your throat (literally)
- ✓ EDUCATE YOURSELF
- ✓ Understand that like computer programming, "Garbage In Garbage Out" applies to what you ingest

OK...the specifics



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I Have To Exercise?

You don't have to do nothin....but

Meeting physical activity guidelines halves mortality risk

- 21% lower risk for mortality with 10 to 149 minutes of weekly MVPA activity;
- 41% lower risk for mortality with 150 to 300 minutes of weekly MVPA activity; (that's only 20 minutes a day – MVPA is "moderate to vigorous physical activity")
- 50% lower risk for mortality with 301 to 600 minutes of weekly MVPA activity (that's 45 minutes a day)

**MOVE IT OR LOSE IT.
BUT PROVEN OVER AND
OVER....EXERCISE WILL
NOT MAKE YOU LOSE
ANY SUBSTANTIAL
WEIGHT.
BUT IT'S STILL GOOD FOR
YOU!**

"RUST NEVER SLEEPS"

Neil Young

<https://bjsm.bmj.com/content/early/2023/04/18/bjsports-2022-106644>



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EVERYONE can eat better

- ✓ **NUMERO UNO – LAY OFF ALL CARBS**
 - ✓ Use unprocessed sugar, natural or *maybe* novel sweeteners. In a pinch, regular white sugar beats the fake ones!
 - ✓ NO processed food
- ✓ Go **organic** as much as possible
- ✓ Grow and raise your own food
- ✓ Eat **free-range** meat and chicken
- ✓ Avoid most overseas farm-raised fish (**but an interesting new twist with northern US fish farms**)
- ✓ Avoid **processed foods, avoid "fat-free", avoid food additives**



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Avoid Toxins!

- ✓ Avoid unnecessary **medications** as much as possible (many if not most are unnecessary – your body is really smart!)
- ✓ Avoid MSG (food), carrageenan (food), pesticides, herbicides, fluoride, biphenyls (plastics), formaldehyde (if possible)
- ✓ **STAY AWAY FROM ANYTHING FAKE – INSIDE OR OUTSIDE YOUR BODY**
- ✓ **Drink GOOD water**...lots of it
 - ✓ Distilled best, but...
 - ✓ Whole house water filters
 - ✓ Cool it on the hot water



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Supplements? Yep, even best food is lacking!

Some at the top of the list (dosages are per day) – there are **MANY** more!

- Omega-3:** 1000mg preventative, 2000mg-4000mg for disease management
- Collagen:** 500-2000mg for bone and joint support
- Ashwagandha:** 1500mg for overall adaptive metabolism
- Mushroom complex:** For overall adaptive metabolism
- Garlic:** 2000-5000mg for overall health and heart support
- Astaxanthin:** 10-40mg for immune support
- CoQ10:** 100-1200mg for heart and brain support (essential if taking statins)
- Curcumin:** 500-1000mg for heart support and regulation of blood sugar
- Magnesium Complex:** 200-800mg for overall body and GI support



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What Did They Tell My Dad?

He's 97 – took him in for his physical and their only concern was his blood was too thin. ADVICE?

“Keep up the Plavix but stop taking that fish oil!”

SIDE EFFECTS PLAVIX

Anaphylaxis
Bruising
Skin rash
Nosebleeds
Blood in urine
Itching
Diarrhea
Muscle pain
Confusion
BLOOD CLOTS

SIDE EFFECTS OMEGAS

Thins blood
Reflux (*only cheap stuff*)



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And Vitamins? Yep, even best food is lacking!

- B-Complex:** 1000mcg for overall body function, supports cardiovascular health, supports nerve and brain function, supports digestion, boosts energy levels
- Vitamin C:** 100-2000mg for immune support, wound healing, increase iron absorption, reduces allergic response, strengthens bone and teeth
- Vitamin E:** 100-1500mcg for overall body function, healthy skin, decreases systemic inflammation, wound healing
- Vitamin D (3):** 600-5000IU for overall body function, reduces depression, lowers risk of diabetes, bone health, increased cardiac health



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Managing Hypertension

Choice One: Pills

- Decreased libido
- Impotence
- Fatigue
- Muscle necrosis
- Dizziness / disorientation
- Depression
- Memory loss
- Liver failure
- Angioedema
- Esophogitis
- General malaise
- *did I mention impotence???*

Choice Two: Side effects of losing weight, eating right, avoiding poisons, de-stressing, supplements?

INCONVENIENCE, MAY COST MORE THAN A PILL



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Supplements for Hypertensives

- Hawthorne 200-400mg QD – many say 1000mg QD (often very effective but doesn't play well with traditional cardiovascular meds – **WHY?**)
- Quercetin 250mg QD before meal
- Hesperidin 250mg QD before meal
- CoQ10 100-600mg QD
- L-Carnitine 500mg TID on empty stomach
- N-Acetyl Cystine 500-1000mg QD on empty stomach (also decreases stress and decreases insulin resistance)
- **L-Arginine 20-40mg** ← POSSIBLY THE TWO MOST IMPORTANT
- **Uric acid flush**

Oh Joe...you're pushing all this natural and supplement BS again.



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Am I?

DASH – Dietary Approach to Stop Hypertension

- 5-10 servings vegetables a day (organic)
- Limit dairy products
- Limit sodium intake to 2100mg/day
- Take 2,000-4,000gm omega-3
- Avoid MSG
- Avoid synthetic sugars
- Avoid simple (processed) carbohydrates
- Drink purified water
- Resistance exercise – (better than aerobics)

<https://www.heart.org/en/health-topics/high-blood-pressure/changes-you-can-make-to-manage-high-blood-pressure/managing-blood-pressure-with-a-heart-healthy-diet>

Once again...pushing pills is just way easier than tackling the lifestyle issues!

This is from the AMA – not Joe the OD!



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Managing Fatty Liver Disease

EASY to recommend, HARDER to do

- ✓ Reduce/limit alcohol consumption
- ✓ **STAY AWAY FROM EVERYTHING CONTAINING FRUCTOSE! You have to read labels!**
- ✓ Liver cleanse: 500-2000mg turmeric, 200-600mg milk thistle

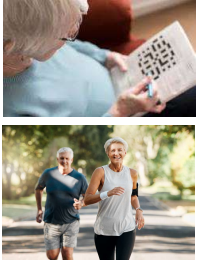



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Treatment of Alzheimer's

A bit tougher...remember we know less about this disease than most

- ✓ DON'T HIT YOUR HEAD
- ✓ **Avoid ALL fructose**
- ✓ Keep your brain active
- ✓ In general, be healthy

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Diabetes – ADA Has Spoken – 2025 Standards of Care

From 6.0 Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes – 2024


EMPHASIS: Care, 2024; ADA Standards of Care in Diabetes – 2024

SUMMARY

PATIENT	A1C
Optimal all younger adults	<6.5
Acceptable most adults	<7.0
Healthy older adults	7.0 – 7.5
Older adults complex care	<8.0
Older adults limited life expectancy	No goal
FBG	80-130mg/dL
Continuous glucose monitoring	70% goal

JUST THE OPPOSITE OF PREDICTED!!!

This will NOT make Big Pharma happy – but likely OK for them as the healthcare system values Big Pharma's opinion/desires more than evidenced based care!




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Other New ADA Recommendations

- DILATED eye examination upon diagnosis of Type 2 DM – repeat exams every 1-2 years unless retinal complications (**NOT every six months!**)
- CGM for all Type 1 and many Type 2
- Use “person first” language (“patient with diabetes” rather than “diabetic patient”)
- Increased lifestyle counseling (**encourages telehealth**)
- 200-300min/week exercise (about 30 min/day)
- “Encourage” sustained 10% weight loss - diet + drug then surgery
- **All Type 2 given choice for weight loss drug**
- Encourage 500cal deficit from current consumption **“without consideration of macronutrient content”**

THEY STILL BELIEVE “A CALORIE IS A CALORIE”




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Other New ADA Recommendations

AT LEAST THEY DIDN'T RECOMMEND ARTIFICIAL SWEETENERS

BUT SINCE LITTLE OF THIS IS GOING TO CHANGE A THING LONG TERM....WHAT ELSE IS THERE?



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Diabetes

- ✓ **LOSE WEIGHT – HOWEVER YOU HAVE TO DO IT**
- ✓ **SIGNIFICANTLY reduce all sugar and carbohydrate intake**
- ✓ **100% avoidance of synthetic sugars of all types**
- ✓ Resistance exercise
- ✓ Add fiber to diet
- ✓ Ordered sleep

How Much?
NIH massive retrospective study confirmed 7-10% weight loss can decrease DM risks by **51-60%**.
NORMALIZING WEIGHT EVEN FAR MORE IMPACTFUL!

EFFICACY ROUTINE EXERCISE ON BLOOD SUGAR CONTROL **58%**

EFFICACY OF METFORMIN **31%** **SAYS THE NIH!**


https://pmc.ncbi.nlm.nih.gov/articles/PMC11209738/...:text=The%20results%20showed%20that%20among%20people%20who%20take%20metformin.

IT IS NOT EASY – BUT REMEMBER DIABETES IS THE SECOND MOST PREVENTABLE CAUSE OF HUMAN DEATH – SECOND ONLY TO SMOKING!

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Supplements for Diabetes

- ✓ **DHA 3000mg QD** (less EPA – EPA can lessen body’s ability to regulate glucose)
- ✓ **Chromium 200mg QD** (Mayo clinic study showed equivalent to metformin – so is berberine. But don’t abandon your metformin so quickly...why later!)
- ✓ **Magnesium citrate 250mg QD**



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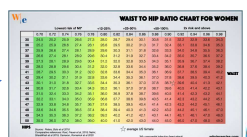

The Tough One....OBESITY – ARE YOU???

HISTORICAL DEFINITIONS (that don’t work well)

BMI (weight to height - totally flawed)
 Overweight $\geq 25\text{kg/m}^2$ with no complications
 Obese 1 $\geq 30\text{kg/m}^2$ with no complications
 Obese 2 $\geq 35\text{kg/m}^2$ with mild to moderate complications
 Obese 3 $\geq 40\text{kg/m}^2$ with severe complications or $>40\text{kg/m}^2$

Waist Size (totally flawed)
 Males > 40 inches
 Females > 35 inches

Waist-to-Hip (really? – actually yes)

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Just in....January 2025

Previous measurements of obesity flawed (“**BMI totally discordant**”)

- The NEW, RECOMMENDED assessment is based on measuring body FAT
- Indirect (flawed but still included) - BMI
 1. Indirect (EASY) – waist-to-hip ratio
Males > 0.9
Females > 0.85
 2. Direct (DIFFICULT but most accurate!) – DXA scan 3D body scanner, hydrostatic weighing, air displacement, bioimpedance spectroscopy, skin callipers
 3. FUNCTION – obesity-related organ dysfunction or inability to complete activities of daily living

Must have two of the three criteria IN ADDITION TO ABNORMAL BMI to be classified as obese

Rubino et al Lancet Diabetes Endocrinol 2025




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IS IT REALLY THAT HARD?

What's the Best Way to Decide if You're Overweight?

- Get naked - look in the mirror. **Like what you see?**
- Do you get compliments on your appearance?
- How's your sex life?
- Can you exercise **hard** for thirty minutes and not feel like you are very close to meeting your maker?
- Does it hurt to bend over and put your shoes on?
- Can you just not wait to get out of those jeans and into your "stretchy pants"?



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Treatment of Obesity. Problem?

Traditional Allopathic Medicine Game Plan (aka Big Pharma, FDA, AMA)


1. Pharmaceuticals for weight loss
2. Diet sodas and fat-free foods
3. Bariatric surgery

The REAL Authorities – IN ORDER OF PRIORITY

Obesity Medicine Association – 2024 Annual Conference

1. **Diet (NO CARBS, balance, no toxins, no synthetics, no additives) – PLUS - Lifestyle modification (exercise, mental health counseling)**
2. Weight loss pharmaceuticals
3. Bariatric surgery

???????????????



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So, the big one....Managing OBESITY


Let's repeat them again...

- ✓ NUMERO UNO – LAY OFF ALL CARBS
- ✓ Use unprocessed sugar, natural or *maybe* novel sweeteners. In a pinch, regular white sugar beats the fake ones!
- ✓ NO processed food
- ✓ Go organic as much as possible
- ✓ Eat free-range meat and chicken
- ✓ Avoid processed foods, avoid "fat-free", avoid food additives

Mindfulness, yoga 'as strong as drug therapy' plus lifestyle intervention in DM2

[Published November](#)
Fact checked by [Quinn Smith](#)

Mind- and body-based practices, including mindfulness-based stress reduction, qigong and yoga, are associated with a reduction in HbA1c for adults with type 2 diabetes, according to findings from a systematic review and meta-analysis



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Supplements for Obesity

All dosages per day

- ✓ Green tea
- ✓ Chromium: 200-1000mg
- ✓ CLA (conjugated linoleic acid): 2-6gm
- ✓ Carnitine: 500-1000mg
- ✓ DHEA derivatives: 50-100mg
- ✓ Fish oil: 100-2000mg DHA

* All show variable efficacy in managing weight

And diets?



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General Comments (truths)

- ✓ All calories are not equal – simply eating less will not lead to sustained weight loss
- ✓ Calorie counting is somewhat meaningless
- ✓ Diet alone is not likely to result in sustained weight loss (can you diet forever?)
- ✓ REAL dieting is hard – bad food is addictive. It's like quitting smoking!
- ✓ Don't focus on BMI, waist circumference, ratios and other gobblygook....focus on how you LOOK and FEEL



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Diets That DON'T Work

- ✗ Diets that focus on simply minimizing portions
- ✗ Diets that do not SIGNIFICANTLY limit saccharides
- ✗ Diets that focus on pre-prepared, mostly processed foods
- ✗ "Low fat" diets
- ✗ A million other "fad" undertakings



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And the others – that can work.....

- **DASH:** Emphasizes vegetables, fruits, whole grains, legumes, nuts and seeds and low-fat dairy, and includes lean meats and poultry, fish and non-tropical oils
- **Mediterranean:** Limits dairy consumption, emphasizes fruits, vegetables, whole grains, legumes, nuts and seeds, plus fatty fish and extra-virgin olive oil
- **Vegetarian (pescatarian):** Plant-based eating that includes fish
- **Vegetarian (ovo or lacto):** Vegetarian, or plant-based plans that include eggs, dairy or both
- **Vegetarian (vegan):** Plant-based plan that includes no animal products
- **Paleo:** Excludes whole and refined grains, legumes, oils and dairy
- **Ketogenic:** Limits carbohydrates to less than 10% of daily calories

NOTE: Many consider these as lifestyle options, not just diets.



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Which work?

[Gardner CD, et al. Circulation. 2023;doi:10.1161/CIR.0000000000001146.](https://doi.org/10.1161/CIR.0000000000001146)

DASH, Mediterranean, vegetarian eating plans best align with AHA dietary guidance

COMMON CHARACTERISTIC OF ALL THESE?

CARBOHYDRATE ELIMINATION / LIMITATION



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The Best?

Cardiometabolic benefits of time-restricted eating may go beyond weight loss

Taub, Cardiology Today, January 2025

- ✓ Decreased calorie intake
- ✓ Decreased weight
- ✓ Decreased large particle LDL
- ✓ Decreased HbA1c
- ✓ Decreased glycemic variability

More commonly referred to as "intermittent fasting"

HIGHLY EFFECTIVE

Ultimate goal should be 8-10 hours

Side effects – ZERO
Financial cost to patient - ZERO



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More Extreme

As a final option

- ✓ Weight reduction drugs
- ✓ Bariatric surgery

MUST REMEMBER!

These are not cures for obesity. Unless you change your dietary habits and lifestyle, these more aggressive options will ultimately fail – usually in a fairly short timeline.



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Oh, but Joe – all that is inconvenient and expensive...

So is hypertension, diabetes, obesity, neurologic disease, cancer and a funeral.....most of us fortunately get to choose



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NOW


For a moment...sit back and let your brain open up just a little bit



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The Longevity Lie

Aging is a normal, inevitable result of accumulated wear and tear on the human body.



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Two Concepts to Consider

LIFESPAN


Simply the number of years we remain on this planet

QUESTIONS

HEALTHSPAN

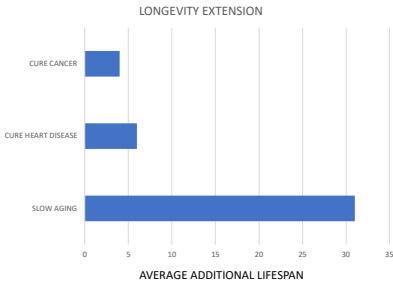
The number of years we remain on this planet in a state of vitality, high cognition and relative freedom from most ALL disease states

QUESTIONS



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The Staggering Truth



Intervention	Average Additional Lifespan (Years)
CURE CANCER	~3
CURE HEART DISEASE	~5
SLOW AGING	~30

“Aging is the single greatest risk factor for most all causes of morbidity and mortality in humans.”
Robert Lufkin MD

Kaeblerlein: Public Policy and Aging Report 2019



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A new concept to ponder...

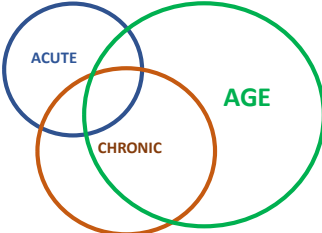
There are really only three causes of our health going south

ACUTE

- Breaks
- Cuts
- Burns
- “Injury”
- Genetic


CHRONIC

- Genetic
- Degeneration
- Dysplasia
- Metabolic
- Mental
- INFLAMMATION



AGE

Pretty much everything else – with significant overlap



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Should we all start re-thinking

Aging is a universal condition for most all people and the underlying cause of the VAST MAJORITY of our ultimate demise – whether it be from “natural causes” (*dying is natural?*) or the fact that aging is the main culprit behind most all chronic disease.

So isn't aging the MASTER DISEASE?

And, if so, why do we not research the cause of aging and develop remedies for the most common of all things that goes wrong with our body?



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Rational thought?

Since aging affects essentially everyone – unless you die young (define “young”) or by “*natural causes*” (*dying is natural?*) aging is just accepted as **“THE WAY IT IS”**

So, wrinkles, grey hair, arthritis, cardiovascular compromise, incontinence, hearing loss, cataracts, weakness, loss of libido, memory loss, aches and pains, organ failure, dementia and having to get up to pee three times a night are just normal...they are ALL **“just the way it is” and we should just accept that and go on?**



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So aging is just normal....

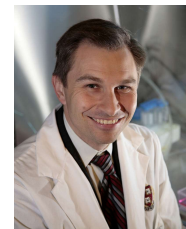
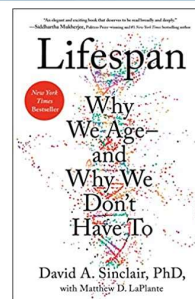
Many beg to disagree!

These are not deranged, renegade, conspiracy theorist whackos trying to play God. These are world renowned scientists at MIT, Harvard Medical School, Salk Institute, Albert Einstein School of Medicine, UCLA Medical School, London College of Medicine...just to name a few...who simply believe **aging is a disease, with an identifiable cause which therefore can be altered.**

One of the Head Whackos is **David Sinclair, PHD** and Chairman of the Genetics Department at Harvard Medical School. If you want your brain blown away completely, read his book **“Lifespan”**.



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Landmark Study

Danish Twin Study (1996)

How long a person lives is 20% determined by genetics and 80% determined by lifestyle

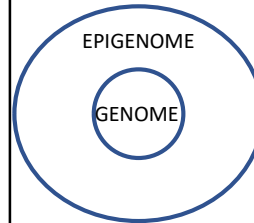
Yet almost thirty years later the world's healthcare system generally ignores lifestyle with a system focused on pathogenesis (treating disease) instead of system focused on preventing disease (salutogenesis)

Herskind AM, McGue M, Holm NV, Sorensen TIA, Harvad B, Vaupel JW. The heritability of human longevity: a population-based study of 2,872 Danish twin pairs born 1870-1900. Hum Genet. 1996;96:319-323. [DOI] [PubMed] [Google Scholar].



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To understand aging, lets look at how "life" works



GENOME

The genetic code – your DNA.

- Maintains homeostasis
- Initiates repair

The genome controls our total function – most cells can have the “programming” to perform every function necessary, including regulating all deviations from “normal” function and even creating a new you.

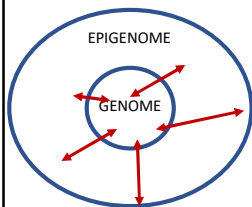
EPIGENOME

Tells the genome what to do – make more skin cells, repair broken DNA, make more protein to regulate BP, make proteins to slow down the bladder so I don't have to get up at 3:00am.....essentially the master controller for every cellular function.



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How the epigenome works



WHAT'S IN THE EPIGENOME?

Sirtuins (also called Daf-2 genes)

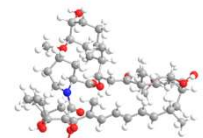
Sirtuins are proteins, enzymes, catalysts that tell the DNA what to do. Those studied so far include **NMN** (nicotinamide mononucleotide), resveratrol, metformin, **rapamycin** – many others. They occupy specific locations in the epigenome based on their role/function. They return to that space when their job in the genome is done.

The master sirtuins, the wizard behind the curtain, the all-knowing, all-seeing may be **NAD** (nicotinamide adenine dinucleotide) and/or **TOR** (target of rapamycin)

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What we KNOW Daf-2 genes control

- ✓ Cardiac health
- ✓ Elimination of cancer cells
- ✓ Brain function
- ✓ Hair loss
- ✓ Wrinkles
- ✓ Insulin metabolism
- ✓ Regulation of the epigenome



RAPAMYCIN

Likely everything else




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How many of these sirtuins are there?

Just the ones we currently know a lot about

- ✓ nicotinamide adenine dinucleotide (NAD)
- ✓ nicotinamide mononucleotide (NMN)
- ✓ Rapamycin
- ✓ Metformin*
- ✓ Acarbose*
- ✓ Phenylbutyrate*
- ✓ Estradiol
- ✓ Canagliflozin*

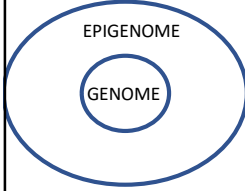
INTERESTING NOTE
All the ones with an “*” are current treatments for diabetes!



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Perpetual Motion Machine - Until It Isn't!

The system is flawless – a complete, self-correcting system. *Theoretically, a disease-free life would go on endlessly. So why does disease – INCLUDING AGING – happen?*



In a word, the system is **INSULTED** to the point that the genome becomes severely damaged **but mainly the epigenome loses its ability to communicate with the genome** – genome no longer knows what to do.

This is called the
“Information Theory of Aging”




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What Goes Wrong

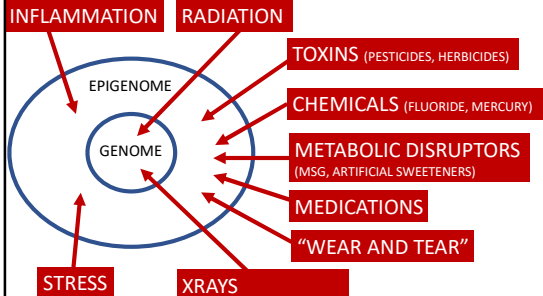
Genes function according to a theory called **ANTAGONISTIC PLEIOTROPY**. Each gene has two functions – **one to build up and one to tear down**. With age and damage, despite the instructions from NAD or TOR, the genes turn to hyperfunctioning scavengers (focus on tear down).

So what damages these sirtuins?




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HERE IT IS - WRAPPED UP. What Are The Insults??



- INFLAMMATION
- RADIATION
- TOXINS (PESTICIDES, HERBICIDES)
- CHEMICALS (FLUORIDE, MERCURY)
- METABOLIC DISRUPTORS (MSG, ARTIFICIAL SWEETENERS)
- MEDICATIONS
- “WEAR AND TEAR”
- STRESS
- XRAYS

GET IT?



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End result....what we call "aging"

- The sirtuins get "lost" - can't find their way back to their correct spot in the epigenome so can't get back to the place in the genome they need to go
- The sirtuins are damaged and no longer know what to do - or do it properly

- The genome (DNA) gets too damaged - loses its telomeres which direct the function of the strand
- The genome gets damaged beyond the capability of the epigenome to direct a fix

"Unfixable" DNA strands become death scavengers - they can't make what they are supposed to but **repeated attempts just create massive inflammation**



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So how do stop damaging the perfect machine?

STEP ONE - Avoid the Insults

Refer back to the previous presentation content

STEP TWO - Supplement the Epigenome

NAD (nicotinamide dinucleotide)

NMN (nicotinamide mononucleotide - natural B-vitamin)

Resveratrol (Chinese lacquer tree)

Metformin (French lilac)

Rapamycin (actinobacterium)

And MANY others - STACS, DAFs

FYI - studies underway showing NMN to effectively **REVERSE** end-stage glaucoma in mice



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The "Blue Zones"

- Areas identified with exceptionally long lifespan AND healthspan
- Areas boast centenarian percentages 25-30% higher than other areas of the world
- Currently include Sardinia, Nuoro Province, Nicoya Peninsula, Ikaria, Okinawa, Loma Linda, and Costa Rica

NINE CHARACTERISTICS OF BLUE ZONE LIFESTYLE

1. **Move** naturally, and a lot
2. Know your sense of **purpose**
3. **Stress**-shedding routines
4. **80%** full rule
5. **Plant focused** diet including limited meat and almost no sugar
6. **Wine** - frequently with moderation
7. **Belong** - typically faith-based
8. **Loved ones** come first
9. Right tribe / social networking - all **focused on healthy lifestyles**



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So - can we really extend life?

More importantly...

Can we better our health?




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The mice studies

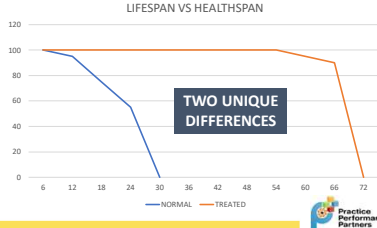
Mice have a normal lifespan of about 2 ½ years – then they succumb to almost the same things humans do. Grey hair, cataracts, wrinkles, cardiovascular decline, energy decline, loss of libido, arthritis and ultimately death

THESE MICE ARE TWINS



Adjusted Human Age Treated	Adjusted Human Age Untreated
125	52

LIFESPAN VS HEALTHSPAN



TWO UNIQUE DIFFERENCES

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Not just one mice study....

Hundreds, if not thousands of similar studies have been conducted or are currently underway involving earthworms, jellyfish, primates - ALL with similar results. And thousands of uncontrolled studies people are essentially conducting on themselves.

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This is just the tip of the iceberg in aging studies.

Next question – can you reverse the effects of aging?

HANG ON TO YOUR HATS!!!!

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Thanks for your attention. Live Long and Prosper

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