

# MEDICAL BITS FROM YOUR DOCTOR

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*“True Happiness is to enjoy the present without anxious dependence upon the Future”.*

*Lucius Annaeus Seneca*

**1 – Your Health:**  
Healthy weight

**2 – Medical News:**  
Weight loss medications

**3 – Debunking Myths**

*“Be tolerant with others and strict with yourself”.*

**Marcus Aurelius**



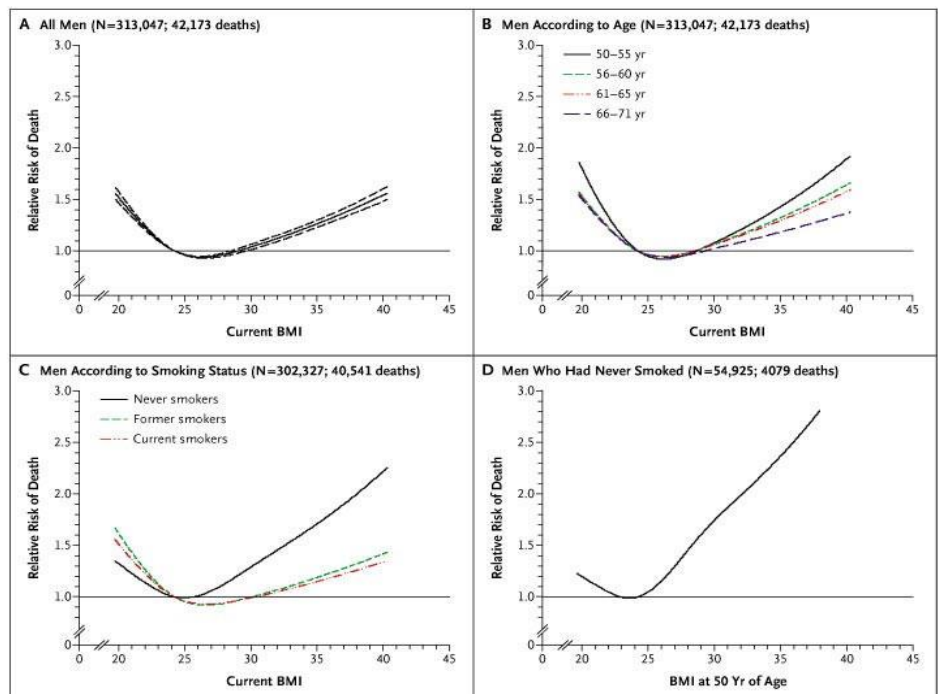
## YOUR HEALTH: Healthy Weight

All humans face challenges, opportunities, risks and uncertainties, as we all strive to improve ourselves in most aspects of life, be personal, social/family or professional. Embracing a healthy life style and doing our part to remain in good physical health, provides the right platform to face those challenges. Of course, this is not easy, as so many stressors and factors conspire to derail our best plans and efforts!

We know that maintaining a healthy weight and proper muscle mass, contributes to our overall sense of wellbeing and improves all health outcomes. The association between rising weight with higher morbidity and mortality is beyond dispute and has been documented since the times of Hippocrates, who, from his island of Kos, launched the “medicine of observation” that most humans (but sadly, not all) continue to value today.

More than two thirds of Americans are overweight or obese and other nations are catching up fast! Even in China 30% of adults are now fat. We will review new alternatives for weight loss, indications and precautions.

At first sight, problem appears to be quite simple:  
Thermodynamics 101: Calories in > Calories out.



But of course, reality is a bit more complicated, as biology has evolved to ascertain survival. We favor salt, fat and sweets and naturally tend to store energy in fat stores should we suffer famine!

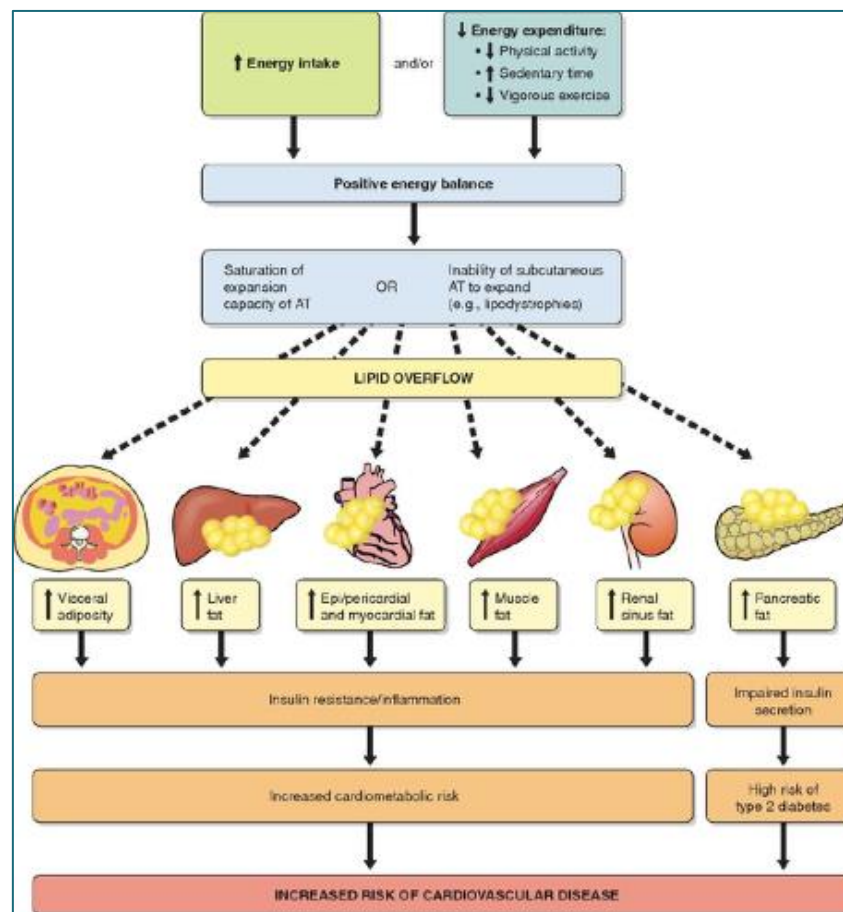
In fact, sugar can be a substance of abuse and lead to a natural form of addiction. According to the [English Oxford Dictionary](#), “Addiction: to be physically or mentally dependent on a particular substance.”

“Food addiction” seems plausible as brain pathways that evolved to respond to natural rewards are activated by sugar intake, leading to release of opioids and dopamine in the brain pleasure centers and thus, it might be expected to have addictive potential. I invite you to read [this review](#).

Our modern world also conspires against our best efforts, as “junk food” is tasty and cheap! It is estimated that 20% of the weight gain over the past few decades is due to sugary drinks!

And technology has automated jobs, provided ubiquitous “pocket screens” and reduced our energy expenditure leading to a positive caloric balance and rising fat with a progressive increase in our waist line, unless we remain vigilant and actively avoid it!

The “perfect storm” of excessive sugar and increasing sedentary lifestyle of modern times has led to the Obesity crisis and the consequences we witness today. But instead of thinking about the Obesity Epidemic, we should probably focus on the **Muscle Crisis or Absence of Muscle Use Epidemic** as the main factor driving our metabolic problems and so many poor health outcomes worldwide!

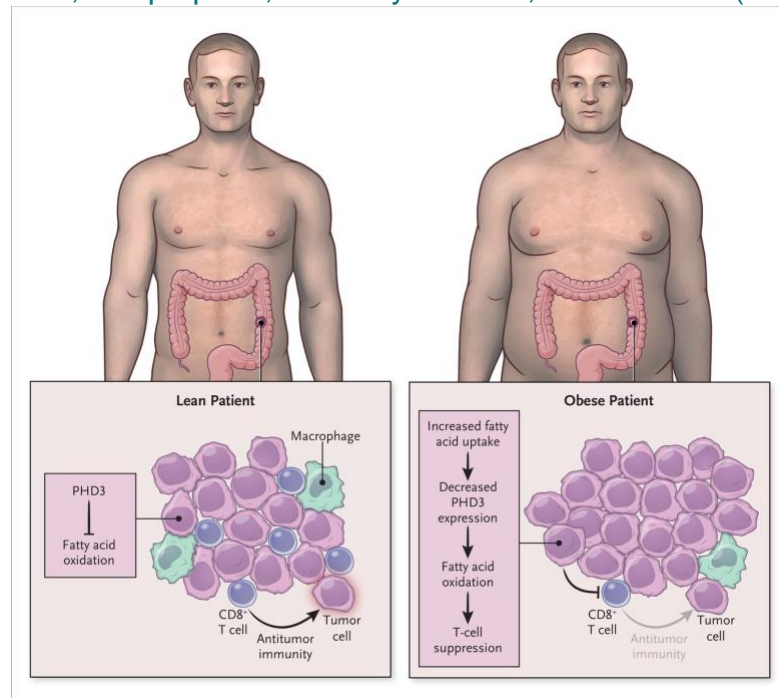


Excess visceral fat leads to increased cardiometabolic risk, particularly in those with limited muscle use and lack of exercise. Muscles are metabolically active and very important to avoid deposition of omental (belly) fat. If we don't use them, our subcutaneous fat may become dysfunctional and unable to expand when facing an energy surplus with the consequent lipid spillover and accumulation of lipids at undesired sites with harmful cardiometabolic consequences.

[André Tchernof and Jean-Pierre Després. Pathophysiology of Human Visceral Obesity: An Update. 2013](#)

Obesity (and Type II Diabetes Mellitus) is more common in Native Americans, African Americans, Hispanics and Asian Americans than in the general population. The rising weight of Humanity, has led to insulin resistance, type II DM and the development of another “pandemic” of obesity which has been worsening for the past 50-60 years, as discussed on [prior “BITS”](#).

Obesity leads to [multiple complications](#) and is associated not just with DM, but also, sleep apnea, coronary disease, heart failure (diastolic dysfunction), higher



susceptibility to infections and many types of cancers including breast, esophageal, ovarian, colon/rectal, renal, thyroid, uterine, pancreatic and liver. It promotes a chronic inflammatory state which is detrimental to our cellular health at the most basic level. We must strive to maintain metabolic health by eating properly and feeding our muscles their share of daily exercise!

**Are you overweight or obese? [Here is your calculator](#)**

## SUGAR

Reviewing the fascinating and infamous [history of sugar](#) would take weeks! **Briefly:**

- Sugarcane, the primary source of sugar, likely originated in New Guinea around 8000 BCE. After its “domestication”, it spread to other parts of Southeast Asia, the Pacific Islands and later ancient India, to China, Persia, and the Arab world.
- During the Middle Ages, Crusaders returning from the Middle East introduced sugar to Europe, remaining a luxury item, primarily available to the wealthy elite.
- Finally, the Portuguese promoted their exploitation in the Madeira Isles, but upon the “discovery of the New World” the tropical conditions suitable for their cultivation and the intensive nature of the crop requiring grueling labor promoted the [slave trade](#) and another [very dark chapter of history](#), maintained by the European lust for sugar.
- Sadly, this system was codified and promoted by all world powers, as international commerce and standards of living for the upper classes increased. They all became addicted to sugar, chocolate, coffee, tobacco, exotic fruits and the slaves that powered their riches, benefitting from the “cheap goods” and exploitation of the Americas. Plantation owners became wealthy and used their

dirty cash to buy influence in the European capitals maintaining a united front in defense of the institution of Slavery (organized “proto-lobbying group”!).

- Sugar was the undisputed king of “cash crops” and Haiti (Saint-Domingue) became the most lucrative colony, producing immense wealth for France (the main economic power in 18<sup>th</sup> century Europe) through its plantation economy, where adult life-expectancy was below 35 and the survival for plantations workers was under 5 years (as slaves were worked to death under unspeakable conditions).
- In most of the Caribbean islands, 9 out of 10 residents were enslaved and thus, plantation owners and their administrations devised an ever more violent and strict oppression system over the great majority to be able to maintain control and a “productive peace” promoting a continuous stream of slaves to replace the high “occupational” mortality.
- Despite Napoleon’s opposition to slavery and his life-long embrace and promotion of the principles of the Age of Reason and Enlightenment, and his personification of the values of the French Revolution, he abandoned his precepts of “egalite, liberte, fraternite” in the name of “cash” to support armies in defense of his Empire against the multiple European powers’ coalitions (seven) formed to counter France and Napoleon’s Continental system expansion.
- The struggles for independence in the Americas, witnessed the improbable rise of Toussaint Breda, who would become Toussaint Louverture, (“the one who opens new roads”) slave born in a plantation, self-educated beacon of the Enlightenment who rose above the prevailing barbarism and fought for the emancipation of Haitians and termination of slavery. He would die in Napoleonic France captured after trickery and false offers of peace by Napoleon’s envoys, despite the mutual respect and admiration.
- Few Americans can forget the early tussles of the Republic and heated debates between Federalists and “Democratic ideals”. Alexander Hamilton, self-educated genius, born out of wedlock in the Caribbean Island of Nevis, witnessed the ravages and tragedy of slavery from an early age, shaping his lifelong opposition to Slavery. His views formed the basis for the Federalist Party, which was opposed by the Democratic-Republican Party led by the plantation / slave owners Thomas Jefferson and James Madison. Hamilton and Federalists supported the Haitian Revolution, and he helped draft the constitution of Haiti. Fortunately for the nascent United States of America (and most of us) upon Hamilton’s death at the hands of vice-president Aaron Burr, Thomas Jefferson embraced most of the Hamiltonian republican principles (but not his unwavering abolitionism). But this is another long chapter in our murky history!

## Increasing Sugar Consumption



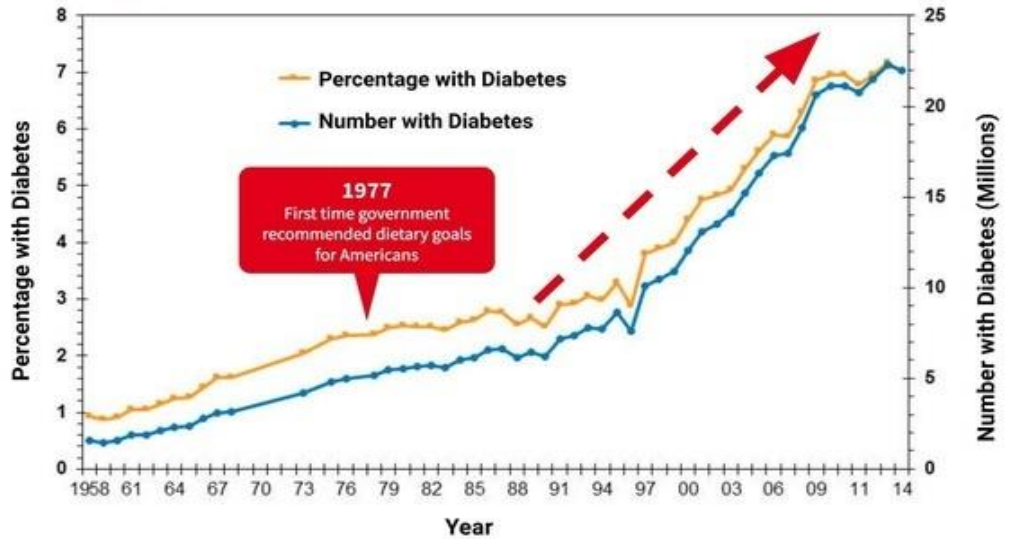
Sugar is the most popular ingredient added to foods in the US.

One teaspoon of white sugar has 15 calories, but one teaspoon of corn syrup has 20 calories and soft drinks are responsible for most of the added sugar in the average American diet.

Two hundred years ago, the average American ate 2 pounds of sugar annually. Today, almost 112 pounds of per year! And one soda = 11 teaspoons of sugar!

In both, type I and type II diabetes, multiple genes and environmental factors are implicated. Genetic studies have identified over 40 genetic variants that increase the risk of type II diabetes, but they account for only 10% of cases and increase the individual risk of diabetes by 10-15%. Since so many genes contribute to the overall risk, it is difficult to quantify each or develop prevention and treatment based on these genetic profiles.

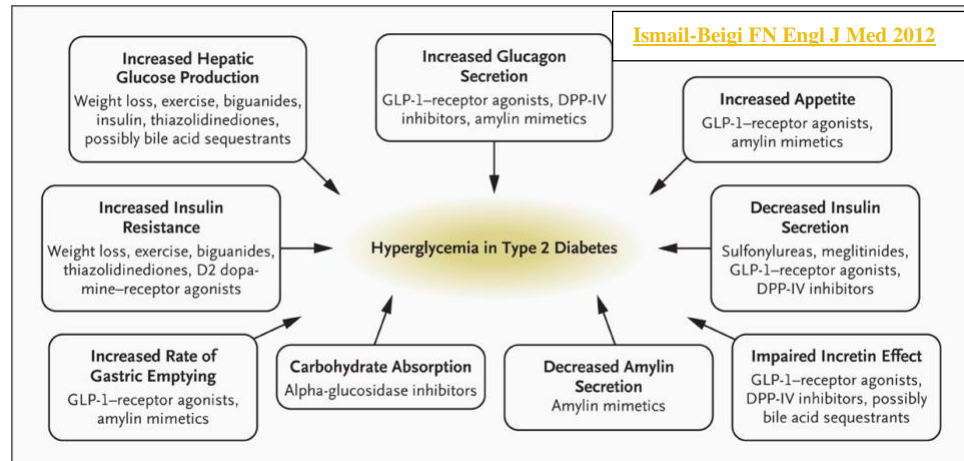
## Type 2 Diabetes Prevalence: 1958–2014



CDC's Division of Diabetes Translation. United States Diabetes Surveillance System available at <http://www.cdc.gov/diabetes/data>

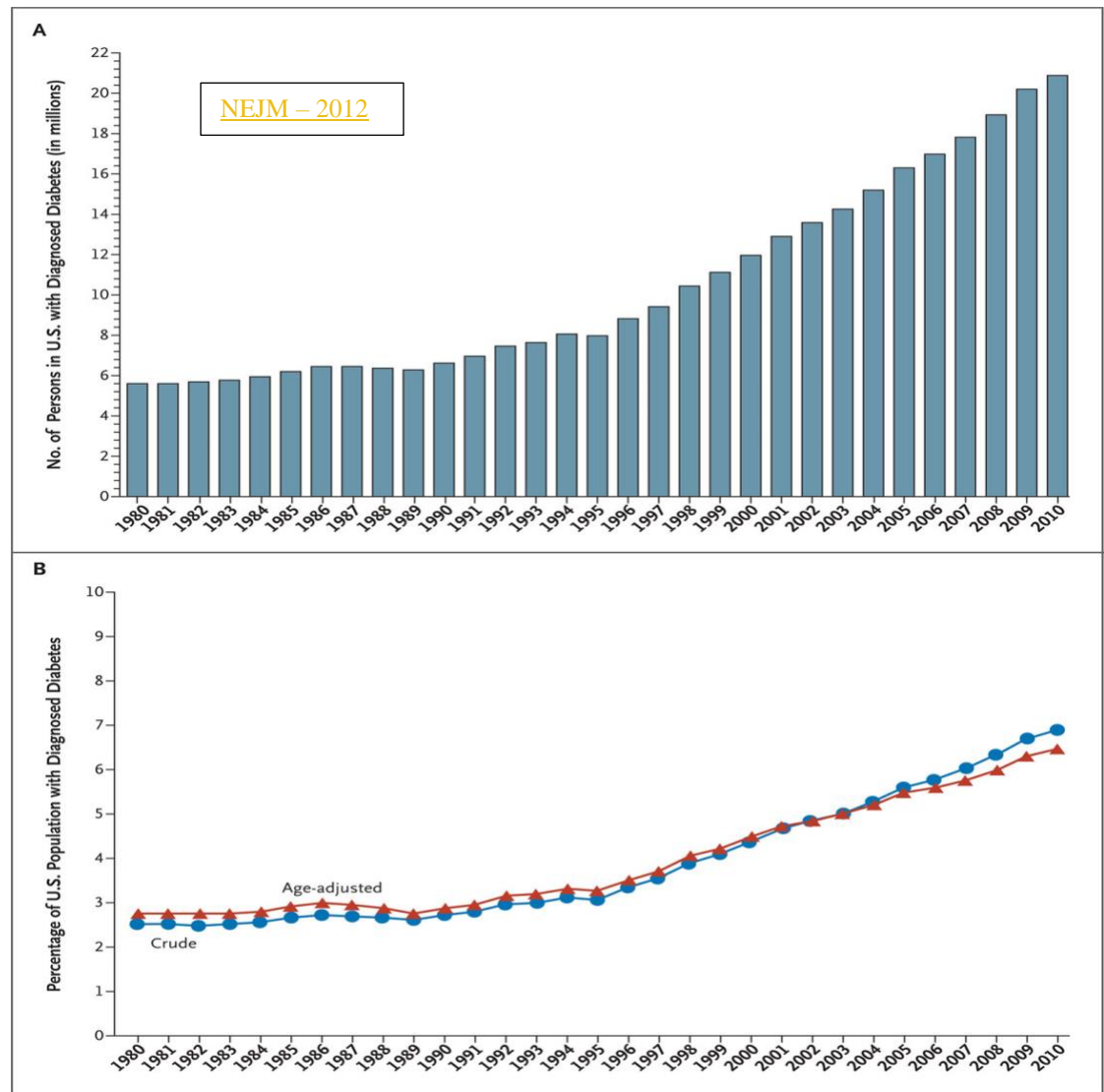


As the weight of Humanity has increased, so has the prevalence of diabetes. Now 40% of Americans are overweight and more than 30% of adults over 65 have diabetes. If the current trends continue, by 2050 1 in 3 of the American population will suffer the condition.



The main problem is the increased insulin resistance and its decreased secretion for the metabolic state, leading to progressive hyperinsulinemia, weight gain and type II DM. Muscle does not need insulin to utilize glucose and it is essential to keep using them to maintain glucose balance. Our muscles need intermittent SNACKS of activity which leads to the release of soluble factors named myokines which have numerous metabolic benefits, sending signals to other muscles, liver, adipose tissue, heart, brain and blood vessels which mediate the numerous benefits of exercise.

The human, direct and indirect costs related to diabetes threatens to overwhelm not only health-care systems but national budgets!



Globally, the number of humans living with diabetes has increased from 108 million in 1980 to almost 500 million by 2020. The global prevalence among adults has reached 10%. In some nations, up to 30%!

Since 2000, there has been a 5% increase in premature mortality due to diabetes and its prevalence has risen more rapidly in low and middle-income nations. DM is now the most common cause of blindness, renal failure and vascular disease, including heart attacks, strokes and limb amputation.

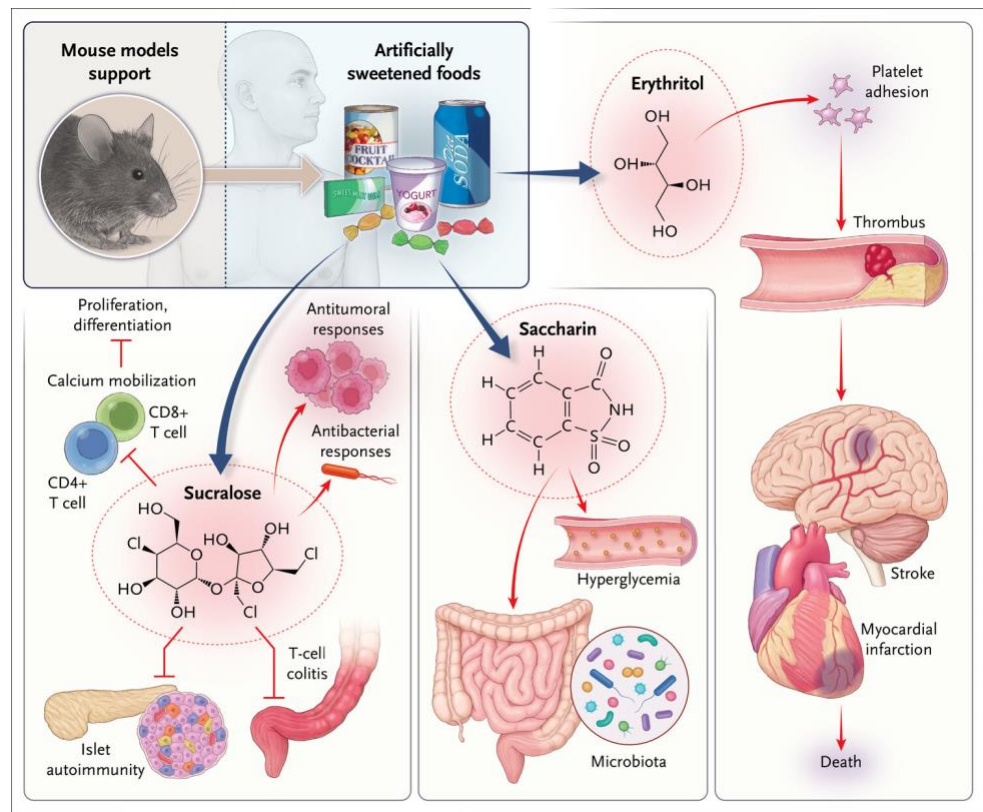
The World Health Organization's (WHO) 2015 sugar guidelines recommends that adults and children consume less than 10% of daily calories from free sugars (sucrose), with a further reduction to 5% being ideal with additional benefits to reduce the burden of disease.

My educated patients would not be surprised to learn that the food and beverage industry has laboriously opposed government efforts throughout the world to regulate and limit the amount of free-sugar consumption for many decades. As we reviewed in the past, this is not an exceptional skirmish in our "mature" societies. The Tobacco Industry fought and continues to undermine efforts to regulate tobacco products despite the millions of humans who die or

suffer daily as a result of their manufacture. And the Gun Industry and their lobbying groups continue to assault their regulatory demise with historical and grandiloquent references to that mystical document called Constitution (always under assault and manipulated).

In my opinion, those ambitious pages were the consequence of arduous debates and opposite view-points that should be interpreted with historical perspective, taking into account the realities of agrarian 18<sup>th</sup> century communities and arguably need updating, to fulfill the needs of a modern urban society with millions of citizens living in close proximity, where “civility” is paramount! But enough said, as I have bored you with similar arguments in the past...

If we must limit Sugar, could we indulge in artificial sweeteners? As this cartoon [summarizes](#), sucralose, saccharin and erythritol are all associated with poor outcomes and best to avoid.



We can all agree that when at the supermarket, we need to steer clear of any “food” that your mother or grandmother could not have recognized! Limit processed and artificial junk and anything that has excessive carbohydrates, and exercise!

Fortunately, human ingenuity and modern research (enticed by the prospect of blockbuster drugs and billions in profits in a classic story in support of Adam Smith’s “Wealth of Nations”) are delivering new, highly effective (and expensive) drugs to combat obesity!

We will discuss these drugs and their many promises.

# How can we effectively lose weight?

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Much has been written about weight loss, with so many billions (people and money) “on the line”. This is just a humble and succinct review.

Remember that muscle activity, both aerobic and resistance training is probably more important than your diet and essential to achieve healthy outcomes!

- **Life-Style Modifications: Diet – Exercise – Behavior Modification**
  - **Diets**
    - Balanced low-calorie diets – Mediterranean – DASH.
    - Low-fat diets
    - Low-carbohydrate and low glycemic index diets
    - High-protein diets
    - MIND Diet.
      - Not beneficial to prevent cognitive decline.
    - Caloric restriction with time-restriction (intermittent fasting).
      - No more beneficial in reduction of weight, fat or metabolic risk factors
  - **Exercise**
    - Combined aerobic - resistance exercise works best.
- **Devices**
  - Laparoscopic adjustable gastric banding
  - Electrical stimulation (vagal blockade) systems
  - Intra-gastric balloon systems
  - Gastric emptying aspiration systems
  - Hydrogels
- **Bariatric surgery** (numerous designs, now mostly sleeve gastrectomy).
- **Liposuction** (do not even think about it!).

## DRUG THERAPY

We know that a weight loss of 5-10% significantly improves most healthcare outcomes. It reduces glucose intolerance, cardiovascular risk, blood pressure, osteoarthritis, fatty liver and numerous other metabolic values and complications. Keep in mind:

- Not every drug works for every patient. Individual responses vary.
- Contemporary trials demonstrate 5-22.5% total body weight loss with medications added to lifestyle modifications.
- Once the maximal effect is realized, weight loss may plateau and additional measures may be required.
- Without life style changes, weight regain may happen and should be expected.

You may recall that medications for weight loss have a troubling history with withdrawal of several approved drugs after adverse events became evident. Among them, several amphetamines (noted to cause addiction), fenfluramine



(pulmonary hypertension and cardiac toxicity) and more recently lorcaserin (increased cancer risk).

These older drugs include:

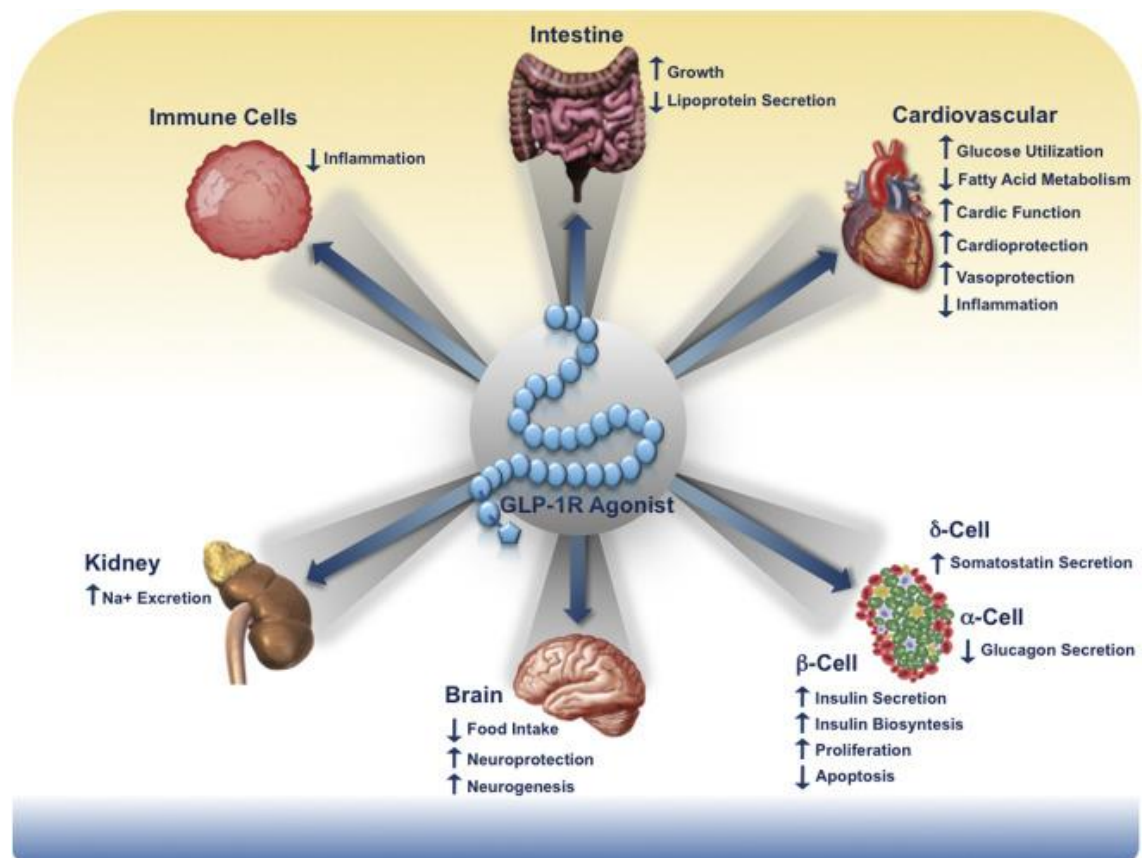
- Lipase inhibitor Orlistat (reduces intestinal fat absorption),
- Phentermine-topiramate (Qsymia)
- Naltrexone-bupropion.

They all have equivocal efficacy, significant side effects, and do not prevent or treat Type II Diabetes Mellitus. They have all been relegated to second and third-line options after the new incretin-based options.

## A NEW AGE: Incretin-based treatment

A new revolutionary family of medications has been approved for weight loss and treatment of Type II Diabetes, leading to significant and sustained weight loss with adequate safety and minimal side-effects. (But again, the answer is not one more medication, but rather life-style modification and to pick up our pace!)

- Incretins are small proteins (peptides) that are rapidly secreted by intestinal cells in response to a meal. The main ones in humans are Glucagon-like-peptide-1 (GLP-1) and the glucose-dependent insulinotropic polypeptide (GIP) and have numerous biologic effects as summarized in this [cartoon](#).



- In the early 1900's, researchers observed that intestinal extracts lowered blood sugar in animal labs and injecting glucose into the gut, stimulated insulin secretion more than IV injection, leading to research and eventual discovery of more than 50 GI hormones. GIP was discovered in the 1970's and GLP-1 in the 1980's.
- Dr. Daniel Drucker and other scientists from the University of Toronto, later sequenced the amino acids and gene sequences of proglucagon, a molecule that

produces GLP-1 and promotes insulin secretion, but it disappeared too quickly to be useful as a diabetes drug.

- In the 1990s, Dr. Drucker heard about the Gila Monster's venom (lizard found in the Sonora desert / SW US and Mexico), containing a similar hormone. His curiosity, prompted a call to a Utah zoo to obtain the lizard and further experimentation on the venom components and the eventual isolation of the lizard hormone, called Exendin-4, significantly more stable than the human version.



- Ten years later, a synthetic version became the first GLP-1 receptor agonist approved for treatment of type II Diabetes, paving the way for the multiple new drugs:
- Exenatide (Byetta) was approved in 2005 and later other similar drugs followed:
- Liraglutide (Victoza), Dulaglutide (Trulicity) offering not only diabetes control but also longer efficacy and cardiovascular benefits.
- Liraglutide (Saxenda), first GLP-1 RA approved for weight loss in 2014.
- Semaglutide (Ozempic – Wegovy) followed in 2021.
- Tirzepatide (Mounjaro – Zepbound) GLP-1/GIP RA approved in 2023.

### Candidates for treatment:

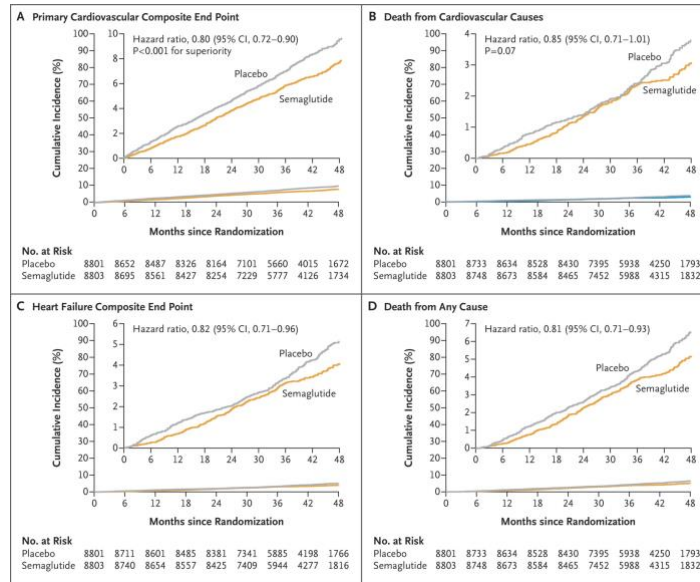
- BMI > 30 kg/m<sup>2</sup>
- BMI > 27 with one or more weight-related comorbidities
  - Coronary artery disease.
  - Type II DM
  - Diastolic dysfunction heart failure
  - Sleep Apnea.
  - Non-Alcoholic Fatty Liver – NASH.

### Recommended approach

- Lifestyle changes. Pick up the pace! Both, aerobic and resistance training!
- Control weight-associated co-morbidities such as blood pressure, sleep apnea, diabetes, heart disease, fatty liver, arthritis and elevated cholesterol!
- Drug choice: Incretin-based therapies are preferred.
  - In patients with type II DM: Semaglutide or Tirzepatide are preferred.
  - In those with cardiovascular disease, similar medications preferred.
- Monitoring: Goal is to lose 1-2 lbs weekly. If well tolerated and not excessive nausea, bloating and constipation, dosage can be increased every 2-4 wks.
- If the weight does not decline by 5% after 3 months, alternative medications should be considered.
- Adverse effects: Nausea (25%), diarrhea (20%), constipation (15%) and slow gastric emptying / bloating are common but improve with slow dose titration.

- Due to delayed gastric emptying and possible increased risk of food regurgitation/aspiration, they should be stopped 7 days before elective surgery.
- Acute pancreatitis and gallstones are uncommon but could happen.
- Contraindicated in pregnancy and those with personal or family hx of medullary thyroid cancer (rare) or multiple endocrine neoplasia type 2A or 2B.
- Once target weight achieved, intermittent dosing every few weeks may be necessary, unless increased muscle mass and regular exercise routine.

## Additional Benefits:

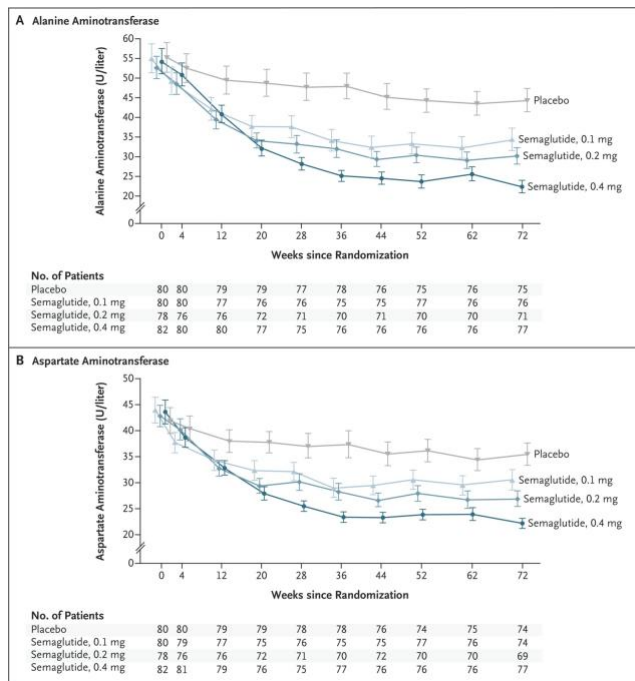


- In patients overweight or obese but without diabetes, semaglutide:

Reduced cardiovascular deaths, non-fatal myocardial infarction and stroke.

In diastolic dysfunction heart failure, also led to a reduction in physical limitations, improved exercise and greater weight loss than placebo

Lincoff AM et al. *N Engl J Med* 2023



- In patients with obesity and associated Non-Alcoholic Steato-Hepatitis (NASH) the addition of semaglutide led to sustained improvements in outcomes with reduced fibrosis scores and improved liver enzymes.

Newsome PN et al. *NEJM* 2021

## Future Drugs

There are almost 200 ongoing or completed clinical trials reported on [ClinicalTrials.gov](https://ClinicalTrials.gov). [Here you can explore!](https://ClinicalTrials.gov) This is an area of active research and

newer drugs will be approved in the near future. Newer GLP-1RAs with improved delivery methods (e.g., oral medications) and potentially fewer side effects is ongoing.

Oral semaglutide (Rybelsius – Novo Nordisk) was approved in 2021, (requires a daily pill on an empty stomach).

A combination semaglutide / maridecab (Novo-Nordisk) may improve absorption and efficacy.

A recent phase 2 trial reported on the oral GLP-1 RA, [Orforglipron](#) (Lilly) and was also safe and effective leading to almost 15% reduction in weight after 36 weeks.

A recent phase 2 trial of [Retatrutide](#) (Lilly - triple agonist of GLP-1, GIP and Glucagon receptors) demonstrated substantial reductions in body weight of up to 25%.

Extended-release formulations that may require monthly administration are also in development.

Danupliron (Pfizer) oral GLP-1 RA in late development.

The potential applications of GLP-1 drugs continue to be explored for various metabolic and chronic conditions, including alcoholism and substance abuse.

Diabetes is a risk factor for Parkinson’s disease and use of GLP-1 RA reduces the risk of new onset Parkinson’s by more than 50%.

[Lixisenatide](#), (GLP-1 RA) was shown to have neuroprotective properties in a mouse model of Parkinson’s disease and this week a phase 2 trial in early Parkinson’s disease, lixisenatide resulted in less progression of motor disability than placebo at 12 months. It attenuated motor impairment and prevented the loss of dopamine neurons.

As the demands for these drugs increases, many of you have been unable to get insurance coverage or find these medications, leading to

Obesity Prevalence	Medication Users			Phentermine and Topiramate Cost		Semaglutide Cost	
	People with Obesity (%)	People with Obesity Treated (%)	No. of Beneficiaries	Estimated Annual Total Cost (\$)	Percentage of Part D Net Spending	Estimated Annual Total Cost (\$)	Percentage of Part D Net Spending
Diagnosis in Medicare claims	21	1	99,568	66,710,261	0.05	1,355,910,952	0.94
		5	497,838	333,551,306	0.23	6,779,554,759	4.68
		10	995,676	667,102,612	0.46	13,559,109,517	9.35
		100	9,956,755	6,671,026,125	4.60	135,591,095,173	93.51
CDC estimate of adults 60 years of age or older	41.5	1	196,764	131,832,183	0.09	2,679,538,309	1.85
		5	983,822	659,160,915	0.45	13,397,691,547	9.24
		10	1,967,645	1,318,321,829	0.91	26,795,383,094	18.48
		100	19,676,445	13,183,218,294	9.09	267,953,830,938	184.80

<sup>2</sup> Data are based on 2020 Medicare Part D enrollment of 47,413,121 persons. Data on obesity diagnoses are from the Centers for Medicare and Medicaid Services. The rate of obesity diagnosis is based on fee-for-service beneficiary claims in 2019; we conservatively assume an equal rate among beneficiaries enrolled in Medicare Advantage. Estimated annual net prices are \$670 for generic phentermine and topiramate and \$13,618 for brand-name semaglutide at a dose of 2.4 mg.<sup>3</sup> Net prices are after rebates and discounts; actual net costs to Medicare could differ. The estimated total costs don't account for use by beneficiaries who are overweight (body-mass index [the weight in kilograms divided by the square of the height in meters] of  $\geq 25$  to  $<30$ ) and have at least one coexisting condition or those with current use of semaglutide for diabetes. The total costs also do not include offsets in pharmaceutical or medical spending. Part D net spending for 2019 was \$145 billion.<sup>4</sup> CDC denotes Centers for Disease Control and Prevention.

frustration and dismay. As you hunt down these medicines, consider [this chart and perspective](#).

It will likely chill your spine and more: If all Medicare plan D members who have a BMI above 30 request these medications, the total Medicare

Plan D budget would be wiped out. In fact, these medications by themselves, would consume 185% of the Medicare Plan D dollars (which are paid for with our federal deficit).

Let's remember that an unhealthy waist line is itself associated with poor outcomes in the long-run. Health is (mostly) our **personal responsibility**.

**The benefit of picking up the pace of your exercise is beyond dispute.**

**Limiting sugar, fats and trans-fat improves our health and longevity!**

**Just one simple 250cc sugary drink (one Coke) daily increases the risk of type II Diabetes Mellitus by over 25%!!**

Glycemic Index Food Samples

	Low GI (>55)*	Medium GI (56-69)*	High GI (70+)
<b>Grains</b>	Stoneground	Whole Wheat	White Bread
	Pumpnickel	Rye	Cornmeal
	Barley	Pita	Rice Cakes
	Pasta	Brown/Wild Rice	English Muffins
	Converted Rice	Couscous	Pancakes/Waffles
<b>Cereal</b>	Stone-Ground Oats	Quick Oats	Bran Flakes
	Bran	Oatmeal	Cornflakes
	Bulgur	Buckwheat	Cream of Wheat
<b>Protein</b>	Beans	Black Bean Soup	
	Lentils	Pea Soup	
<b>Dairy</b>	Milk	Low-Fat Ice Cream	Ice Cream
	Yogurt		
<b>Fruit</b>	Most	Apricots	Watermelon
		Cantaloupe	Dates
		Mango	
		Pineapple	
		Raisins	
<b>Vegetables</b>	Yams/Sweet Potato	Sweet Corn	Russet Potato
	Carrots	Beets	Pumpkin
	Peas		Rutabaga
	Tomato		French Fries
	Greens		Parsnips
<b>Snacks</b>	Fructose	Muffins	Pretzels
	Jam	Shortbread	Soda Crackers
	Sponge Cake	Corn Syrup	Glucose/Honey
		Sucrose	Cookies
			Corn Chips
		Cake	

\* Glucose = 100 on the Glycemic Index

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Nutritional choices are important: keep the glycemic index in mind

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**RECOMMENDATIONS:**

- It is important to control Cholesterol levels!
- Do Not Smoke!
- Treat Hypertension!
- Exercise! This is part of being humans! We are designed to hunt prey in the savannah and other less hospitable environments! Nothing special about it!
- If you have vascular disease, a daily baby aspirin may be beneficial.
- Regular eye exams by an ophthalmologist every 1-2 years.
- Examine your feet and wear comfortable shoes, particularly if nerve damage from diabetes present.
- Most diabetic patients benefit from anti-hypertensive pills such as losartan (and its class) or lisinopril (and its class).

There is no doubt that Incretins ([Semaglutide](#), [Tirzepatide](#) and others), are changing the “landscape” of obesity and comorbid conditions. When you remember that almost a billion people worldwide (and 40% of Americans) suffer from obesity, the health benefits (and potential costs) are staggering.

## DEBUNKING MYTHS: Q & A

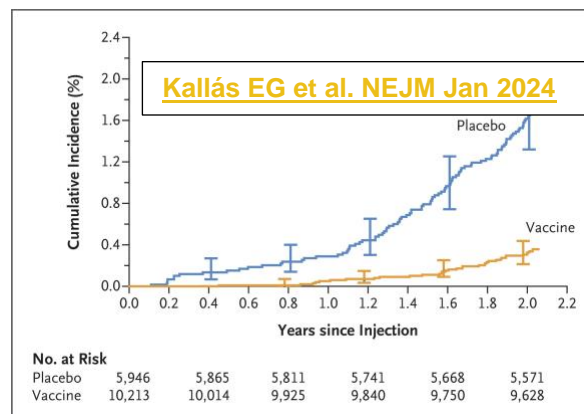
### Should we all take medical supplements? MYTH!

As we discussed in the past, almost 60% of Americans consumes vitamins, minerals, botanicals, live microorganisms, probiotics and dietary supplements (spending about 55 billion in 2020) to prevent or treat various (mostly) imaginary ailments and “conditions” (infections of all sorts, memory loss, lack of energy, heart disease, aging, degenerative bone disease, etc.) you may want to read the [Dietary Supplement Listing Act of 2022](#) and will realize why it’s always best to “keep it simple” and if not proven, do not use them. The [FDA reports](#) that are more than 95,000 supplements on the market today and the vast majority have not been tested for safety or effectiveness.

### What are the exceptions where supplements may be beneficial?

1. Laboratory testing has demonstrated a deficiency of specific vitamins or minerals (Only be tested in particular situations).
2. Vegan individuals are frequently deficient in Vitamin B12, as animal sources are rich in B12. Also, patients who had a gastric or terminal ileal resection.
3. Individuals with Inflammatory Bowel Disease (UC or CD) or GI conditions with associated malabsorption syndromes may need fat-soluble vitamins (A-D-E-K).
4. All Cystic Fibrosis patients.
5. Most patients with prior Bariatric Surgery.
6. Pregnant women need to add Folic Acid and Prenatal Vitamins with iron.
7. [Multivitamins](#) might slow cognitive decline, but more research necessary.
8. [AREDS](#) supplements (Vitamins C, E, Copper, Lutein and Zeaxanthin) may slow vision loss in those with age-related macular degeneration.

## There is no MAGIC PILL and NO SUBSTITUTE FOR EXERCISE and a HEALTHY PROTEINACEOUS DIET!



**Word of caution:** As you may have read, the Caribbean, Central and South America are now in the midst of a severe **Dengue** epidemic. Beware of Mosquitoes and use daily repellent and long-sleeves! There is no effective [vaccine against Dengue](#) although a new [promising vaccine](#) is in development.

If you have 10 minutes, enjoy this [time-lapse of the Entire Universe](#).

If you have 6 more minutes, the [massive expanse of our Universe](#) and the magnificent insignificance of humanity will delight you.

As you look up at the sky in awe to observe our Solar Eclipse of the decade, remember that [Thales of Miletus'](#) eclipse prediction in the spring of 585 BC arguably launched science and doomed superstition.

You will not be able to watch these two [videos](#) without [smiling](#).

[7 Minutes](#) can start to improve your [fitness](#) right now with the Scientific 7- Minute Workout. [Get the app](#)

[11 more minutes](#) will get you in shape!

For core strength, try this [9-minute routine!](#)

Can you pass this 10-second [BALANCE TEST?](#)

Embrace fitness! Exercise is candy to our muscles and they need daily intermittent activity to remain metabolically healthy!

Remember that every woman benefits from [Pelvic Floor exercises](#) and should be part of their routine.

START EXPLORING [MINDFULNESS!](#)

It lowers your BP, stress and raises pain threshold and well-being.

[RESOURCES](#) ON THE WEB.

You know that the only certainty in life, is death and the only fountains of youth proven by science

and experience are love, exercise, laughter, humor  
and a positive attitude!



**FORWARD!**  
Wishing you a Happy Spring!

## OFFICE UPDATES

- I will be away with my family from May 22<sup>nd</sup> through June 7<sup>th</sup> visiting friends in Tanzania (and chasing lions, leopards and the few creatures not decimated by Humanity). My partners will cover as usual but never too far from email and phone (service may be spotty).



- Olivia Dragovits ([oliviad@chevychasepulmonary.com](mailto:oliviad@chevychasepulmonary.com)) is my assistant, always ready to help with her wonderful demeanor and multi-tasking abilities, as she works towards her Medical School acceptance.
- Emily Swearingen, Moghaddaseh Hosseini and Lauren Roling joined us last summer and along with Nicole Loy and Jonathan Sir are always ready to help with your office needs as they continue to work towards their Medical School acceptances.
- Some of our former assistants whom you know, continue to make progress towards their medical degrees. Patty Zhao graduating soon from UVa. Emily Ferguson is a 3<sup>rd</sup> year student at Jefferson University in PA. Simran Singh is now completing her second-year Med School student at University of Buffalo. Samantha Morales is at the University of South Carolina School of Medicine and Andrew Fookes at Georgetown University and both advancing to their second year.

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