Power of 1 Wellness News

Newsletter 5 Δ May 01, 2020

Wellness Word—Crisis & Courage

This first half of this month's Wellness Word contains excerpts from the writings of David Whyte's 'Consolations—The Solace, Nourishment & Underlying Meaning of Everyday Words' (pp. 39-47).

RISIS is unavoidable. Every human life seems to be drawn eventually, as if by some unspoken parallel, some tidal flow or underground magnetic field, toward the raw, dynamic essentials of its existence, as if everything up to that point had been a preparation for a meeting, for a confrontation in an elemental form with our essential flaw, and with what an individual could until then, only receive stepped down, interpreted or diluted.

This experience of absolute contact with an essential hidden dynamic, now understood to be essential to our lives, often ignored but now making itself felt, where the touchable rawness of life becomes part of the fabric of the everyday, and a robust luminous vulnerability, becomes shot through with the necessary, imminent and inevitable prospect of loss, has been described for centuries as the dark night of the soul : *La noche oscura del alma.*

But perhaps, this dark night could be more accurately described as the meeting of two immense storm fronts, the equally vulnerable edge between what overwhelms human beings from the inside and what overpowers them from the outside.

The waveform that overwhelms a maturing human being from the inside is the inescapable nature of their own flaws and weaknesses, their self-deceptions and their attempts to create false names and stories to place themselves in the world; the felt need to control the narrative of the story around them with no regard to outside revelation. The immense wave on the outside is the invitation to give that self up, to be borne off by the wave and renamed, revealed and re-ordered by the powerful flow.

Walking the pilgrim edge between the two, holding them together, is the hardest place to stay, to breathe of both and make a world of both and to be active in their exchange: aware of our need to be needed, our wish to be seen, our constant need for help and succor, but inhabiting a world of luminosity and intensity, subject to the wind and the weather, surrounded by the music of existence, able to be found by the living world and with a wild self-forgetful ability to respond to its call when needed; a rehearsal in fact for the act of dying, a place where inside and outside can reverse and flow with no fixed form.

OURAGE is a word that tempts us to think outwardly, to run bravely against opposing fire, to do something under besieging circumstance, and perhaps, above all, to be seen to do it in public, to show courage; to be celebrated in story, rewarded with metals, given the accolade, but a look at its linguistic origins is to look in a more interior direction and toward its original template, the old Norman French, *Coeur*, or heart.

Courage is the measure of our heartfelt participation with life, with one another, with a community, a work; a future. To be courageous is not necessarily to go anywhere or do anything except to make conscious those things we already feel deeply and then to live through the unending vulnerabilities of those consequences. To be courageous is to seat our feelings deeply in the body and in the world: to live up to and into the necessities of relationships that often already exist, with things we find we already care deeply about: with a person, a future, a possibility in society, or with an unknown that begs us on and always has begged us on. To be *courageous* is to stay close to the way we are made.

The French philosopher Camus used to tell himself quietly to *live to the point of tears,* not as a call for maudlin sentimentality, but as an invitation to the deep privilege of belonging and the way belonging affects us, shapes us and breaks our heart at a fundamental level. It is a fundamental dynamic of human incarnation to be moved by what we feel, as if surprised by the actuality and privilege of love and affection and its possible loss. Courage is what love looks like when tested by the simple everyday necessities of being alive.

… we become courageous whenever we live closely and to the point of tears with any new possibility made known inside us, whenever we demonstrate faith in the interior annunciations and align ourselves with the new and surprising and heartfelt necessities of even the average existence. To allow ourselves to feel deeply and thoroughly what has already come into being is to change our future, simply by living up to the consequences of knowing what we hold in our affections.

From the inside it can feel like confusion; only slowly do we learn what we really care about and allow our outer life to be realigned in that gravitational pull. With maturity, that robust vulnerability comes to feel like the only necessary way forward, the only real invitation and the surest, safest ground from which to step. On the inside we come to know who and what and how to love and what we can do to deepen that love; only from the outside and only by looking back does it look like courage.

Finding solutions to complex problems is inherently demanding. A natural tendency is to shirk the work and blame others for poor results. Easier to plead ignorance, deride knowledge, scapegoat, blame, make excuses, deflect responsibility, tear things down and wallow in victimhood rather than accept that the buck really does stop here (Common Dreams, 04.03.2020). Tackling the tangle of issues surrounding coronavirus, overcoming societal challenges and proceeding safely will be necessitated by a change in our collective mindset

from one of *Me*...to that of *We*.

EVERY INDIVIDUAL will have a vital role to play towards this end.

With the rising 3-month coronavirus death toll in America currently surpassing those who perished amidst the Vietnam War and with expectations of additional waves throughout the year, Courage in this time of Crisis will require letting go of norms, of expectations, dealing with disruptions and uncertainty, flexing with unexpected and abrupt changes in our routines. Courage will encompass the understanding that behaviors undertaken by the self will have consequences for the good and health of the community, not only own own households but also that of our parents, grandparents, neighbors, colleagues, team, group, rippling ever outward to everyone of THEIR acquaintance. Courage will assess risks and act accordingly for the safety of everyone, bypassing superficial and trivial concerns over peer pressure, inconvenience, appearing different/weak/uncool/afraid.

Courage makes the time to assess the unknown, the untested, the unimaginable. Courage provides the patience to measure and weigh the swirling vulnerabilities, inconsistencies, improbabilities, contradictions that line the path to eventual answers. Courage turns to face even the most unpredictable of daily realities. Courage is persistent and acknowledges that success can sometimes only be acquired through carefully progressing stages. Courage cares enough to investigate, to change, to act, to inspire, to be part of the ongoing quest for solutions.

One simple solution easily enacted within social distancing parameters which has been proven to greatly enhance the safety for all is that of wearing a face mask or protective covering when out in public.

Covid-19 Carrier

Contagion Probability
%70

Covid-19 Carrier

Contagion Probability
%5

Covid-19 Carrier

Contagion Probability
%1,5

WEAR IT

Wellness Wizard

ScienceAlert HEALTH

BI ARIA BENDIX, BUSINESS INSIDER
29 APRIL 2020

Biohazard Cleaner Warns We Often Miss This Critical Step in Disinfecting Surfaces

To reduce your chance of infection, the US Centres for Disease Control and Prevention (CDC) recommends cleaning areas you touch often, like doorknobs, sinks, and toilets.

But cleaning a surface isn't the same as disinfecting it.

The cleaning process involves scrubbing an area with soap and water, while disinfecting means applying a chemical to kill germs. "The most important step is the cleaning step," Cory Chalmers, the CEO of the professional cleaning service Steri-Clean, told Business Insider.

His team specializes in biohazard cleaning for sites contaminated with infectious diseases. For the past month, the team has dedicated itself almost exclusively to scrubbing down places contaminated by the new coronavirus. That includes homes, cruise ships, offices, factories, and fast-food restaurants.

"A lot of people spray a surface and then wipe it around right away," Chalmers said. "But you're not letting the disinfectant do its job." That's because dirty surfaces are coated in clusters of germs called biofilm that resist disinfectants. These germs have to be removed before a chemical can effectively kill off any lingering viruses or bacteria.

Chalmers said the first step in the cleaning process should be putting soap on a rag or paper towel and then folding the towel into quarters. The towel will lift the biofilm off the surface so only residual germs are left behind. After you've wiped down a small surface – a couple of square feet – flip the towel over and use the other side, then turn it inside out and use the remaining quarters.

"People sometimes will walk around the house with the same rag, cleaning all the surfaces. That doesn't do anything because now they're just spreading the germs around," Chalmers said.

"Once that towel or rag that you're using is full of germs, it's not going to absorb anymore."

After the surface is clean, you can apply a disinfectant spray or wipe. Chalmers said the back of every disinfectant bottle was marked with a "dwell time" – how long the disinfectant needs to sit on a surface before it kills germs. Some disinfectants take 10 minutes, while others only about 30 seconds.

The virus lives longer on certain surfaces, like glass. Depending on the type of surface, it's possible to let the coronavirus die on its own. Research from the University of Hong Kong suggests that the novel coronavirus can live for three hours on printing and tissue paper but for two days on cloth. The virus tends to survive for much longer on glass and paper money: about four days. But its lifespan also depends on temperature and humidity.

Since there's still more research to be done, Chalmers said cleaning and disinfecting was a safer method than waiting for the virus to die. "When you're dealing with a new strain like this, we really don't have all the answers," he said. "I don't think we have enough factual data to know that closing up a building or an office or a room will kill that virus."

How long the new coronavirus can live on surfaces

SURFACE	LIFESPAN OF COVID-19 VIRUS
 Paper and tissue paper**	3 hours
 Copper*	4 hours
 Cardboard*	24 hours
 Wood**	2 days
 Cloth**	2 days
 Stainless steel*	2–3 days
 Polypropylene plastic*	3 days
 Glass**	4 days
 Paper money**	4 days
 Outside of surgical mask**	7 days

*At 69.8 to 73.4°F (21 to 23 °C) and 40% relative humidity **At 71°F and 65% relative humidity

Source: New England Journal of Medicine*; The Lancet Microbe**

BUSINESS INSIDER

(Shayanne Gal/Business Insider)

That's also why he recommends being extra cautious when wiping things down – or hiring a service to do it for you. "There are so many companies out there from landscapers to plumbers to exterminators that are all claiming they're experts and they're going to disinfect your house," Chalmers said.

"Ask them how they're doing it. What's the process? Are they cleaning first, then applying the disinfectant? Are they testing? If they're doing all three of those, you should be safe."

What's New?

Δ NOTE: ALL WORKSHOPS, SEMINARS & PRIVATE SESSIONS HAVE BEEN CANCELLED UNTIL FURTHER NOTICE.

Δ WELLNESS FOCUS: INFLAMMATORY NATION. Our upcoming summer series will explore the concept of inflammation, the roles it plays at the cellular and systemic levels and its importance in the development, maintenance and progression of wound recovery, illness and the chronic diseases that determine our quality and length of life. We will detail its principle drivers as well as strategies to combat and cool these internal fires.

Wellness Bites: FARRO

Farro is an ancient grain and one of the oldest cultivated grains initially discovered in Mesopotamia, the fertile crescent of the Middle East. Farro is shaped like rice with a golden brown hue, has a nutty flavor and chewy texture once cooked & provides a nutritious alternative to refined grains. Farro does not refer to 1 type of grain; rather, it's Italian for "ancient wheat grain" & often used to describe 3 different hulled wheat species with varying tastes: Einkorn (aka *farro piccolo*); Emmer, commonly sold in the US (aka *farro medio*); and Spelt (aka *farro grande*).

Fiber, protein, vitamin B3 (niacin), magnesium, zinc, iron, selenium, antioxidants (polyphenols, carotenoids, phytosterols).

One serving of emmer farro can provide 20% of the daily recommended fiber intake, preventing spikes in blood sugar, reducing LDL cholesterol and protecting against heart disease, diabetes, stroke, and some cancers.

It's important to note that if you're sensitive to gluten then farro would not be recommended since it is derived from wheat.

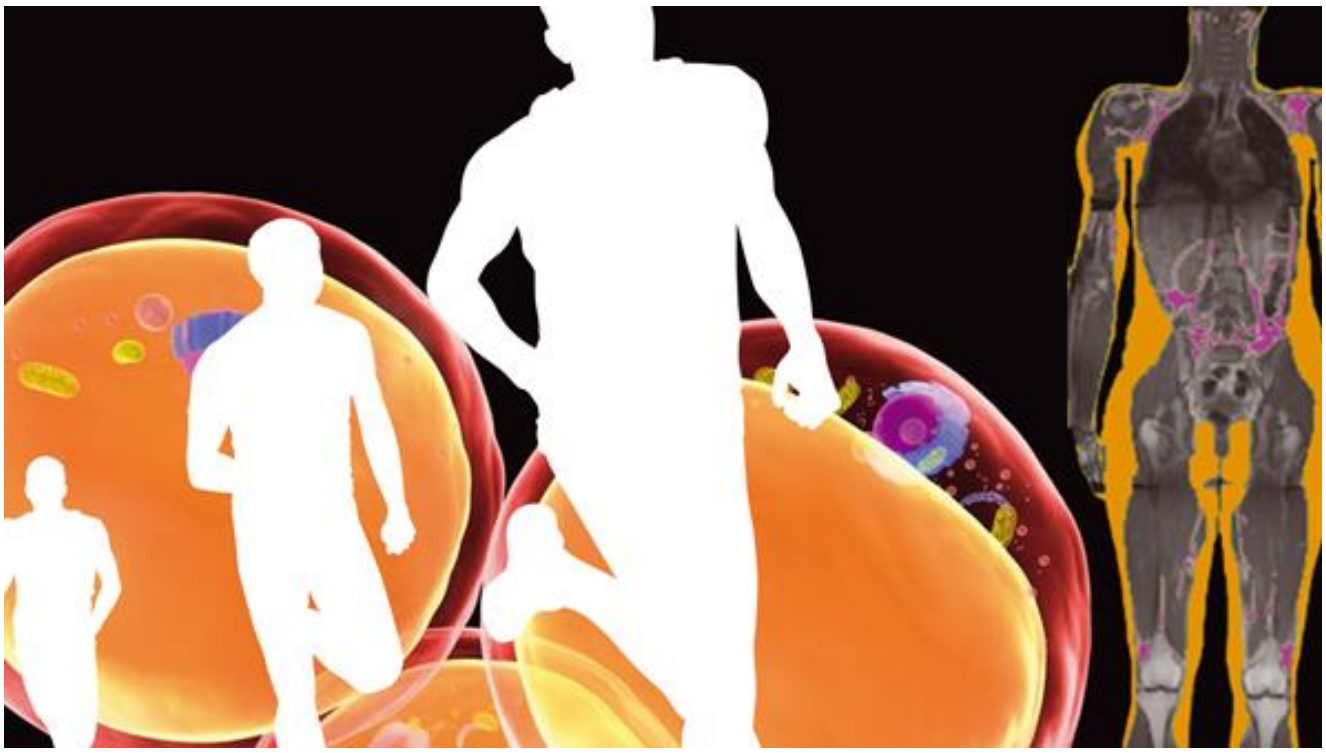
Farro readily absorbs flavors so you can cook this grain with aromatics like herbs, vegetables or broths and stocks to add more complexity. If you want to enhance the nutty flavor, the uncooked grains can be toasted in a skillet before adding to hot liquid. Farro is quite versatile & can easily be added to salads, soups, stews, risottos or casseroles, eaten as a side dish, provide a base for a power bowl or serve as a breakfast dish similar to granola/oatmeal, combining with fruits, nuts & honey.

INEXPENSIVE! NUTRIENT-DENSE! The selection criteria that will most affect the taste, time and nutrition of the grain is how it's processed. Here's the difference between products & their labeling:

- Whole Farro: The grain is left intact, retaining more nutrients per serving. Has a stronger flavor, more chew & requires the longest cooking time. Often soaking these whole grains overnight in water helps to soften the husk so that it cooks faster. Typically this will take over 30 minutes of cook time.
- Semi-Pearled Farro: A part of the bran is removed from the grain but still contains a portion of the fiber.
- Pearled Farro: All of the bran and outer husk is removed, yet retains some fiber. The cooking time is the quickest for this product, less than 30 minutes.

Wellness Focus

The Metabolic Network

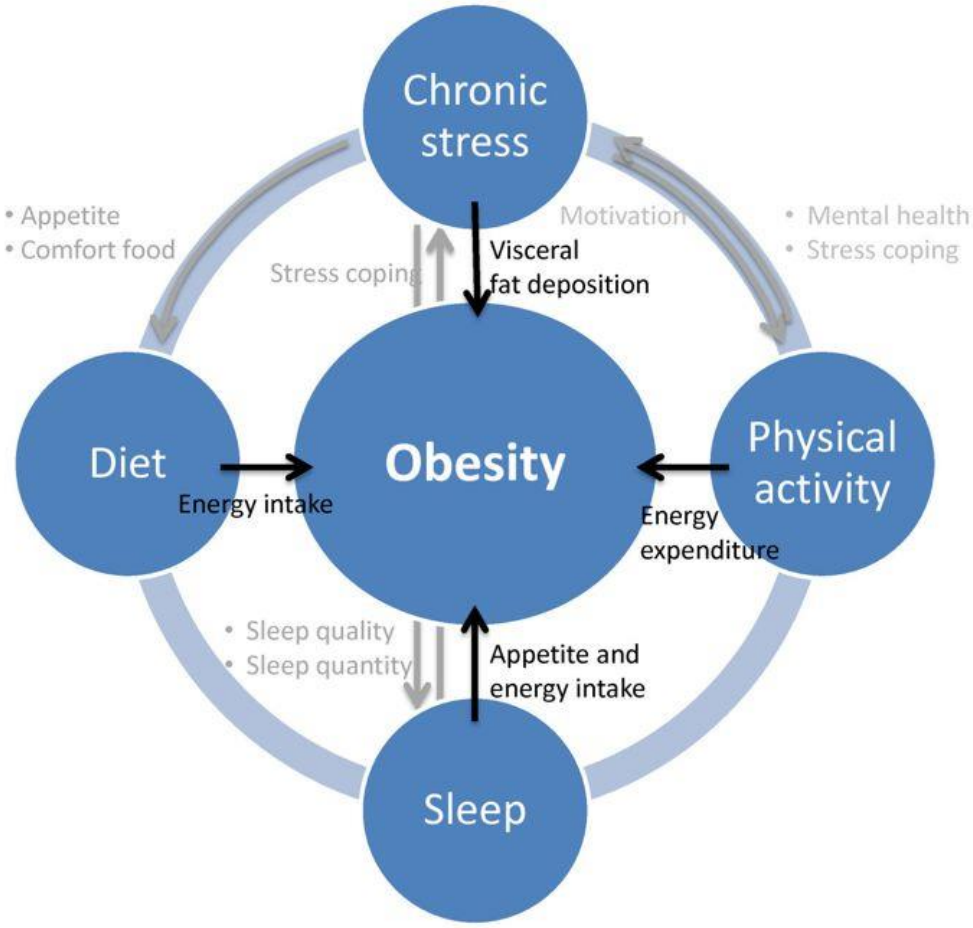


The March newsletter painted a mosaic of terms and concepts on the metaphoric wall: As we continue to summarize the interplay of elements involved in our May issue, the basic unifying principle that resides at the core of any of our systemic processes__mental, physical, social, spiritual, or in our current discussion of the metabolic network___ is one of ~BALANCE~. Our ability to recognize, develop and then maintain this balance determines the scope of our individual wellness. Our cells, tissues, organs and organ systems are all interconnected, and it is the culmination of the entirety of our lifestyle choices that resonate through and are reflected by this network.

As we initially presented in the February issue, it is not just our heart and vasculature system that benefit when we take the time to prioritize our lifestyle choices and revolve our energies towards banking adequate sleep, moderating stress, ensuring a healthy diet and exercise regime and implementing a plan for smoking cessation/alcohol moderation.

These behaviors also directly influence a plethora of collaborating hormones, growth factors, neurotransmitters and receptors and by doing so affect many internal processes that escape our awareness, such as DNA expression, inflammation and metabolic (dys)function, as well as more the noticeable external markers that we tend to focus our attention on, such as our weight, our skin and our mental facility.

When we become out of balance with our energy intake, when we eat too much or when we eat those food-like products our bodies do not recognize (i.e., fast food, junk food, processed food manufactured into boxes and bags), then our adipose metabolism is disrupted by shifts in our leptin, ghrelin and insulin production, circulation and receptivity. Like any other internal mechanism regulated by cascades and cycles, be that sleep, inflammation or stress, the maintenance of our adipose production is intricate, it is multi-tiered, it consists of all kinds of feedback responses, it involves multiple organ systems and it remains entirely dependent upon our individual choices and priorities.

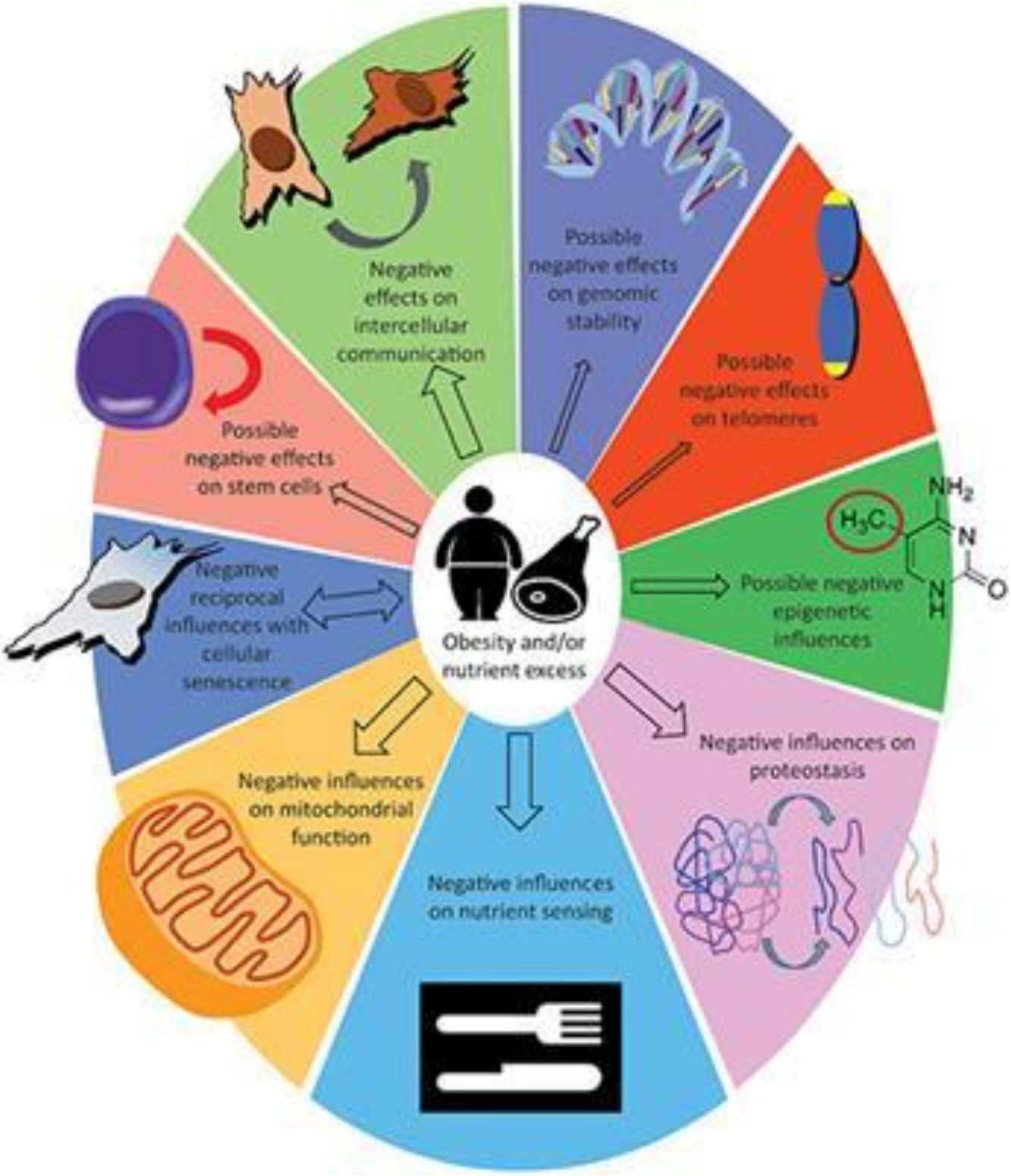


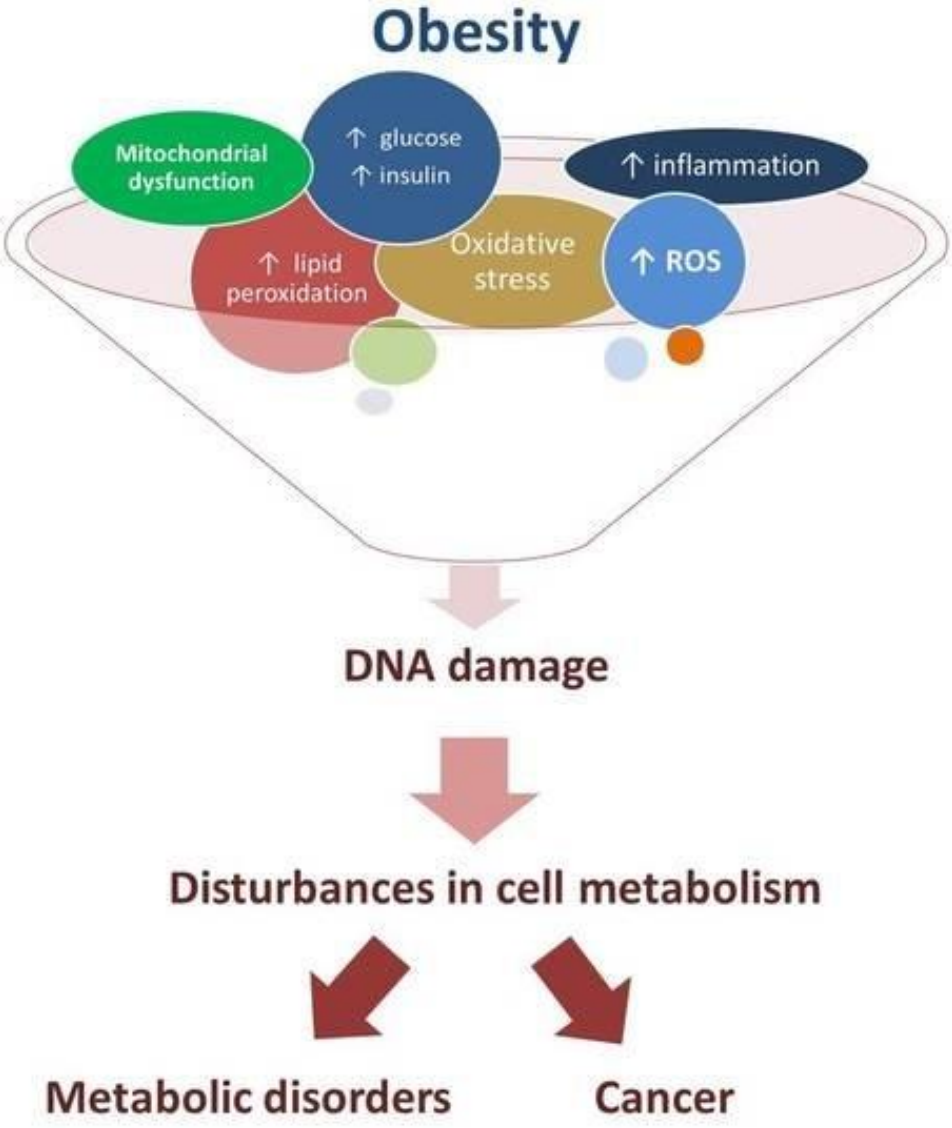
Through the metabolic hormones LEPTIN (suppresses urge to eat, "I'm full"), GHRELIN (stimulates urge to eat, "I'm hungry") and INSULIN (acts as a key that unlocks "doors" or receptors on cell membrane so glucose moves from bloodstream into cells), our bodies regulate its energy and expenditure requirements. When we take care to ingest a diet loaded with essential micronutrients, macronutrients, phytonutrients, antioxidants, vitamins and minerals (acquired from fruit/vegetable-dense meals & snacks) and pair that with moderate activity/exercise/movement, then we provide a dependable foundation of support that our bodies utilize for optimal performance.

When we do not maintain this balance, when our choices are reflected in a body habitus that holds excessive amounts of adipose tissue, then our foundation crumbles, our metabolic cascades are disrupted and these same metabolic hormones morph into engines that construct more negative outcomes. We instead begin to accrue a network of detrimental circulating factors defining our vasculature: high cholesterol, high blood pressure, high blood sugar, high insulin levels, high triglycerides. These contributing factors begin to accumulate, to interlink and combine into a metabolic syndrome. The effects of this darkening web eventually influence every working cell, spanning chromosomal DNA expression to multi-organ functions.

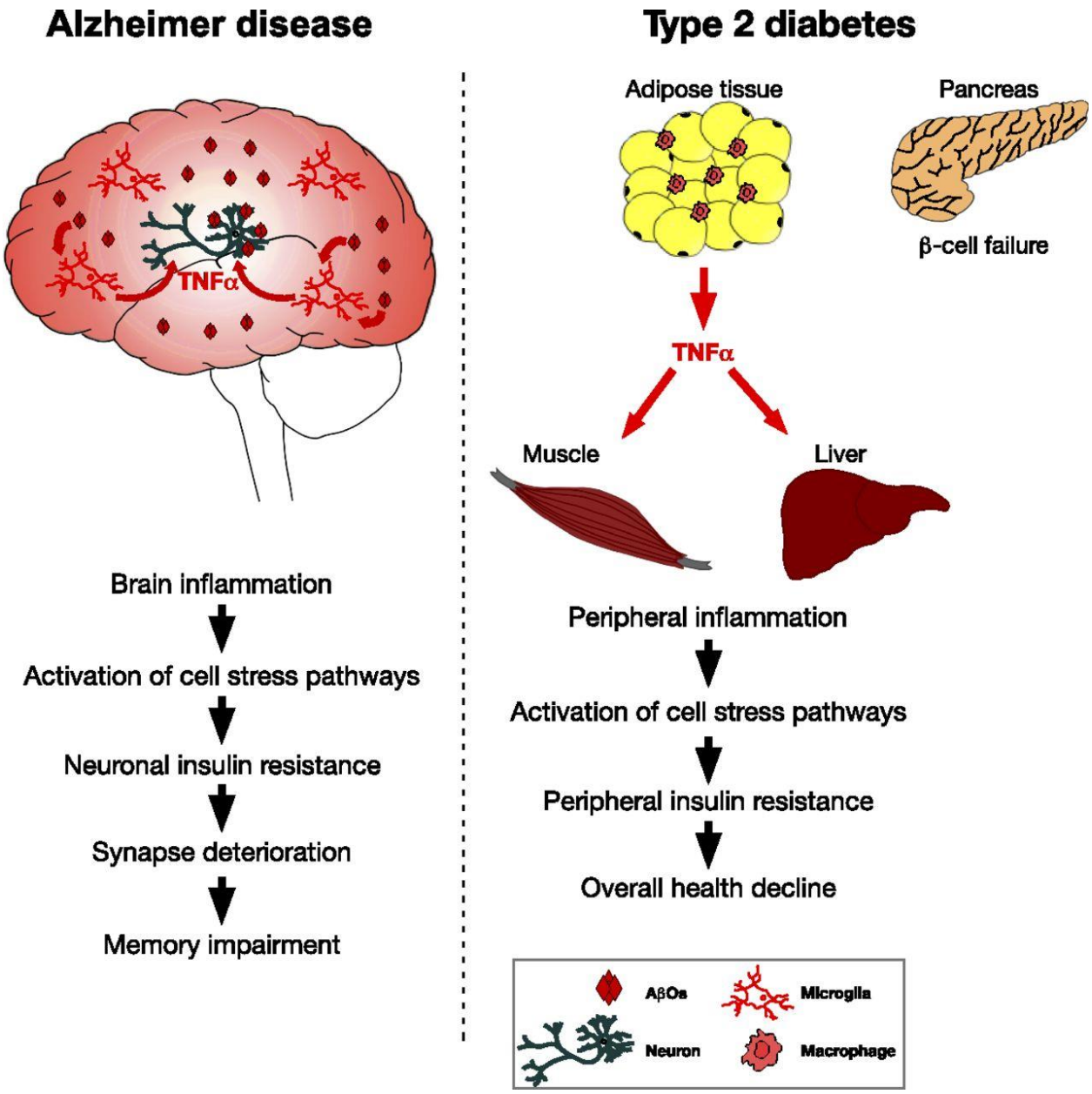
As individuals we see this more concretely through our attempts at suppressing resultant symptoms and complications stemming from heart disease, dementia, cancer, diabetes, infertility, PCOS, liver disease, stroke, respiratory insufficiency, autoimmune disease, to name a few. Although we do not typically associate or correlate these chronic diseases directly with our food and beverage choices, it is a very straightforward pathway linking our habits of consumption to the recognizable consequences that ripple far and wide. These are the choices that determine the limitations and barriers we struggle against. These are the choices that define our lifestyles and abilities both internally and externally, regardless of what age we may be. These are the choices that we can become aware of, familiar with and ultimately modify for a better quality of life.

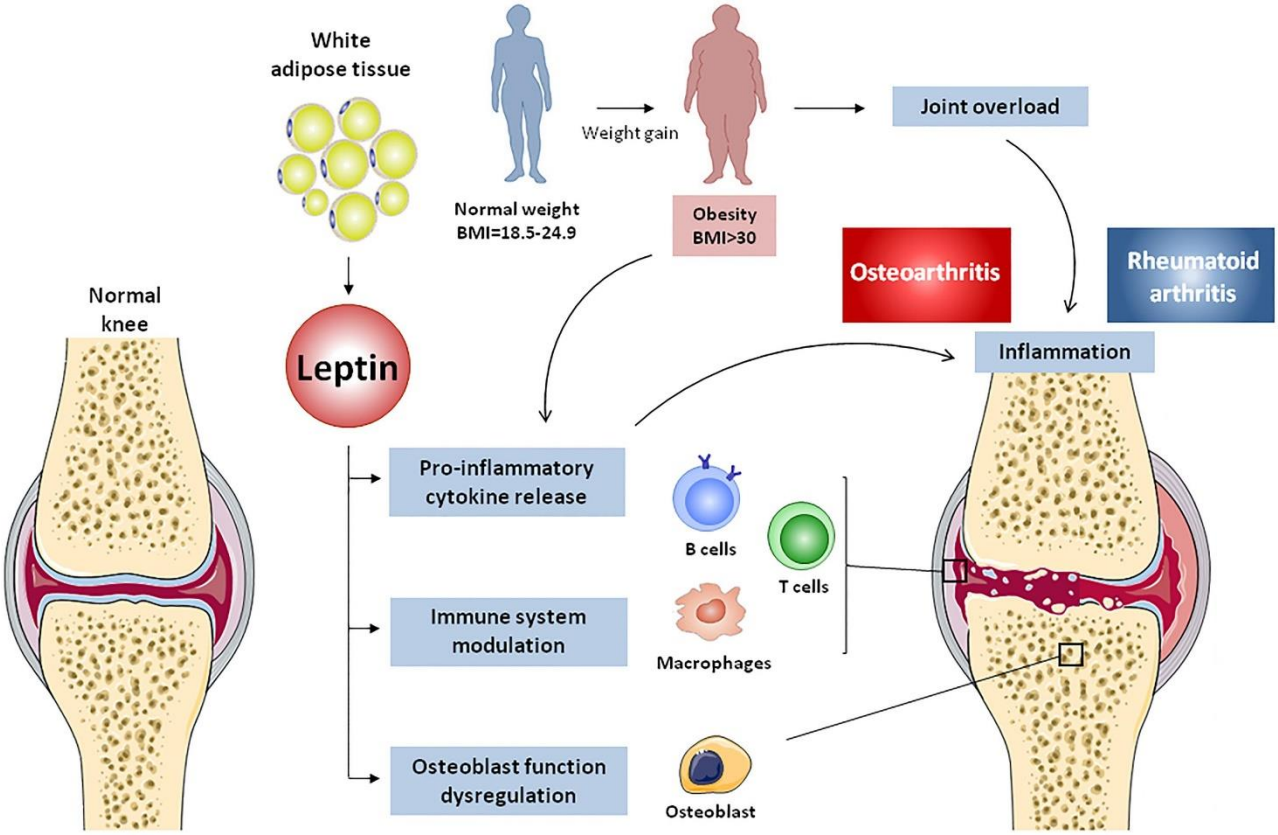
From cellular disruption…

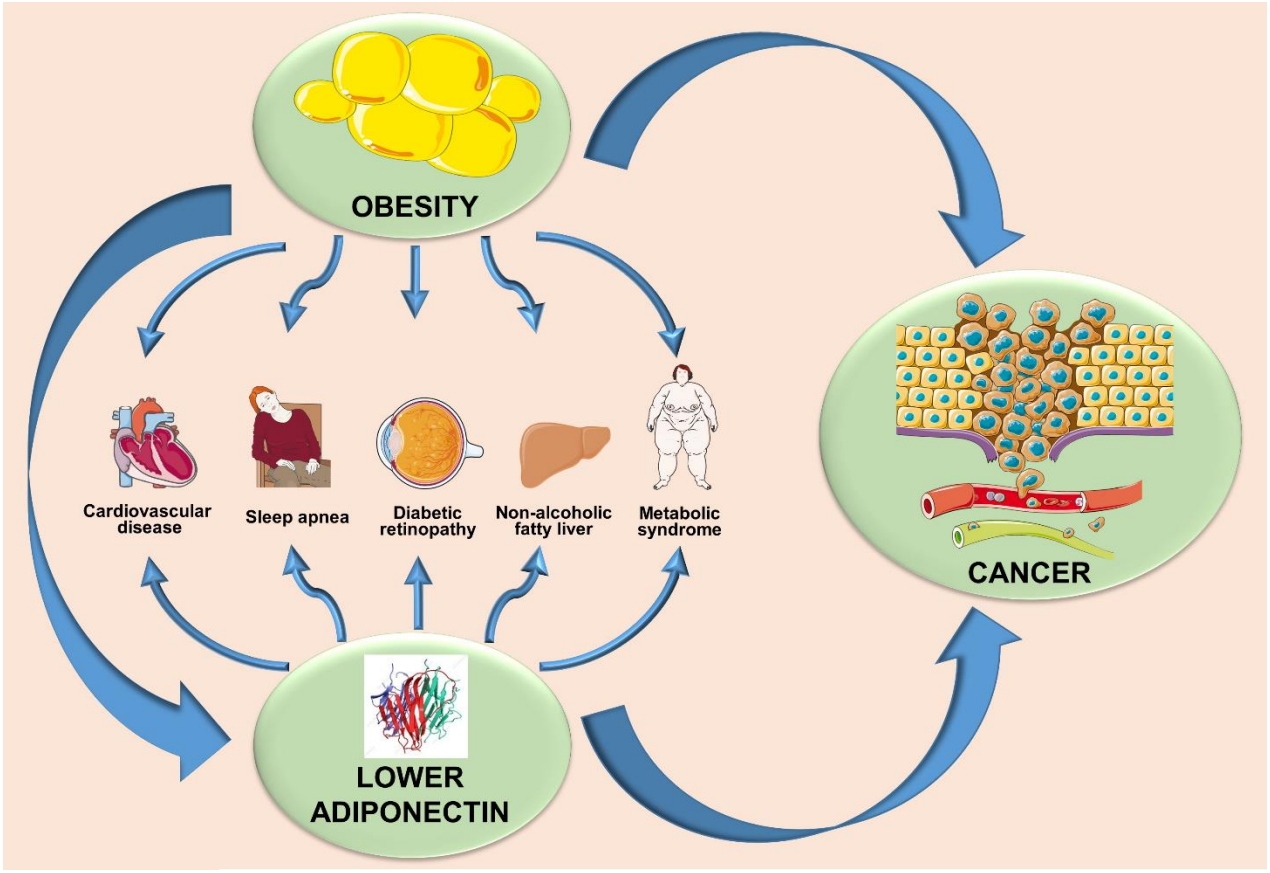


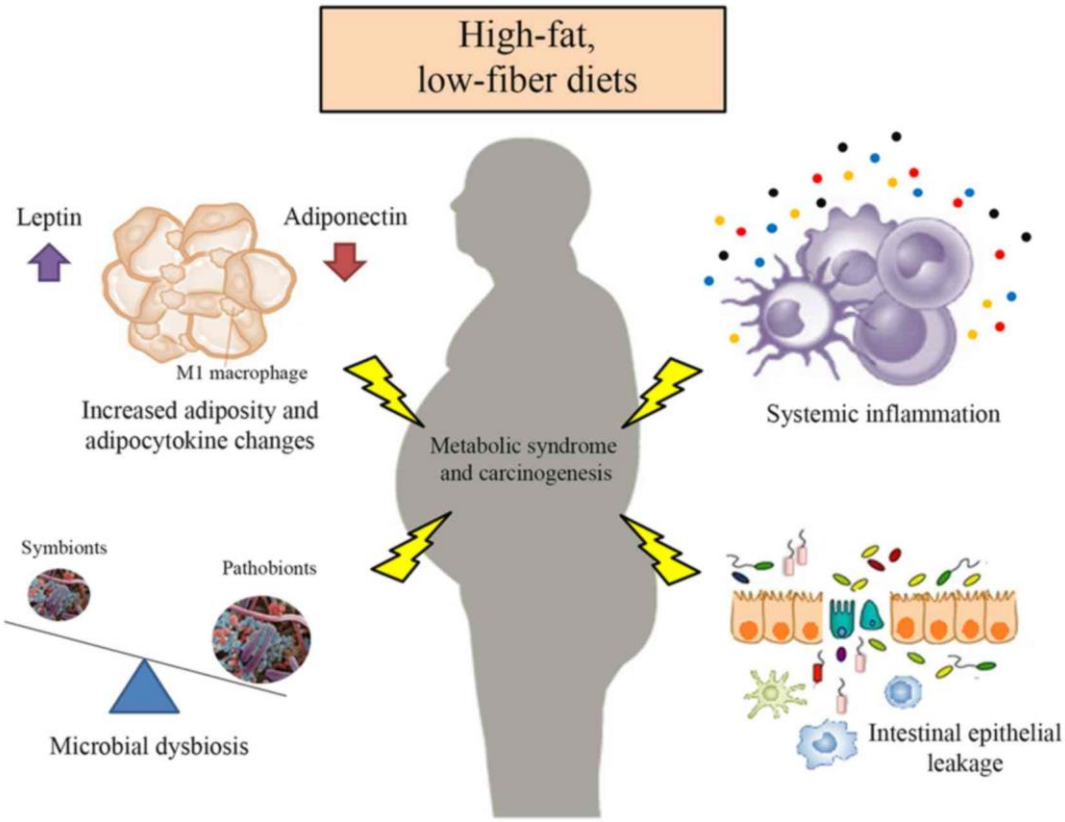

Obesity
Mitochondrial dysfunction
↑ glucose
↑ insulin
↑ inflammation
↑ lipid peroxidation
Oxidative stress
↑ ROS
DNA damage
Disturbances in cell metabolism
Metabolic disorders
Cancer

To all-encompassing systemic dysfunction…



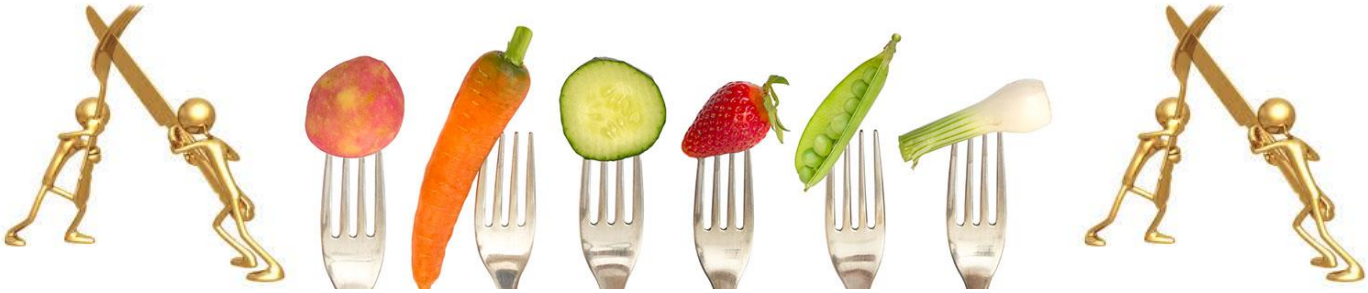

White adipose tissue
Normal weight BMI=18.5-24.9
Weight gain
Obesity BMI>30
Joint overload
Osteoarthritis
Rheumatoid arthritis
Normal knee
Leptin
Inflammation
Pro-inflammatory cytokine release
Immune system modulation
Osteoblast function dysregulation
B cells
T cells
Macrophages
Osteoblast


OBESITY
Cardiovascular disease
Sleep apnea
Diabetic retinopathy
Non-alcoholic fatty liver
Metabolic syndrome
CANCER
LOWER ADIPONECTIN

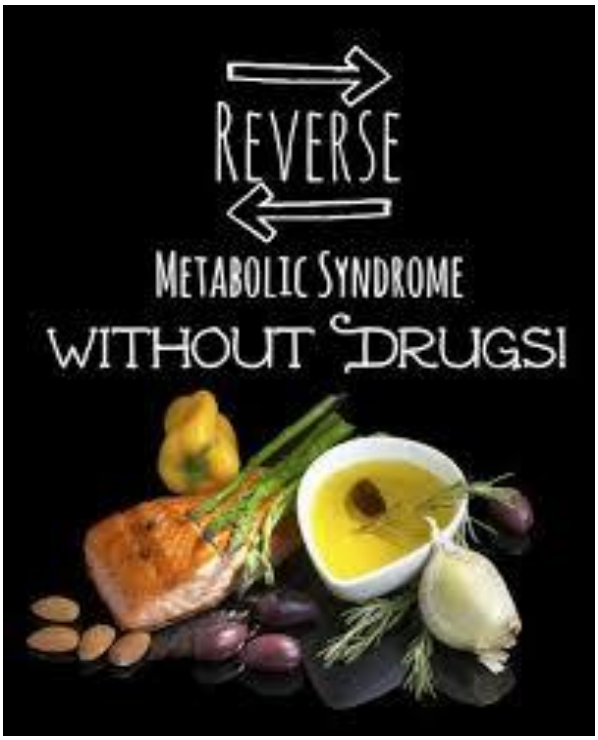


Through our Choices on the Fork, we have the Power to support our metabolic networks, to bolster our immune systems & to…

Fight Cancers. Fight Diabetes. Fight Aging.



Fight Flu and Corona Viruses.



According to Bonnie Taub-Dix, MA, RDN, CDN (Everyday Health, Healthy Living: '10 Things Your Doctor Won't Tell You About Metabolic Syndrome'), "The percentage of people who have metabolic syndrome increases with age, so it's important to start adjusting faulty health habits early on.

Don't wait for the signs and symptoms, which may not even appear until damage has already been done. And don't wait for a diagnosis from your doctor; some doctors may not even tell you about simple, subtle modifications you can start making today. Here are 10 things you should know about metabolic syndrome:"

1. *Metabolic syndrome is closely linked to your family history,* so ask your family members about their medical histories. Your family's medical history is yours, too. If one of your close relatives has diabetes or heart disease, you could be a candidate for having metabolic syndrome.

According to Genetics Home Reference, a complete family health record includes information from three generations of relatives, including children, brothers and sisters, parents, aunts and uncles, nieces and nephews, grandparents, and cousins.

It may sound like a daunting task to collect this info but questioning your family can evoke some interesting and heartfelt conversation. It could also protect your children and their children for generations to come.

2. *It matters where you wear your fat.* If you look more like an apple than a pear, your risk of developing metabolic syndrome is greater. Your doctor may criticize you for being overweight, but not mention how fat that settles in your belly boosts health risks more than weight that sits in your butt.

Erin Palinski-Wade, RD, CDE, author of Belly Fat Diet for Dummies says, "Reducing your waist circumference could have more of an impact on preventing and managing disease than medication." Carrying weight around your middle, Palinski-Wade underscores, "is an indication of excess visceral fat, a key risk factor for the development of metabolic syndrome, type 2 diabetes, heart disease, and even certain cancers." Focus on reducing waist size even more than the numbers on the scale, she advises.

3. *A plant-based diet will help curb metabolic syndrome.* Even the proposed Dietary Guidelines for Americans encourage a diet that is plant-focused. Julie Upton, MS, RD, of San Francisco and co-founder of Appetite for Health, encourages a Mediterranean style of eating. The Mediterranean diet showcases fruits, veggies, whole grains, legumes, and seafood but has less meat, cheese, sugars, and sweets. Upton says, "Not only is this plan helpful for your heart, but it also lowers risks for metabolic syndrome."

Although some would think this diet is a strict plan, people who live around the Mediterranean didn't get together and say, "Let's create a diet." Instead, they sat together at the table and shared meals, conversations and a healthy lifestyle that keeps families close and disease risks at bay.

4. *Dietary fiber will help lower your risk of metabolic syndrome by lowering your cholesterol.* Your doctor may have handed you a sheet of the foods you should be avoiding, but you might be more successful by taking a more positive approach: Focus on adding foods rich in soluble fiber, like oats and beans. Insoluble fibers like whole grains can provide a "moving experience" by transporting foods through your gastrointestinal tract while keeping you feeling satisfied. Fill at least half your plate with veggies and fruits and choose whole-grain carbs to make less room on your plate (and in your stomach) for less beneficial choices.

5. *What you drink can affect your risk for metabolic syndrome.* If you're lucky, your doctor will ask you about your diet, provide with you some guidance and refer you to a registered dietitian or nutritionist who can tailor a plan to your particular needs. But it's rare that a doc will discuss what you're drinking.

Fruit juices and sugary beverages can make your blood sugar and triglyceride levels soar. Alcoholic beverages may cause hypoglycemia and an initial drop in blood sugar but those numbers will then climb – especially if you're consuming mixed cocktails. Water is the best beverage for healthy hydration. But it's good to know that tea, coffee, skim or low-fat milk and watery fruits and vegetables provide fluid credit, too.

6. *Even a little weight loss could have a big impact.* "Too often, doctors don't set reasonable expectations," says Lauren Harris-Pincus, MS, RDN, of New York City, owner of NutritionStarringYOU.com. A blanket statement like "Lose weight and go exercise" is not as motivating as "if you lose a modest 5 percent of your body weight you can make a significant impact on the important numbers like blood pressure, blood sugar and cholesterol/triglycerides," Harris-Pincus says.

As an example, if you weigh 160 pounds but your ideal weight is 120, even a drop of 8 to 10 pounds could improve your laboratory test results. It could also even decrease or eliminate your need for medication. Setting smaller and more specific goals could make them seem more attainable.

7. *Exercise is just as important as a balanced diet in combating metabolic syndrome.* "Your doctor is probably not trained about the types of exercises and their related recommended intensities for improving specific parameters of this syndrome," says Joey Gochnour, RDN, exercise physiologist and owner of Nutrition and Fitness Professional, LLC, in Austin, Texas. Gochnour points out that even moderate aerobic exercise can improve HDL (good) cholesterol levels just as much as intense aerobic exercise. He recommends exercising regularly, preferably at least 30 minutes a day, 5 days a week to help ward off metabolic syndrome.

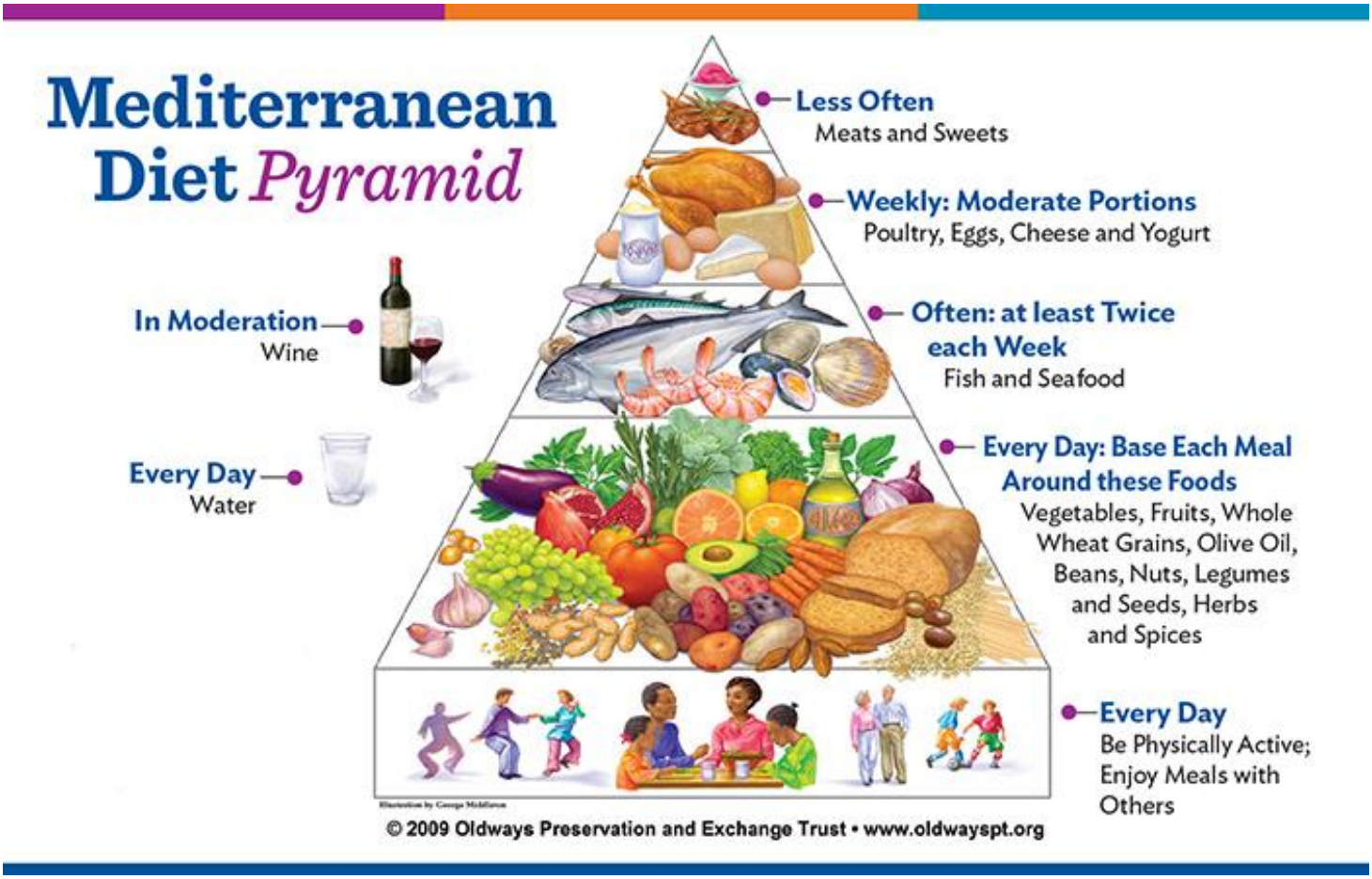
According to Gochnour, "Strength training and intense aerobic exercise may improve your blood glucose sensitivity and reduce elevated insulin levels." Exercise is a key component in boosting metabolism and burning calories, both of which help you keep your weight down.

8. *Sitting too much puts you at risk.* "It may sound odd," says Jo-Ann Heslin, MA, RD, CDN, author of The Diabetes Counter, "but sitting or sedentary activities such as watching TV, using the computer, sitting at work or sitting while commuting have been identified as risks for metabolic syndrome even when you incorporate modest amounts of regular activity into your day." A recent study published in the British Medical Journal connected sitting time with a positive risk for diabetes, speculating that for every hour of daily TV viewing, a person's risk for diabetes increased by more than 3 percent.

9. *You should get your fasting insulin level tested.* When it comes to laboratory values, numbers like blood glucose and hemoglobin A1C levels are commonly checked. It is less often that doctors order a test for your fasting insulin level, yet this test can help predict your risk of developing prediabetes and metabolic syndrome. Insulin plays a key role in metabolism and high insulin levels can promote obesity, stimulate hunger and increase the storage of fat.

"When you eat sugary foods, your blood sugar levels rise and your pancreas releases insulin to move the sugar from your blood into your cells to be used or stored," explains Chere Bork, MS, RDN, Owner of Savor Your Life Today Seminars and Coaching in Minneapolis-St. Paul. But if your body is continuously exposed to high levels of insulin, Bork says, "The receptor cells become inefficient and resistant to the effects of insulin," and this leaves blood glucose levels elevated. It is insulin resistance that promotes the high cholesterol, high glucose and high blood pressure of metabolic syndrome — also known as insulin resistance syndrome.

10. *You should keep an up-to-date copy of your laboratory values.* Your current healthcare provider may not end up being your future provider but your current body is yours forever. If you undergo any blood tests or exams, ask for copies of the results so that you can keep them filed away at home. It's essential that you know your baseline numbers and keep track of the evolution of your health throughout the course of your life.



Liberating the Liver

Your Amazing Liver

WHAT YOUR LIVER DOES

Provides Immunity Against Infection
Regulates Blood Clotting
Bile production & excretion
Excretion of bilirubin, cholesterol, hormones & drugs
Metabolizes fats, proteins & carbohydrates
Enzyme activation
Stores glycogen, vitamins & minerals
Performs over 500 different chemical functions
Blood detoxification and purification
Filters over a liter of blood each minute

If the weight of your liver is more than 10% fat, then you have fatty liver. As many as 10 to 25% of Americans have fatty livers!

SYMPTOMS OF SLUGGISH LIVER

Headaches, Dark urine, Loss of appetite, Chronic Constipation, Diarrhea & light colored stools, Easy bruising, Anxiety & depression, Mental confusion, Hormone imbalance, Exhaustion & fatigue, Jaundice, Impaired libido, Food allergies & chemical sensitivities, Sinus & Allergy

SUPPORT YOUR LIVER

Eat healthy & organic
Smaller protein consumption
Count carbohydrates
Avoid antibiotics & antacids
No alcohol & Acetaminophen
Perform liver cleansing
Be aware of drug side-effects
Avoid environmental toxins

ORGANIC HERBS FOR LIVER SUPPORT & CLEANSING

Milk Thistle seed, Wildcrafted Chanca Piedra, Fringetree bark, Dandelion root & leaf, Nettles root & leaf, Turmeric Root, Marshmallow root & leaf, Yellow Dock root, Barberry root bark, Blue Flag

LIVER SIZE

Largest solid organ in your body. About 8 inches (20 cm) wide, 6.5 inches (17 cm) long & 4.5 inches (12 cm) thick. Weighs approximately 3.5 lbs.

Did You Know that...?

①

…if 75% of your liver were removed and 25% left, that 25% could regenerate a full-size liver in 8 to 15 days? Your new liver would reorganize itself over the course of a few months but it would be functional as it regenerates.

②

the liver has at least 500 distinct functions in the body. It is an organ that is also a gland, creating important chemicals for its many processes. See some of them below.

③

the liver is a blood filter, like the kidneys, removing toxins from the blood. It also breaks down old blood cells and produces the proteins for blood clotting.

④ the liver stores vitamins and minerals. The liver stores vitamins A, E, and K, which are fat soluble vitamins. Here are some of the uses for each of these vitamins.

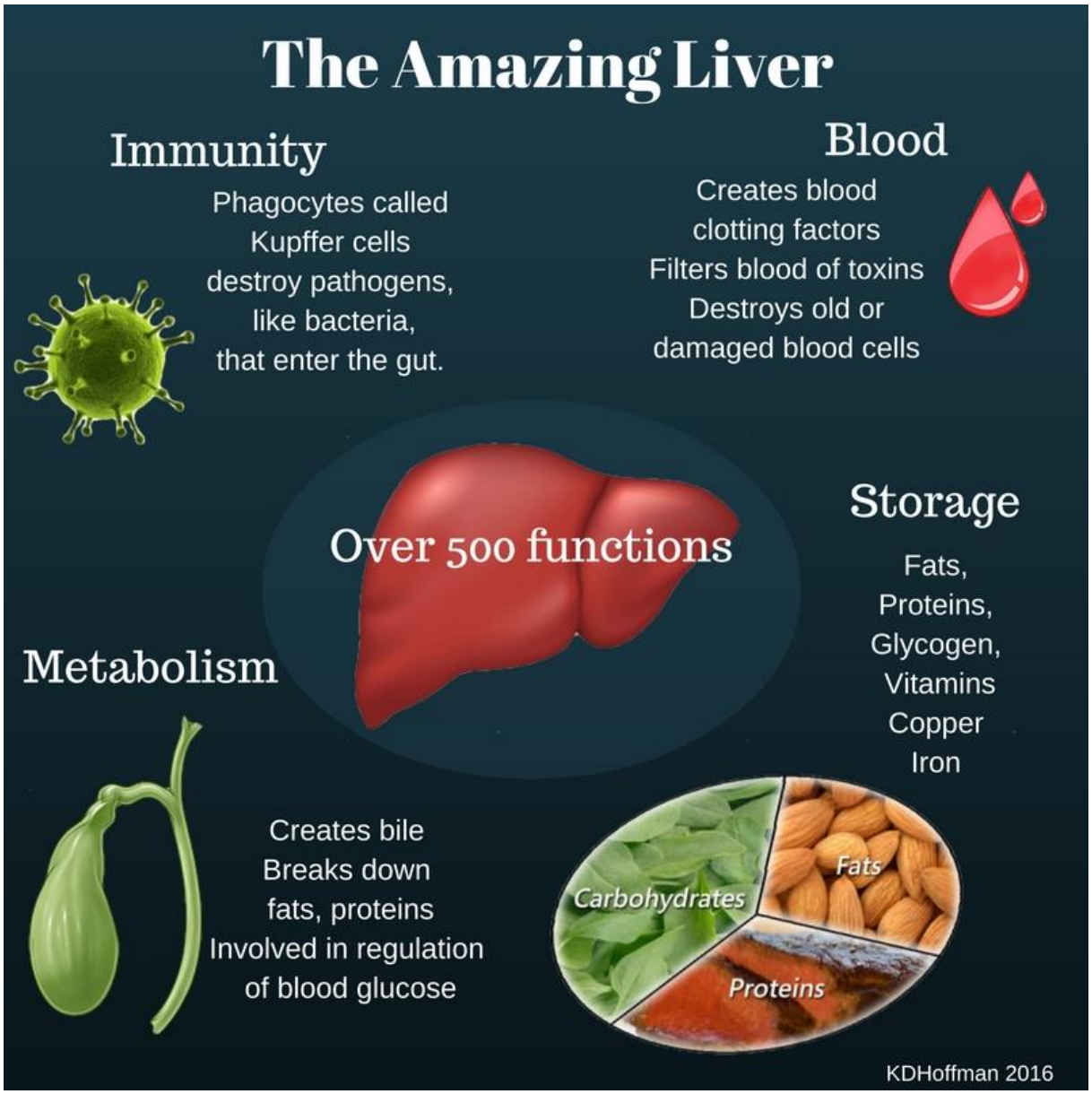
Vitamin A: Vitamin A keeps the eyes, skin and mucus membranes healthy. It is involved in bone formation and healing of wounds. Vitamin A is essential for cell differentiation, that is the process by which cells become specialized. This means that it is important during pregnancy for fetal development.

Vitamin E: Vitamin E is antioxidant, a substance that helps prevent cell damage. It is involved in healthy blood cell development. It also works with Vitamin K.

Vitamin K: Vitamin K is involved in clotting and in bone health.

⑤ the liver is essential for digestion of food.

Some of these functions include creating bile, which is essential for breaking down fats. Bile also helps to metabolize proteins. In addition, the liver also stores glucose in the form of glycogen and helps in maintaining the proper amount of glucose in the blood.



The liver is one of our largest (2nd in size only to our skin) and most critical organs, responsible for a wide range of functions, including metabolic and digestive tasks, hormone production, and detoxification. The liver's main job is to filter the blood coming from the digestive tract replete with ingested substances before it passes into the rest of the body, therefore supplying purified blood to the other organs. It does so in up to 3 separate filtration passes, processing every substance that enters the body, including food, drugs (surgical anesthesia, OTC pain-relievers such as Tylenol, discarded pharmaceuticals that turn up in drinking water), diesal exhaust, synthetic chemicals like pesticides, thousands of new chemicals introduced into the environment every year, as well as the more traditional and well-known neutralization of alcohol we drink.

The liver detoxifies chemicals and metabolizes drugs that would otherwise quickly build to intolerable levels within our blood, cells and organs incompatible with life.

When the liver is overburdened or damaged, the rest of the body suffers; resarch details negative changes to gut flora, mitochondrial function, genetic health and hormone balance. It can no longer process waste from red blood cells, which leads to jaundice; synthesize proteins, which leads to poor blood clotting; high blood pressure; deterioration in brain function; kidney malfunction; immune system failure; and much more.

There is growing scientific consensus that one of the most common types of sugar, fructose, can be toxic to the liver, just like alcohol. Fructose is the sugar that makes fruit taste sweet. For most people, there's nothing wrong with eating fructose in its natural state, in fruit. But today, manufacturers extract and concentrate the fructose from corn, beets and sugarcane, removing the fiber and nutrients in the process. Getting frequent, high doses of fructose throughout the day, without fiber to slow it down, is more than our bodies were designed to handle.

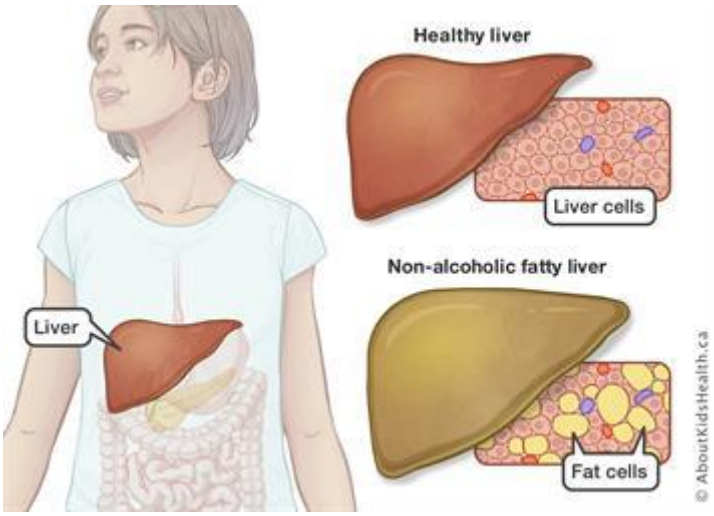
Too much fructose can damage your liver, just like too much alcohol

Nearly all added sugars contain significant amounts of fructose. Look on the Ingredients Label found on any processed food purchase and note the frequency of added sugars, usually disguised within the marketing under many of the "aliases" listed in the graphic below. Typical formulations of high-fructose corn syrup contain upwards of 50% fructose, depending on processing methods. Table sugar and even sweeteners that sound healthy, like organic cane sugar, are 50% fructose.

What's unique about fructose is that, unlike any other sugar, it's processed in the liver. Small amounts of fructose, meted out slowly, are not a problem for your liver. Think of eating an apple - its sweetness comes with a lot of chewing that takes time. The apple's fiber slows down its processing in the gut. But when we consume large amounts of fructose in added sugar, particularly in liquid form (juice, sodas, energy drinks) on an empty stomach, it slams the liver with more than it can handle. As with alcohol, a little added fructose, consumed with fiber-rich foods, is OK. It's only when we frequently consume large quantities, in concentrated form, that fructose becomes a health hazard.

Liver damage is a looming health issue

Nonalcoholic fatty liver (NAFLD) is a medical condition that is characterized by an excessive accumulation of fats, within liver cells. This means normal, healthy liver tissue becomes partly replaced with fatty tissue. The fat starts to invade the liver, gradually infiltrating the healthy liver areas, decreasing the amount of healthy active liver tissue. While it's normal for your liver to contain some fat, accumulations of more than 5 percent to 10 percent of your liver's weight are problematic.

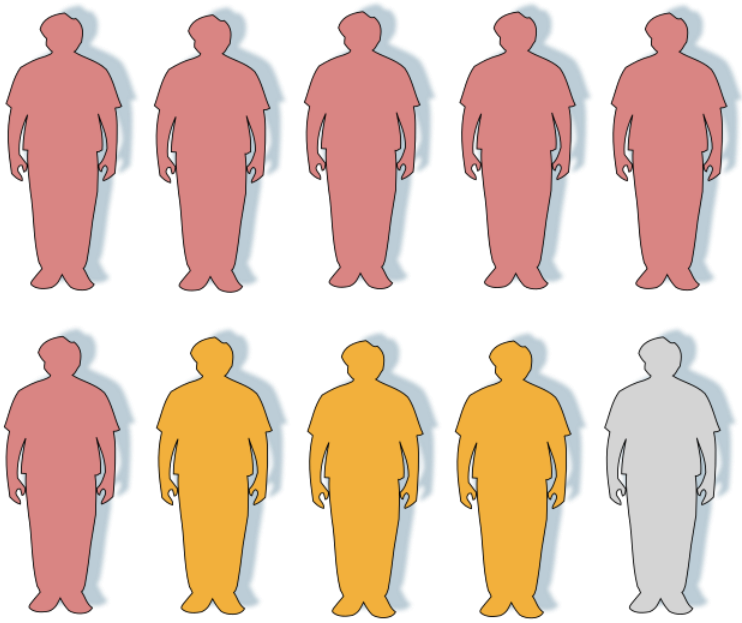


Nonalcoholic fatty liver (NAFLD) has become increasingly common in the United States and Western Europe as weight gain, obesity, insulin resistance, diabetes and metabolic syndrome have risen in epidemic proportions. It is now the most common cause of liver disorders in the United States and other Western industrialized countries, such as Australia and the United Kingdom. It is estimated that 1 in 5 people (25%) throughout these regions have NAFLD. Studies have also revealed that the excessive use of prescribed medications and pain killers (i.e., acetaminophen/Tylenol) or the toxicity stemming from these can lead to fatty liver disease, as well.

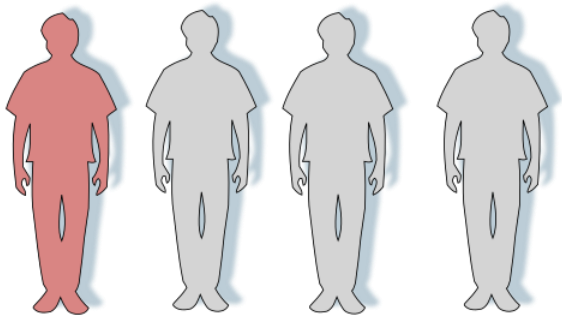
Decades ago, we only saw conditions like fatty liver disease and cirrhosis occur as a direct result of excessive alcohol indulgence/addiction. However, this trend has changed in the current day with skyrocketing consumption of added sugars and trans fat, prevalent in choices of fast foods, take out, super-size portions/buffets and processed "junk" food or food-like products. Increasingly, both adults and children are being diagnosed with non-alcoholic fatty liver disease (NAFLD). Estimates vary, but conservatively, 31% of American adults and 13% of children suffer from NAFLD.

It is estimated that 70 million Americans have fatty liver disease & don't even know it.

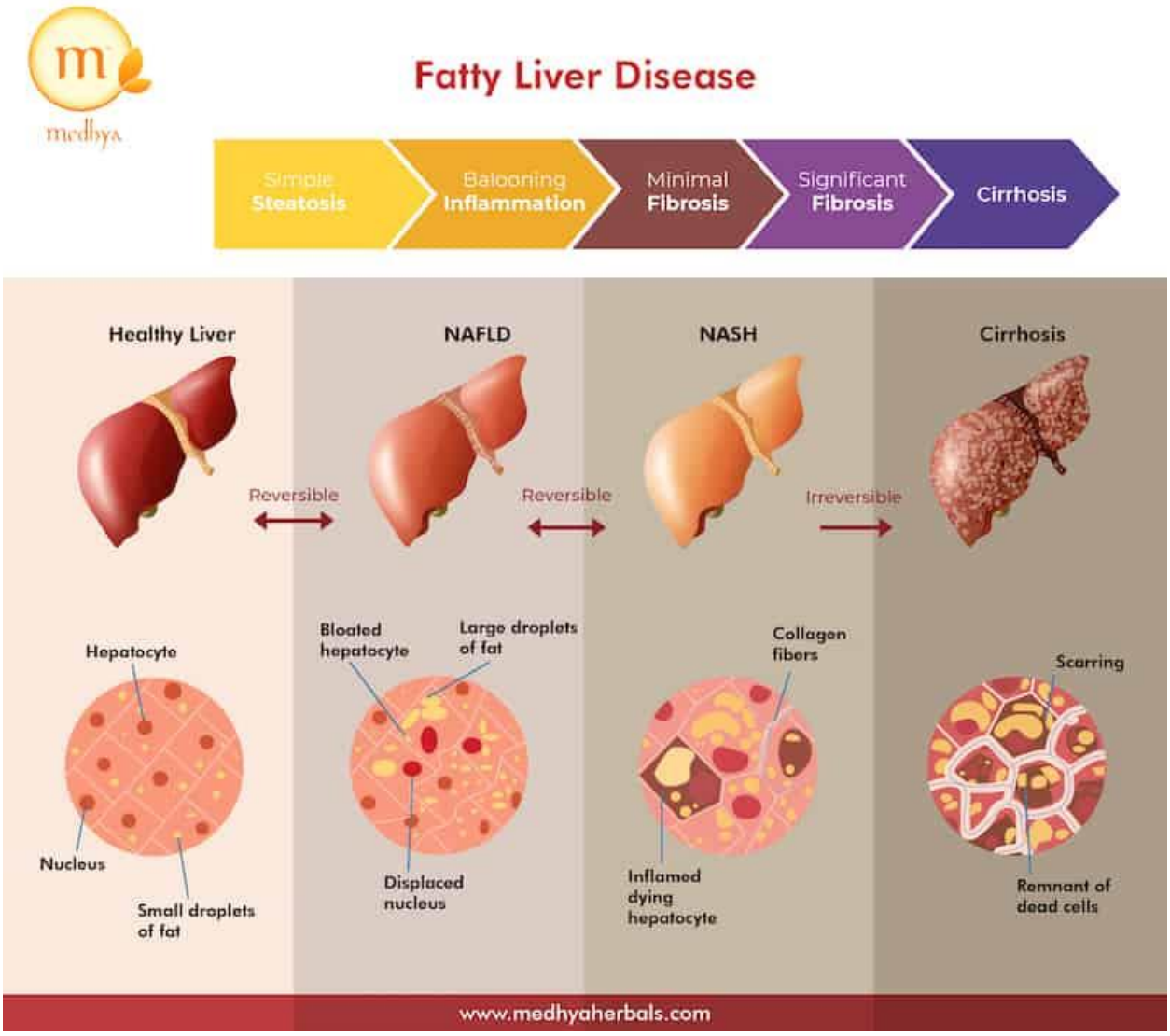
NAFLD Prevalence in 2019



More than 6 diabetics and
9 severe obese people
out of 10 have NAFLD



1 out of 4 people
have NAFLD,
regardless of weight

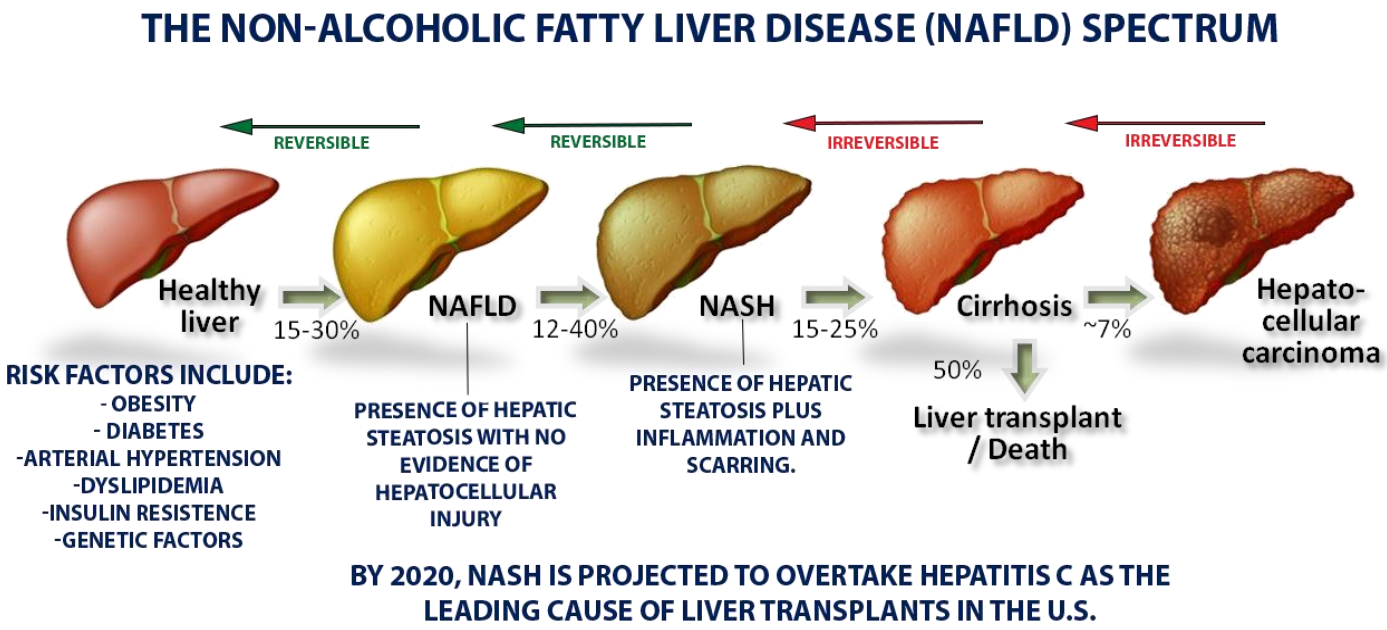


Non-alcoholic fatty liver disease (NAFLD): This is characterized by excess fat build-up in the liver.

Non-alcoholic steatohepatitis (NASH): This is characterized by fatty liver, inflammation and "steatosis," which is essentially scarring as the liver tries to heal its injuries. Scar tissue is known as fibrosis

Since 1980, the incidence of NAFLD and NASH has doubled, along with the rise of fructose consumption. Approximately 6 million individuals in the United States are estimated to have progressed to NASH and some 600,000 to NASH-related cirrhosis.

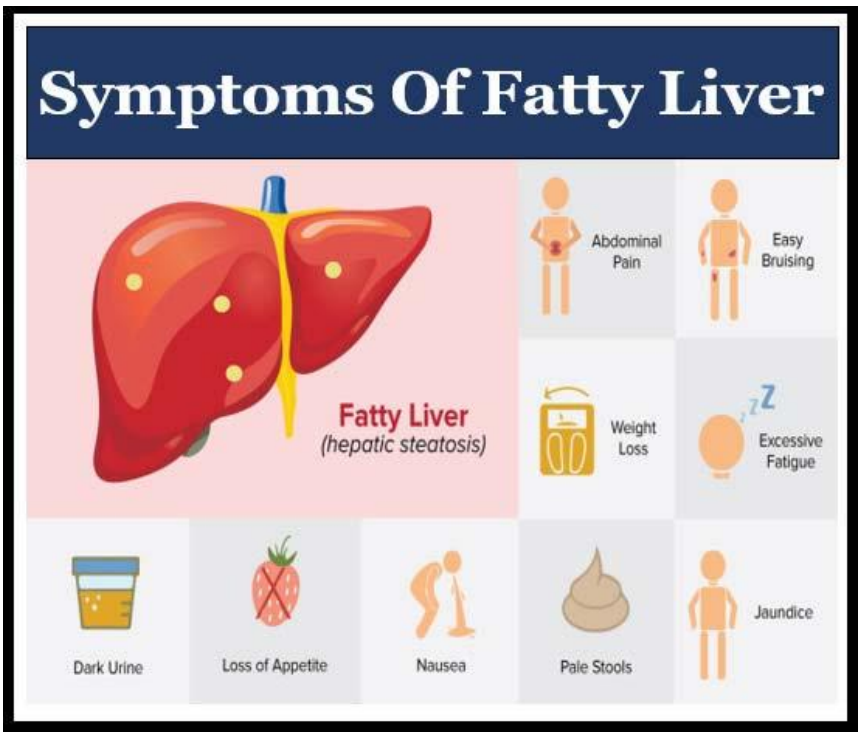
NASH-related cirrhosis: About one-quarter of NASH patients will progress on to non-alcoholic liver cirrhosis, where scar tissue permanently replaces healthy tissue and causes the liver to shrink and harden. These changes in structure block the flow of blood and slows the processing of nutrients, hormones, drugs and naturally produced toxins, as well as the production of proteins and other substances made by the liver. Symptoms of cirrhosis are severe and include the buildup of fluid in the body (especially the abdominal cavity called ascites), muscle weakness, internal bleeding, yellowing of the skin and eyes, and liver failure. Progressive cirrhosis can lead to systemic decompensation that requires liver transplant to prevent death. NASH is now the third-leading reason for liver transplantation in America and it will become the most common if recent trends continue.



Hepatocellular carcinoma (HCC): Once liver disease has progressed to the condition of NASH, this seriously increases the chances of liver cancer as well as heart disease. Research shows liver cancer deaths soaring by 80% due to late diagnosis. Numbers have tripled in just 2 decades, with a quarter of the cases linked to obesity and rising levels of associated conditions, like diabetes and NAFLD.

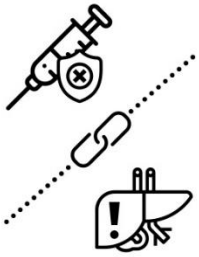
How do you know if you have a liver problem?

You should be concerned if you or your kids have a "sugar belly" or belly fat. A sugar belly occurs when the liver detects more fructose than can be used by the body for energy. That excess fructose is broken down by the liver and transformed into fat globules (triglycerides), some of which are exported into the bloodstream and selectively deposited around your midsection and internal organs. Just as people who drink too much get a "beer belly," those who eat or drink too much fructose can get a "sugar belly." If your waist is larger than your hips, you should ask your doctor for a blood test that checks for triglyceride levels.



Poor dietary habits (hi prevalence trans-fats/added sugars), being overweight and a sedentary lifestyle are common risk factors for insulin resistance, Type 2 diabetes and metabolic syndrome. They are also common risk factors for NAFLD, NASH and liver cancer (HCC).

The Link Between Insulin Resistance and Fatty Liver Disease



The most common cause of non-alcoholic fatty liver disease (NAFLD) is insulin resistance.

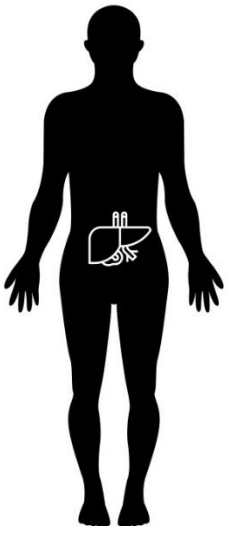
Factors that can impair your body's insulin sensitivity include:

Increased body weight

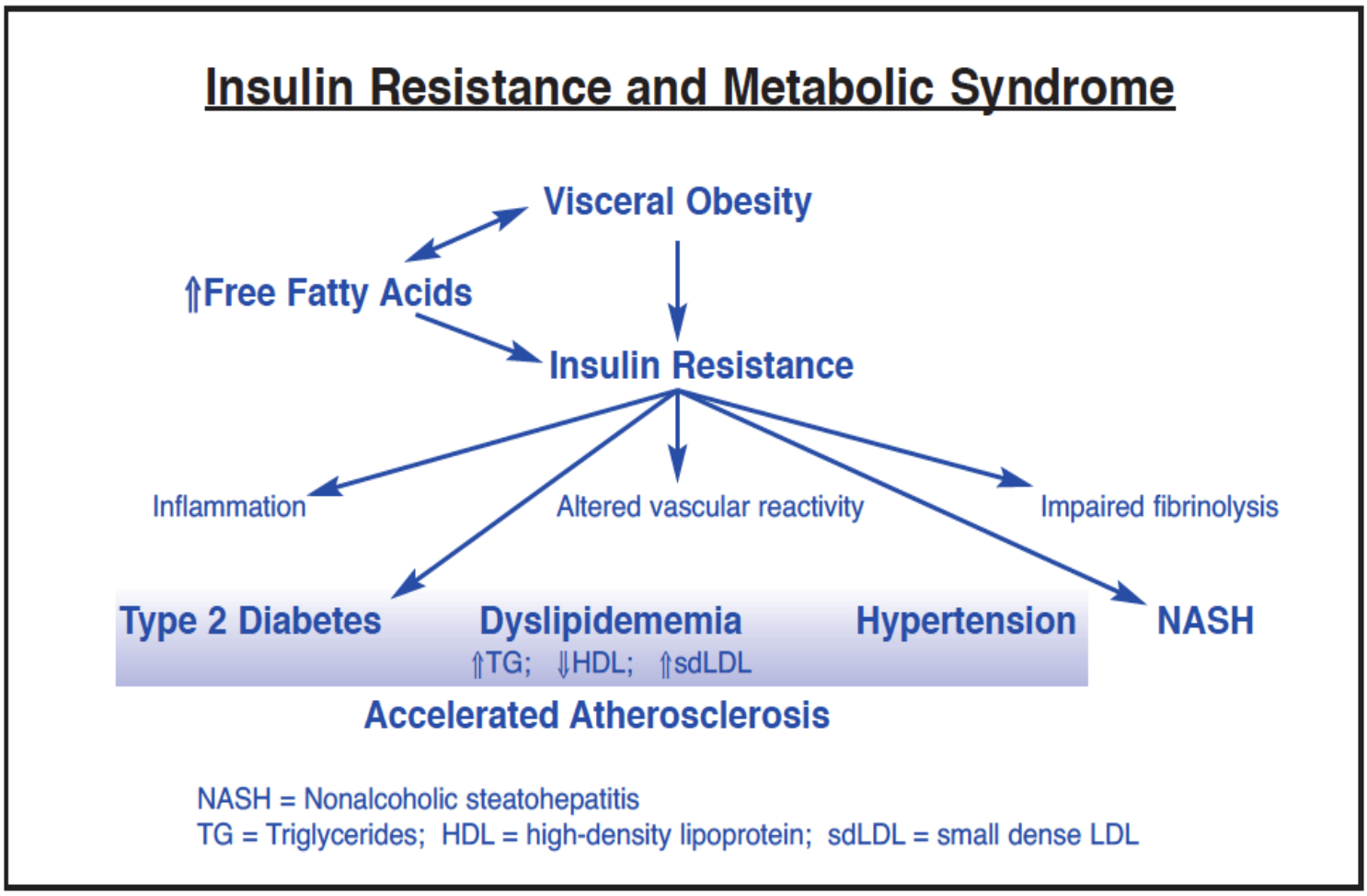
Aging

Family history of type 2 diabetes

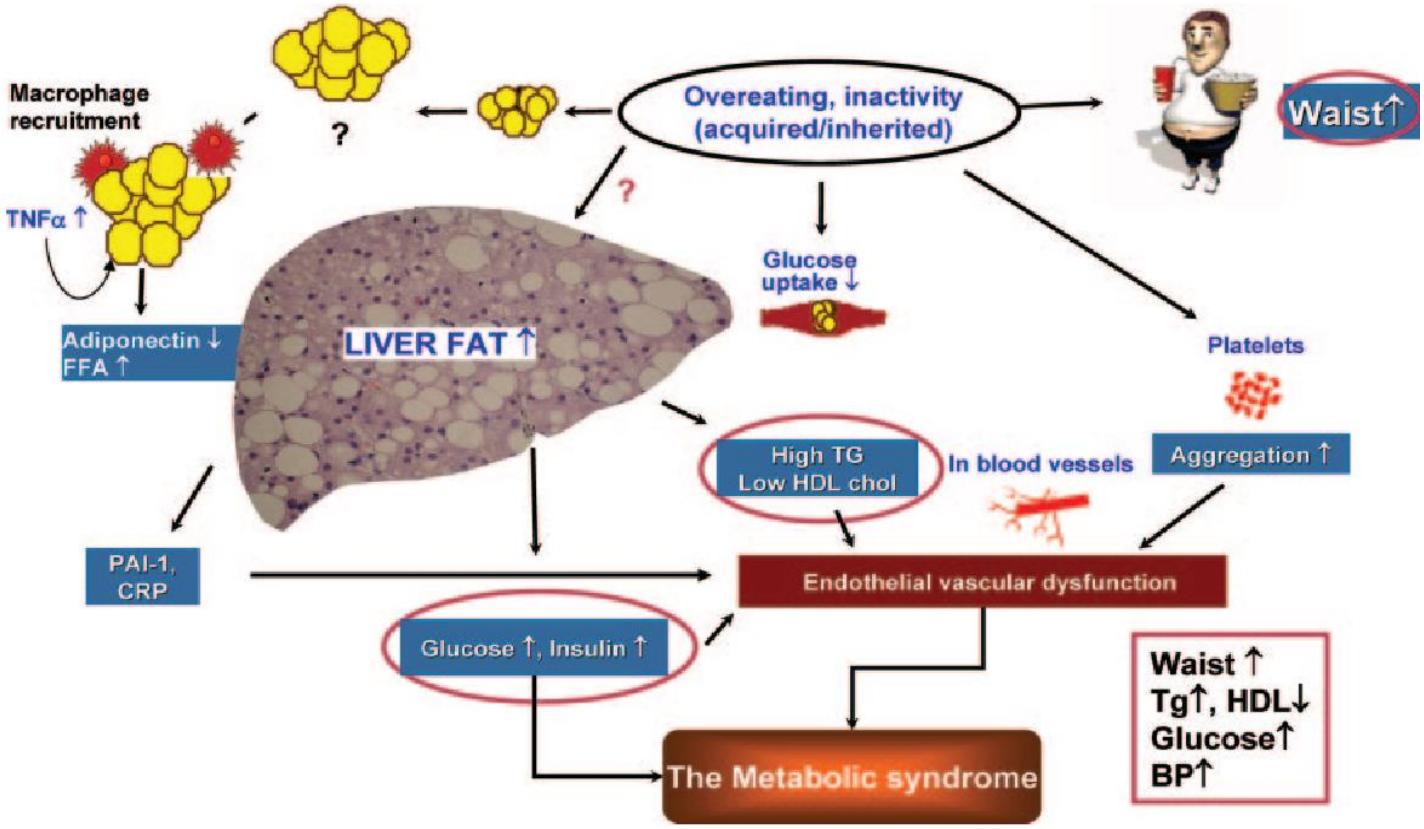
Large fat deposits in the abdominal area



If the body cannot appropriately detect the presence of insulin, then it increases its own insulin production. Rising insulin levels can cause accumulation of fat in the liver, which drives the progression of NAFLD.

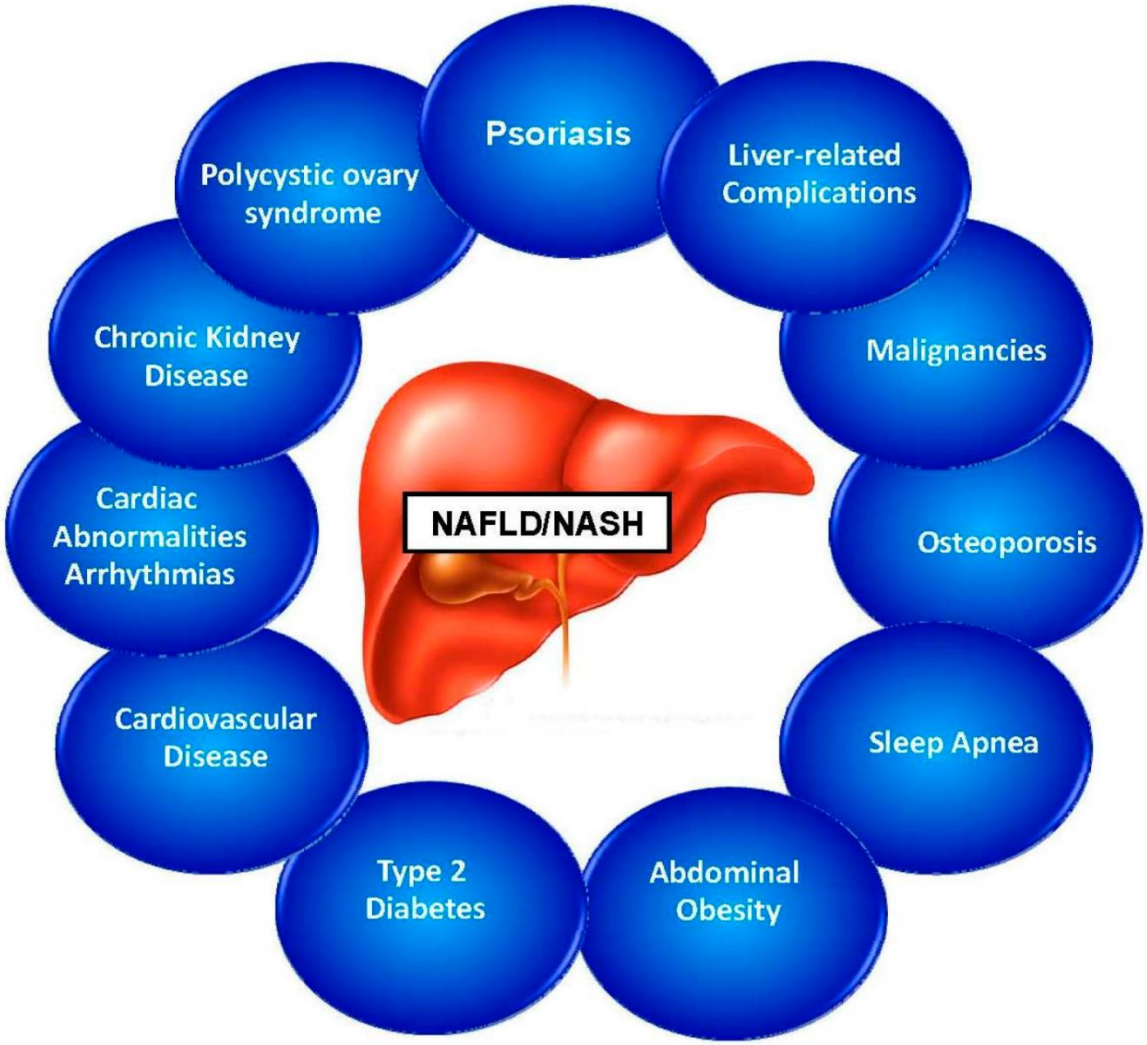


NAFLD is an important piece of the metabolic network we have been discussing this year. It is the liver's manifestation of systemic metabolic syndrome [obesity/hi BMI, insulin resistance, type 2 diabetes, dyslipidemia]. Fatty liver occurs when triglycerides compose greater than 5% of the organ's weight. It is both accompanied by and contributes its own reactive cascades propelling chronic underlying inflammation, systemic impairments in clotting, high blood pressure, high cholesterol, high triglycerides, associated vascular compromise with heart disease. This constellation of symptoms presents a significant risk factor for onset of extra-hepatic (outside of the liver) tumors, especially within the GI tract.



Excessive fat cell (adipocyte) deposition that accumulates within liver cells (hepatocytes), around internal organs (visceral fat) and midsections (ectopic fat/"apple" silhouette) send out disruptive hormonal messages that upset the body's normal chemical balance, characterized by impaired production of adipocytokines: decreasing circulating levels of protective adiponectin that play a pivotal role in metabolic homeostasis of healthy individuals and increasing circulating pro-inflammatory cytokines (leptin, TNF-α, IL-6). There is overwhelming evidence that this adipocytokine imbalance is associated with adipose dysfunction and an inflamed microenvironment favoring tumor development, factors implicated in a wide variety of diseases, including NAFLD/NASH, heart disease, stroke, diabetes, cancer and Alzheimer's. [please see March newsletter for review of terms and concepts]

Prevention of excessive increases in adipose tissue is therefore important to avoid promotion of pro-inflammatory activity sustained by an adverse adipokine profile. Such abnormal profiles predispose the body to increased risk of chronic diseases, cancers and shortened lifespans.



The role of lifestyle management is also important. The number one treatment of fatty liver disease is weight loss and a healthy diet. Many people with fatty liver disease are overweight and malnourished. A healthy diet that provides the vitamins and nutrients that your body needs to function is very important and it is essential that you eat a well-balanced predominantly plant-based diet. The Mediterranean diet, along with exercise, have been supported with the most evidence to improve early stages of NAFLD. Weight loss is very important: If the patient loses 10% of their weight or more, there is NASH resolution 90% of the time. With less weight loss, there is less resolution.