

Self-Protective Measures

You should get your medical advice from your doctor or pharmacist, not from this Report or the internet, and *do* get vaxxed for Covid, [shingles](#), HPV (girls *and* boys as young as 9), [RSV \(>60\)](#), [RSV \(<8mo\)](#), and the flu per recommendation by FDA and CDC - unless your doctor advises against, based on your personal medical information.

- [Atrial Fibrillation \(Afib\)](#) - How to detect Afib, the various types of Afib, the various treatments, [here](#). Afib affects more than 2 million people in the US, and often goes undetected.
- [Sulfites in Dried Mangos](#) - Some have an allergy to sulfites. See the FDA safety alert on *undeclared* sulfites (for this particular brand only), [here](#).
- [7 Symptoms of Prostate Cancer to be Aware of](#) - [here](#). Prostate cancer is the most common type of cancer in men, both in the US and UK, with about a third of the UK cases occurring in those 75 and older. Symptoms are often subtle until late stage, so it's important to be alert.
- [NIH BMI Calculator](#) - Use the [NIH](#) National Heart, Lung and Blood Institute [calculator](#) to find your Body Mass Index (BMI). Above 25 - overweight. Above 30, check with your doctor, consider better nutrition, and exercise.

Vaccine and Therapeutic News -

- [First Transcatheter Tricuspid Valve Replacement](#) - FDA has approved the [Edwards](#) Lifesciences Corporation (Irvine CA) '[EVOQUE](#) Tricuspid Valve Replacement System', an artificial heart valve that is implanted using a delivery catheter - no open-heart surgery. This is the first transcatheter replacement device indicated for use in the *tricuspid* position.
- [In Vitro Diagnostic Tests](#) - FDA has announced that it intends to reclassify most *in vitro* diagnostic (IVD) tests that are currently class III (high risk) into class II (moderate risk). This will streamline the clearance of *most* types of IVD tests by allowing the use of the less burdensome [510\(k\)](#) pathway, rather than the more stringent Premarket Approval ([PMA](#)) pathway. Less empty process. Smart!
- [AI Analysis of Cervical Cancer Test Samples](#) - FDA has authorized marketing of the Hologic Inc (Marlborough MA) '[Genius Digital Diagnostics System](#)' with its accompanying 'Genius Cervical AI' algorithm. The artificial intelligence (AI) creates and views digital images of scanned 'ThinPrep Pap Test' slides. It then presents objects of interest next to the image of the whole cell spot as an aid in cervical cancer screening for the presence of atypical cells, cervical neoplasia (including precursor lesions), carcinoma, and other cytological categories. A reliable, faster, more cost-effective process.
- [Pulse Ablation Treatment for Atrial Fibrillation \(Afib\)](#) - FDA has approved the [Boston Scientific](#) (Marlborough MA) [FARAPULSE](#) Pulsed Field Ablation (PFA) System to treat paroxysmal [Afib](#) using *electrical* pulses to ablate cardiac tissue. The PFA approach brings to market an alternative treatment that *may* reduce risks found with conventional *thermal* ablation for Afib.

Other Health Science News -

- [New AstraZeneca Facility in Rockville MD](#) - The company has [announced](#) that it will be investing \$300 million in a new manufacturing facility in Rockville MD. The new facility will focus on manufacturing for critical cancer trials, and the launch of commercial cell therapy platforms.
- [Breaking Through the Blood/Brain Barrier](#) - Bioengineers at the University of Melbourne in Australia have developed a [method for using pulsed ultrasound](#) to temporarily/locally

open this selectively permeable barrier to allow medications in the blood (such as chemotherapy agents) to reach treatment targets in the brain (such as brain tumors).

Many implications. Diagrams. [Harvey B.]

- Metabolic Dysfunction-Associated Steatohepatitis (MASH) - [Eli Lilly](#) (Indianapolis IN). [Reports](#) indicate that preliminary results of the company's Phase 2 human trial of its medication [Tirzepatide for treatment of MASH \(Fatty Liver Disease\)](#) are promising. MASH was previously known as nonalcoholic steatohepatitis (NASH), affects about 115 million people worldwide, and there is no FDA-approved treatment. Tirzepatide is also the active ingredient in the company's products for diabetes and weight-control, Mounjaro and Zepbound respectively.
- Multivitamins Enhance Memory in Older Adults (>60) - according to the results of a large (3,562 participants) clinical trial [published](#) 7/2023 in the *Journal of the American Society for Clinical Nutrition* by Columbia University researchers, and described in *NIH Research Matters* [here](#). Memory performance was improved by the equivalent of 3.1 years of age-related memory change. There are other confirming studies. Further background [here](#).
- Oral Administration Covid-19 Vaccine - is [under development](#) by Vaxart (San Francisco CA), with the [company](#) having received a \$9.27 million grant from the US Biomedical Advanced Research and Development Authority (BARDA) to fund preparations for a 10,000 subject Phase 2b clinical study. The vaccine is intended to develop mucosal immunity along the nasopharyngeal passages (nose/throat), as well as the usual systemic response, by attacking the virus where it first enters the body. Ultra-Refrigeration for transport and storage is *not* required.
- Too Much Protein? - The average American/Canadian is getting way too much protein (except bodybuilders and vegans), especially *animal sourced* protein. More details, and a good bar chart from the US Department of Agriculture, [here](#). More *fiber* is what's needed. Note: those on primarily plant focused Mediterranean nutritional plans may well need a bit *more* protein than average.
- Worst Diet for Heart Health - A cardiologist advises that although the ketogenic diet (high fat, low carb) may help some people lose weight, it's *not* a good eating plan for heart health. Such high saturated fat diets are linked to high LDL levels, which is linked to plaque buildup in the arteries. The [Mediterranean](#) approach to nutrition is more [heart healthy](#). Cardiac disease is the #1 killer.
- Stealth Cholesterol - Millions of people in the US have a genetic predisposition to a type of blood cholesterol called [lipoprotein\(a\), or Lp\(a\)](#) [good video, turn on sound] that leads up to plaque buildup in the arteries, but most don't know about it. Lp(a) also predisposes to blood clots, but it isn't usually screened for in routine blood tests because there isn't presently any workable treatment. Since several promising medications are now in the human trials process, routine screening tests should begin. Ask your doc to include the one-time Lp(a) test when you get your next blood work done, and provide your family cardiac history for background.
- Boxed Water Takes Flight - Alaska Airlines has replaced plastic bottles and cups with [boxed](#), purified water, and the passengers are liking it. Details and a photo of the boxes [here](#). Removed annually: 22 million plastic cups, 32 million plastic water bottles. It *can* be done.
- Are Your Stools Healthy? - Check the Bristol Stool Chart [here](#). Ideally you should be a Type 3 or 4. This simple check, that you can routinely do yourself in a few seconds, may help catch a problem early, and could provide important information for your doctor. [Details](#).

Practical Nutrition -

- Dried Fruit - Can be a useful part of a well balanced diet. See a Registered Dietician/Nutritionist recommendation [here](#). Tune-up: accept no added sugar or chemical preservatives.
- 6 Anti-Inflammatory Shopping Tips - [here](#). Tune-up: also use avocado oil, particularly for high temperature cooking. [Thanks Chad C.]
- 5 Most Nutritious Apples - Red Delicious, Granny Smith, Yellow Delicious, Fuji, Gala. Choose organic. [Details](#).
- Bok Choy - is a cruciferous green vegetable of the Brassica family, native to China and sometimes called Chinese cabbage - and it's a [nutritional powerhouse!](#) It's full of antioxidants like Vitamins C, E and beta-carotene. It also has folate, Selenium, Magnesium, Calcium, Potassium, Phosphorus, Zinc, Vitamin K, the antiinflammatory flavonoid Quercetin, and plenty of fiber. Eat raw in salads, or minimally cooked. Note: if you are taking a blood thinner, talk to your doctor about the Vitamin K content of bok choy.
- 13 High Fiber Vegetables - recommended by a registered dietitian, [here](#).
- 6 Reasons to Want Quinoa - Not only does quinoa have a *lot* of protein, it's a 'complete' protein - it has all 9 of the amino acids essential to human life that the body can't make for itself. See the 6 reasons [here](#). Tune-up: cook with a vegetable or mushroom or bone broth chicken stock to add a bit of flavor. Throw in some herbs.
- 7 Best High Protein Grains - Details [here](#). Summary: Sorghum, Teff, Kamut, Amaranth, Quinoa, Wild Rice, Farro. Tune-up: add whole grain bulgur wheat.
- Rice: Brown Vs. White - White rice is simply brown rice with the outer bran and germ layers containing most of the nutrients stripped off, leaving only the endosperm. See a registered dietician lay out the reasons why brown is way more nutritious than white, [here](#). Summary: more fiber, manganese, phosphorus, selenium, magnesium, and B-vitamins such as niacin and folate. Also brown rice, being a complex carbohydrate, and slower to digest, produces a lower insulin spike than white rice - lower glycemic index.
- Best Choices for Bone Broth - Those following a mostly mediterranean nutritional plan (mostly vegetable), may want to look to a meat-based [bone broth](#) (stock simmered with bones) for otherwise scarce collagen. You can use this in place of water to enrich the flavor of brown rice, bulgur wheat, lentils, dry beans, etc. Typically no fat, no carbs, no sugar - watch the Sodium.
- 2 Fruits to Ease Constipation - Plums and pears, [here](#) - sugar, alcohol, sorbitol and lots of fiber.
- Fruits for Weight Loss - as reviewed by a registered dietician, details here. Summary: grapefruit, apples, avocados, pears, raspberries, strawberries, oranges, bananas, peaches, cantaloupe, kiwi. Fruit chosen from the same food groups that better suit your taste are also OK, [here](#).
- 12 Unhealthiest Cereals - Many traditional boxed cereals on grocery shelves have so much added sugar, they are the equivalent of eating candy - definitely not good. Some of them even have dyes that are associated with ADHD in children! See a registered dietician/nutritionist's ranking of the worst of them, starting with the *lowest* (but still bad) amount of added sugar, here. Tune-up: Choose a cereal with at least 5 grams of fiber per 1/2 cup portion, and *less* than 5 grams of added sugar per portion. Even the best of the 12 worst fail this test by a wide margin. Actually *measure* the portion size you've been using. [Beware!](#)
- 15 Unhealthiest Sodas - and why, [here](#). The 'diet' versions with artificial sweeteners are worse.
- Unhealthiest Costco Foods - See the list of nutritional shame [here](#).
- 4 OK Natural Sweeteners - Using whole fruit as a natural sweetener is best, but if you must have a more convenient sweetener, [here](#) are 4 that are handy to use, based on either Stevia leaf or [Monk fruit](#), and *not* linked to diabetes, [stroke or heart disease](#). **Bad artificial sweeteners:** aspartame, sucralose, acesulfame-K, erythritol.

- Misleading Words For Sugar - High-fructose corn syrup, sucrose, barley malt, dextrose, maltose and rice syrup are all [forms of sugar](#).
- Milk - 30% of the protein in milk is beta casein protein, which comes in two forms, A1 and A2. [Human breast milk is all A2, as is the milk of other mammals: goats, sheep, donkeys, buffalo, yaks, camels](#). Standard cow milk in the US and Europe is mostly A1 - in Asia and Africa it is mostly A2. There is an emerging opinion from a segment of the dairy industry that the A1 beta casein protein in dairy products derived from conventional cow milk is more difficult to digest and absorb than the A2 form, and for some is *indigestible* [Publication 1](#). [Publication 2](#). Herds that produce only A2 milk, usually identified as A2/A2 to clarify that it doesn't contain any A1, have now been assembled by DNA testing in the US, New Zealand and elsewhere. So ... could some of the digestion issues that arise with dairy be due to its A1 beta casein protein content? Is A2 dairy more nutritious because its protein content is more digestible? A2 dairy based on A2 cow milk is now available in groceries in the DMV, with nutritionists and food writers beginning to focus on the issue. What's needed is good science that isn't sponsored by any of the interested parties, and that doesn't seem to be forthcoming. See a survey article published in *Medical News Today* by a registered dietician, [here](#). Likely to be controversial. [Thanks Chad C.]
- Is Your Favorite Food Ultra-Processed? - and if so, what's a good substitute. View the Northeastern University [TrueFood Dashboard](#).
- Most Nutritious Vegetables and Fruits Rank-Ordered by CDC - See the list [here](#). Chinese cabbage = bok choy.

Environmental Science News -

- EPA Announces [Final Rule Lowering PM 2.5](#) - PM 2.5 refers to air pollution particulates 2.5 μ in diameter and smaller. The PM 2.5 limit will be lowered to 9.0 $\mu\text{g}/\text{m}^3$ from the present 12 $\mu\text{g}/\text{m}^3$. The WHO recommended limit is 5 $\mu\text{g}/\text{m}^3$. Non-attainment areas will be declared, and will have until 2032 to come into compliance. "Scientific evidence shows that long- and short-term exposures to PM 2.5 can harm people's health, leading to heart attacks, asthma attacks, and premature death. Large segments of the U.S. population, including children and older adults, people with heart or lung conditions, communities of color, and low socioeconomic status populations, are at elevated risk of adverse health effects from PM 2.5."
- Electric School Buses - [20 million children ride 450,000 school buses](#) daily, 90% of which are diesel: pollutants, particulates, Nitrogen oxide, and carcinogenic chemicals like benzene. In a *third* round of funding, EPA has now awarded \$1 billion in *additional* funds from the 2021 Bipartisan Infrastructure Act to 280 school districts for the purchase of electric buses - about 2,700 buses in 37 states, focused on low-income, rural, or tribal districts. Thank you EPA Administrator Regan. Video of Sen. Warnock's speech [here](#). [Wendell M., John A. B., Eileen J.]
- New EV Battery Charger Manufacturing Plant - LG Electronics has just opened a [new 59,000 square foot plant](#) in Ft. Worth TX, capable of making 10,000 chargers annually: 11 kW home chargers now, 175 kW fast chargers by mid-2024, and 350 kW ultra fast chargers later in 2024. The US currently has 169,741 charging ports (DC fast or Level 2) across 65,113 stations, with a goal of 500,000 public charge ports by 2030. Location look-up tool [here](#).
- New Toyota 3-Row SUV-EV to be Built in Kentucky - Toyota's manufacturing complex in Georgetown Kentucky currently has a 550,000 car annual production capacity. The company has also announced that it will be adding a \$2.1 billion investment for battery pack production (including the cells they're assembled from) at this site, bringing the total investment there to

about \$6 billion - details [here](#). Toyota is presently constructing a [battery manufacturing plant in Greensboro-Randolph North Carolina](#), due to commence operation in 2025, where they will be making batteries for both hybrids and EVs. The battery tech to be used has not been announced - great expectations.

- [More EPA Grants to School Systems for Electric School Buses](#) - [Orange County FL](#) (\$5 million), [Seminole County FL](#) (\$525,000), [Overland MO](#) (\$9.5 million), [Ferguson-Florissant MO](#) (\$65 million), and many more.
- [Feral Peacocks are Stalking Heathwood TX](#) - and most of the other neighborhoods surrounding Buffalo Bayou in Houston TX. [They chase humans, animals and cars](#). They damage roofs and break windows. They were introduced by a local restaurant in the late 50s as a promotional, and have since settled in to stay. They're not very bright. If they see their reflection in a piece of metal or glass during mating season, they'll attack. There's a reason why every language seems to have a short rude word for male chicken. [Mike and Jaqui K.]
- [Colorado Potato Beetle \(CPB\)](#) - [GreenLight Biosciences](#) (Medford MA) has been granted a license by EPA for its bioinsecticide Calantha for control of the highly destructive [CPB](#), which decimates plants in the nightshade family (potatoes), and quickly develops resistance to traditional pesticides - half a billion dollars in annual crop loss worldwide. Calantha is specific to the CPB, degrades within three days, is applied at the rate of 4 grams per acre (one spoonful over a football field), and does not harm honeybees, butterflies and other nontarget insects or mammals. This is a new technology based on dsRNA (double-stranded ribonucleic acid). The next pest to be targeted is the varroa mite, a pest for honeybees. See GreenLight's product [Pipeline](#).
- [Thiamine \(Vitamin B1\) Deficient Chinook Salmon](#) - began to be detected in central valley California rivers and near inshore California Pacific waters some years ago. Thiamine deficient salmon returning to spawn were passing along this deficiency to their eggs, resulting in thiamine deficient fingerlings that have trouble surviving long enough to return to the Pacific. California hatcheries have been putting a bandaid on this problem by collecting spawning salmon, bathing them and the resulting eggs and fingerlings in a thiamine solution prior to releasing them into the rivers. Now we discover that the salmon were deficient in the first place because, due to ocean warming, they were eating a less diverse diet increasingly focused on anchovies moving North with the warming front of Pacific waters. Anchovies are high in an enzyme called thiaminase which degrades thiamine. So mystery solved, but problem *not* solved. Recent studies of the microbiome of river bottoms in the area, and in the associated gravels where salmon spawn, *do* show a low level microbial generation of thiamine, but so far no one has figured out how this can be made available to migrating salmon. Not so coincidentally, thiamine deficiency issues have also been discovered in more than two dozen species of birds in the Baltic Sea, so California Chinook salmon may be a canary in the coal mine for global warming. Worldwide trouble.
- [Indoor Farming in Arlington VA](#) - [Fresh Impact Farms](#) (Arlington VA) is one of two *hyper-local*, urban farms in Arlington, in operation since 2017. The farm uses LED lighting to provide exactly the color and intensity suited for each type of crop, and runs its hydroponic systems in a closed loop providing just the right amount of water and nutrients. All plant-based waste is composted and recycled. See some of the 400 crops such as rare edible flowers, herbs and vegetables being grown to order by elite Washington DC chefs, [here](#). [Expansion plans](#) have been announced. The other Arlington urban farm is [Area2Farms](#). Both farms deliver. [Thanks Liz S.]
- [Factory-Grown Meat](#) - currently requires a cell culture medium, various nutrients ... and growth factors (currently 90% of the cost) that latch onto the meat cells and tell them to grow. Now researchers believe they have found a way around that 90% cost, [here](#). As [one](#) said, "Give a cell

a fibroblast growth factor and it'll grow for a day, but teach a cell to produce its own fibroblast growth factor and it'll grow forever."

- [Alpine Ibexes are Becoming Nocturnal](#) - to escape the increasingly warm day temperatures of global warming. [Problems](#): they don't see well in the dark, they live in treacherous up-and-down terrain, and wolves hunt at night. Trouble.
- [Midwestern Swan Lake](#) - A trumpeter swan was a little late getting started on her migration South. When the other water birds on the lake took off, she found that her feathers were stuck to the newly formed ice. See the story of her rescue, and the happy ending, [here](#).
- [Mandatory PFAS Limits Coming](#) - EPA issued a [proposed rulemaking](#) in March proposing to set the first *mandatory* limit, 4 parts per trillion (4.0 nanograms per liter), on the presence of PFOA and PFOS in drinking water. They are expected to go to final rule sometime this year. Some municipal water utility companies will be put to considerable expense in meeting this standard - close to the corresponding standard in the EU. Once the final rule is set for municipal drinking water utilities, bottled water and food will be next up - FDA, USDA. EPA estimates that Americans get [80 percent](#) of their PFAS intake from sources other than drinking water.

Other Science News -

- [The UK's Dragon Fire Anti-Drone Laser](#) - has passed its first test by the Ministry of Defense. Each shot uses about \$10 worth of electricity, as compared with an anti-air missile that might cost millions - to take down drones that might cost a few thousand. The US Navy already has anti-drone lasers mounted on ships. No ammunition needed, speed of light striking time, can hit a coin at a distance of half a mile.
- [Skynex Air Defense Gun](#) - The first battery of this high tech Rheinmetall Italia air defense gun, jointly developed by Germany and Italy, has reached Ukraine, and is now operational. A second is due in March. Ukraine is becoming a testing ground for the effectiveness of military systems under wartime conditions. [Details](#).
- [German Tanks and Air Defence Systems](#) - 80 Leopard1 A5 main battle tanks, and several IRIS-T air defence systems, will be transferred from Germany to Ukraine this year. IRIS-T systems have been effective. [Details](#).
- [Jet Powered Ukrainian 'Beaver'](#) - Ukraine now has home-grown, [jet-powered drones](#) with a flight range of 620 miles [[photo](#)], and has begun using them to attack strategic targets in Russia proper.
- [Space Tug - Impulse Space](#) (Redondo Beach CA) is developing Helios, a new class of orbital transfer vehicle designed to receive satellites launched from Earth, and have the muscle to [place them where they need to go](#) - so they don't each need to be launched with their own engines, etc. To LEO, MEO, GEO and beyond.
- [Tesla Model S Plaid Vs. Bugatti Divo](#) - Who wins the drag race ... Tesla, with a top speed of 235 mph and a faster start. Details and a video, [here](#). Specs: 1,000 horsepower, range 235 miles, 0 to 60 mph in 1.99 seconds.
- [Russian Warship Sunk by 6 USVs Powered by Jet Skis](#) - [Details](#), and the video. USV - uncrewed surface vessel.
- [Russian Black Sea Mining Platform](#) - blown up by Ukrainian commando raid. It was being used to extend control and guidance of Russian drones aimed at Ukraine, [Details](#).

[Nice Thing](#) - [skip ads, full screen]

[Cosi Fan Tutte](#) (women are like that) - a comic opera in two acts by W A Mozart

- Overture - [here](#).
- Un'aura Amorosa - Act 1, Scene 12, [here](#).
- Dorabella and Guglielmo Duet - 'this heart I give you', [here](#) [Jenna and Henry]
- Prenderó Quel Brunettino - [here](#).