

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, July 9 at 12:30 in the GSA Trailer

Science Report Highlights

Betsy and Dan thought all the items in following science report from Charles were interesting but most liked the following:

- FDA National Priority Vouchers
- Popular Blood Pressure Medication Recalled
- Kraft Heinz Announcement On Food Dyes
- Massive New Solar Farm In Northern Indiana
- Coal Is Getting More Expensive
- New Dwarf Planet Discovered
- Mankind Had Never Seen The Sun's South Pole
- EU Countries Now Manufacturing Drones In Ukraine

Science Report

Self-Protective Measures -

You should get your medical advice from official sources, your doctor, or your pharmacist .. not from this Report or the internet. Per recommendations by FDA and CDC, everyone should maintain current vaccinations for the three respiratory viruses: Covid, flu and RSV (for RSV, adults [over 60](#) and children [younger than 8 months](#)) - unless your doctor advises against it based on your medical record. Adults over 50 should have had the [Shingrix vaccine for shingles](#) (two doses 2 to 6 months apart, good indefinitely). Adults over 50 should have the [Pneumococcal Vaccine](#).

- [Skin Lumps and Bumps](#) - See Harvard Health's advice on which skin irregularities should be brought to the attention of your doctor, [here](#).
- [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.
- [Basal Metabolic Rate \(BMR\)](#) - Your BMR is how many calories you burn just sitting in your chair. Use the [calculator](#) to get your BMR. Then consult the exercise table to see how many calories you can consume daily with your current exercise plan and still maintain your current weight.
- [Body Roundness Index \(BRI\)](#) - is a new medical screening tool for estimating *visceral* fat, [details](#). Use a calculator to get your BRI [here](#). Additional background from Harvard, [here](#). Results to your doc.

Vaccine and Therapeutic News -

- Twice-Yearly Injection To Prevent AIDS Transmission - FDA has approved [Yeztugo](#) (lenacapavir) from [Gilead Sciences](#) (Foster City CA) for this indication. [Human trial data](#) indicated that it was highly effective for this indication. [Background](#). Not a *cure* for AIDS.
- FDA National Priority Vouchers - FDA has [announced](#) that companies supporting US national interests will be granted access to a program that reduces review time for their medical products.
- Popular [Blood Pressure Medication Recalled](#) - FDA has issued a recall for 732,000 bottles of carvedilol, a beta-blocker widely prescribed for controlling blood pressure, and for cardiac conditions. A substance was detected that presents a risk of cancer.
- CDC Measles Update - including a map showing where cases are concentrated, [here](#).

Other Health Science News -

- Emulsifiers In Otherwise Healthy Foods (Yogurt, Peanut Butter) Linked To Colon Cancer - several [studies](#) have associated **emulsifiers** such as [xanthan gum](#), [carrageenan](#), sucralose, carboxymethyl cellulose (aka cellulose gum), soy lecithin, and mono and diglycerides with [systemic inflammation and colon cancer](#). 50,000 Americans will die of colon cancer this year, including 2,600 under the age of 50. Look for these additives on the list of ingredients for packaged foods.
- Four Things A Neurologist Avoids - to stay [mentally sharp](#). Some are surprising, [here](#). [Sarah F.]
- Four Food Additives Banned In California - The forbidden 4 additives to look for on the contents label on the back of food packages are: brominated vegetable oil, potassium bromate, propylparaben and red dye No.3. See a list of 10 widely available foods that contain them, [here](#). Nine more with other problematic contents, [here](#).
- Kraft Heinz Announcement On Food Dyes - The [company](#) (Pittsburg PA) has [announced](#) that it will be removing all Food, Drug & Cosmetic (FD&C) colors from all of its products by the end of 2027, and that new products won't contain them. Two of the company's products are Kool-Aid and Jell-O.
- 8 Things Not To Do To Your Knees - according to orthopedic surgeons, [here](#). Even those who've already had knee replacements - the gold standard for severely damaged knees. The health of surrounding tissues is important to recovery, which can take up to a year. Other ideas from the Mayo Clinic, [here](#).
- Obese In South Carolina - more than one-third of all adults, and half the African American population, qualify as obese according to SC authorities. SC is taking it seriously by becoming the 14th state ([map](#)) to cover weight reduction drugs for Medicaid recipients. The requirements to qualify for coverage are quite strict, but not scientifically inappropriate. [Details](#)
- When To Take Vitamin D Supplements For Best Absorption - The [time of day is irrelevant](#), according to a registered dietitian, but since Vitamin D is fat soluble, it should be taken with food (plant or animal) that has some *healthy* fat to promote absorption.
- One More Clue To The Causes Of Alzheimer's Disease (AD) - A recently [published](#) associational study indicated a statistical relationship between Herpes Simplex Virus type 1 (HSV-1) infections that cause cold sores, and AD. Useful with other data, but not decisive. [Background](#)
- Widely Used Blood Pressure Drug May Slow Ageing And Extend Life - An AI-guided search found this association with regular use of the blood pressure control drug [rilmenidine](#). The AI had a little help from a molecular biogerontologist at the University of Birmingham UK. Now that his lab tests have explained [how that happens in worms in the lab](#) ... mice and then humans are next. Soon.

- Contact Lens Research May Permit [Limited Infra-Red Sight](#) - and could potentially assist those who are color blind by using nanoparticles to [up-convert infra-red light](#) into the visible spectrum..
- 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 -

- 7 Healthy Things About Strawberries - and a nutritional run-down by a registered dietitian, [here](#). Either fresh or frozen is good. Cooking reduces the health benefits of the antioxidant content.
- 6 Small Changes For More Fiber - dietitian recommended [here](#) - only 1 in 2 get enough. [C.C]
- 13 Power Vegetables - loaded with vitamins, minerals and antioxidants, according to registered dietitians. See the list, and the particular advantages of each, [here](#).
- Magnesium - A registered dietitian explains why [Magnesium](#) is important, and which whole foods provide it. You can get Magnesium from leafy greens, nuts, seeds, legumes and whole grains, but when fruit is more to your taste, there are 9 she recommends, [here](#).
- Healthier Sweetener: Honey Or Sugar - According to a registered dietitian, honey is healthier. See a side-by-side comparison of the benefits of each, [here](#). Use in moderation. [Mack W.]
- Ginger Tea - is the best tea for lowering inflammation, according to a registered dietitian, [here](#). Ginger is rich in antioxidants, and has [other benefits](#).
- Garlic - has good antioxidants, and helps lower LDL cholesterol. [Details](#)
- Canned/Frozen Artichoke Hearts - good fiber ... not to mention magnesium, iron, calcium, phosphorus, folate, vitamin C, and antioxidants. [Details](#) They incorporate well into other dishes.
- 9 Herbs And Spices That Reduce Inflammation - See the list, and why reducing systemic inflammation is so important to health, [here](#). Summary: ginger, garlic, tumeric, cardamom, black pepper, green tea, rosemary, cinnamon.
- The Nutrient That 90% Of Us Aren't Getting Enough Of - Fiber fiber fiber! See how enough fiber can lower your risk of [cancer](#), heart disease, and [dementia](#) ... [here](#).
- Flaxseed - is a good source of fiber, both the soluble and insoluble (75%) type of fiber. The insoluble type helps to feed and boost your gut microbiome. The insoluble type adds bulk to stools, and attracts water, making stools easier to pass. Flaxseeds also provide Omega-3 fatty acids that boost heart health and help to control blood pressure. [Details](#). Tune-up: if you have a spice grinder, it just takes a few seconds to grind a tablespoon or two of flax seeds into a powder for adding to your cooking. Improves absorbtion, and doesn't change the flavor or texture noticeably.
- Almonds Are Healthy - Registered dietitians describe the many benefits ... [here](#), and the best ways to eat them. Summary: Raw, with the skin (seed coat, testa) on is best. Almond milk is good, but the processing reduces antioxidants.
- High Fiber Fruit - A [registered dietitian](#) at Ohio State University explains the health benefits of fiber, and provides a list of high fiber fruit, [here](#).
- Bananas - See a nutritional run-down from the Cleveland Clinic, and their list of 6 health benefits from eating bananas, [here](#). Tune-up: most nutritious when eaten at least partly green. A slightly green banana has 50% less sugar. Also, if your goal for your fruit/berry smoothies is their antioxidant/anti-inflammatory content, don't add bananas or eat them simultaneously - reduces

antioxidant uptake. Do eat nutritious bananas, separated in time from antioxidant-content foods.

- Top Dairy Product For Lower Cholesterol - low fat milk, recommended by a registered dietitian [here](#). Tune-up: also consider *unflavored/plain* low fat yogurt, kefir, and cottage cheese.
- Greek Yogurt - gains its thicker consistency and tangier flavor by having the whey filtered out after the fermentation step. Check the 'Ingredients' label on the back. If it gains its thickness by adding cornstarch or other thickeners, it isn't *really* Greek yogurt. Greek 'Style' is a marketing department term that may mean nothing (maybe more sugar and less protein). Side-by-side comparison, [here](#).
- Misleading Words For Sugar - High-fructose corn syrup, sucrose, barley malt, dextrose, maltose and rice syrup are all [forms of sugar](#). Certain blood alcohols sometimes used as sweeteners, such as Erythritol and Xylitol, are made by the body and occur naturally in certain foods - but in very small amounts. They have recently been [linked to heart disease and stroke by Cleveland Clinic researchers](#), and should be avoided as food additives. Chemical sugar substitutes to be avoided: acesulfame potassium, advantame, allulose, aspartame, brazzein, lactitol, maltitol, mannitol, neotame, rebaudioside A (reb-A), saccharin, sorbitol, thaumatin and trehalose.
- 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 -

- Massive New Solar Farm In Northern Indiana - [Doral Renewables](#) (Philadelphia PA) has directed its contractor Bechtel to proceed with construction of the next phase of its [Mammoth Solar Farm](#), to be one of the largest in the US when complete. 1.3 GWdc, 200,000 solar panels, power for 200,000 homes. The company's [agri-voltaics](#) approach allows grazing (now 2,000 [sheep](#)/alpacas/donkeys) and crops (corn, hay, melons, blueberries and honey) on the same site. [Harvey B.]
- Major New Solar+Storage Project In Arizona Desert - The US Department of the Interior's Bureau of Land Management has [approved](#) the [Elizabeth Solar Project](#) to be built on 1,400 acres in the Agua Caliente Solar Energy Zone of Arizona's Sonoran Desert. Power 270 MW, storage 300 MWhr, operational 2026, 500 kV transmission line and Hoodoo Wash Switchyard nearby. [Phil J.]
- Huge New Solar Project In Egypt's Nagaa Hammadi Region - The Norwegian energy company [Scatec](#) (Oslo Norway), and the Egyptian Electricity Transmission Company, now have a power purchase agreement (PPA) to build a 1 GW solar plant, [Obelisk Solar Power](#), including 100MW/200 megawatt hours (MWh) of battery storage. Scatec will operate and maintain the facility. [Background](#) and video [turn on sound]. \$480 million.
- Also In Egypt - Scatec with [Fertiglobe](#) (Abu Dhabi) will construct a [green Hydrogen project](#) (100 MW, solar powered electrolyzer) to provide the feedstock for manufacturing green ammonia - a key component in fertilizer. [Peter M.]
- Michigan Focuses On Contaminated Brown-Field Sites For Solar/Storage Projects - and considers *former coal-burning plants* ideal because the grid infrastructure is already present. Two successful examples elsewhere: [Alabama Power](#) in Walker County Alabama, and [Simec Atlantis](#) in Wales, UK. It *can* be done ... it *has* been done ... it *should* be done.
- Coal Is Getting More Expensive - 99% of existing coal-fired US power plants are more expensive to run than to replace with wind/solar/storage, according to [Energy Innovation](#). In the last 4

years [more than 100 coal-fired units have closed](#) for economic reasons. The invisible hand of economics.

- [Ireland Is Now Coal-Free](#) - In [shutting down its last coal burning power](#) plant at Moneypoint, Ireland became Europe's 6th coal-free country. There has been an operating, 17 MW onshore wind farm there since 2017. More to come, with Moneypoint at the center, repurposing the use of existing grid infrastructure - [Green Atlantic @ Moneypoint](#). Spain and Italy are also on track. Progress!
- [India Makes Progress On Transition To Sustainable Energy](#) - 11 years ago, 60% of India's power was from coal. By 2024 it was down to 50%. Between April 2024 and April 2025, 30 GW of clean energy capacity was added, power for 18 million homes, and renewable power is now considered cheaper than coal. The goal is to add 50GW of clean power annually for the next 5 years. Go!!!
- [Illinois Nuclear Reactor To Remain Open](#) - [Constellation Energy](#) and [Meta](#) have signed a 20 year power purchase agreement that will allow the 1,121 MW Clinton Clean Energy Center (nuclear plant) in Clinton IL to [remain open through 2047](#). Upgrades will expand capacity by 30 MW.
- [World's First Working Thorium Molten Salt Reactor \(MSR\)](#) - was built in the Gobi desert in China, and has been generating 2 MW of power there [since 2018](#). They've just refueled the reactor successfully, which marks [completion of the pilot test](#). A much larger MSR is already under construction, with a 10 MW capacity, so the new technology is on its way. Thorium is much more abundant than Uranium, isn't as radioactive, has a shorter half-life, and having the molten salt serve as the coolant greatly improves safety.
- [No More Gas-Powered Leaf Blowers](#) - Washington DC has banned them, and now [Alexandria Virginia](#) is planning to do the same. They make much more noise than electric versions, and running a gas powered leaf blower for 1 hour emits as much pollution as driving a car 1,100 miles! [California](#) is also on board. Of course some states have banned the ban (Florida, Texas). [Details](#)
- [Bergen Norway Vacuums Trash](#) - using a centralized underground system that reduces the need for large trucks in the narrow streets of its historic center. See a short video, [here](#). [Barbara R.]
- [A Mile Under South Dakota](#) - In addition to investigating dark matter and the secretive neutrino, the focus of the Sanford Underground Research Facility ([SURF](#)) for the last decade has been hosting the Center for Understanding Subsurface Signals and Permeability ([CUSSP](#)) study of Enhanced Geothermal Systems ([EGS](#)) - tapping into the vast natural geothermal energy of the Earth. Commercial, emissions-free EGS systems are now up and running. Drill baby drill! (but not for oil)
- [Born Again River](#) - The Klamath River in California is running completely free again, for the first time in a century since the final dam has come down last year, and [coho salmon have been seen in the upper Klamath basin for the first time in 60 years](#) - didn't take them long to find their way home! Nature just needed a kick-start. [Harvey B.]
- [The Ospreys Couldn't Be Discouraged](#) - from continuing to build their nests on the 350 foot high pinnacles of the Bear Mountain Bridge over the Hudson River, so the New York State Bridge Authority built steel nesting boxes for them there. Now the first chicks have fledged - details and photos [here](#). Conservation work in the Hudson Valley has been successful in restoring the populations of fish such as sturgeon, and birds such as bald eagles, peregrine falcons and ospreys that depend on fish for food have made a major come-back. Success breeds success!

Other Science News -

- [New Dwarf Planet Discovered](#) - We knew something large was out there, because of the clustered orbits of objects out beyond Neptune. It's one third the diameter of Pluto at 430 miles, 1600 times further from the Sun than Earth, and takes 25,000 earth-years to complete one solar orbit. Astronomers believe there are more such objects out there to be discovered. Let's find them.
- [SpaceX Starship Goes Boom, Again](#) - This time the spacecraft only, while still on the test stand being fueled ... liquid Oxygen and methane. Space is hard. [Starship](#) is a combination of a spacecraft on top of a Super Heavy booster rocket. [Details](#)
- [Honda Goes To Space](#) - The company reported the [successful launch and recovery](#) of its modest 20 foot tall rocket this week. It achieved the planned height of 890 feet, a flight duration of 56.6 seconds, and landed safely on its 4 landing legs (no boom) within 14 inches of its target, [here](#). A fine first step. The company projects suborbital capability by 2029.
- [Europa Is A No/Go](#) - NASA built a robot to walk on Europa's ice (moon of Jupiter), but the money to get there just ran dry. How about [Enceladus](#) (moon of Saturn)?
- [Mankind Had Never Seen The Sun's South Pole](#) - but heliophysics has grown a lot. Now the European Space Agency's '[Solar Orbiter](#)' has caroomed past Venus, ricocheted down below the ecliptic (plane of the Earth's orbit around the Sun), and beamed back our first look at the Sun's South polar region - at a 33° orbital tilt, not the usual edge-on. It's currently in the process of sending photos of the *North* pole. [Solar storms can destroy communications satellites](#), endanger astronauts, and might even disrupt the electrical grid, so predicting solar weather is important
- [World's Largest Battery-Electric Ship](#) - built by ship builder [Incat](#) (*must-see* video) in Derwent Park, Tasmania Australia, has just been launched. Photo and details [here](#). Specs: 426 feet long two-hulled catamaran ferry, 2,100 passengers, 225 vehicles, 24,757 ft² duty-free retail deck, 275 tons of batteries with 40 MWh capacity, 8 electric water jets, zero emissions. **BIG!** [Michael C., Phil J.]
- [World's First Suspended Railway](#) - The Wuppertal Schwebebahn opened to the public in 1901, with Kaiser Wilhelm II taking a test ride in 1900. Very steampunk look. Details and photos [here](#). Did the engineering idea for Chicago's 'El' come from Wuppertal? The German town Wuppertal is on the Wupper River about 15 miles East of Düsseldorf, [maps](#). [Sonja B.]
- [Clean Mineral Buildup Off Faucets](#) - See the details, and a how-to video [here](#).
- [Autonomous Ground Robots In Use On Front Line](#) - by both Ukraine and Russia, payloads 330-660 pounds. Details, and a photo, for the Ukrainian 'Targan', [here](#).
- [EU Countries Now Manufacturing Drones In Ukraine](#) - Details, [here](#). Finland, [France](#), Netherlands.
- [South Korea Magnifies Ukrainian Asymmetric Power Projection](#) - See [concept models](#) of Hyundai Heavy Industries' stealthed drone carrier 'HCX-23 Plus', designed for autonomous operations at sea for aerial (UAVs), surface (USVs) and subsurface (SSVs) missions. It can launch a *fleet!*

Nice Thing -

Series Of Amusing Short Videos - scroll down as each one completes, [here](#).