

Betsy says HI!!!!

Announcements

The next LABQUEST meeting will be Wednesday, December 10, location TBD.

Science Report Highlights

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

- New FDA CDER Director - Dr. Richard Pazdur
- Reduce Risk Of Death By 23% based upon nutrition from Researchers at Denmark's Aarhus University
- Artificial Sweetener And DNA Damage
- Timing Of Breakfast Important To Health And Longevity
- Sprouted Grain Bread
- Farmed Salmon - Aquaculture has been getting better
- Multiple items on nuclear reactors
- Huge Lithium Deposits Discovered In Germany

Science Report

You should get vaccination advice from your doctor or your pharmacist ... not from this Report or the internet. Everyone should consider maintaining current vaccinations for the three respiratory viruses: Covid, flu and RSV (for RSV, adults [over 60](#) and children <8 months), unless your doctor/pediatrician advises against. Adults over 50 should have had the [Shingrix vaccine for shingles](#) (two doses 2 to 6 months apart, good indefinitely), and also the [Pneumococcal Vaccine](#). Many states are making access to these vaccines less complex - [map](#).

Vaccine and Therapeutic News -

- [Multiple Myeloma](#) - The FDA has [approved](#) the GSK (London UK) treatment [Blenrep](#) (belantamab mafodotin-blmf), in combinations with other treatments, for refractory multiple myeloma. Some side effects [reported](#).
- [Reduction Of Genetically Derived Triglycerides](#) - [Arrowhead Pharmaceuticals](#) (Pasadena CA) has [announced](#) FDA approval of the company's treatment REDEMPLO (plozasiran) for the treatment of familial chylomicronemia syndrome (FCS)
- [Acid Reflux](#) - Some research suggests that certain [probiotics](#) can reduce the effects of [acid reflux](#). See the reasoning, and a list of [natural foods](#) that are rich in probiotics, [here](#). No supplements without medical advice. [CC]
- [Flu Update](#) - No CDC word, but see this information for the UK and Canada, [here](#). The new strain may be more serious for Seniors.
- [New FDA CDER Director](#) - [Dr. Richard Pazdur](#) has been appointed Director of the FDA Center for Drug Evaluation and Research (CDER). The only position in FDA subject to Senate confirmation is that of the Commissioner.

Other Health Science News -

- [Reduce Risk Of Death By 23%](#) - Researchers at Denmark's Aarhus University, in a recently [published](#) study, concluded that mortality for those following the 2023 Nordic Nutritional Recommendations is 23% lower than for those who don't. Summary: less meat, less added sugar ... and more whole grains, legumes, fish, and low-fat dairy. Largest reductions: cancer and cardiovascular disease.
- [Artificial Sweetener And DNA Damage](#) - Researchers at the North Carolina State University Department of Biomedical Engineering, and others at the University of North Carolina, have [published](#) the result of their human-cell-culture-based work indicating that sucralose-6-acetate, a compound formed when people eat sucralose, is [genotoxic and can trigger mutations](#). FDA review?
- [17 Million Americans Carry Hidden Genetic Mutations Increasing Cancer Risk](#) - according to a recently published study, [here](#). Many of these genetic biomarkers are [unrelated to family history or lifestyle](#). Now that genetic testing has become cheaper/faster/better, it's time to expand its use as a screening tool to catch and treat cancers earlier.
- [Timing Of Breakfast Important To Health And Longevity](#) - A [study](#) done by researchers at the Massachusetts General Hospital concluded that having a [regular time for breakfast](#) early in the day (7-9 am) is associated with a lower risk of health problems.
- [Brain Health](#) - includes physical aspects such as motor, emotional, sensory, and tactile functions. It also includes cognitive health aspects such as thinking, learning, and memory. Learn more about it, and how to protect it, [here](#). [CC]

Practical Nutrition -

- [Sprouted Grain Bread](#) - is the healthiest, according to a registered dietitian, [here](#). If not found on the shelves, **look for it frozen**.
- [5 Nutrients For When You Have Covid](#) - The list, the reasons, and the natural foods that have the nutrients, [here](#).
- [Farmed Salmon](#) - [Aquaculture has been getting better](#), and wild salmon is increasingly rare and expensive. It's best to use a trusted fishmonger or grocer, and to look for third party certifications, but the [nutritional boost salmon provides](#) is worth the extra focus.
- [Foods That Promote Sleep](#) - [here](#). [Study](#): *higher* daytime intake of fruits and vegetables, *avoidance* of sugar and red meat.
- [Peanut Butter](#) - is very healthy, according to three registered dietitians, [here](#) ... [biotin](#), folate, [vitamin E](#), antioxidants, magnesium, [potassium](#), [protein](#), fiber and **monounsaturated** fats. *Real* peanut butter has no sugar or artificial sweeteners, no hydrogenated vegetable oil or palm oil, no preservatives, and no unpronounceable chemicals. A *very* small amount of salt is OK. None of the big name commercial brands qualify. Find a store that provides peanut stock (just peanuts) and a grinder, and grind it yourself - like grinding coffee beans. Add some [low sodium salt](#) at home. Expect to stir it a bit before each use, since its natural oils will separate.
- [Canned Pumpkin](#) - can also contain certain amounts of particular types of squash (pumpkins are gourds), according to the [US Department of Agriculture legal definition](#). See a taste tester review of 7 different brands of 'canned pumpkin', [here](#).
- [Mangoes Are Healthy](#) - Researchers at the Department of Nutrition and Food Studies, George Mason University (Arlington VA) performed a study comparing the health effects of mangoes with sugar-added granola bars ... using blood glucose levels, body responses to insulin, and body fat as biomarkers. [Publication](#). They concluded that mangoes were healthier because they resulted in lower blood glucose and insulin resistance. [Details](#). Summary: even natural foods like mangoes with considerable natural sugar are healthier than processed foods with less sugar.

- Are Bananas Healthy? - It's complicated, since the nutritional value changes with ripeness. See the details corresponding to the 5 stages of ripeness, [here](#). Stage 2 called '*barely ripe*' is best. It's very nutritious (slightly greenish at the stem). Stage 3 called '*fully ripe*' is OK, but is a missed nutritional opportunity. Stage 4 and beyond has *way* too much sugar, no fiber, and **nutrializes antioxidants in other foods eaten at the same time (+/- 2 hours)**.
- Cashews Are Healthy - See the detailed reasoning, as reviewed by a registered dietitian, [here](#). Note: limit of 1 oz/day due to calories.
- Chicken Thighs Are Healthy - according to a registered dietitian. They have a lot of [protein, and the complete set of amino acids](#) the body needs but can't make for itself. Reduce saturated fat and calories by broiling or baking, and **removing the skin**. [Karen W.]

Environmental Science News -

- The Klamath River Tribe Of Migratory Chinook Salmon Are Back - Just a year after the dam removal project was completed, they were spotted clearing the Western end of Upper Klamath Lake ... on their way to spawn in the river's upper tributaries for the first time in 100 years! See a map, and details from the Oregon Department of Fish and Wildlife, [here](#). Welcome back! [Harvey B., Barbara R.]
- Bear Breaks Into The Zoo - The [Sequoia Zoo Park](#) (Eureka CA) said the young male was very polite, stayed on the walkway, and was ushered out peacefully. Where did he go in the zoo? [To look at the bears](#), of course.
- New Process For Enriching Uranium - The original, obsolete process was gaseous diffusion - very dirty, *very very* expensive, and very slow. The current process involves a cascade of centrifuges achieving successively higher degrees of enrichment - also dirty, expensive and slow. Global Laser Enrichment (GLE), at its 'Test Loop' facility in Wilmington North Carolina, has now successfully completed the pilot testing phase of its SILEX laser excitement method, described [here](#), and expects to have produced several hundred pounds of low enriched uranium (about 5% enriched, LEU) by the end of this year. GLE now plans a scaled up commercial version - [Paducah Laser Enrichment Facility](#) in Kentucky. LEU is the type of uranium used as fuel in nextgen modular reactors, and existing reactors. You'll be hearing more about it, and recycling potential. Most of the world's supply of LEU is currently from Russia.
- Microreactors On Army Bases In US - The [Janus Program](#) will be offering factory manufactured, transportable, modular, LEU-type fuel (seen above) by 4Q28. Details [here](#).
- Illinois Lifts Long Standing Moratorium On New Nuclear Power Plants - [details](#).
- Restart Of Iowa's Only Nuclear Plant - The 615 MW Duane Arnold Energy Center in Palo IA (near Cedar Rapids) was closed in 2020. Now [NextEra](#) (Juno Beach FL) plans to do a [restart by early 2029 to power Google's AI operations](#), with any excess power sold into the grid, [details](#).
- New US Nuclear Reactors - [Westinghouse Electric](#) (Cranberry Township, Pennsylvania), [Cameco](#) (Saskatoon, Saskatchewan Canada) and [Brookfield Asset Management](#) (New York, NY) have [announced a partnership](#) to build \$80 billion in new reactors using Westinghouse [AP1000](#) (full sized) and AP 300 reactor technology. Locations and other details have not yet been released.
- Grid-Scale Battery Co-Located With Steel Plant - The [Jingjiang Special Steel Project](#) is now on-line in Taizhou (eastern China) ... 120 MW power output, 240 MWh energy storage, first in China to be located directly on a user's site, minimal grid infrastructure needed.
- Huge Lithium Deposits Discovered In Germany - Details [here](#). The deposit discovered by [Neptune Energy](#) in Anhalt, Saxony is estimated to be one of the largest in the world. Several different extraction methods are being considered. Well done! [Sonja B.]

- [Hybrid Solar In Texas](#) - [X-Elio](#) (Madrid Spain) has just opened [Liberty Energy](#) solar park near Dayton in Liberty County Texas. The 72 MW solar farm is paired with a 60 MW battery energy storage system for grid resilience.
- [Where Does Texas Get Electricity](#) - The Texas grid, Electric Reliability Council of Texas (ERCOT), will get [40% of its power in 2025 from wind and solar](#). Texas has also had the largest increase in electrical power demand in the US over the past year, and ERCOT has done a good job of connecting in new wind, solar and storage projects promptly, with a minimum of red tape. As one energy expert said: "It wouldn't be happening if they weren't also reliable and cost effective," Very well done!
- [Where Does The DVM Get Electricity](#) - The PJM Interconnection provides power for DC, VA, MD, and several other states including NJ and PA. Four of the PJM Governors have now jointly [proposed](#) that the PJM grant fast track connection approval to data center firms that [agree to generate and add their own power to the PJM grid](#). Thanks to the Governors of PA, MD, NJ and VA. Smart!
- [Solar Carports](#) - and related multipurpose structures. Let the sun shine, according to your latitude ([map](#))
 - [South Korea](#) - A new law just going into effect requires that [parking lots with more than 80 spaces be covered with solar canopies/carports](#) ... charge points for EVs, protection from sun/snow/rain, and power back into the grid. The new law applies to both *existing* and new lots. Win win win!
 - [Arizona](#) - the Northwest Fire District in Arizona, with [Standard Solar \(Rockville MD\)](#), will build a similar 657 kW solar carport system over 12 parking lots. Other sun-rich states take note.
 - [Washington DC](#) - Catholic University of America, with [Standard Solar](#), has turned part of a parking lot into a solar park, providing power to the university and charge stations for EVs. West Campus Solar Array, 7.5 MW. [Laudamus te!](#) [full screen]
 - [Tennessee](#) - [Solar cowports](#) are being designed by [Silicon Ranch](#) (Nashville TN) for an experimental agrivoltaics solar farm it plans in Christiana TN ... as a test bed for extending the established success of agrivoltaics from sheep to cattle. The animal behavior difference being that cows are taller than sheep, weigh up to 2,000 pounds, and like to rub and scrape themselves against things. Using taller support pylons for the solar panels would work, but would increase costs, so the company will modify the sun trackers for the panels to be *aware* of the presence of cows, and keep the delicate panels tilted horizontally up out of range when cows are present. The panels would reposition/tilt for optimal power when the cows are rotated to other parts of the project ... for grazing maintenance and manure buildup reduction. Huge acreage potential! [Harvey B.]
 - [Bahrain](#) - Solar cattle shed. [Yellow Door Energy](#) (Dubai, UAE) is building the world's largest single-site rooftop solar plant, consisting of 77,000 solar panels generating 50 MW of power, and stretching across the 2,820,000 ft² roof of a stockyard shed in Bahrain. The overall project will contain 10 rooftop and 4 on-ground systems generating a total of 200 million kWh of energy annually - [189,000 panels covering 7,610,000 ft](#). Bahrain has a lot of sun, but limited space. [Ashok K.]
- [Florida's Got Solar](#) - and leads the Southeastern US in installed solar power capacity, thanks substantially to utility scale projects built by Florida Power and Light (FPL) ... [13,850 MW as of the end of 2024](#). With contributions from other partners, that capacity is expected to more than double to 30,000 MW by 2030! See a report on the regional picture, [here](#). [Bette Anne S., Gerry C.]

- Sick Seabirds - are being found along the beach in the Sarasota and Lido Key, Siesta areas. The affected birds are unable to stand or walk. Red Knots - a type of sandpiper, black beak, grayish feathers and a rusty colored patch on their chests. Laughing Gulls.
- 3-D Solar Towers - Janta Power (Dallas Texas) already has pilot installations at the Munich International and Dallas-Fort Worth airports. The company expects the new geometry to be more efficient, particularly in the morning and afternoon when the sun is lower in the sky. Photo and details, here.

Other Science News -

- They Bought a Flamingo For Ukraine - In 48 hours a Czech fundraising initiative raised \$575,000 to fund the manufacture (in Ukraine) of one of the deadly new *long* range cruise missiles nicknamed for the red *long* legged bird. Looks like there'll soon be longer gas lines in Новосибирск (Novosibirsk, capital city of Siberia).
- 2,000 Years Old, 7,000 Feet Up - An ancient Roman military camp was discovered in the Swiss alps using LIDAR laser scanning data and a digital terrain model ... then confirmed with old fashioned digging. Details. It was the Roman 3rd Legion.
- First Flight Of The X-59 - built for NASA by Lockheed Martin as a one-of-a-kind prototype to test designs for *quiet* (thump not boom) supersonic passenger aircraft. Details.

Nice Thing - [wait out ad, full screen]

Men Dancing - Life imitating art. Spectacular!

- Vitruvian Man - A brief ballet sequence inspired by the Leonardo da Vinci line drawing of that same name, choreography by David Fernandez, here. [Jules M.] [stay on for final scene from Swan Lake]
- Sphere - here.
- Bolero - here.

Useful Health And Nutrition Websites -

- Health Biomarker Websites -
 - NIH BMI Calculator - NIH National Heart, Lung and Blood Institute calculator. Find your Body Mass Index (BMI).
 - Basal Metabolic Rate (BMR) - Your BMR is how many calories you burn just sitting in your chair, calculator.
 - Body Roundness Index (BRI) - Estimate your *visceral* fat, details and calculator. Harvard background, here.
 - Are Your Stools Healthy? - Check the Bristol Stool Chart here. You should be a Type 3 or 4. Not complicated. Details.
- Nutrition Websites -
 - Is Your Favorite Food Ultra-Processed? - See good substitutes. Northeastern University TrueFood Dashboard.
 - Most Nutritious Vegetables and Fruits Rank-Ordered by CDC - List here. Chinese cabbage = bok choy.
 - Misleading Words For Sugar - High-fructose corn syrup, sucrose, barley malt, dextrose, maltose and rice syrup are all forms of sugar. Erythritol and Xylitol have 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.