

# SAFE HEALTH REPORT

Scientific Data ... Informed Choice ... Actionable

February 2024

Issue 19

Please repeat once before proceeding: **He Can Do It, She Can Do It, I Can Do It!**

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## Bottled Water: Not Safe?

### Your Ticket to Exuberant Health for the Next 5 Years

Zhang, W., et al. used a hyper-spectral stimulated Raman scattering (SRS) imaging platform with an automated plastic identification algorithm that allows micro-nano plastic analysis at the single particle level with high chemical specificity and throughput. This technique was used to analyze micro-nano plastics in bottled water, providing multi-dimensional profiling of individual plastic particles. The study found that more than 240,000 particles were present in each liter of bottled water, the majority

of which were nanoplastics. This measurement of plastic particles is larger and more precise than other studies on bottled water.

The potential presence of nanoplastics in drinking water could have serious implications for human health, although



**Ike Kim**  
**Editor**

the exact impact remains unclear. Ingestion of nanoplastics could potentially lead to a variety of health issues, including inflammation and cellular damage.

However, further research is necessary to fully understand the health implications of nanoplastic consumption. Nanoplastic exposure can be considered a new type of pollution with an unknown range of toxicities.

Recent studies on animal models have shown that ingested micro and nanoplastics are quickly absorbed in the intestine and deposited into the liver within just 15 minutes. Once these nanoplastics

are absorbed systemically, they have been found to cause inflammation and liver cell death, as well as damage to blood vessels and tissues of the lung and heart.

However, it is crucial to note that no such adverse effects have been observed in humans to date. This significant study has illuminated the presence of plastic pollution at the nano level within the human body.

### **Actionable Recommendation**

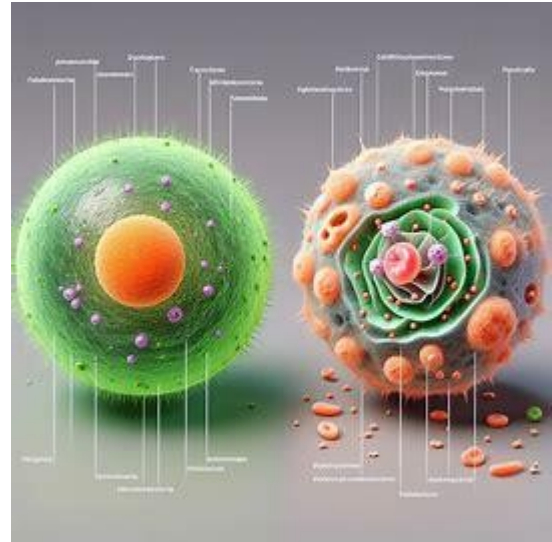
In light of these findings, until more is known about the potential adverse effects of nanoplastics, it is recommended to avoid beverages in plastic bottles and instead opt for filtered water at home. This precautionary measure could help mitigate potential health risks associated with nanoplastic consumption.

Zhang, W., et al. (2023). Rapid single-particle chemical imaging of nanoplastics by SRS microscopy. *Proceedings of the National Academy of Sciences*, 120(47), e2300582121

### **Irreversible Disease and Pre-Disease States**

In the realm of medicine, the term “irreversible” is complex and often nuanced. While certain diseases, such as extensive organ damage from a stroke or advanced neurodegeneration in Alzheimer’s, may truly represent irreversible states, many others exist on a spectrum of progression with varying degrees of potential reversibility.

Take cancer, for example. It is not inherently irreversible. Early detection and appropriate treatment can lead to complete remission and cure in many cases. Even some later-stage cancers can be managed or have their progression slowed with therapies like targeted drugs, immunotherapy, and palliative care.



The extent of irreversibility in stroke depends on the severity and location of the brain damage. While some areas of the brain can’t regenerate, functional recovery through neuroplasticity and rehabilitation is possible for many stroke survivors.

Alzheimer’s disease is currently considered irreversible due to progressive neuronal loss and the lack of curative treatments. However, ongoing research focuses on slowing progression and preserving cognitive function, potentially delaying the irreversible stage.

Parkinson’s disease, similar to Alzheimer’s, is currently considered irreversible due to neuronal loss and Lewy body accumulation. However, treatments

can manage symptoms and improve quality of life, preventing complete functional decline.

Pre-disease states, such as pre-diabetes, hypertension, and hyperlipidemia, may not be “diseases” yet, but their progression, if left unaddressed, can lead to irreversible damage in organs like the heart, kidneys, and brain. Early intervention and lifestyle changes can often prevent these conditions from reaching a disease state altogether.

While some diseases reach stages with limited recovery options, many others offer varying degrees of potential reversibility or progression management through early intervention, effective treatment, and healthy lifestyle choices. This is where lifestyle medicine or functional medicine plays a role. Taking vitamins and other supplements may potentially play a significant role along with dietary changes and exercise.

Remember, “irreversible” shouldn’t discourage hope or motivation for treatment and improvement. Even in seemingly irreversible cases, palliative care and symptom management can significantly enhance quality of life.

The human body is an intricate network of organ systems working together to maintain health and well-being. However, imbalances or disruptions in these systems can lead to various pre-disease states and diseases. Here’s a breakdown of some common examples:

## 1. Circulatory System:

Pre-disease states: High blood pressure (hypertension), high cholesterol (hyperlipidemia), pre-diabetes, obesity, smoking.

Disease states: Coronary artery disease, heart attack, stroke, peripheral artery disease, heart failure, arrhythmias, blood clots.

## 2. Respiratory System:

Pre-disease states: Smoking, air pollution exposure, family history of respiratory problems, chronic bronchitis, and now potentially nano plastics.

Disease states: Asthma, chronic obstructive pulmonary disease (COPD), pneumonia, lung cancer, tuberculosis.

## 3. Digestive System:

Pre-disease states: Acid reflux, gastroesophageal reflux disease (GERD), peptic ulcers, constipation, irritable bowel syndrome (IBS).

Disease states: Crohn’s disease, ulcerative colitis, colon cancer, liver cirrhosis, hepatitis, pancreatitis.

## 4. Nervous System:

Pre-disease states: Stress, anxiety, depression, sleep deprivation, head injuries.

Disease states: Alzheimer’s disease, Parkinson’s disease, multiple sclerosis, epilepsy, migraines, stroke.

## 5. Endocrine System:

Pre-disease states: Insulin resistance, prediabetes, polycystic ovary syndrome (PCOS).

Disease states: Diabetes, thyroid disorders, adrenal gland disorders, pituitary gland disorders.

## 6. Musculoskeletal System:

Pre-disease states: Osteoporosis, osteoarthritis, tendonitis, bursitis, muscle strain.

Disease states: Rheumatoid arthritis, lupus, gout, fractures, sports injuries, spinal cord injuries.

## 7. Urinary System:

Pre-disease states: High blood pressure, diabetes, urinary tract infections (UTIs).

Disease states: Kidney stones, kidney failure, bladder cancer, prostate cancer, urinary incontinence.

## 8. Reproductive System:

Pre-disease states: Irregular periods, endometriosis, polycystic ovary syndrome (PCOS).

Disease states: Ovarian cancer, cervical cancer, uterine fibroids, pelvic inflammatory disease (PID), infertility.

## 9. Immune System:

Pre-disease states: Malnutrition, stress, chronic infections, autoimmune disorders.

Disease states: HIV/AIDS, autoimmune diseases (lupus, rheumatoid arthritis), allergies, immunodeficiency disorders.

Remember, this is not an exhaustive list, and the presence of a pre-disease state or disease may not always manifest with symptoms. Regular checkups, healthy lifestyle choices, and early intervention can help prevent or manage many of these conditions. It's important to consult a healthcare professional for personalized advice and diagnosis if you are experiencing any concerning symptoms.

### Actionable Recommendation:

There are numerous lifestyle medicine specialists available on various platforms such as YouTube. These specialists come from diverse backgrounds including chiropractic medicine, naturopathic medicine, traditional medicine, and dietetics. While they are excellent lifestyle coaches, it's important to note that they may not be qualified to treat an "irreversible disease" or even pre-disease states.

If you are dealing with terminal disease states, it is crucial to seek help from medical professionals. At this stage, taking vitamins or supplements may not provide the necessary treatment. The disease state could be at a point of no return, and professional medical intervention is essential.



Remember, while lifestyle changes and preventative measures can significantly contribute to overall health, they are not a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of something you have read or seen on the internet.

### **Lycopene: Holy Grail of Blue Zones**

In an analysis of the Blue Zone diets, specifically those of Ikaria Island and the Barbagia region of Sardinia, three key dietary practices have emerged.

Firstly, the inhabitants of these regions prefer bread made from stone-ground flour, as opposed to the machine-ground or refined flour commonly used elsewhere. Research indicates that consumption of products made from crudely ground flour results in a significantly lower blood sugar spike compared to those made from refined flour.

Secondly, the primary sources of protein in these diets are legumes, pecorino cheese, and cheese derived from sheep or goats. It's worth noting that despite living in coastal regions, the historical threat of piracy led these communities to rely on terrestrial sources of protein rather than seafood.

Lastly, these diets heavily incorporate tomato sauce, which is rich in lycopene, a compound known for its anti-inflammatory properties.

These three simple yet significant dietary habits may provide an explanation for the longevity observed in these two regions, when applying Occam's razor. The health benefits of lycopene are further explored in our current issue. This examination of the Blue Zone diets underscores the potential health benefits of traditional dietary practices.

### **Lycopene: Review**

Lycopene, a fat-soluble red pigment, is primarily found in tomatoes but also in varying amounts in papaya, pink grapefruit, pink guava, and watermelon. The lycopene content in tomatoes ranges



from 0.88 to 7.74 mg/100 g, depending on the species and ripening stage of the tomatoes. Interestingly, lycopene undergoes a chemical reaction into cis isomers when

heated during cooking, which enhances its absorption into the systemic circulation.

In the human body, only 10–30% of lycopene is absorbed from the proximal intestine. After ingestion, fat-soluble lycopene is converted into micelles when mixed with bile acid and pancreatic enzymes. It is then absorbed in the duodenum and subsequently delivered to the liver via chylomicrons by the lymphatic system. Lycopene molecules are then systemically distributed to different target organs by lipoproteins. Peak concentrations have been detected in the prostate, adrenal glands, liver, and other tissues.

Most studies attribute the anti-inflammatory effects of lycopene to its ability to modulate pathways responsible for the induction of inflammatory mediators, as well as the signaling pathway of NF- $\kappa$ B. Lycopene has shown anti-inflammatory activity when it binds to the I $\kappa$ B protein, preventing its dissociation and keeping it bound to NF- $\kappa$ B, thereby avoiding the translocation from the cytoplasm to the nucleus. Studies have shown a correlation of NF- $\kappa$ B activation with inflammatory disease in animal models of arthritis.

In most human cells, the cytoplasmic transcription factor NF- $\kappa$ B regulates multiple aspects of innate and adaptive immune functions and serves as a pivotal mediator of inflammatory responses.

Specifically, NF- $\kappa$ B triggers the expression of various pro-inflammatory genes, including those encoding cytokines and chemokines, and plays a crucial role in inflammatory regulation at the cellular level. Furthermore, NF- $\kappa$ B plays a critical role in activating and regulating innate immune cells and inflammatory T cells. As a result, deregulated NF- $\kappa$ B activation contributes to the inflammation of various tissues.

Lycopene has been shown to inhibit the binding abilities of NF- $\kappa$ B and decrease the expression of the insulin-like growth factor-1 receptor (IGF-1R). Insulin-like growth factor-1 (IGF-1) is thought to be involved in the enlargement of prostate and breast cancer. Lycopene exerts its inhibitory effects by blocking the degradation of the inhibitory protein, I $\kappa$ B $\alpha$  and p65, resulting in the deactivation of the NF- $\kappa$ B pathway. Since the activation of the NF- $\kappa$ B pathway is involved in the inflammatory pathway, the action of lycopene can thus be seen as anti-inflammatory.

Therefore, it is understandable why lycopene should be beneficial in inflammation for both males and females. The author believes lycopene may be the one of key drivers of health as found in Barbagia and Ikaria Island.

Reference:

Liu, T., Zhang, L., Joo, D. et al. NF- $\kappa$ B signaling in inflammation. *Sig Transduct Target Ther* 2, 17023 (2017). <https://doi.org/10.1038/sigtrans.2017.23>

Huang C., Fan Y., Lin C., Hu M. Lycopene inhibits matrix metalloproteinase-9 expression and down-regulates the binding activity of nuclear factor-kappa B and stimulatory protein-1. *J. Nutr. Biochem.* 2007;18:449–456. doi: 10.1016/j.jnutbio.2006.08.007.

Fenni S., Hammou H., Astier J., Bonnet L., Karkeni E., Couturier C., Tourniaire F., Landrier J. Lycopene and tomato powder supplementation similarly inhibit high-fat diet induced obesity, inflammatory response, and associated metabolic disorders. *Mol. Nutr. Food Res.* 2017;61:1601083. doi: 10.1002/mnfr.201601083.

## Recent FDA Medication/Supplement December Recall

Recall Date	Brand Name	Product Description	Recall Reason Description	Company Name
12/31/2023	Enfamil	Nutramigen Powder infant formula in 12.6 and 19.8oz cans	Potential Cronobacter sakazakii contamination	Reckitt/Mead Johnson Nutrition
1/8/2024	Leiters, Compounding Health	Vancomycin IV Bags, Phenylephrine IV Bags, and Fentanyl IV Bags	Potential for superpotent drug	Leiters Health
1/11/2024	Rizo Bros California Creamery	Aged Cojita Mexican Grating Cheese	Potential Listeria monocytogenes contamination.	Rizo Lopez Foods, Inc.
1/11/2024	Multiple brand names	Cereal, bars, and snacks	Potential for Salmonella contamination	The Quaker Oats Company
1/17/2024	BrightFarms	Spinach and Salad Kits	Potential Foodborne Illness-Listeria monocytogenes	BrightFarms
1/17/2024	Big Island Candies	Brownie Assortment	Contains undeclared peanuts	Big Island Candies
1/18/2024	Whitley's Peanut Factory	Deluxe Nut Mix	Undeclared Allergens - Peanuts, Milk, Soy, Wheat, and Sesame	Whitley's Peanut Factory
1/24/2024	Robitussin	Cough syrups	Microbial Contamination	Haleon
1/25/2024	Zendedi	dextroamphetamine sulfate tablets, 30mg	Mislabeled package	Azurity Pharmaceuticals
1/30/2024	Byrne Dairy	Mighty Fine Chocolate Ice cream	Undeclared peanuts	Byrne Dairy Inc.



## Case Number 14: Benign Prostate Hypertrophy (BPH)

### What's the probability of 5-year survival for this 91-year-old male?

*The following real-life case examples are hypothetical stories in the palliative or hospice care settings, imagined by the author with the help of artificial intelligence. Frailty scores are commonly used not only to decide if a patient should be placed in palliative or hospice care but also to assess whether the patient is a suitable candidate for major surgery in the case of surgical intervention. Unfortunately, patients with low frailty scores often do not survive five years after a major health crisis. No one is an exception since everybody eventually succumbs to the law of gravity. Case examples may contain personalized **Translational Medicine** from pre-clinical trial data.*

James Sang is a 91-year-old Hawaiian male who has a medical history of transient ischemic attack atrial fibrillation and chronic benign prostate hypertrophy. He complains of further exacerbation of being able to void urine. Urologists have ruled out surgical intervention for Mr. Sang due to his age and frailty score. He seeks lifestyle advice if any. He states that prostate supplement hasn't helped with any symptoms of his BPH over the last 3 years.

#### Current Medications:

Tamsulosin 0.8 mg daily

Simvastatin 10 mg daily

Aspirin 81 mg daily

Prostate Plus Health Complex 1 tablet daily

#### Mortality Data:

What is the 5-year mortality for a 91-year-old Hawaiian male with a stable medical condition?

It is difficult to gauge how many additional years this patient might live. Setting aside, current health, lifestyle, and family history that could increase or decrease life expectancy, the online Social Security Life Expectancy calculator can estimate additional years of life expectancy. Based on the sex and date of birth only, the SSA cohort yields 4 additional years for Mr. Sang. With both James' ADL score of zero and Eye of the Tiger Test score of 3, it is not unreasonable to expect 4 more years of life for Mr. Sang.

#### James Sang

\*All patient data is fictional and imagined by the author with AI assistance. Safe Health Report complies fully with US HIPPA regulations.

Age: .....91

Sex: .....male

Weight: .....115 pounds

Height: .....5 feet 3 inches

**Activities of Daily Living (ADL) components: transfer, bed mobility, toileting, and eating**

▪ 0 – Independent: If the resident completed the activity with no help or oversight every time during the 7-day prior period.

▪ 1 – Supervision: If oversight, encouragement, or cueing was provided three or more times during prior 7 days.

▪ 2 – Limited Assistance: If resident was highly involved in the activity and received physical help in guided maneuvering of limb(s) or other non-weight-bearing assistance three or more times during the last seven days.

▪ 3 – Extensive Assistance: If resident performed part of the activity over the prior 7 days, help of the following type(s) was provided three or more times: ▪ Weight-bearing support provided three or more times. ▪ Full staff performance of activity during part, but not all, of the prior 7 days.

▪ 4 – Total Dependence: If there was full staff performance of an activity with no participation by the resident for any aspect of the ADL activity. The resident must be unwilling or unable to perform any part of the activity over the entire prior 7-day period. ▪ 7 – Activity occurred only once or twice: If the activity occurred but not 3 times or more. ▪

8 – Activity did not occur: If, over the prior 7-day period, the ADL (or any part of the ADL) was not performed by the resident or staff at all. ADL support measures the most support provided by staff over the prior 7 days.

\*Adapted from Minnesota Department of Health Guideline

James' ADL Score ..... 0

## Benign Prostate Hypertrophy

Benign Prostatic Hyperplasia (BPH), a disorder associated with aging, is one of the most common benign tumors found in men. This condition typically begins to manifest around the age of 50, characterized by an increase in prostate volume. This enlargement results in lower urinary tract symptoms (LUTS), which include difficulties in voiding urine such as hesitancy, intermittency, a weak stream, straining, and

**Eye of the Tiger Test for James Sang**  
\*All patient data is fictional. Safe Health Report complies fully with US HIPPA regulations.

**Clinical Frailty Score**

- 1 – Very Fit: Very fit for their age with no disease symptoms, very active, and exercise regularly- 5 days a week
- 2 – Fit: Still no active disease as in 1 but exercise only occasionally – three times a week or only seasonally
- 3 – Managing Ok: Disease symptoms are well managed. Not able to exercise at all other than walking.
- 4 – Very Mild Frailty: Symptomatic disease. Not dependent on others for daily activities but disease symptoms slow down their activities. May need a cane for walking occasionally for example
- 5 – Mild Frailty: Symptomatic disease limits daily activities. Needs walkers. Needs help with walking and shopping.
- 6 – Moderate Frailty: Needs help with walking, shopping, climbing stairs, and bathing with disease progression.
- 7 – Severe Frailty: Completely dependent for personal care and daily activities but seem stable and at risk of death within the next 6 months.
- 8 – Very Severe Frailty: Same as 7 but unstable and even mild illness is likely to cause death.
- 9 – Terminally Ill: As in 8 but not likely to live next 3-6 month.

\*Adapted from [Rockwood & Theou 2020](#)

**James' Frailty Score** ..... 3

terminal dribbling. Additionally, storage symptoms such as nocturia, urgency, and increased frequency may also be present.

The symptoms of BPH are influenced by a variety of factors including hormonal changes, inflammation, growth factors, cell receptor signaling, diet, physical activity, and changes in the prostate's microbiome, all of

which contribute to cellular proliferation. Notably, hormonal changes such as elevated levels of insulin and insulin-like growth factor 1 (IGF-1), increased 5 $\alpha$ -dihydrotestosterone, and heightened expression of estrogen receptor  $\alpha$  (ER- $\alpha$ ) play a significant role. Chronic inflammation, particularly through the activation of the NF- $\kappa$ B pathway, also plays a critical role in this condition.

Dietary habits, specifically those common in the Midwest, which promote cellular growth through hyperinsulinemia and increased levels of IGF-1, should be minimized. After the age of 50, there is no further need for growth. It is recommended that individuals undergo a one to three-month trial of lycopene taken 20 mg once daily, along with zinc supplementation. Lastly, adopting more walking is advised for Mr. Sang.

### References:

Stewart KL, Lephart ED. Overview of BPH: Symptom Relief with Dietary Polyphenols, Vitamins and Phytochemicals by Nutraceutical Supplements with Implications to the Prostate Microbiome. *Int J Mol Sci.* 2023 Mar 13;24(6):5486. doi: 10.3390/ijms24065486. PMID: 36982560; PMCID: PMC10058027.

# MrGineaPig's Core Long-Term Trial

LONG-TERM TRIAL	SUPPLEMENT	START DATE	
Muscle Weakness	Hyaluronic Acid	07/01/2019	50 mg-1 capsule daily
Back Pain	Pantothenic acid	09/1/202	500 mg 1 capsule daily
	Pantethine	09/01/2022	450 mg 1 capsule daily
Mealtimes	Breakfast 09:00 -Lunner (13:00)	01/07/2023	+Salad with Balsamic Vinegar Lunner = Lunch + Dinner
BPH Prevention	Lycopene	01/31/2024	20 mg daily

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## Risk Factors for Premature or Unexpected Death

Immediate Risks	Internal Threat	External Threat	Other Topics
<ol style="list-style-type: none"> <li>COVID-19 JN.1</li> <li>RSV</li> <li>Flu</li> <li>Fentanyl death</li> <li>Drug shortages</li> <li>Gun violence</li> </ol>	<ol style="list-style-type: none"> <li>Poor diet</li> <li>Smoking</li> <li>High blood pressure</li> <li>Obesity</li> <li>Sedentary Lifestyle</li> <li>Suicide</li> </ol>	<ol style="list-style-type: none"> <li>War</li> <li>Microplastics</li> <li>FDA recalls</li> <li>Meat preservatives</li> <li>Trans fatty acid</li> <li>Pesticides</li> <li>Heavy metals</li> </ol>	<ol style="list-style-type: none"> <li>Shortness of breath</li> <li>Back pain</li> <li>Hemorrhoids</li> <li>Incontinence</li> <li>Joint swelling</li> <li>Fibromyalgia</li> <li>Health Insurance</li> </ol>

**Topics Chosen: Covid-19 update, Clostridium difficile, Search of Best Diet Series**

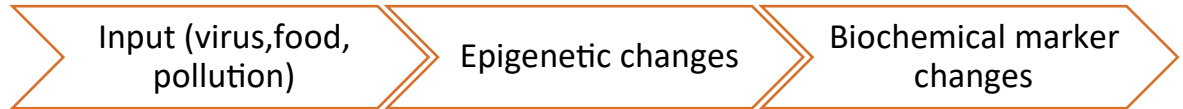
## Format of Safe Health Report

Section 1: Conditions or internal environment that increases the risk of premature death or

pose an immediate danger to your health (both mental and physical) as in an avalanche.

Section 2: External environment that increases premature death, FDA recalls.

Section 3: Case examples of premature death. If you are in a similar situation, remove yourself out of harm's way! Can we extend **our expiration dates** when in the eye of the storm before disease strikes at a tissue level. Remember epigenome is what activates a specific set of genes.



### **Purpose of Safe Health Report**

If you feel you are being used by someone or somebody or institution or institutionalized philosophy or even by your parents or siblings or your coworkers or even your boss, you are a GineaPig. This newsletter is designed to empower GineaPigs in the area of human health and possibly decrease the risk of **premature death**.

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