SAFE HEALTH REPORT

Scientific Data … Informed Choice … Actionable

January 2024 Happy New Year! *Issue 18*

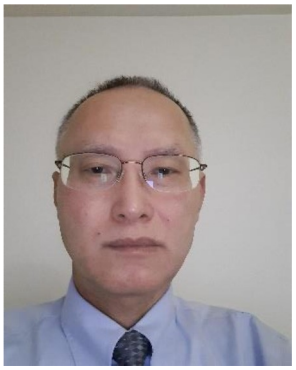
Please repeat once before proceeding: He Can Do It, She Can Do It, I Can Do It!

Inside …

Vinyl Chloride on EPA review

Your Ticket to Exuberant Health for the Next 5 Years

Vinyl chloride (VC), a very common chemical, is the building block of plastics and is at the center of a growing number of environmental and health concerns. First synthesized in 1835, vinyl chloride is a monomer that is transformed into the polymer polyvinyl chloride (PVC) using phthalates. PVC, which comes in two forms - rigid and flexible, is used in a wide array of products, from water pipes and cling wrap to toys and tents. According to Statista, PVC is one of the world's most widely produced synthetic plastic polymers, with production potentially increasing to 59.7 million tons by 2025, up from 44.3 million tons in 2018.



Ike Kim
Editor

While PVC is most in demand for pipes and flooring, it also plays a significant role in the packaging market, with uses including pharmaceutical blisters, bottle sleeving, shrink wrap, food trays, and disposable syringe packaging.

Exposure to vinyl chloride can lead to various health problems, including liver toxicity. It was classified as a human carcinogen in the 1970s, leading to a federal ban on its use in products such as hair sprays, refrigerants, cosmetics, and drugs. Around the same time, the White House Council on Environmental Quality and officials from the Environmental

Protection Agency (EPA) raised significant concerns about the health impacts of vinyl chloride. These concerns prompted Congress to draft legislation to ensure the safe production and use of chemicals, culminating in the enactment of the original Toxic Substances Control Act (TSCA) in 1976.

While it is confirmed that vinyl chloride is a carcinogen, the toxicity of PVC or plastic itself remains unclear. Studies dating back to the 1950s have shown that exposure to plastic can promote tumor formation in animal models. Furthermore, in vitro studies have demonstrated the toxicity of microplastics, which are small fragments or particles of plastic measuring less than 5mm, at the cellular level. However, it is still uncertain whether the toxicity is due to the plastic itself or if the plastic merely acts as a vehicle for other environmental toxins to accumulate. Notably, vinyl chloride, which is used in a wide range of plastic items, has emerged as a primary suspect.

Tasha Stoiber, a senior scientist at the Environmental Working Group (EWG), states that microplastics have been widely detected in fish and seafood, as well as in other products like bottled water, beer, honey, and tap water. Despite this, the EWG reports that there are currently no formal advisories on fish consumption to avoid exposure to microplastics.

The accumulation of plastic waste is reaching alarming proportions. By 2050, it's estimated that the oceans will contain more plastic by weight than fish. This equates to hundreds of thousands of tons of microplastics, or trillions of particles, in our seas. A recent study found plastic particles ≥700 nm in the bloodstream of the majority of 22 otherwise healthy participants, highlighting the pervasiveness of these particles.

In particular, there is a growing demand for a ban on microbeads, which are commonly found in personal care products. One of the primary concerns is the extensive use of vinyl chloride, a chemical predominantly used in the production and processing of plastic materials. Notably, vinyl chloride was involved in the Norfolk Southern train derailment in East Palestine, Ohio.

In response to these concerns, on December 14, 2023, the EPA announced that vinyl chloride was among five chemicals selected for risk evaluation

prioritization under the TSCA. This is the first step towards potentially banning or restricting the use of this chemical.

Actionable Recommendation

Until such restrictions are implemented, it is recommended to minimize exposure to potentially harmful chemicals like vinyl chloride. This can be achieved by avoiding single-use plastics, using reusable tote bags for grocery shopping instead of plastic bags, and choosing loose-leaf tea or paper tea bags over mesh-based alternatives. Also, for those who are building new homes, consider using copper pipes with lead-free soldering for water pipes rather than PVC pipes if financially viable.

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Tasha Stoiber, Senior Scientist, on microplastics in food and water: https://www.ewg.org/news-insights/news/2023/08/macro-issues-microplastics

Environmental Protection Agency (EPA):

Vinyl chloride risk evaluation prioritization: https://www.epa.gov/sites/default/files/2020-05/documents/vinyl_chloride_march_26_2020.pdf

Toxic Substances Control Act (TSCA): https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act

Statista:

Global PVC production statistics: https://www.statista.com/topics/11401/polyvinyl-chloride-pvc/

Norfolk Southern train derailment in East Palestine, Ohio: https://www.wkbn.com/news/local-news/east-palestine-train-derailment/

White House Council on Environmental Quality and EPA officials, 1970s: Historical records likely available through government archives or libraries.

Recurrent Urinary Tract Infection (UTI):

By Allison Nguen

UTI Déjà Vu: Innovative Strategies for Women Battling Frequent Flares

You may think a urinary tract infection (UTIs) is just a painful inconvenience that a quick round of antibiotics can clear up. But did you know that if left untreated, a UTI can rapidly escalate into a life-threatening condition? In as little as 2 hours, bacteria from a simple UTI can begin to invade your kidneys, and within a short time frame, this infection can turn into sepsis, a critical response that can be fatal. The clock is ticking when it comes to UTIs—ignoring the signs can lead to dire consequences. Not Knowing 3 Signs of kidney infection can kill you. These signs are fever, back pain, and nausea or vomiting in addition to signs of a simple UTI such as Pain or burning when urinating, frequent urge to urinate, sudden urge to urinate, and blood in the urine. UTIs are a significant health concern, particularly among adult women, with a lifetime incidence of 50-60%,

necessitating up to 8 million doctor's visits annually. The prevalence of UTIs increases with age, doubling in women over 65, and is influenced by various factors, such as catheterization in older women and increased sexual activity in younger women. Recurrence of UTIs within six months is common, and while severe infections like pyelonephritis are rarer, they pose a considerable burden due to hospitalization risks. Healthcare-associated UTIs are the most common healthcare-acquired infections, with pathogen types varying by community and hospital settings, emphasizing the

necessity for localized infection control data. UTIs account for numerous medical visits each year in the United States and are associated with increased absenteeism and physician consultations in Europe, significantly affecting the quality of life. Non-antimicrobial prophylactic strategies are suggested to reduce both UTI rates and the personal burden on patients, highlighting the importance of both understanding and preventive measures in managing this prevalent condition.

Understanding the Anatomy and Physiology:

The lower urinary tract, comprising the urethra, bladder, and ureters, plays a crucial role in urine storage and expulsion. The urethra, a short, tube-like structure, serves as the passageway for urine from the bladder to the outside. The bladder, a muscular organ, acts as a reservoir for urine, expanding and contracting as needed. The ureters, two thin tubes, transport urine from the kidneys to the bladder.

The Recurrence Cycle:

UTIs most commonly occur when bacteria, usually Escherichia coli (E. coli), invade the urethra and ascend to the bladder. In women, the short urethra and its proximity to the vagina increase the susceptibility to bacterial colonization. Once established, these bacteria can form biofilms, communities of bacteria encased in a protective matrix that shields them from the immune system and antibiotics. These biofilms contribute to recurrent UTIs by creating a reservoir for bacteria, allowing them to persist and re-infect the bladder.

Several factors increase the risk of recurrent UTIs in women:

Anatomy: Women with a shorter urethra or structural abnormalities in the urinary tract are more susceptible.

Sexual activity: Frequent sexual intercourse increases the risk of bacteria entering the urethra.

Hormonal changes: Menopause can lead to thinning and dryness of the vaginal tissues, making them more susceptible to bacterial colonization.

Contraceptive methods: Diaphragms and spermicides can disrupt the natural flora of the vagina, increasing vulnerability to UTIs.

Diet: Sugary drinks and processed foods can promote bacterial growth in the bladder.

Genetics: Some women may have a genetic predisposition to recurrent UTIs.

Prevention Strategies:

Combating recurrent UTIs requires a multi-pronged approach. Here are some effective preventive strategies:

Considering recent clinical studies, the prevention of recurrent UTIs, especially in postmenopausal women, has seen significant advancements. In 2020, A multicenter, single-blind, randomized, placebo-controlled trial emphasized the efficacy of vaginal estrogen (delivered via ring or cream) in preventing UTIs in postmenopausal women with a history of recurrent infections. The study revealed that fewer women treated with vaginal estrogen developed a UTI within six months compared to those receiving the placebo, underlining the potential of estrogen therapy in this demographic.

Hydration: Drinking plenty of water (2-3 liters daily) helps flush out bacteria from the urinary tract.

Urination habits: Emptying the bladder frequently and completely reduces the time bacteria can reside in the bladder.

Hygiene: Wiping from front to back after urination prevents bacteria from entering the urethra.

Cranberry products: Cranberry juice or cranberry supplements may help prevent bacterial adhesion to the bladder wall.

D-mannose: This natural sugar can compete with bacteria for binding sites in the urinary tract, hindering their attachment.

Probiotics: Restoring the balance of healthy bacteria in the vagina can potentially reduce UTI risk.

Post-coital urination: Emptying the bladder after sexual intercourse helps wash out bacteria that may have entered the urethra.

Dietary modifications: Limiting sugary drinks and processed foods may help decrease bacterial growth in the bladder.

Hormone replacement therapy: For women experiencing UTIs due to

menopausal changes, hormone replacement therapy may be beneficial.

Medical Management:

In cases of recurrent UTIs, medical intervention may be necessary. Low-dose antibiotics taken daily or after intercourse can help prevent infection. Additionally, long-term antibiotics or bladder instillations with medications may be recommended in specific situations.

A guideline by the American Urological Association, the Canadian Urological Association, and the Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (AUA/CUA/SUFU) provides comprehensive recommendations for managing recurrent UTIs. This guideline underscores the need for judicious use of antibiotics to prevent inappropriate usage and antibiotic resistance, and it suggests a combination of both antibiotic and non-antibiotic strategies for UTI prevention.

Furthermore, a review of nonantibiotic prophylaxis methods for recurrent UTIs indicates that while low-dose daily or postcoital antimicrobial prophylaxis is effective, the increasing resistance of E. coli to antibiotics has necessitated the exploration of non-antibiotic methods. This review highlights the potential of lactobacilli strains (oral and vaginal) and the oral immunostimulant OM-89 in preventing UTIs

Conclusion:

Recurrent UTIs can be a frustrating and disruptive problem for women. However, by understanding the contributing factors and adopting preventive strategies, women can gain control and significantly reduce the risk of recurrent infections. It's crucial to seek medical advice for diagnosis and appropriate treatment. This combined approach empowers women to manage their health and enjoy a life free from the recurring nightmare of UTIs.

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COVID-19 JN.1

As the holiday season comes to a close, the United States is grappling with a surge in COVID-19 cases, largely driven by JN.1, a new dominant strain. JN.1, which originated from BA.2.86, was first detected in the U.S. in September and by mid-December, it accounted for 44% of the cases, according to data from the Centers for Disease Control and Prevention (CDC). The strain has also been detected in 41 countries.

Each virus possesses unique "spike proteins" that enable it to infect cells and cause specific symptoms. Additional changes or "mutations" in the DNA sequence of these spikes indicate the emergence of a new "variant" of the virus. Variants can differ in terms of their severity, contagion, and response to treatments for symptoms.

The dominance of JN.1 may be due to its potential for increased transmissibility or immune evasion, as observed by the CDC. However, the impact of this strain on winter infections and hospitalizations remains uncertain. In response to the emergence of JN.1, the CDC has updated its estimates and tracking methods, which now include traveler and wastewater surveillance. It's important to note that current vaccines, tests, and treatments remain effective against JN.1. The CDC continues to recommend updated vaccinations and testing for respiratory symptoms. The World Health Organization has classified JN.1 as a "variant of interest" with low additional public health risk.

Factors such as increased holiday travel and waning immunity could potentially contribute to another wave of the disease. JN.1, originating from BA.2.86 within the Omicron lineage, has an additional mutation (L455S) that could potentially evade immune responses. It's crucial to understand that spike proteins and mutations play a significant role in virus variants and that prior infection and vaccination typically train the immune system to respond effectively.

In conclusion, the emergence and prevalence of JN.1, its potential

advantages, and ongoing monitoring are key points of focus in the current COVID-19 landscape. As the situation continues to evolve, the need for continued vigilance remains paramount. Experiencing a COVID-19 infection or getting vaccinated typically enables the immune system's antibodies to fight off the virus when exposed to it again.

Actional Recommendation:

Reports from China suggest that their crematoriums are operating around the clock, particularly for children and the elderly. This underscores the importance of receiving the new COVID-19 vaccine, especially for those who are at a higher risk. It's crucial to stay updated on vaccinations to protect oneself and others, particularly in these challenging times. The vaccine is a key tool in mitigating the risk of severe illness and sudden death from Covid-19. Please consult with a healthcare professional for more personalized information. Stay safe and healthy.

Game of Life:

In the grand game of Hide and Seek, a tale unfolds,

Of a single Consciousness, in itself it molds.

Decided to become two, a division so bold,

The Original Supreme, and the Creative Force, we're told.

She, the Creative Force, in her search so wide,

Keeps on creating, her Lord to find.

The Original Supreme, in her creations, does hide,

An Infinite Consciousness, leaving no trace behind.

Creating and destroying, in her search, she persists,

She is the Perceived, and her Lord, the Perceiver exists.

When she halts her creation, her destruction desists,

And in her quietude, the Perceiver too, into oblivion, slips.

The Perception itself vanishes, leaving no trace,

And thus, the two become one, in an eternal embrace.

In her surrender, she finds grace,

By remaining quiet, she meets her Lord face-to-face.

You, dear reader, in this cosmic play,

Are the Perceived, in the light of day.

In the grand game of Hide and Seek, you sway,

In the dance of Consciousness, you are the ballet.

Recent FDA Medication/Supplement December Recall

Recall Date	Brand Name	Product Description	Recall Reason Description	Company Name
12/13/2023	Himalayan	Tea	Undeclared drugs, Diclofenac and Dexamethasone	WS Global, Inc
12/15/2023	Quaker	Granola Bars and Granola Cereals	Potential for Salmonella contamination	Quaker Oats Company
12/15/2023	Citi Trade Int'l Limited	Notoginseng Formula Special Gout Granule	Undeclared drugs, Diclofenac and Dexamethasone	8th Avenue Pharmacy
12/15/2023	Nature's Wonder	Mung Bean Sprouts	Listeria monocytogenes	Chang Farm
12/22/2023	Americaine	Benzocaine Topical Anesthetic Spray	Presence of benzene	Insight Pharmaceuticals
12/22/2023		Bleomycin for Injection, USP 15 Units Single Dose ONCO-TAIN™ Glass Fliptop Vial	Presence of Glass Particulate Matter	Hospira, Inc
12/26/2023	Hospira	4.2% Sodium bicarbonate injection, 8.4% Sodium bicarbonate injection, Atropine sulfate injection	Presence of Glass Particulate Matter	Hospira, Inc

Case Number 13: Right Hip Replacement and Hypoalbuminemia

What's the probability of 5-year survival for this 64-year-old female?

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.*

By JJ Ulloa

Blair Thompson is a 64-year-old female who has a medical history of intestinal endometriosis with subsequent abdominal hysterectomy in her early 30s and a left hip replacement six months ago, is currently postoperative day one after a right total hip replacement. She presents with severe orthostatic hypotension (blood pressure dropping from 92/54 mmHg when supine to 54/52 mmHg when standing) despite receiving 3 liters of normal saline in 24 hours. Additionally, she is showing profound lower extremity edema with 'elephant feet', a severe pain rating of 12 out of 10 on an analog pain scale of 0-10. She also endorses nausea/vomiting. The only laboratory value checked was serum albumin of 2.1 g/dl [normal 3.5-4.5] after receiving a single infusion of 25 gm albumin. The clinical team is asking about the causes of her vital sign changes that are delaying her discharge; the team is reluctant to work up the patient any further since the current admission is based on elective right hip replacement. The patient was admitted to hospitalist service overnight.

Current Medications:
None

Vitals: 92/54 supine; 54/52 standing, patient's pre-surgery blood pressure had been 120s/80s.

Mortality Data:

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

Age: 64
Sex: .....female
Weight: .....180 pounds
Height: .....5 feet 8 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-nearing 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

Blair's ADL Score 3

What is the 5-year mortality after total hip replacement for this patient?

Overall Short-term Mortality (30-90 days):

Overall: Around 0.3-1%.

Age-specific:

- 40-49 years: 0.1-0.2%
- 50-59 years: 0.2-0.4%
- 60-69 years: 0.4-0.8%
- 70-79 years: 0.8-1.2%
- 80+ years: 1.5-3%

Long-term Mortality (5+ years):

Overall: Approximately equal to or slightly lower than the general population at similar ages.

What about the mortality post-operative hip replacement for someone with albumin less than 3.5 g/dl?

For Short-term Mortality (30-90 days):

Studies generally show an increased risk of short-term mortality in patients with low albumin levels (<3.5 g/dL) compared to those with normal levels.

The magnitude of this increased risk varies across studies, ranging from 2-3 times higher risk to over 5 times higher.

Hypoalbuminemia

Hypoalbuminemia is a condition characterized by low levels of albumin in the blood. In adults, the normal blood albumin concentration typically ranges between 3.5 to 5.0 grams per deciliter (g/dL). Albumin levels below 3.5 g/dL are indicative of hypoalbuminemia.

Albumin, the most abundant plasma protein, accounts for 50% of the total protein content of plasma. It is a single polypeptide chain composed of 585 amino acid residues and has a molecular weight of approximately 66 kilo Daltons. The liver exclusively synthesizes albumin, initially as pre-proalbumin, which is then converted to albumin in the Golgi apparatus from pro-albumin before being secreted by hepatocytes. The liver produces about 10 to 15 grams of albumin per day, 40% of which remains in circulation, with the remaining fraction moving from the intravascular to the interstitial space.

Eye of the Tiger Test for Blair Thompson

*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

Blair's Frailty Score 5

The primary function of albumin is to maintain the oncotic pressure within the

vascular compartments, preventing the movement of fluids into the extravascular spaces. It accounts for around 80% of the colloid osmotic pressure.

Hypoalbuminemia may result from a combination of decreased production, increased loss, or increased catabolism. Decreased production of albumin is rare and usually due to severe liver impairment and advanced cirrhosis. It may also be a result of severe protein malnutrition or under-diagnosed non-alcoholic fatty liver disease (NAFLD) or non-alcoholic steatohepatitis (NASH). While synthetic function may be normal, low albumin can be due to increased catabolism in the presence of severe inflammatory illness.

Due to its large molecular size, renal loss of albumin is minimal in healthy individuals. However, increased losses may occur in conditions such as nephrotic syndrome and chronic kidney disease. Other causes of albumin loss may occur in protein-losing enteropathy, and due to the movement of albumin from the intravascular into the extravascular compartments in the settings of burns and sepsis.

Patients with hypoalbuminemia may present with pitting peripheral edema in the lower extremity and central pulmonary effusions and anasarca in severe cases. They may also complain of fatigue, weakness, and signs and symptoms of nutritional deficiencies, as seen in conditions like Celiac disease or iron deficiency.

Conclusion and Recommendations

While there are no reported case reports of hypoalbuminemia in intestinal endometriosis, it cannot be ruled out since it is an inflammatory condition and potentially may cause catabolism of the albumin. For the management of current orthostatic hypotension, fluid resuscitation of the patient with 25% albumin is recommended, depending on the volume status of the patient. Further infusion of normal saline is NOT recommended due to the fluid movement from the intravascular to the extravascular compartment, as the patient is already exhibiting signs of lower extremity ascites. Administering any more saline infusion may likely delay the discharge of the patient. Further workup of hypoalbuminemia is strongly recommended post-discharge, if not during the current hospital stay.

In patients undergoing hip fracture surgery, preoperative hypoalbuminemia is linked to poor short-term outcomes, lower scores in functional recovery, and quality-of-life assessments post-surgery. A broad analysis across major surgeries has revealed that hypoalbuminemia independently predicts overall complications in a significant number of procedures, as well as 30-day mortality in others. Therefore, it's crucial to prioritize improving nutritional status, particularly addressing hypo-albuminemia, through further workup with medical specialists and through dietary changes or supplements to boost protein intake. Regular checks of serum albumin levels should be included in

postoperative follow-ups for tracking recovery progress and identifying any potential complications early. Engaging in a tailored rehabilitation program specifically designed for hip surgery patients can aid in regaining mobility and function. Encouraging early mobilization post-surgery has been associated with reduced rates of complications such as delirium. Given the patient's complex medical history, including intestinal endometriosis and hypoalbuminemia, close medical supervision post-surgery is critical. This involves regular follow-ups with healthcare providers to monitor for any signs of complications, such as infection, wound healing issues, or exacerbation of endometriosis symptoms.

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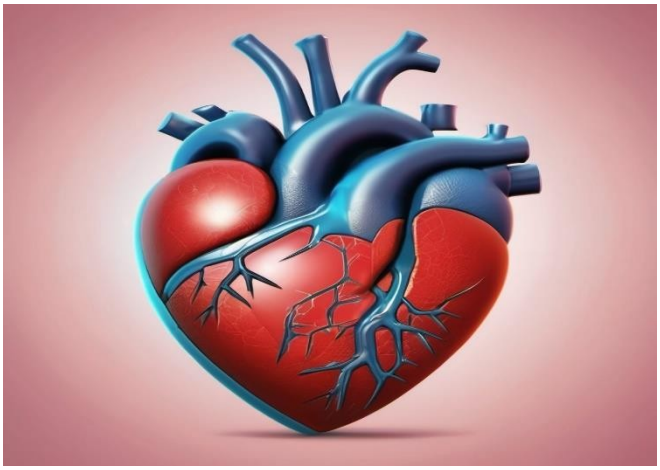
The Oral Microbiome: A Hidden Player in Cardiovascular Disease?

By Allison Nguyen

The idea that bacteria in our mouths might influence our heart health may seem surprising. However, recent research suggests that the oral microbiome, the community of bacteria living in our mouths, may play a significant role in the development of cardiovascular disease (CVD).



CVD, encompassing conditions like heart disease and stroke, remains a major global health concern. While traditional risk factors like smoking, high blood pressure, and diabetes are well-established, the emerging role of the oral microbiome adds a new dimension to our understanding of this complex disease. The bacteria living in your mouth might hold the key to unlocking new strategies to prevent heart disease.

Dysbiosis: The Link Between Oral Microbes and CVD

A healthy oral microbiome is characterized by a balanced diversity of bacteria. However, certain imbalances, known as dysbiosis, may contribute to various health problems, including CVD.

Dysbiosis can lead to the overgrowth of specific bacteria, some of which produce inflammatory molecules and toxins that can enter the bloodstream. These molecules can damage the endothelium, the inner lining of blood vessels, and contribute to the formation of atherosclerotic plaques, the hallmark of CVD.

The Evidence for a Connection

Several studies have highlighted the potential link between the oral microbiome and CVD. Research has shown that individuals with CVD have a different oral microbiome composition compared to those without CVD. Specific bacteria, such as Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans, are associated with an increased risk of CVD. Certain oral hygiene practices, like brushing and flossing, may help protect against CVD by promoting a healthy oral microbiome.

Potential Mechanisms

While the exact mechanisms by which the oral microbiome influences CVD are still under investigation, several potential pathways have been proposed:

Direct invasion: Oral bacteria can potentially enter the bloodstream

through inflamed gums or oral wounds and directly contribute to the development of atherosclerotic plaques.

Inflammatory response: Certain oral bacteria can trigger an inflammatory response in the body, which can damage blood vessels and contribute to CVD.

TMAO production: Some oral bacteria produce a molecule called trimethylamine N-oxide (TMAO), which has been linked to an increased risk of CVD.

Gut-microbiota interaction: The oral and gut microbiomes are interconnected, and disturbances in the oral microbiome may impact the gut microbiome, potentially influencing CVD risk.

The Future of Oral Health for Heart Health

While further research is needed to fully understand the complex relationship between the oral microbiome and CVD, the current evidence suggests a promising direction for preventative strategies.

By maintaining a healthy oral microbiome through good oral hygiene practices, we may be able to reduce our risk of developing CVD. Additionally, future research may pave the way for microbiome-based interventions, such as probiotics or targeted therapies, to specifically prevent CVD by promoting a healthy oral microbial community.

In conclusion, the oral microbiome is emerging as a potential player in the complex puzzle of cardiovascular disease. By unraveling the intricate connections between our oral health and our heart health, we may be able to develop new strategies for preventing and treating this devastating disease.

Actionable Plan for Maintaining a Healthy Oral Microbiome for Heart Health

While research is ongoing, here are some actionable steps you can take to improve your oral health and potentially reduce your risk of cardiovascular disease:

1. Maintain good oral hygiene:

Brush your teeth twice a day with fluoride toothpaste.

Floss daily to remove plaque and bacteria between your teeth.

Use a tongue scraper to remove bacteria from your tongue.

Schedule regular dental checkups and cleanings, typically every six months.

2. Choose a healthy diet:

Limit sugary and processed foods, which can feed harmful bacteria.

Eat plenty of fruits, vegetables, and whole grains, which provide beneficial nutrients for your oral microbiome.

Consider incorporating foods rich in probiotics, such as yogurt, kimchi, and sauerkraut, to promote a healthy balance of bacteria in your gut, which may indirectly influence your oral microbiome.

Drink plenty of water to stay hydrated and promote saliva production, which helps wash away bacteria.

3. Manage stress:

Chronic stress can negatively impact your immune system and oral health.

Practice stress-management techniques like yoga, meditation, or deep breathing.

Get enough sleep, which is essential for overall health and well-being.

4. Quit smoking and excessive alcohol consumption:

Smoking and excessive alcohol consumption can damage your gums and increase inflammation, both of which contribute to dysbiosis.

Quitting smoking and reducing alcohol intake can significantly improve your oral health and overall health.

5. Talk to your dentist about your concerns:

Discuss your risk factors for cardiovascular disease with your dentist.

Ask about specific recommendations for maintaining a healthy oral microbiome based on your individual needs.

By incorporating these actionable steps into your daily routine, you can take control of your oral health and potentially reduce your risk of cardiovascular disease. Remember, a healthy mouth is a healthy body!

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MrGineaPig's Core Long-Term Trial

LONG-TERM TRIAL	SUPPLEMENT	START DATE	
Muscle Weakness	Hyaloronic 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

Risk Factors for Premature or Unexpected Death

Immediate Risks	Internal Threat	External Threat	Other Topics
1. COVID-19 JN.1 2. RSV 3. Flu 4. Fentanyl death 5. Drug shortages 6. Gun violence	1. Poor diet 2. Smoking 3. High blood pressure 4. Obesity 5. Sedentary Lifestyle 6. Suicide	1. War 2. Microplastics 3. FDA recalls 4. Meat preservatives 5. Trans fatty acid 6. Pesticides 7. Heavy metals	1. Shortness of breath 2. Back pain 3. Hemorrhoids 4. Incontinence 5. Joint swelling 6. Fibromyalgia 7. Health Insurance

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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