Flourishing

The Ultimate Goal of Natural Health

.. and how the microbiome gives us insight into thriving

Welcome

About Me …

INNOVATIVE THINKING AND ACTION

Transforming Health

We envision a world where health is valued as our most basic and essential asset and where people, places, and the planet flourish for the benefit of all.

Our Mission


Seekers in Planetary Health
Nova Institute Fellows, Scholars and Faculty
Baltimore October 2024

PLANETARY HEALTH ALLIANCE

EDUCATION & RESEARCH ACTIONS & PLANS GET INVOLVED ABOUT PHA

BECOME A MEMBER >

The Earthrise Community

Transforming Planetary Consciousness for a Flourishing Future

JOIN THE COMMUNITY >

THE POWER OF THE GLOBAL ALLIANCE

495+	23K	8	56
Member organizations from 80 countries committed to understanding and addressing global environmental change and its health impacts	Newsletter subscribers receiving a monthly digest of recent publications, news, events, and job opportunities relevant to the Planetary Health community	Regional Hubs are locally rooted communities dedicated to driving progress in Planetary Health through collaboration and local action	Planetary Health Campus Ambassadors from 30 countries are leading efforts to engage their communities and foster cross-disciplinary collaborations on Planetary Health initiatives
BECOME A MEMBER ›	SUBSCRIBE ›	CONNECT WITH A HUB ›	LEARN ABOUT THE PROGRAM ›

Our journey into the Universe turned our awareness inward—to our own destiny and

challenges MDPI

Viewpoint

The Earthrise Community: Transforming Planetary Consciousness for a Flourishing Future

Susan L. Prescott[1,2*], Aterah Nusrat[3], Richard Scott[2], David Nelson[2], Heidi Honegger Rogers[4], Mona S. El-Sherbini[5], Knellee Bisram[6], Yvonne Vizina[7], Sara L. Warber[8], David Webb[9]

1. Medical School, University of Western Australia, Nedlands, WA 6009, Australia
2. Nova Institute for Health, Baltimore, MD 21231, USA; rscott@novainstituteforhealth.org
3. Osher Center, Harvard Medical School, Boston, MA 02215, USA; anusrat1@mgb.org
4. College of Nursing, University of New Mexico, Albuquerque, NM 87131, USA; HRogers1@salud.unm.edu
5. Faculty of Medicine, Cairo University, Cairo 11562, Egypt; monas.elsherbini@kasralainy.edu.eg
6. AHAM Education, Tamarac, Florida, 33321, USA; knellee@ahameducation.org
7. Faculty of Education, University of Winnipeg, Manitoba R3B 2R6, Canada; y.vizina@uwinnipeg.ca
8. Department of Family Medicine, University of Michigan, MI 48109, USA; swarber@med.umich.edu
9. Business School, University of Western Australia, Nedlands, WA 6009, Australia; dave.webb@uwa.edu.au

* Correspondence: susan.prescott@uwa.edu.au

Abstract: In the face of the growing challenges of the Anthropocene—marked by climate change, biodiversity loss, and increasing rates of disease and despair—this paper explores the need for holistic solutions that integrate cultural and spiritual transformation as essential dimensions of change. Recognizing that the interconnected challenges to planetary health stem from destructive socio-political agendas and unhealthy economic structures, we underscore the importance of worldviews and value systems as root causes of social and ecological injustices. Solutions require an understanding of the complex interdependence of systems, fostering mutualistic mindsets, and healing the 'relationship crisis' between humans and the natural world by cultivating a deeper level of consciousness. In response to these urgent needs, we describe Earthrise—a community of contemplative practice led by the Nova Institute for Health in collaboration with the Planetary Health Alliance—dedicated to spiritual and cultural transformation in the face of today's complex crises. Through intentional spiritual relationships—with ourselves, each other, and the natural world—our community emphasizes the power of narrative co-creation in building social cohesion and collective action for environmental stewardship. Our activities focus on developing cultural capacities and self-awareness as essential foundations for fair and sustainable social transformation. By integrating diverse perspectives, including ancestral wisdom and Indigenous knowledge systems, we enrich worldviews and deepen our connection to the planet. The Earthrise community seeks to cultivate a sense of belonging, nurturing the meaningful relationships that foster compassion and care. Central to our approach is the use of creative emergence, leveraging the arts to inspire change and catalyze new paradigms. Through this exploration of interconnected themes, we contend that spiritual and cultural transformation is vital to advancing a thriving future, where human flourishing and planetary health are understood as inseparable and interconnected goals.

Citation: To be added by editorial staff during production.

Academic Editor: Firstname Last-name

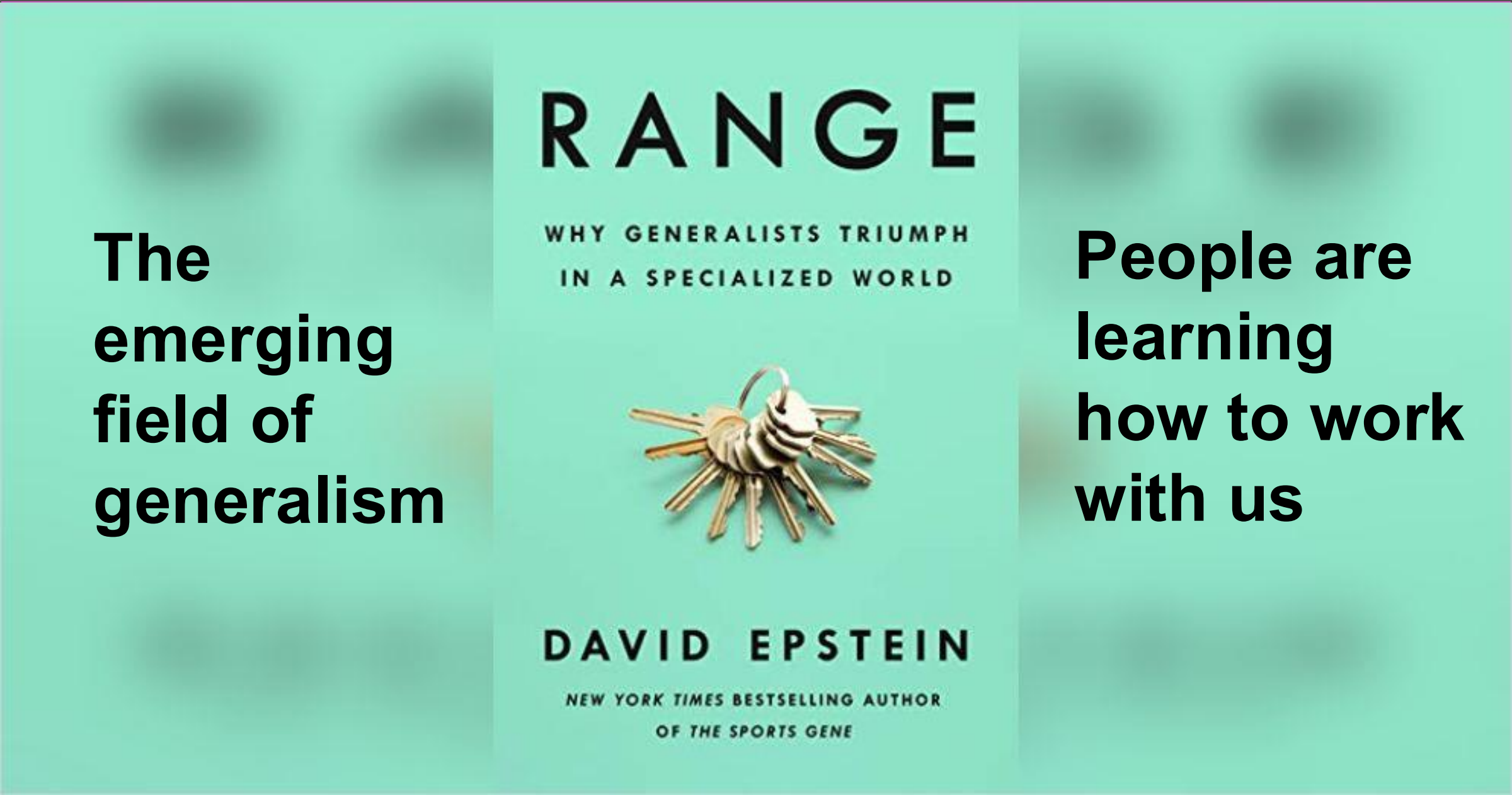
Received: date

HEALTH FIRST®

insideU

Natural Health Food & Supplements

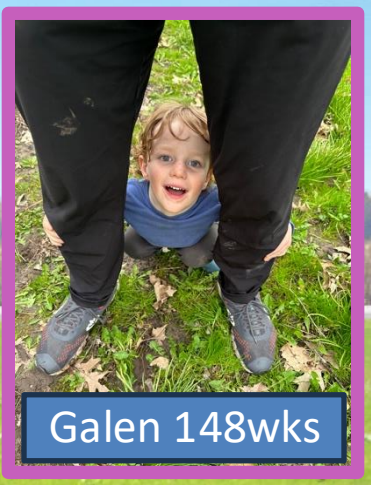
The emerging field of generalism



People are learning how to work with us

Why I am here ..

Logan 9wks



Galen 148wks

We want to leave the world a better place than when we found it …

Let’s get started ..

Human Flourishing: The Science of Thriving

Harvard's Human Flourishing Program conceptualizes flourishing as a state in which "all aspects of a person's life are good," providing a multidimensional framework for measuring and promoting wellbeing beyond the absence of illness.

The Five Domains of Human Flourishing

1. **Happiness & Life Satisfaction** Encompasses positive emotions, contentment, and overall satisfaction with one's life trajectory
2. **Mental & Physical Health** Covers both psychological wellbeing (e.g., low distress, high vitality) and the absence of debilitating physical disease
3. **Meaning & Purpose** Reflects having goals, direction, and a sense of meaning that motivates daily life and long-term aspirations
4. **Character & Virtue** Includes traits such as honesty, compassion, self-control, and generosity—qualities that foster moral integrity and social trust
5. **Close Social Relationships** Captures the breadth and depth of supportive ties with family, friends, and community, which buffer stress and enhance resilience

Components of Flourishing

PERMA Model

Positive emotions, engagement, relationships, meaning, accomplishment

Integrated Health

Physical, mental and social health integration

Purpose & Growth

Self-motivation and commitment to personal development

Supportive Communities

There is magic is the power of social connections

Health Beyond Absence of Disease

Traditional Model Limitations

Health as "no illness" misses vitality, resilience, purpose

From Surviving

From "just getting by"

To Thriving

Exuberant vitality

Almost childlike

Allostatic Load & Environmental Burden

Allostatic Load

Cumulative stress wear on neuroendocrine systems

Exposome Impact

Total environmental exposures from conception onward

Flourishing Strategy

Mitigate stress burden, reduce toxin load

Dysbiotic Drift & Healthspan Extension

1

Modern Challenges

Antibiotics, processed foods erode microbial diversity

2

Chronic Inflammation

Low-grade inflammation accelerates aging processes

3

Counteract Strategy

Prebiotics, fermented foods, nature exposure, etc..

4

Quality Lifespan

Preserve microbiome for extended healthspan

Pathways to Flourishing

Individual Level

Personal commitment, self-belief, health knowledge

Community Level

Support systems, resources, institutional backing

Microbiome Pathway

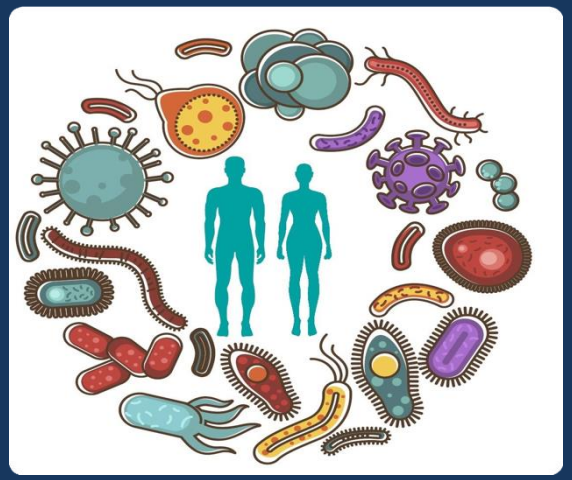
Gut-brain axis influences mood, cognition, immunity

Research Results

Good nutrition, movement, sleep, social connections, nature exposure

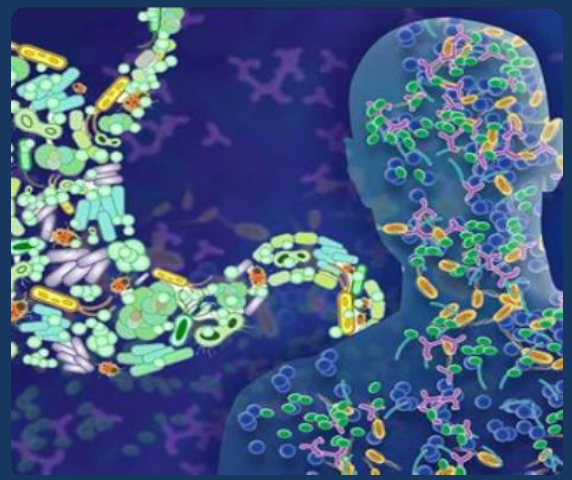
About the microbiome

What is the Human Microbiome?



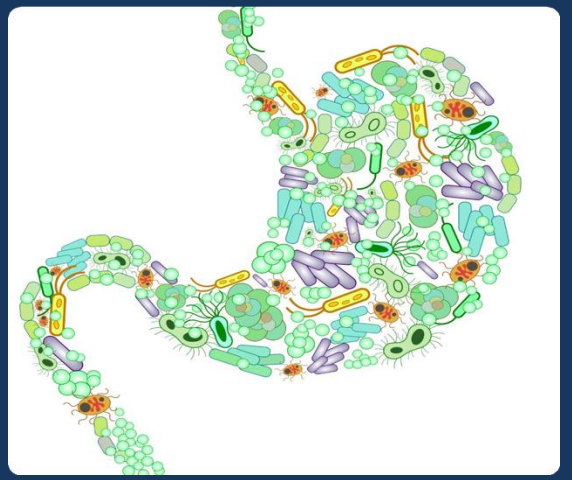
A Community Together

The gut houses trillions of microorganisms that live in harmony with each other and the human host.



The Microbiome "Organ"

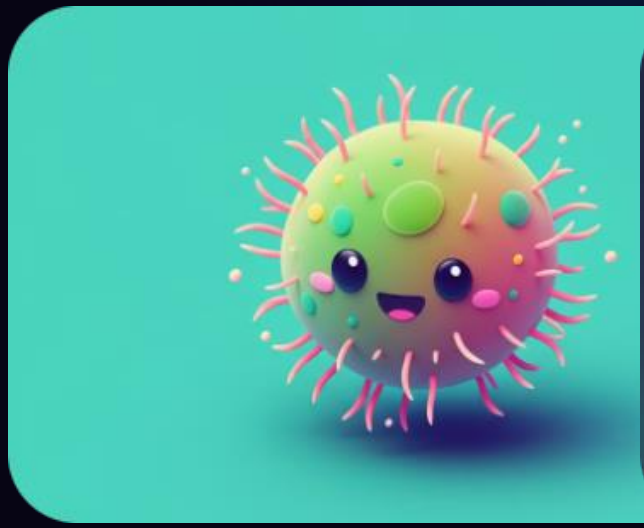
The microbiome includes the microorganisms, their genes, and various metabolites.



Microbiome Diversity

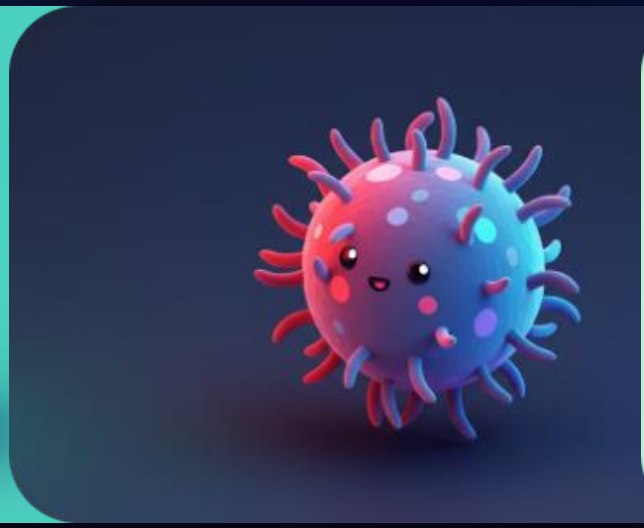
Each individual's microbiome is unique and diverse with varying effects on human health.

Welcome to your body and gut's Microbial "City"
The Community on you and inside of you ..



Microbial Citizens

Each microbe has a role to play.



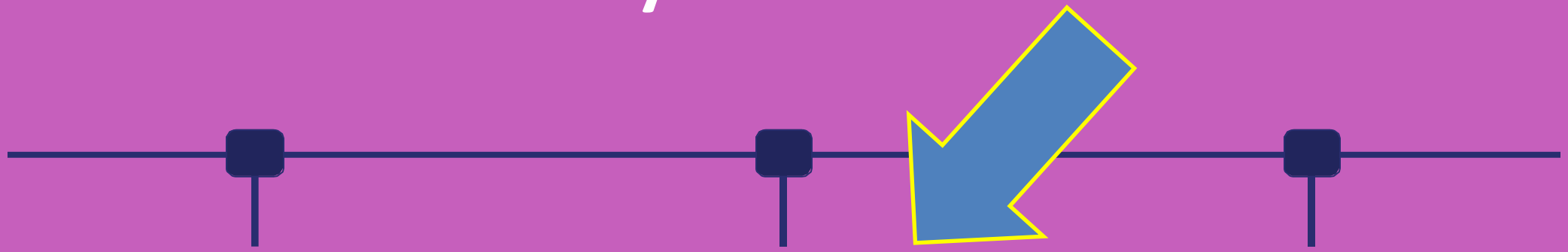
A Complex Ecosystem

The city is always changing.

Thriving Metropolis

Our gut is a dynamic community.

This community does stuff …



Digestion and Nutrient Absorption

Brain Function

Immune System Modulation

Flourishing

Emotional Regulation

Resiliency

Fetal & Infant Development

Social Integration

* kiss *

Constantly Changing

Good Quality Communication is VITAL

1

Communication Highway

Gut microbiome talks to almost everything, especially the brain.

2

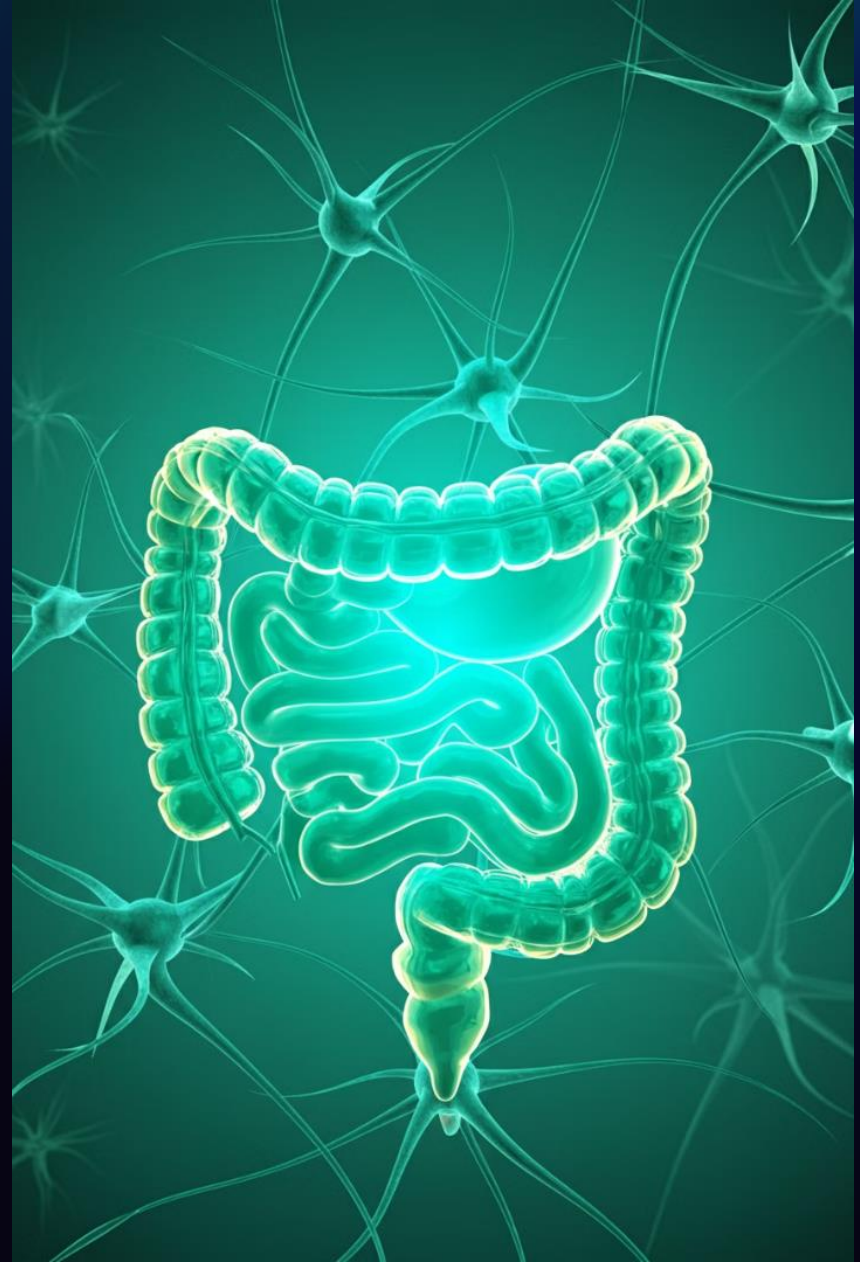
Bidirectional Pathway

The communication influences gut microbes too.

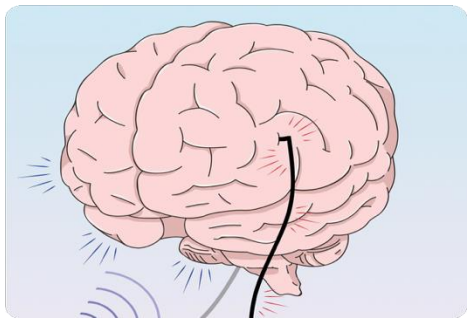
3

Dynamic Relationship

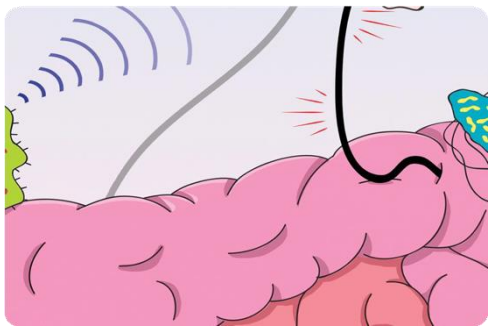
Constant dialogue and feedback.



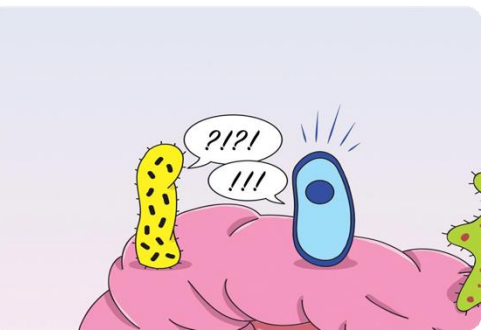
How “good” is the communication?



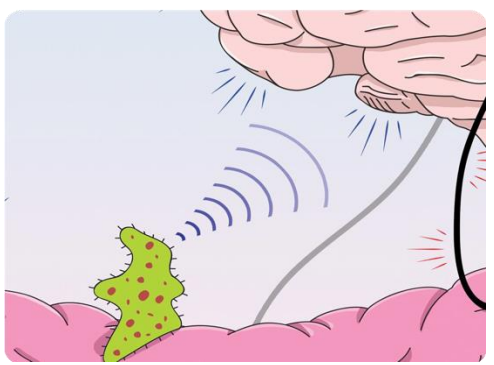
brain with headphones (vagus)



nerves (wires) connect to gut

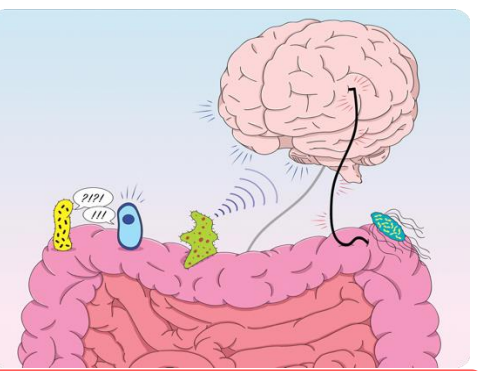


microbes talk to each other



microbes talk to the brain

brain talks to bacteria



conversations inside of you

So .. what causes chaos
in the microbiome?

.. and by proxy erodes flourishing

Threats to Microbiome Biodiversity

1. **Antibiotics**

   Can wipe out beneficial bacteria.

2. **Disrupted Rhythms**

   Inconsistent sleep patterns affect microbiome.

3. **Ultra-Processed Foods**

   Limited nutrients, harmful additives disrupt balance.

4. **Stress**

   Chronic stress can negatively impact gut health.

Factors Disrupting the Human Microbiome

Poor Diet

Processed foods, artificial sweeteners, and nutrient-poor foods adversely affect gut health.

Stress

Stress leads to increased levels of harmful bacteria and reduced numbers of beneficial bacteria in the gut.

Climate Change

Environmental changes imbalanced soil microbiome, depriving crops and vegetables of vitality and nutrient density.

Additional Disruptors of the Human Microbiome

Pollution

Air pollution, water pollution, and soil contamination have been shown to alter the composition of the human gut microbiome, leading to increased risk of disease.

Urbanism

Living in densely populated urban areas is linked to altered microbial diversity in the gut, likely due to factors such as lifestyle changes and exposure to pollutants.

Antibiotics

Antibiotics have long been known to disrupt the gut microbiome by killing off both harmful and beneficial bacteria, leading to dysbiosis and other negative health effects.

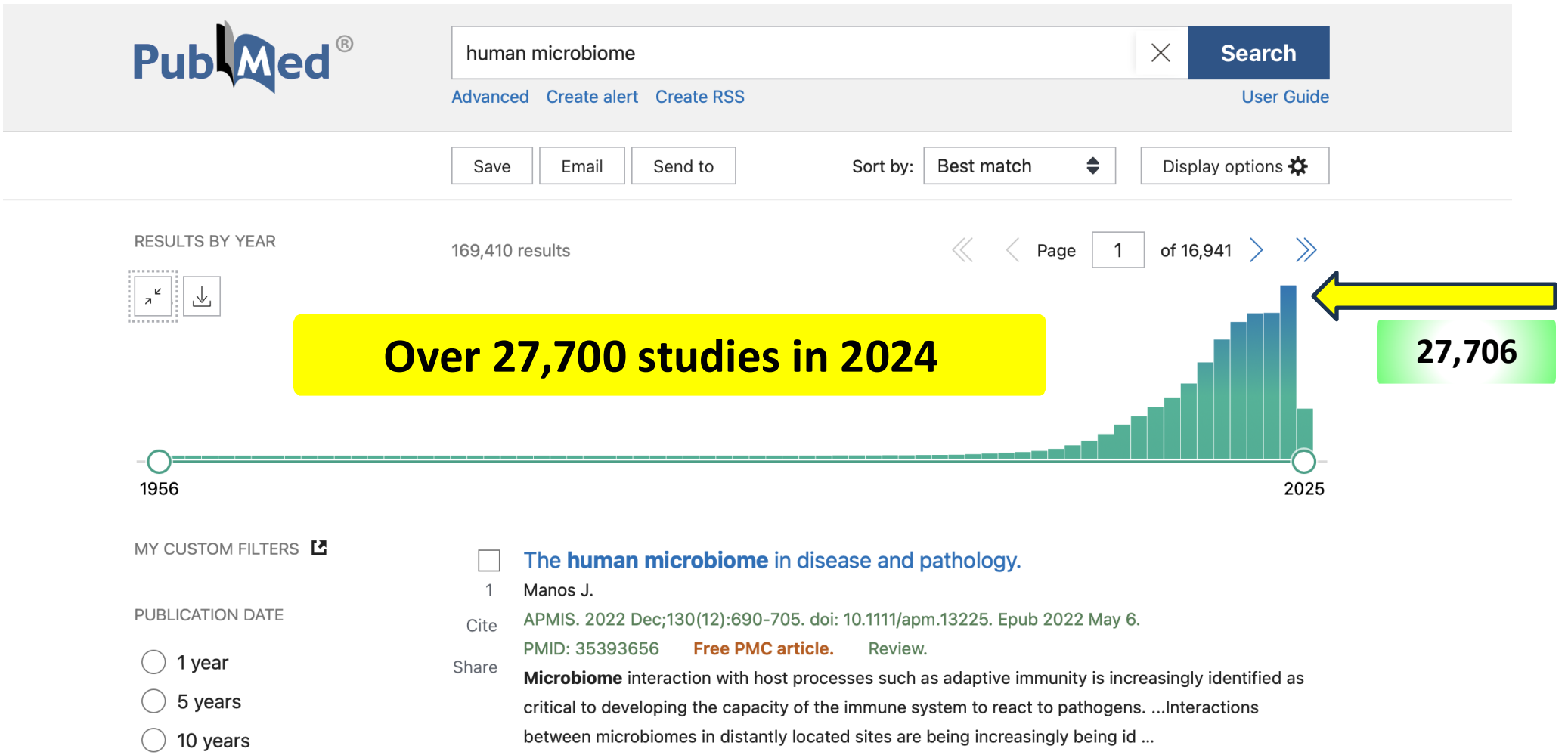
Put another way …

The modern world is **a full-on assault** on our microbiome. Period.

And, frankly, it is hard to flourish with a broken microbiome.

The Story Continues ..

Human Microbiome studies - 27,000+ in 2024



1/3 of ALL the studies on the Human Microbiome have been done in the …. AND…

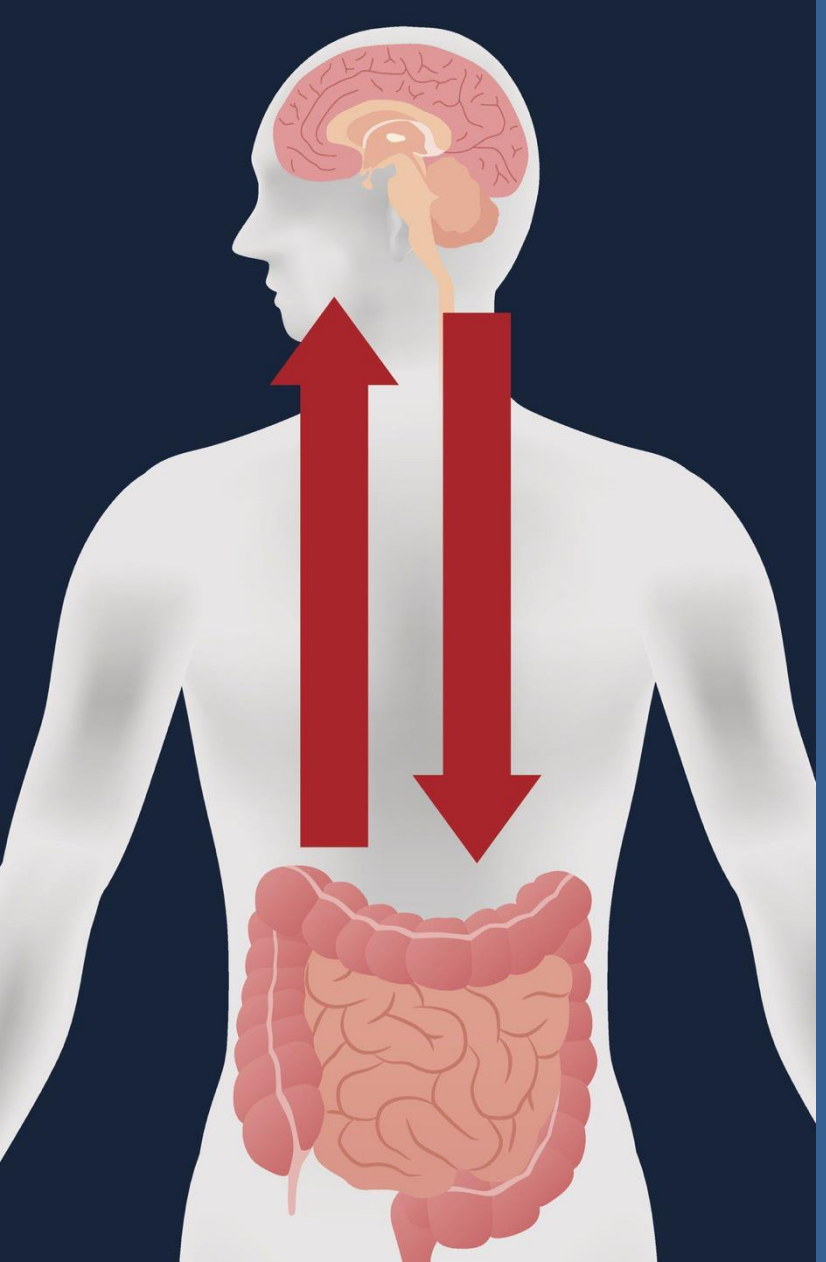
Last Two Years

60% of ALL the studies have been done in the …

Last Four Years

This is a wow moment.
It is really okay to truly be in awe of just how big this microbiome story is getting …

Let's take a quick closer look ..



The Gut's Role in Disease and Mortality

1

Gut-Brain Axis (neuro + GI)

Microbes secrete signaling molecules that influence brain physiology and behavior.

- NEW → GBA Disorders NOT just GI
- Every GI has brain involvement

2

Disease and Comorbidities

Disrupted gut microbial balance is associated with several diseases like obesity, type 2 diabetes, anxiety disorders, cancer, autoimmunity, seasonal allergies, genetic disorders (ALS, etc), colorectal cancer, neurodivergent disorders, etc..

3

Mortality

Studies show associations between microbiome disturbances and **all-cause mortality**.

Nourishing the Microbial City

The Community of Microbes need resources to thrive.

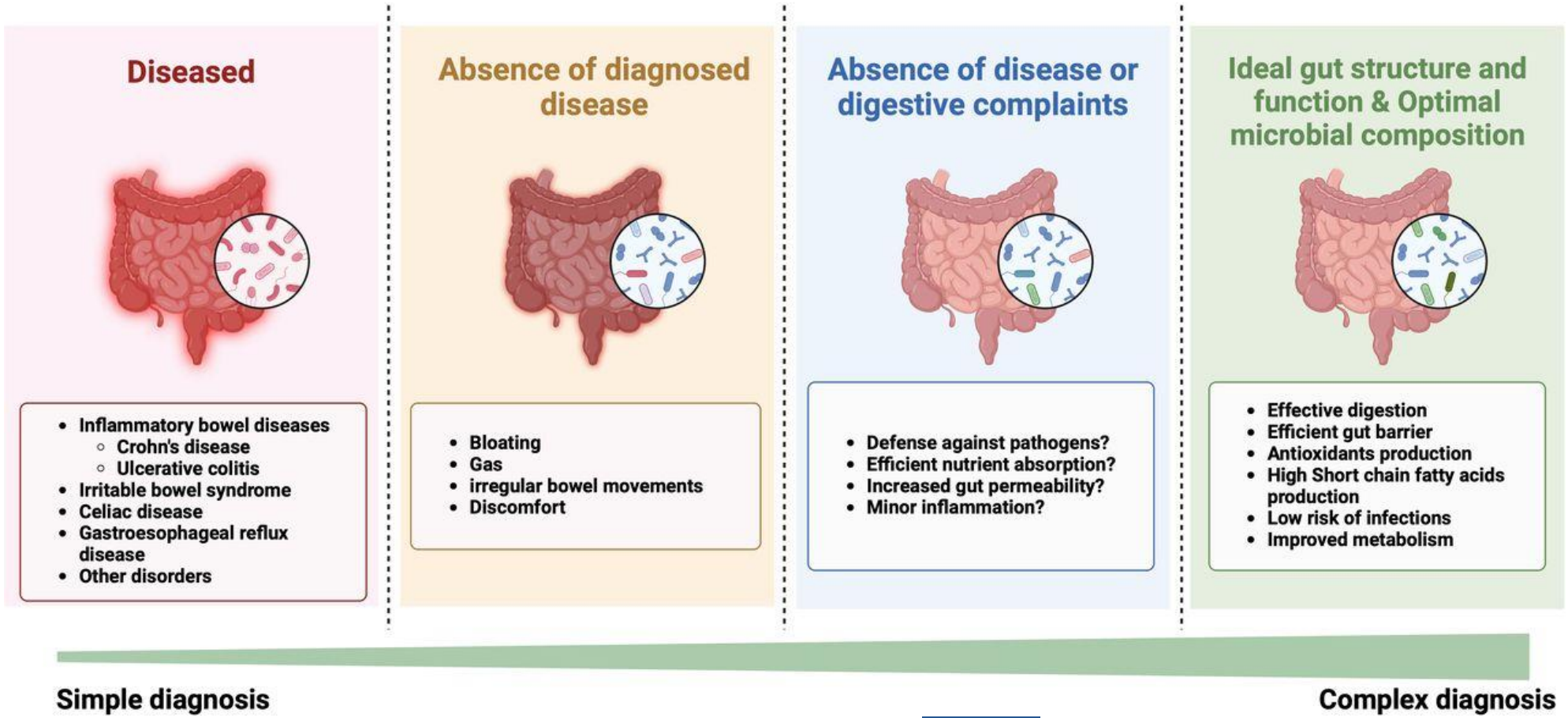
Prebiotics, probiotics, polyphenols, and fiber are key.
Along with micronutrients like vitamins and minerals ..

These compounds fuel microbial growth, communication, and beneficial postbiotics.

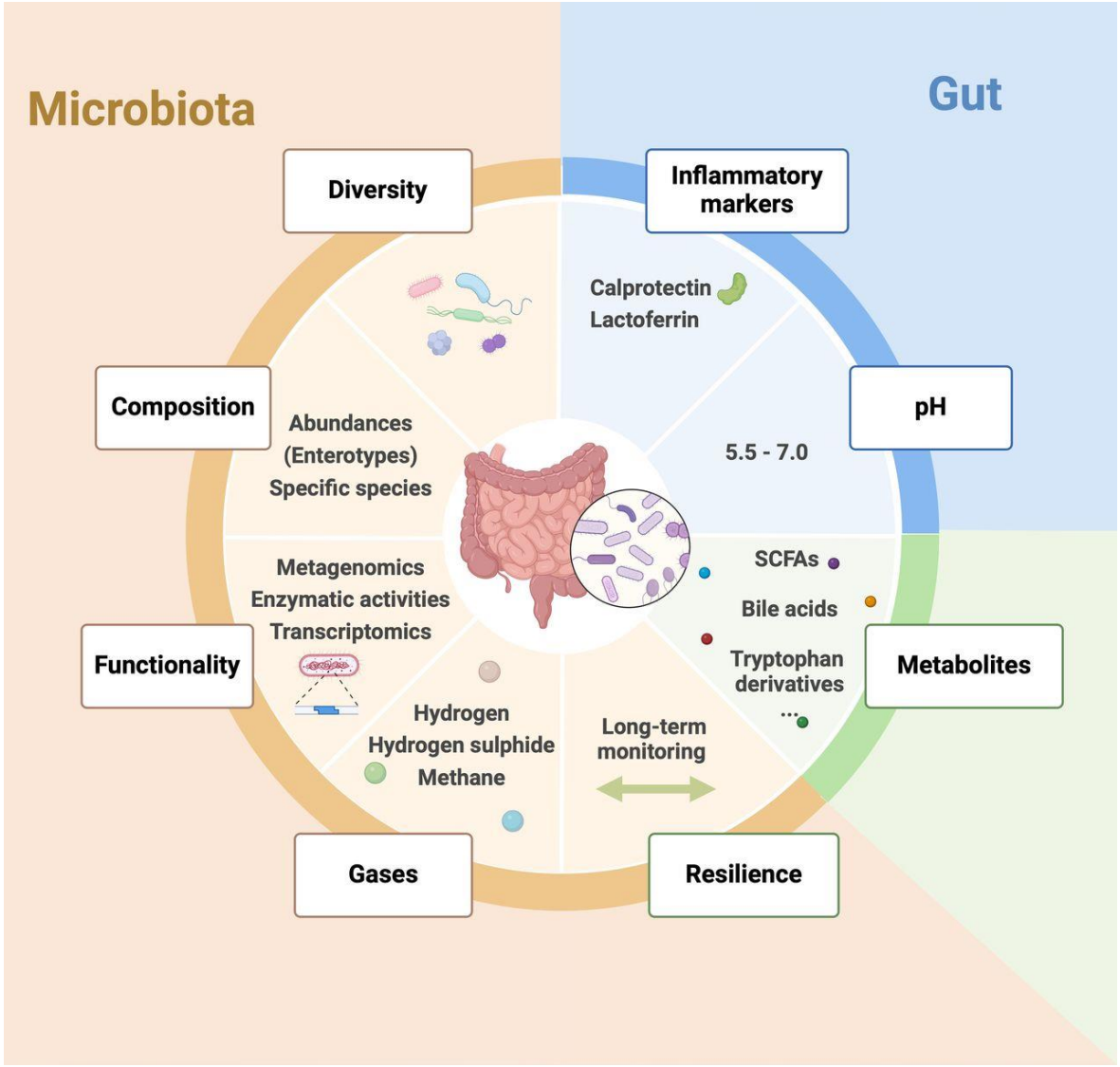
The Science Says ....

Spectrum of gut health from diseased to optimal gut functionality.

Healthy gut: where do we put the line?



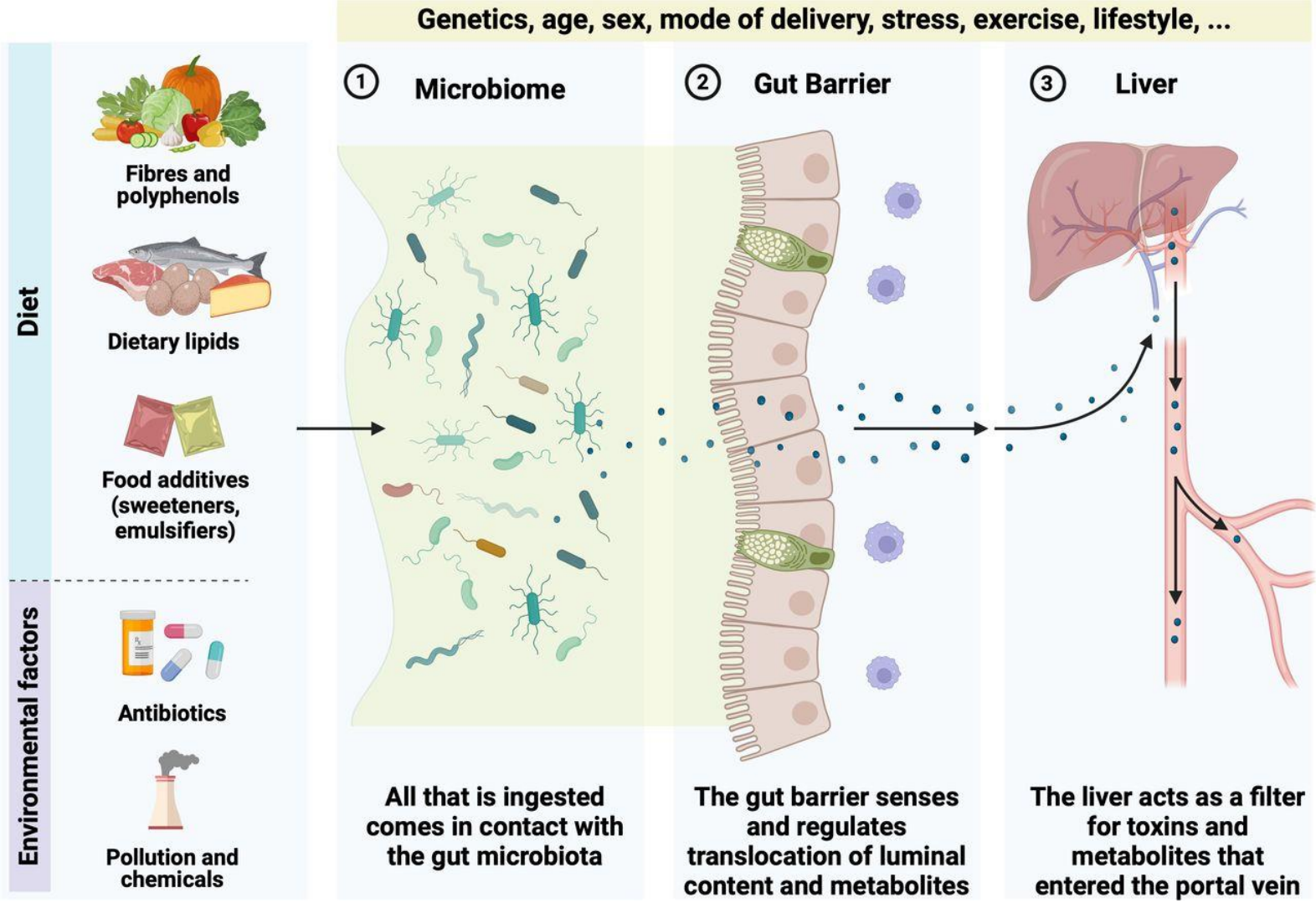
Matthias Van Hul et al. Gut 2024;73:1893-1908



Potential markers of a healthy gut microbiota.

GUT

Matthias Van Hul et al. Gut 2024;73:1893-1908



The three ‘lines of defence’

GUT

Matthias Van Hul et al. Gut 2024;73:1893-1908

What is the secret to a “Flourishing Gut”

.. so we can also flourish

Pre, Pro, and Post → biotics

Prebiotics

Non-digestible components of food that selectively promote the growth or activity of beneficial gut bacteria.

Probiotics

Live microorganisms that when consumed, confer a health benefit on the host.

Postbiotics

Small molecules produced by the metabolism of probiotics with components useful for human health.

The Importance of Prebiotics

What are Prebiotics?

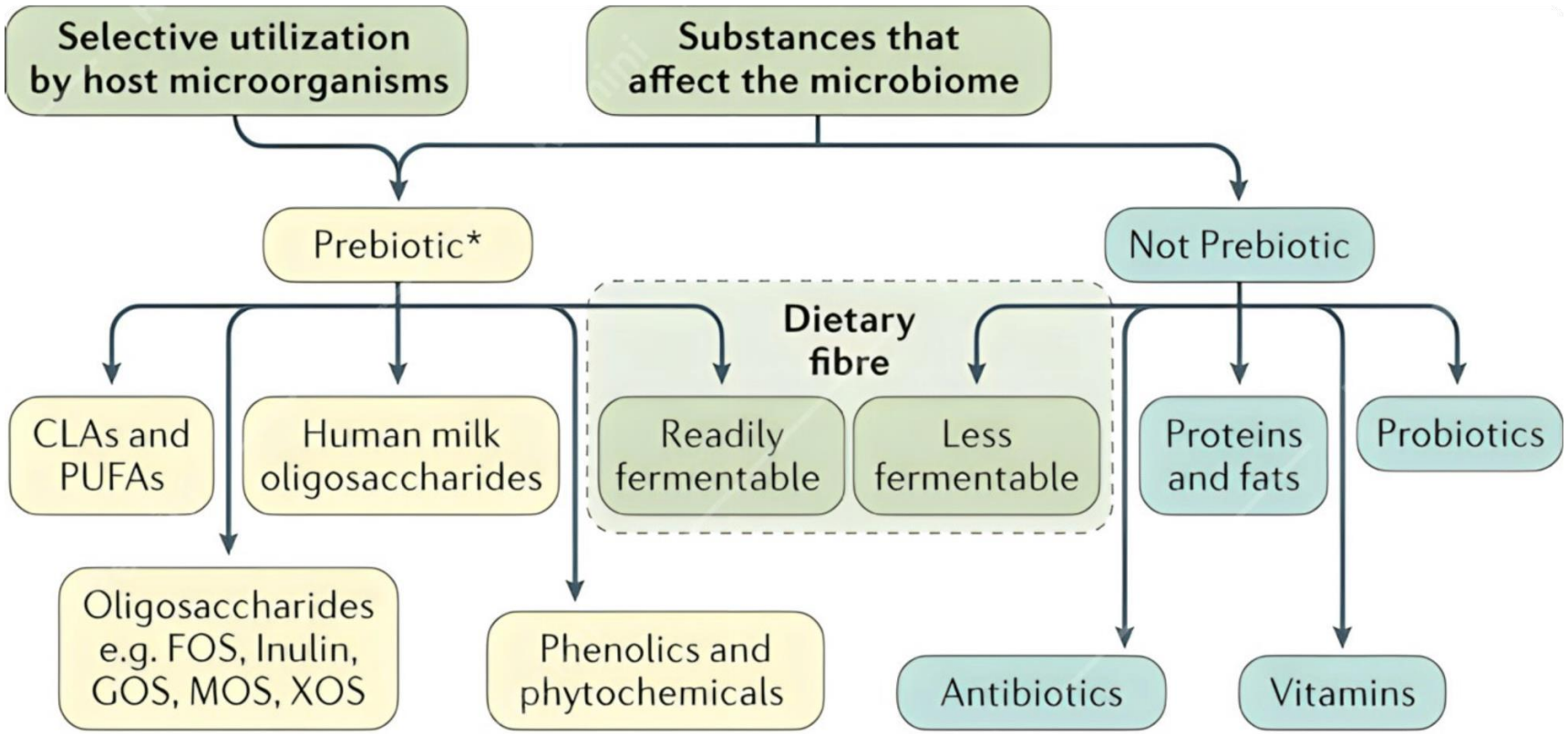
Prebiotics are part of real food. They serve as nourishment and raw materials for the beneficial bacteria in the gut, helping them grow and thrive.

Examples of Prebiotics

- Polyphenols
- Fiber (readily and less fermentable)
- Omega-3 and PUFA
- HMOs
- FOS/GOS

Research has shown that prebiotics can improve digestive health, boost the immune system, and even reduce the risk of certain chronic diseases. By incorporating prebiotic-rich foods into your diet, you **greatly increase the biodiversity of the gut**.

Prebiotics Definition - 2017 - ISA



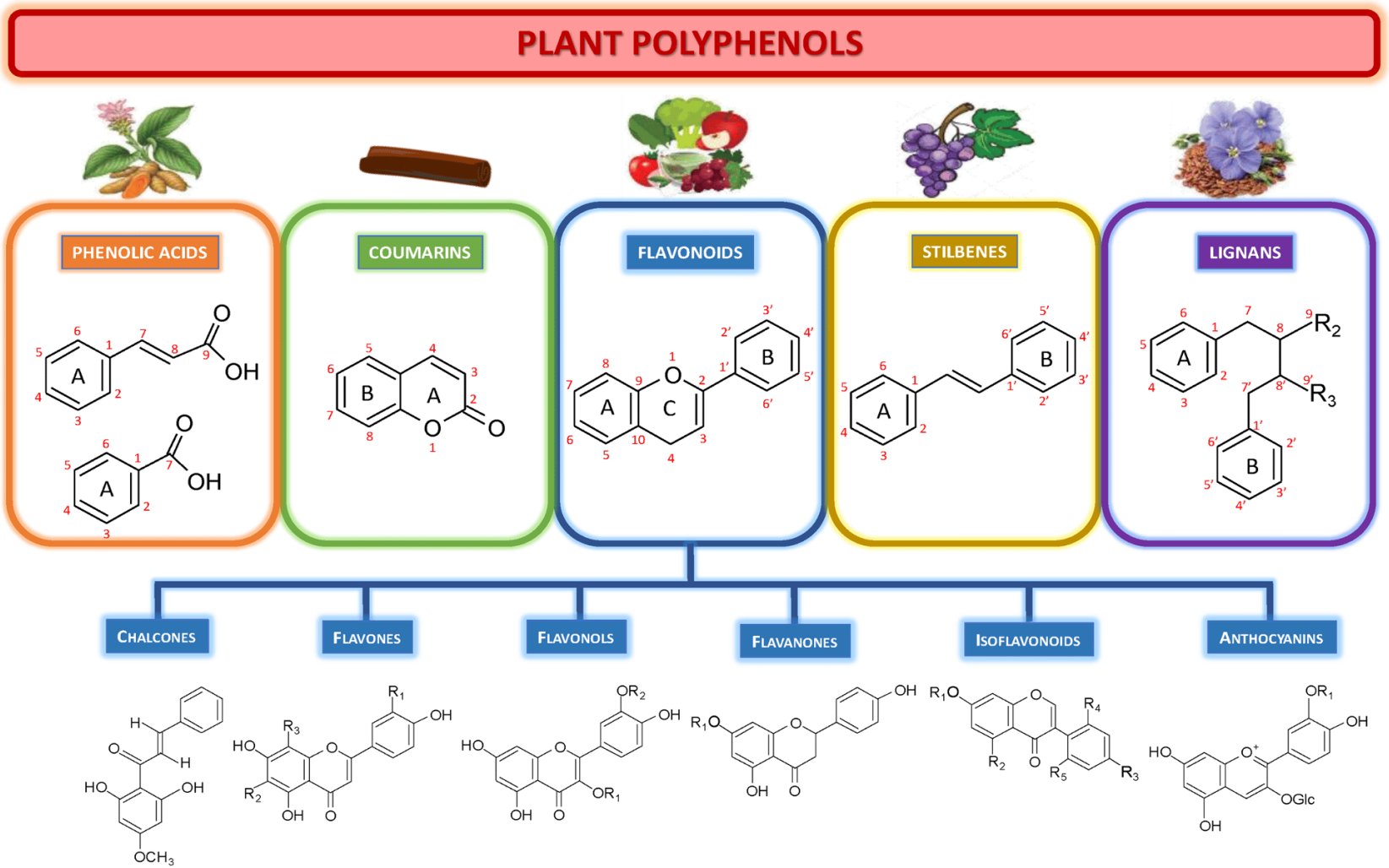
Gibson, et al, 2017

Nature Reviews | Gastroenterology & Hepatology

Prebiotic Recap

1) Polyphenols
2) Phytonutrients
3) Fibres
4) Omega-3s / Fish Oil


Flourishing Comes in Many Colours



Medicines 2020, 7(5), 26; https://doi.org/10.3390/medicines7050026

So what happens when you don't get enough Prebiotics? (Polys, Fibre, Omega-3)

What is coming next isn’t meant to be scary .. it is to show that **WE can make a difference!**

So, what the *bleep* is happening?


UPF is happening .. that’s what

It’s all about the presence of plants ..

(and the absence of UPF)

What have we been missing about food?

* and the probiotics on plants

Macros:

Protein
Fats
Carbs

Micros:

Vitamins
Minerals
Water

Polyphenols:*

Information
Raw materials

Cell Metabolism | Supports open access | Submit

CLINICAL AND TRANSLATIONAL REPORT | VOLUME 30, ISSUE 1, P67-77.E3, JULY 02, 2019

Ultra-Processed Diets Cause Excess Calorie Intake and Weight Gain: An Inpatient Randomized Controlled Trial of *Ad Libitum* Food Intake

Kevin D. Hall [5] • Alexis Ayuketah • Robert Brychta • ... Peter J. Walter • Shanna Yang • Megan Zhou •
Show all authors • Show footnotes

Open Archive • Published: May 16, 2019 • DOI: https://doi.org/10.1016/j.cmet.2019.05.008 •
Check for updates

Highlights

- 20 inpatient adults received ultra-processed and unprocessed diets for 14 days each
- Diets were matched for presented calories, sugar, fat, fiber, and macronutrients
- *Ad libitum* intake was ~500 kcal/day more on the ultra-processed versus unprocessed diet

Highlights

- 20 inpatient adults received ultra-processed and unprocessed diets for 14 days each
- Diets were matched for presented calories, sugar, fat, fiber, and macronutrients
- *Ad libitum* intake was ~500 kcal/day more on the ultra-processed versus unprocessed diet
- Body weight changes were highly correlated with diet differences in energy intake

First official dietary rec flavanols revealed

By Nikki Hancocks
19-Oct-2022 - Last updated on 19-Oct-2022 at 12:26 GMT

The Academy of Nutrition and Dietetics has issued the first ever authoritative dietary recommendation on flavanols.

The recommendation of 400 to 600 milligrams of flavanols per day to support cardiometabolic health aims to address the global health challenge around cardiovascular diseases - the leading causes of sickness and death globally.

Dr. Catherine Kwik-Uribe, VP scientific & regulatory affairs, applied science & nutrition, Mars Edge, says the recommendation, issued last week (October 11), is an exciting one for the industry.

"For over 20 years Mars scientists and others have been researching flavanols and how they can benefit human health. This recommendation is a significant milestone in this emerging area of nutrition.

400 - 600 mg / day

"We hope that this recommendation prompts greater interest and awareness – from health professionals to consumers – on the significant role that flavanols can play in health and nutrition and furthers conversations that may soon lead to full inclusion into worldwide dietary guidelines."

CVD now .. but more is coming!

promoting health rather than the prevention of a deficiency, the most common approach in making recommendations for such things as vitamins and minerals.

The recommendation manuscript states: *"Moderate evidence supporting cardiometabolic protection resulting from flavan-3-ol intake in the range of 400-600 mg/d was supported in the literature. Further, increasing consumption of dietary flavan-3-ols may help improve blood pressure, cholesterol levels, and blood sugar. Strength of evidence was strongest for some biomarkers (i.e., systolic blood pressure, total cholesterol, HDL-cholesterol, and insulin/glucose dynamics)*

(CNN) — We all eat them — ultraprocessed foods such as frozen pizza and ready-to-eat meals make our busy lives much easier. Besides, they are just darn tasty — who isn't susceptible to hot dogs, sausages, burgers, french fries, sodas, cookies, cakes, candy, doughnuts and ice cream, to name just a few?

RELATED ARTICLE
Ultraprocessed foods now account for two-thirds of calories in the diets of children and teens

If more than 20% of your daily calorie intake is ultraprocessed foods, however, you may be raising your risk for cognitive decline, a new study found.

That amount would equal about 400 calories a day in a 2,000-calories-a-day diet. For comparison, a small order of fries and regular cheeseburger from McDonald's contains a total of 530 calories.

The part of the brain involved in executive functioning — the ability to process information and make decisions — is especially hard hit, according to the study published Monday in JAMA Neurology.

Men and women in the study who ate the most ultraprocessed foods had a 25% faster rate of executive function decline and a 28% faster rate of overall cognitive impairment compared with those who ate the least amount of overly processed food.

Neurology®

The most widely read and highly cited peer-reviewed neurology journal

Subscribe My Alerts Log in

AMERICAN ACADEMY OF NEUROLOGY

Home Latest Articles Current Issue Past Issues Neurology Video Journal Club Residents & Fellows

November 22, 2022 RESEARCH ARTICLE

Association of Dietary Intake of Flavonols With Changes in Global Cognition and Several Cognitive Abilities

Thomas Monroe Holland, Puja Agarwal, Yamin Wang, Klodian Dhana, Sue E. Leurgans, Kyla Shea, Sarah L Booth, Kumar Rajan, Julie A. Schneider, Lisa L. Barnes

First published November 22, 2022, DOI: https://doi.org/10.1212/WNL.0000000000201541

FULL PDF CITATION PERMISSIONS MAKE COMMENT SEE COMMENTS

Check for updates 1,077 Downloads 191

Add to Cart ($39)

Article Info & Disclosures

Abstract

Background and Objective: Previous research has examined the association between cognition and flavonoids:

Results: Higher dietary intake of total flavonols and flavonol constituents were associated with a slower rate of decline in global cognition and multiple cognitive domains. In continuous models adjusted for age, sex, education, APOE-ε4, late life cognitive activity, physical activity, and smoking, total flavonol intake was associated with slower decline in global cognition β estimate=0.004 (95% CI episodic memory β=0.004 (95% CI: 0.002, 0.006), semantic memory β=0.003 (peed β=0.003 (95% CI: 0.001, 0.004), and working memory β sociated with visuospatial ability β=0.001 (95% CI: -0.001, 0.003) monstrated that intakes of kaempferol and quercetin were a =0.01 (95% CI: 0.006, 0.02) and β=0.004 (95% CI: 0.0005, 0.007)] inetin were not associated with global cognition.

Conclusion: Results suggest dietary intakes of total flavonols and several flavonol constituents may be associated with slower decline in global cognition and multiple cognitive abilities with older age.

Just how important is your "mind"?

Article Info & Disclosures

Advertisement

Agree? Disagree? Neurology Join the conversation!

HUGE NEWS

< 2 months OLD

RESEARCH ARTICLE | NEUROSCIENCE

Dietary flavanols restore hippocampal-dependent memory in older adults with lower diet quality and lower habitual flavanol consumption

Adam M. Brickman, Lok-Kin Yeung, Daniel M. Alschuler, +9, Scott A. Small Authors Info & Affiliations

Edited by Fred Gage, Salk Institute for Biological Studies, La Jolla, CA; received Octo

May 30, 2023 | 120 (23) e2216932120 https://doi.org/10.1073/pnas.

We are FINALLY getting som

PNAS Vol. 120 | No. 23

Significance Abstract Results Discussion Materials and Methods

Significance

Just like there are specific constituents of our diet that are vital for the developing brain, other dietary constituents might be important for the aging brain. This study, a culmination of 15 y of research from mice to humans, provides biomarker-based evidence that dietary consumption of flavanols, a food constituent found in certain fruits and vegetables, can be etiologically linked to age-related memory decline.

ELSEVIER

Advances in Nutrition

Volume 14, Issue 4, July 2023, Pages 840-857

Review

Exploring the Influence of Gut Microbiome on Energy Metabolism in Humans

Julia Montenegro [1], Anissa M. Armet [1], Benjamin P. Willing [1], Edward C. Deehan [1 2 3], Priscila G. Fassini [4], João F. Mota [5 6], Jens Walter [1 6], Carla M. Prado [1]

Show more

Add to Mendeley Share Cite

https://doi.org/10.1016/j.advnut.2023.03.015 Get rights and content

Under a Creative Commons license open access

Abstract

The gut microbiome has a profound influence on host physiology, including energy metabolism, which is the process by which energy from nutrients is transformed into

ELSEVIER

The American Journal of Clinical Nutrition

Volume 118, Issue 1, July 2023, Pages 27-33

Original Research Article

Higher intake of dietary flavonols, specifically dietary quercetin, is associated with lower odds of frailty onset over 12 years of follow-up among adults in the Framingham Heart Study

Steven Oei [1 2 †], Courtney L. Millar [2 3 †], Thuy Nga Nguyen Lily [4], Kenneth J. Mukamal [2], Douglas P. Kiel [2 3], Lewis A. Lipsitz [2 3], Marian T. Hannan [2 3], Shivani Sahni [2 3]

Show more

Add to Mendeley Share Cite

https://doi.org/10.1016/j.ajcnut.2023.04.013 Get rights and content

Abstract

Yes, Omega-3s

are a prebiotic, etc..

nature aging

Letter | Open access | Published: 03 February 2025

Individual and additive effects of vitamin D, omega-3 and exercise on DNA methylation clocks of biological aging in older adults from the DO-HEALTH trial

Heike A. Bischoff-Ferrari ✉, Stephanie Gängler, Maud Wieczorek, Daniel W. Belsky, Joanne Ryan, Reto W. Kressig, Hannes B. Stähelin, Robert Theiler, Bess Dawson-Hughes, René Rizzoli, Bruno Vellas, Laure Rouch, Sophie Guyonnet, Andreas Egli, E. John Orav, Walter Willett & Steve Horvath

Nature Aging (2025) | Cite this article

Abstract

While observational studies and small pilot trials suggest that vitamin D, omega-3 and exercise may slow biological aging, larger clinical trials testing these treatments individually or in combination are lacking. Here, we report the results of a post hoc analysis among 777 participants of the DO-HEALTH trial on the effect of vitamin D (2,000 IU per day) and/or omega-3 (1 g per day) and/or a home exercise program on four next-generation DNA methylation (DNAm) measures of biological aging (PhenoAge, GrimAge, GrimAge2 and DunedinPACE) over 3 years. Omega-3 alone slowed the DNAm clocks PhenoAge, GrimAge2 and DunedinPACE, and all three treatments had additive benefits on PhenoAge. Overall, from baseline to year 3, standardized effects ranged from 0.16 to 0.32 units (2.9–3.8 months). In summary, our trial indicates a small protective effect of omega-3 treatment on slowing

FEBRUARY 3, 2025 The GIST Editors' notes

Daily omega-3 fatty acids may help human organs stay young

by Nature Publishing Group

Credit: Pixabay/CC0 Public Domain

Consuming one gram of omega-3 per day may slow down the rate of biological aging in humans, according to an analysis of data from a clinical trial involving over 700 older adults over a three-year period. The findings are published in *Nature Aging*.

Pre, Pro, and Post → biotics

Prebiotics

Non-digestible components of food that selectively promote the growth or activity of beneficial gut bacteria.

Probiotics

Live microorganisms that when consumed, confer a health benefit on the host.

Postbiotics

Small molecules produced by the metabolism of probiotics with components useful for human health.

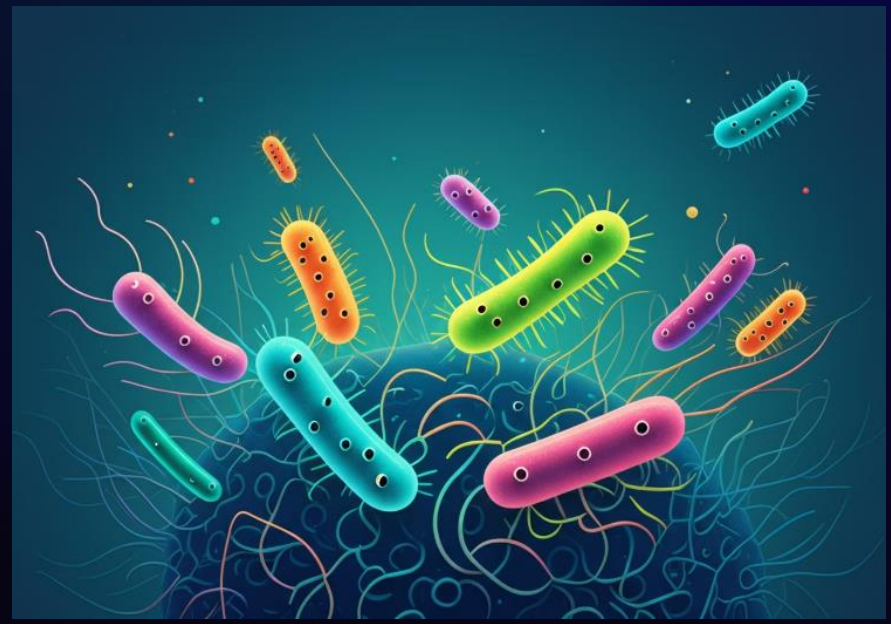
Probiotics - New Residents (sometimes just temporary)

Probiotics are beneficial bacteria.

They can ”sometimes” join our gut community.

Like welcoming skilled travellers who are just visiting for a bit.

Strengthen the community with new talents and other stuff.



Resident vs. Transient Strains

Resident Strains

Long-term
Established roles.

Transient Strains

Short-term
Positive impact.

Just an FYI ..
Edible Microbiome*

Plants have their own microbiome.

We consume this microbiome when we eat plants.

Plants	Microbiome	Gut
Fruits	Bacteria	Diversity
Vegetables	Yeast	Health

*** This means nature's real food comes with a probiotic built in**

Gut Microbes ›
Volume 15, 2023 - Issue 2

Research Paper

The edible plant microbiome: evidence for the occurrence of fruit and vegetable bacteria in the human gut

Wisnu Adi Wicaksono, Tomislav Cernava, Birgit Wassermann, Ahmed Abdelfattah, Maria J. Soto-Giron, Gerardo V. Toledo, ...show all

Article: 2258565 | Received 19 Jun 2023, Accepted 08 Sep 2023, Published online: 23 Sep 2023

Cite this article https://doi.org/10.1080/19490976.2023.2258565 Check for updates

ABSTRACT

Diversity of the gut microbiota is crucial for human health. However, whether fruit and vegetable associated bacteria contribute to overall gut bacterial diversity is still unknown. We reconstructed metagenome-assembled genomes from 156 fruit and vegetable metagenomes to investigate the prevalence of associated bacteria in 2,426 publicly available gut metagenomes. The microbiomes of fresh fruits and vegetables and the human gut are represented by members in common such as *Enterobacterales*, *Burkholderiales*, and *Lactobacillales*. Exposure to bacteria via fruit and vegetable

Connecting the microbial dots to flourishing….

Emerging Science 2025..

1) Dietary polyphenols regulate appetite
2) Gut microbiota influence brain structure
3) Your microbiome is like having a 2nd liver
4) What's the link between CRIME and the microbiome?

Drugs like Ozempic and Wegovy could boost the US economy by a trillion dollars in a few years, Goldman Sachs predicts

By Bryan Mena, CNN

4 minute read · Updated 10:04 AM EST, Tue February 27, 2024

Drugs vs Food
What is your choice?

A pharmacist holds a box of Novo Nordisk A/S Ozempic brand semaglutide medication arranged at a pharmacy in Provo, Utah, US, on Monday, Nov. 27, 2023. George Frey/Bloomberg/Getty Images

ELSEVIER

Food Chemistry
Volume 446, 15 July 2024, 138739

Review

Dietary polyphenols regulate appetite mechanism via gut-brain axis and gut homeostasis

Hongyan Liu [a], Xue Guo [a], Kexin Jiang [a], Boshan Shi [a], Lingyi Liu [b], Ruyan Hou [c], Guijie Chen [c], Mohamed A. Farag [d], Ning Yan [e], Lianliang Liu [a]

Show more

https://doi.org/10.1016/j.foodchem.2024.138739

Highlights

- Dietary polyphenols stimulate satiety hormone release by promoting gut microbial metabolites.
- Satiety signaling can be involved in appetite regulation via the gut-brain axis.
- Polyphenols can regulate the energy metabolism via appetite related pathways.
- Dietary polyphenols exert prebiotic effects and maintain gut homeostasis.

Emerging Science 2025..

1) Dietary polyphenols regulate appetite
2) Gut microbiota influence brain structure
3) Your microbiome is like having a 2nd liver
4) What's the link between CRIME and the microbiome?

New study suggests gut microbiota can influence brain structure

by **Eric W. Dolan** April 27, 2024 in Neuroimaging

Very VERY Recent

(Photo credit: OpenAI's DALL·E)

In a study recently published in the *Journal of Affective Disorders*, researchers have found

ELSEVIER

Journal of Affective Disorders
Volume 352, 1 May 2024, Pages 312-320

Research paper

Association of gut microbiota with cerebral cortical thickness: A Mendelian randomization study

Lubo Shi [a 1], Xiaoduo Liu [b 1], Jiutian Zhang [a], Anni Zhou [a]

Show more

Add to Mendeley Share Cite

https://doi.org/10.1016/j.jad.2024.02.063

Get rights and content

Under a Creative Commons license

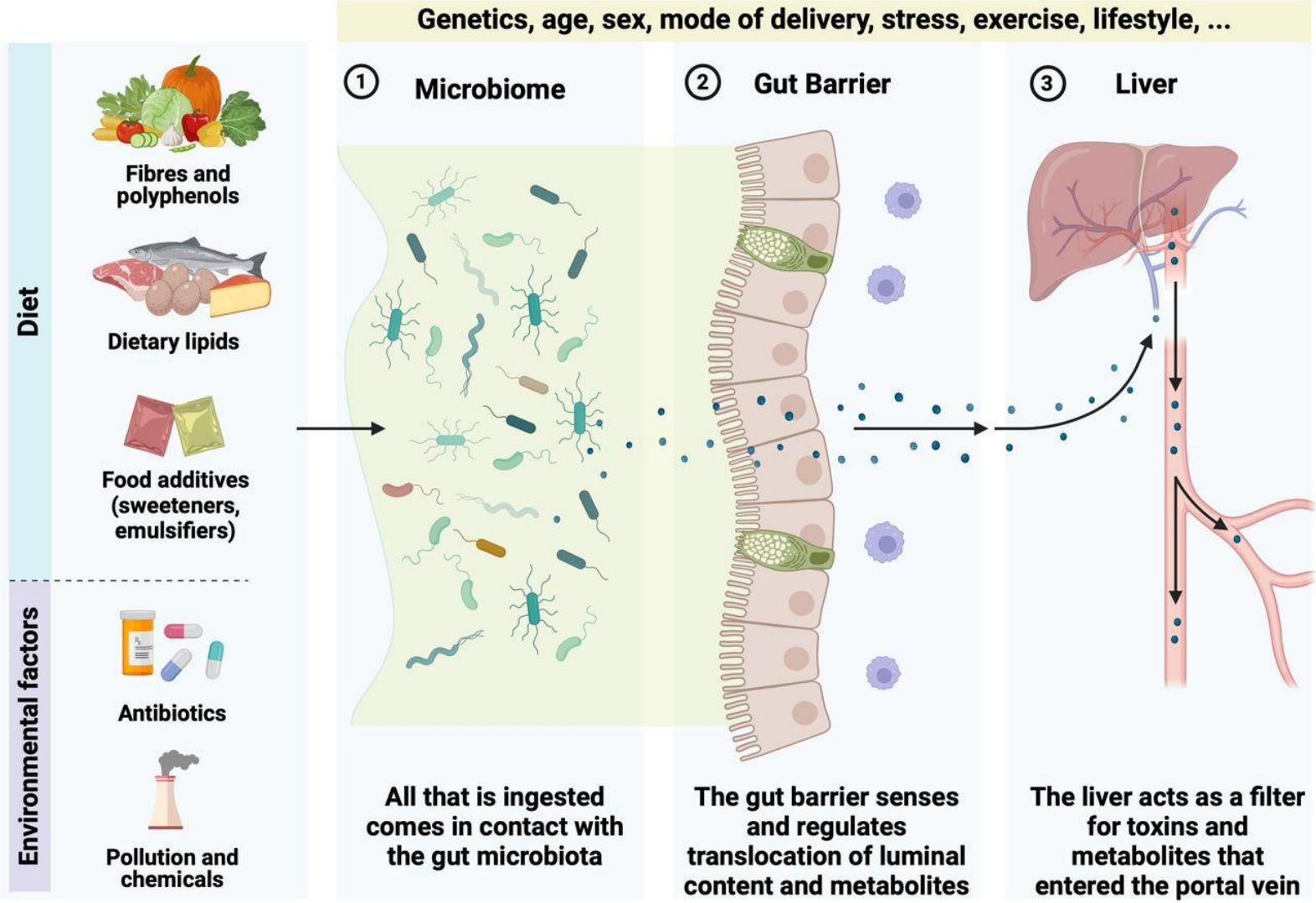
open access

Highlights

- Our study demonstrated the causal associations between gut microbiota and cortical thickness.
- A systematic investigation between gut microbiota and cortical thickness was carried out.
- We discovered genetic prediction of the *Lactobacillales* and *Bacillales* orders may potentially enhance brain structure.

Emerging Science 2025..

1) Dietary polyphenols regulate appetite
2) Gut microbiota influence brain structure
3) Your microbiome is like having a 2nd liver
4) What's the link between CRIME and the microbiome?



The three ‘lines of defence’

GUT

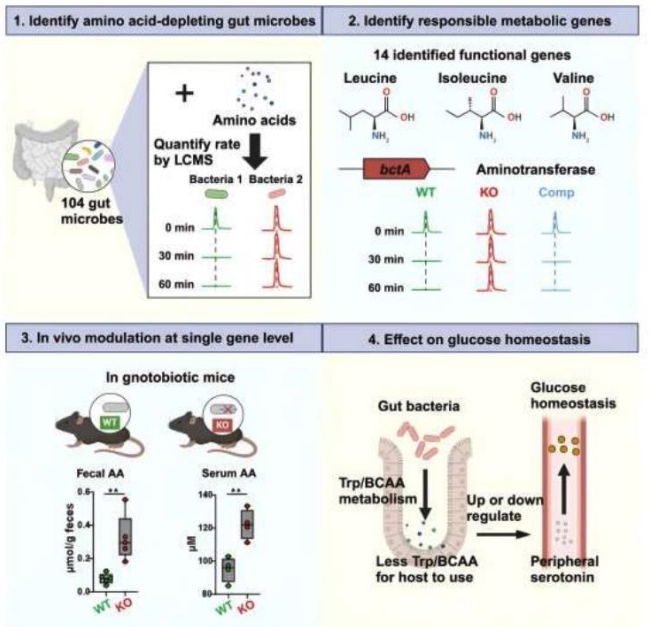
Matthias Van Hul et al. Gut 2024;73:1893-1908

APRIL 23, 2024

VERY Recent ..

Gut microbiota acts like an auxiliary liver, study finds

by Weill Cornell Medical College



Credit: *Cell Host & Microbe* (2024). DOI: 10.1016/j.chom.2024.04.004

Microbes in the mammalian gut can significantly change their hosts' amino acid and glucose metabolism, acting almost like an extra liver, according to a new preclinical study by Weill Cornell Medicine investigators.

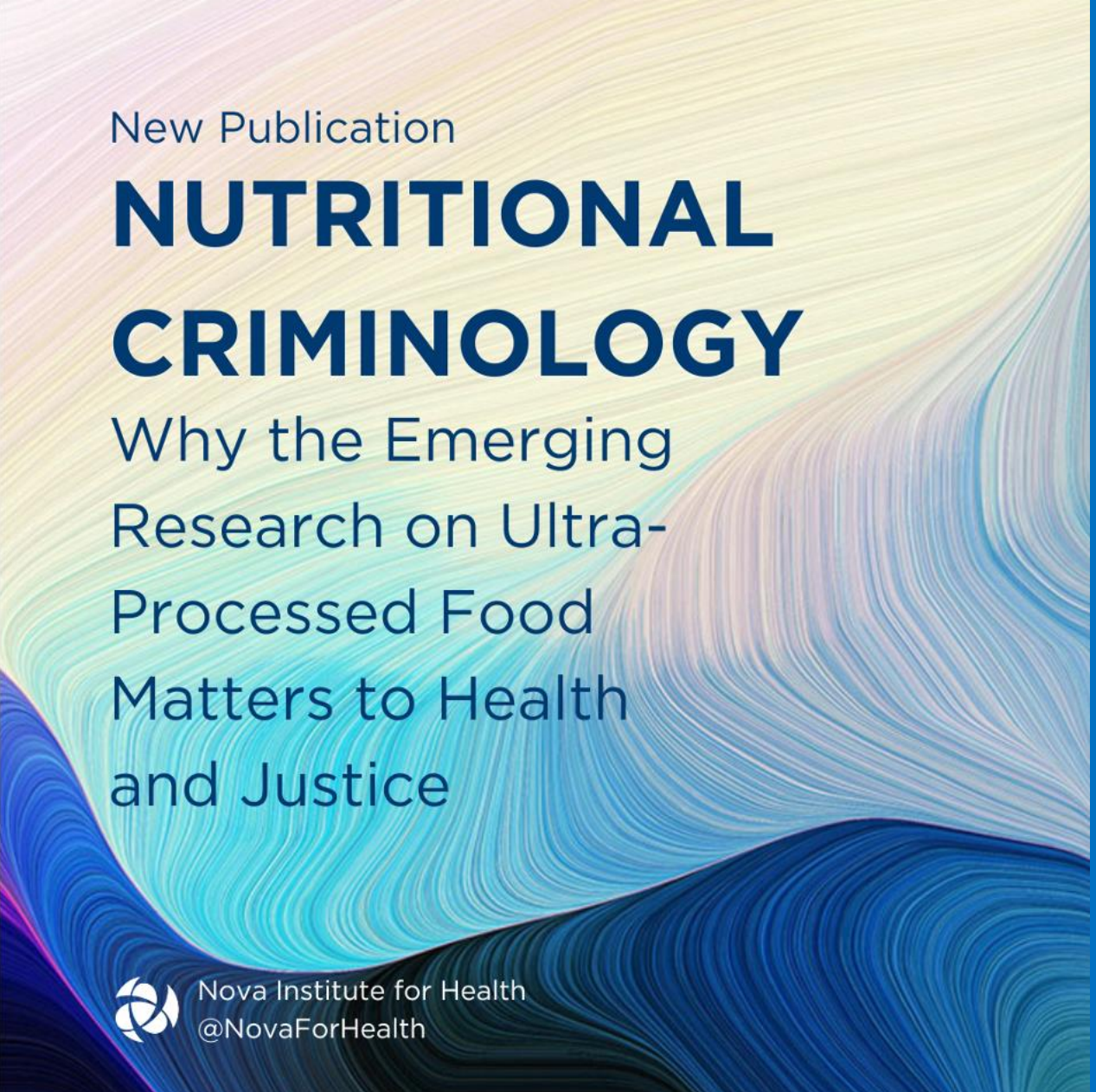
That work produced a surprising result: By consuming a specific class of amino acids, gut microbes can alter their hosts' blood glucose homeostasis. Further analysis revealed that by changing amino acid availability, the microbes appear to affect the production of the neurotransmitter serotonin, which in turn changes glucose regulation.

"A lot of these metabolic functions can be done by the liver, but now we've found that there are functionally comparable enzymes encoded by the gut microbiota that can do the same or similar things," said Dr. Guo. "It's like there is a second liver operating in the gut."

Statement: Liver cleanses involve the gut microbiome!

Emerging Science 2025..

1) Dietary polyphenols regulate appetite
2) Gut microbiota influence brain structure
3) Your microbiome is like having a 2nd liver
4) What's the link between CRIME and the microbiome?



The research on crime will give us insight into why WE behave poorly sometimes too …

“microaggressions”

Crime and Nourishment: A Narrative Review Examining Ultra-Processed Foods, Brain, and Behavior

Susan L. Prescott [1,2,3], Alan C. Logan [2], Erica M. LaFata[4], Ashka Naik[5], David H. Nelson[2], Matthew B. Robinson[6], Leslie Soble[7]

[1.] School of Medicine, University of Western Australia, Nedlands, WA 6009, Australia

[2.] Nova Institute for Health, Baltimore, MD 21231, USA

[3.] Department of Family and Community Medicine, University of Maryland School of Medicine, USA

[4.] Center for Weight, Eating, and Lifestyle Science, Drexel University, Philadelphia, PA, United States

[5.] Corporate Accountability, Boston, MA, USA

[6.] Department of Government and Justice Studies, Appalachian State University, Boone, NC 28608, USA

[7.] Impact Justice, Oakland, CA, USA

Author Note: The authors declare no conflicts of interest; no funding or financial support was used in support of this manuscript.

Correspondence concerning this article should be directed to Susan l. Prescott, MD, PhD, University of Western Australia, School of Medicine, Perth, 6009, Australia, Email: Susan.Prescott@telethonkids.org.au

Abstract

Recently, there has been increased scientific interest in the potential harms associated with ultra-processed foods, including poor mental health, aggression, and antisocial behavior. Research spanning epidemiology, mechanistic pre-clinical work, addiction science, microbiome and exposome science, and human intervention trials, has underscored that nutrition is of relevance along the criminal justice continuum. In addition, relationships between nutrition and behavior relate to 'food crime,' an emergent area unifying criminal justice researchers with public health, and other interdisciplinary sectors. Food crime scrutinizes the vast harms, including non-communicable diseases and adverse behavioral outcomes, as influenced by the distribution of addictive ultra-processed food products. Here in this narrative review, we examine emergent research, including biophysiological mechanisms, and evidence indicating that dietary patterns/components intersect with psychosocial vulnerabilities linked with risks of aggression and justice involvement. Although nutritional criminology research is salient to carceral systems, it remains mostly ignored within correctional facilities. Viewed through a prevention lens, the study of nutrition and aggressive behavior should be prioritized, especially if the outcomes emerge as externalities of the global consumption of ultra-processed food. In the context of criminal justice and behavior, there is a need to scrutinize how industry influence and power structures can undermine matters of food justice.

Keywords: ultra-processed food; microbiome; aggression; addiction; behavior; mental health

Crime and Nourishment: A Narrative Review Examining Ultra-Processed Foods, Brain, and Behavior

Susan L. Prescott [1,2,3], Alan C. Logan [2], Erica M. LaFata[4], Ashka Naik[5], David H. Nelson[2], Matthew B. Robinson[6], Leslie Soble[7]

[1.] School of Medicine, University of Western Australia, Nedlands, WA 6009, Australia

[2.] Nova Institute for Health, Baltimore, MD 21231, USA

[3.] Department of Family and Community Medicine, University of Maryland School of Medicine, USA

[4.] Center for Weight, Eating, and Lifestyle Science, Drexel University, Philadelphia, PA, United States

[5.] Corporate Accountability, Boston, MA, USA

[6.] Department of Government and Justice Studies, Appalachian State University, Boone, NC 28608, USA

[7.] Impact Justice, Oakland, CA, USA

Belgian man whose body makes its own alcohol cleared of drunk-driving

Bruges court heard how defendant had condition called auto-brewery syndrome sometimes brought on by intestinal problems

The market square in Bruges. The man with auto-brewery syndrome is employed by a brewery. Photograph: NobleImages/Alamy

A Belgian man has been acquitted of drunk-driving because he has auto-brewery syndrome (ABS), an extremely rare condition whereby the body produces alcohol, his lawyer has said.

Anse Ghesquiere said on Monday that in "another unfortunate coincidence" her client worked at a brewery, but three doctors who independently examined him had confirmed he had ABS.

Belgian media said in the verdict the judge emphasised that the defendant, who was not named in line with local judicial custom, did not experience symptoms of intoxication.

The Bruges police court, which acquitted the man, did not immediately reply to an email requesting comment.

Real life ..

My microbiome made me do it!

This is a new area of research called the "legalome"

omics + microbiome

Neurolaw & the “Legalome”

Huberty vs. McDonanld’s

.. the fries made me do it

Open Access Viewpoint

Neurolaw: Revisiting *Huberty v. McDonald’s* through the Lens of Nutritional Criminology and Food Crime

by **Alan C. Logan** [1,*], **Jeffrey J. Nicholson** [2], **Stephen J. Schoenthaler** [3] and **Susan L. Prescott** [1,4]

[1] Nova Institute for Health, Baltimore, MD 21231, USA
[2] Faculty of Business and Law, Humber College, Toronto, ON M9W 5L7, Canada
[3] College of the Arts, Humanities & Social Sciences, California State University, Turlock, CA 95202, USA
[4] School of Medicine, University of Western Australia, Perth, WA 6009, Australia
[*] Author to whom correspondence should be addressed.

Laws **2024**, *13*(2), 17; https://doi.org/10.3390/laws13020017

Submission received: 28 January 2024 / Revised: 12 March 2024 / Accepted: 19 March 2024 / Published: 21 March 2024

Download Browse Figures Versions Notes

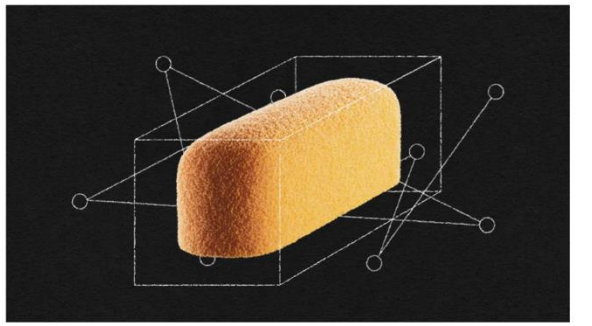
Abstract

Recent studies have illuminated the potential harms associated with ultra-processed foods, including poor mental health, aggression, and antisocial behavior. At the same time, the human gut microbiome has emerged as an important contributor to cognition and behavior, disrupting concepts of the biopsychosocial ‘self’ and raising questions related to free will. Since the microbiome is undeniably connected to dietary patterns and components, the topics of nutrition and microbes are of heightened interest to neuroscience and psychiatry. Research spanning epidemiology, mechanistic bench science, and human intervention trials has brought legitimacy to nutritional criminology and the idea that nutrition is of relevance to the criminal justice system. The individual and community-level relationships between nutrition and behavior are also salient to torts and the relatively new field of food crime—that which examines the vast harms, including grand-scale non-communicable diseases and behavioral outcomes, caused by the manufacturers, distributors, and marketers of ultra-processed food products. Here in this essay, we will synthesize various strands of research, reflecting this emergent science, using a notable case that straddled both neurolaw and food crime, *Huberty v. McDonald’s* (1987). It is our contention that the legalome—microbiome and omics science applied in neurolaw and forensics—will play an increasing role in 21st-century courtroom discourse, policy, and decision-making.

NEUROPSYCH — APRIL 29, 2024

The "Twinkie defense": What we know about diet and crime

In the murder trial of Dan White, the defense touched on diet as a cause for White's actions. It has become known as the "Twinkie defense."



Adobe Stock / Big Think

KEY TAKEAWAYS

● In the 1979 murder trial of Dan White, his legal team seemed to attempt to blame his heinous actions on junk-food consumption. The press dubbed the tactic, the "Twinkie defense." ● While no single crime can be blamed on diet, researchers have shown that providing inmates with healthy foods can reduce aggression, infractions, and anti-social behavior. ● Various studies have demonstrated that consuming nutritious, whole foods rather than processed, high-fat, high-sugar foods improves mental health, mood, and academic outcomes. All heavily factor into one's likelihood of committing crime.

Listen to this article

Frankly …

This is JUST THE BEGINNING

Oh .. and check out that date

A lack of plants and polyphenols is implicated in: **cardiovascular** disorders, **diabetes**, **macular degeneration**, **GI disorders**, **weight gain**, **mood**, **anxiety**, **depression**, **PCOS**, the list goes on .. and on .. and on ... etc ..

The MICROBIOME is the unseen flourishing link! For real though ....

Quick updates to round out the story …

Health

The alarming rise of colorectal cancer diagnoses in people under 50

Colorectal cancers will soon be the number one cause of cancer death among people under 50. Could changes in lifestyle and environment be to blame?

By Graham Lawton

3 March 2025

This should alarm most of us in this room …

BIOTECHNOLOGY AND HEALTH

Your gut microbes might encourage criminal behavior

Is “My microbes made me do it” a valid legal defense?

By Jessica Hamzelou May 9, 2025

Microbiome influences our feelings and actions

PLOS Medicine

Browse Publish About

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Food additive mixtures and type 2 diabetes incidence: Results from the NutriNet-Santé prospective cohort

Marie Payen de la Garanderie, Anaïs Hasenbohler, Nicolas Dechamp, Guillaume Javaux, Fabien Szabo de Edelenyi, Cédric Agaësse, Alexandre De Sa, Laurent Bourhis, Raphaël Porcher, Fabrice Pierre, Xavier Coumoul, Emmanuelle Kesse-Guyot, Benjamin Allès, [···], Mathilde Touvier [view all]

Published: April 8, 2025 • https://doi.org/10.1371/journal.pmed.1004570

Abstract

Background

Mixtures of food additives are daily consumed worldwide by billions of people. So far, safety assessments have been performed substance by substance due to lack of data on the effect of multiexposure to combinations of additives. Our objective was to identify most common food additive mixtures, and investigate their associations with type 2 diabetes incidence in a large prospective cohort.

Methods and Findings

Participants (n = 108,643, mean follow-up = 7.7 years (standard deviation (SD) = 4.6), age = 42.5 years (SD = 14.6), 79.2% women) were adults from the French NutriNet-Santé cohort

Seems like emulsifiers .. are bad news for the microbiome BIG TIME

The reason UPF is so bad, isn't just what is taken out .. but, also what is added

The Journal of Infectious Diseases

JOURNAL ARTICLE CORRECTED PROOF

Early Childhood Antibiotics and Chronic Pediatric Conditions: A Retrospective Cohort Study

Get access >

Matthew A Beier , Soko Setoguchi , Tobias Gerhard , Jason Roy , Dawn Koffman , Dinesh Mendhe , Joanna Madej , Brian L Strom , Martin J Blaser , Daniel B Horton

The Journal of Infectious Diseases, jiaf191, https://doi.org/10.1093/infdis/jiaf191
Published: 16 April 2025 **Article history** ▾

Abstract

Background

Early childhood antibiotics have been implicated in chronic pediatric conditions, but many studies leave concerns about unmeasured confounding. We evaluated associations between early childhood antibiotics and multiple pediatric conditions.

Methods

I hope that science and our industry can help here!

nature communications

Article | Open access | Published: 10 May 2025

Mapping pesticide-induced metabolic alterations in human gut bacteria

Li Chen, Hong Yan, Shanshan Di, Chao Guo, Huan Zhang, Shiqi Zhang, Andrew Gold, Yu Wang, Ming Hu, Dayong Wu, Caroline H. Johnson, Xinquan Wang & Jiangjiang Zhu

Nature Communications **16**, Article number: 4355 (2025) | Cite this article

Abstract

Pesticides can modulate gut microbiota composition, but their specific effects on it remain largely elusive. In our study, we show that pesticides inhibit or promote the growth of various gut microbial species and can be accumulated to prolong their presence in the host. Pesticide exposure also induces significant alterations in gut bacterial metabolism, as reflected by changes in hundreds of metabolites. We generate a pesticide-gut microbiota-metabolite network that not only reveals pesticide-sensitive gut bacteria species but also reports specific metabolic changes in 306 pesticide-gut microbiota pairs. Using an in vivo mouse model, we further demonstrate the interactions of a representative pesticide-gut microbiota pair and verify the inflammation-inducing effects of pesticide exposure on the host, mediated by microbially dysregulated lipid metabolism. Taken together, our findings generate a comprehensive atlas of pesticide-gut microbiota-metabolite interactions atlas and shed light on the molecular mechanisms by which pesticides affect host health via gut microbiota-

Pesticides and gut metabolites:

1) we often assume pesticides only kill or suppress microbes; here, certain species actually thrived under exposure,
2) 2) instead of detoxifying, gut bacteria sequestered — not metabolized — these chemicals, potentially extending human internal pesticide half-life,
3) 3) rather than only causing oxidative stress, pesticides broadly rewired fundamental microbial pathways (nucleotide and amino acid metabolism), suggesting subtler modes of dysbiosis.

Strategies for Flourishing..

Flourishing Strategies for Combatting “Dis-ease” AND Disease

Real Food

The best way to support your microbiome is to eat real, whole foods. This means choosing fresh fruits and vegetables, whole grains, and lean proteins over highly processed and packaged foods.

More Fiber – And here!

Fiber is essential for a healthy gut microbiome. Eating a variety of high-fiber foods like fruits, vegetables, nuts, and seeds can help feed the good bacteria in your gut and promote digestive health.

Less Ultra-processed Food

Ultra-processed foods like chips, candy, and fast food can be harmful to your gut. Sugar, unhealthy fats, preservatives, emulsifiers disrupt the balance of good and bad bacteria.

More Polyphenols - Start here!

We cannot be truly healthy without them. They form the foundational elements that feed the microbiome to support health and human flourishing!

More Real Strategies ..

Phone Down Before Bed

Put the damn phone down!

BEFORE BEFORE BEFORE BED!

90 minutes BEFORE bed!

Nature Time

Getting into nature relieves stress/boosts the immune system. New research on the soil microbiome shows it helps our immunity. Also, a forest has an "aerobiome" that you breath in!

Brain Down Time

Your amygdala is the emotional centre of the brain and in the modern world there is FAR TOO MUCH TRAFFIC IN THERE.

Meditate to slow down the traffic - CALM

Social Microbiome

Your social connections can also have an impact on your gut health. Spending time with friends and family, getting enough sleep, and managing stress can all help support a healthy gut microbiome.

“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has.” – Margaret Mead

Thank You

davidhplanet@gmail.com
txt: (519) 788-1477