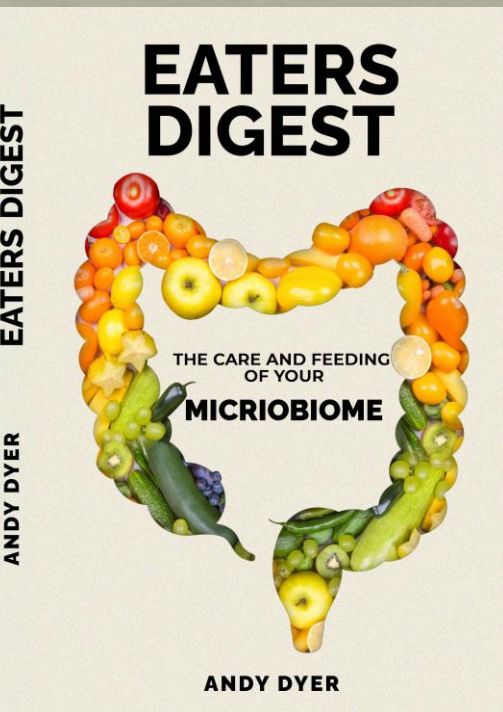


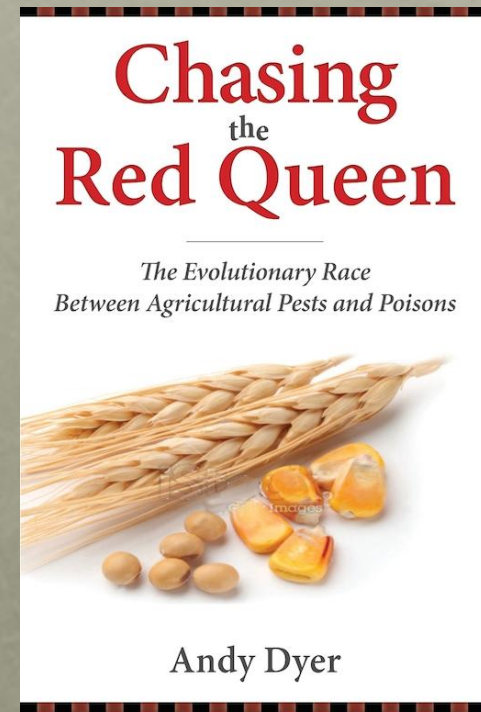
The Microbiome & Implications for Human Health



Andy Dyer
USCA Professor Emeritus



**Biological, Environmental
& Earth Sciences**



THE BIG RESEARCH QUESTION

Can we modify our health with the MB?

- Improving digestive function
- Increasing bacterial diversity
- Increasing food diversity and food quality
- Avoiding chemicals that can harm or kill bacteria
- Supplements: either prebiotic or probiotic

ADVICE, ADVICE, ADVICE

CAVEATS!

We understand very little.

May, might, could: means we don't know

There are no silver bullets.

Nothing is linear

Context is everything

FEEDING 100 TRILLION Modern Microbiome Diet

EAT THESE FOODS!



Probiotics

beet kvass, kraut, kombucha, kefir, kimchi, pickles, yoghurt (non-dairy)



Fruits & Vegetables

green leafy, cruciferous, root vegetables and avocado, apple, blueberries, cherries, lemon, lime



Clean Animal Proteins

beef, buffalo, lamb, turkey, pork and halibut, mackerel, salmon, sardines



Prebiotics

asparagus, chickory root, jicama, dandelion greens, garlic, coconut (meat, flour)



Healthy Fats

avocado, flax seed, coconut (oil, butter), olive, sesame, walnut



Herbs & Spices

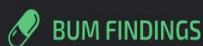
coriander, cumin, fennel, ginger, oregano, peppermint, salt, tumeric, vanilla

A FIRST ATTEMPT

A hand holds a small green bottle of Activa Probiotic Dailies Strawberry flavor against a person's midsection. The bottle is labeled 'ACTIVA PROBIOTIC DAILIES', 'BILLIONS OF LIVE & ACTIVE PROBIOTICS', and 'STRAWBERRY FLAVOR' with a strawberry illustration. The background is a person's bare midsection in a pink top.

SHOW YOUR GUT SOME LOVE

Enjoying Activa twice a day for two weeks as part of a balanced diet and healthy lifestyle may help reduce the frequency of minor digestive discomfort. Minor digestive discomfort includes gas, bloating, abdominal discomfort and rumbling.



BUM FINDINGS

Popular gut probiotic completely craps out in randomized controlled trial

If you're familiar with the history of Activia, you may not be surprised.

BETH MOLE – OCT 3, 2024 1:34 PM | 132



Credit: Getty | BSIP



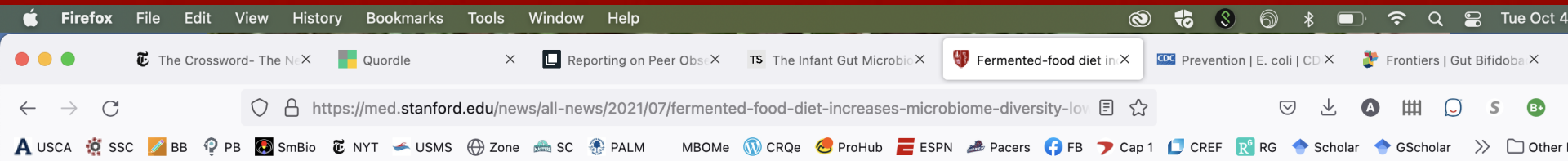
Any striking marketing claims in companies' ads about the gut benefits of a popular probiotic may be full of, well, the same thing that has their target audience backed up.

In a randomized controlled trial, the probiotic *Bifidobacterium animalis* subsp. *lactis*—used in many probiotic products, including Dannon's Activia yogurts—did nothing to improve bowel health in people with constipation, according to data from a randomized triple-blind placebo-controlled clinical trial published Wednesday in JAMA Network Open.

EARLY OBSERVATIONS

- Westerners have much lower microbiome diversity than more traditional cultures.
- Our diet is depleted in plant materials and the microbiome depends on it.
- Western cultures have skyrocketing obesity, autoimmune disease, autism, allergies, diabetes, and many other formerly rare diseases.
- Western medicine is founded on antibiotics and antiseptics → a “bacteria are bad” philosophy.

INCREASING DIVERSITY



Fermented-food diet increases microbiome diversity, decreases inflammatory proteins, study finds

Stanford researchers discover that a 10-week diet high in fermented foods boosts microbiome diversity and improves immune responses.

July 12, 2021 - By Janelle Weaver

A diet rich in fermented foods enhances the diversity of gut microbes and decreases molecular signs of inflammation, according to researchers at the [Stanford School of Medicine](#).

In a clinical trial, 36 healthy adults were randomly assigned to a 10-week diet that included either fermented or high-fiber foods. The two diets resulted in different effects on the gut microbiome and the immune system.

Eating foods such as yogurt, kefir, fermented cottage cheese, kimchi and other fermented vegetables, vegetable brine drinks, and kombucha tea led to an



Stanford researchers found that eating a diet high in fermented foods such as kimchi increases the diversity of gut microbes, which is

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June 4, 2021

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Giving people information about animal welfare can motivate them to eat less meat, a meta-analysis of 100 studies has found.



February 25, 2020

[Stanford scientists link ulcerative colitis to missing gut microbes](#)

FERMENTATION AND DIVERSITY

- The colon is anaerobic (anoxic). Only certain bacteria can live there. Typically, they cannot live outside.
- Fermentation produces short-chain fatty acids that act as neurotransmitters (serotonin, dopamine).
- SCFA reduce inflammation and maintain the integrity of the gut lining. These compounds help the gut communicate with the brain.
- Bacteria doing anaerobic fermentation are not part of our normal diet.

BARRON'S

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(KYLE ELLINGSON)

RETIREMENT | FEATURE

Doctors and Health Experts Are Changing Their Minds About Whole Milk and Cheese

Consuming full-fat milk products could help stave off diseases seniors are more prone to, including heart disease, stroke, and diabetes.

HIGH FAT AND DAIRY

- *Dairy consumption was associated with lower risk of mortality and major cardiovascular disease events in a diverse multinational cohort. (Dehghan et al. 2018)*
- The view of high fat dairy is changing.
- Whole fat yogurt and cheese are fermented products that can benefit Type II diabetes, cholesterol, immune system.
- These are correlations only, but they indicate that doctors and researchers are focusing on microbiome interactions with the human body.