

Guillermou

The microbiota-gut-brain axis is a complex communication network that links the gut, microbiota and brain, influencing various aspects of health and disease. There is a bidirectional communication between the gut microbiota and the gut-brain axis (GBA). The microbiota communicates with the GBA through different mechanisms, viz. direct interaction with enterocytes (enteric message), through immune cells (immunological message) and through contact with neural endings (vagus nerve) (neuronal message) to influence the central nervous system (CNS). Metabolites, neurotransmitters and cytokines access the brain through the bloodstream.

The gut microbiota has been linked to memory, learning, anxiety, stress and brain disorders. This review and studies analyzing the neurotropicity of some probiotic strains has led to the emergence of the concept of "psychobiotic" to describe live microorganisms that, when ingested in adequate quantity, produce a health benefit in patients suffering from psychological disorders through "microbiota-gut-brain axis". Psychobiotics, as a special class of probiotics, differ from conventional probiotics in their ability to produce or stimulate the production of neurotransmitters, short-chain fatty acids, enteroendocrine hormones, and anti-inflammatory cytokines.

Psychobiotics have the potential to positively affect mental health by modulating the gut-brain axis. These beneficial bacteria interact with the gut microbiota and generate compounds that can send signals to the brain, potentially improving mood, cognition, and stress response. While studies indicate that psychobiotics could offer therapeutic benefits for conditions such as depression, anxiety, and neurodegenerative diseases such as dementia, the precise mechanisms of action are still under investigation.

Posted On 04/26/2024

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Fructooligosaccharides (FOS) and galactooligosaccharides (GOS), along with polyphenols, inulin, and compounds derived from vegetables, herbs, and plants, are the best-documented prebiotics for treating depression by indirectly improving host health by promoting probiotic growth. Psychobiotics contribute to mental health through the dynamic interaction between the microbiota, the intestine and the brain. Research is reinforcing the concept that gut bacteria participate in the transmission of information between the gut and the brain, involving neuronal, immune and endocrine pathways. Factors such as diet, stress and aging can shape the composition of the microbiota in a process that can also influence the appearance and development of mental illnesses.

There is a link between the microbiota and brain function focusing on clinical and preclinical evidence of the possible application of psychobiotics in the context of cognitive process and performance. It has been shown that psychobiotic-based dietary interventions could be a novel nutritional approach targeting the gut microbiota to manage cognitive performance and prevent memory decline across the lifespan. The DASS is a depression, anxiety and stress scale made up of 42 items that measures these symptoms.

One study reported that participants who did not consume any probiotic yogurt had depression subfactor scores 6.962 times higher than those who consumed probiotic yogurt every day. Also curcumin to influence neurotransmitter levels, inflammatory pathways, excitotoxicity, neuroplasticity, HPA axis disorders, insulin resistance, oxidative and nitrosative stress and the endocannabinoid system related to mental health.

www.sciencedirect.com/science/article/abs/pii/S0963996921007924 (2022).--

www.mdpi.com/.../601 (2024).--- www.mdpi.com/.../510 (2024).-- www.mdpi.com/.../1054 (2024).--

Posted On 04/26/2024

It's been expressed many times Gui, those few pockets of communities who live much closer to what their ancestors have ate, when put in the situation of coming to the West, States, they find the fare for food makes them sick. Very likely tied to a removal from Microbes and Food Sources feeding both the microbes and them. Very likely a die off of their base levels of a much wider range of micro biotic life they once maintained and then exposed to the toxic waste of Throw Away Societies. The success of Antibiotics addressing bacterial infections sourced from breaching our natural defenses, usually from wounds or surgery was picked up and expanded through propaganda of the Rockefeller Model creating a foundation of unnecessary Fear of an invisible enemy.

Also a foundation for enormous loads of health disruptors often claimed safe because they killed bacteria. To consume the many different types, kinds of fermented foods supporting different strains of microbes would seem to also turn our guts into a internal fermentation 'jar'.

Fed and maintained on 'site' in the gut in interaction with other strains as a source for natural medicines to be produced and processed by the body more than likely in our personal 'Goldilocks Zone." On the personal level, not only does fermentation offer another way to store garden fare, the many kinds of products all seem to have their own very appreciated positive outcomes. The gut issues of my youth have become a thing of the past.

Posted On 04/26/2024

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I just really like his original expressions 'Goldilocks Zone.' and his skill in describing reality.

Considering the decrease in abundance of *L. reuteri* in humans in recent decades correlates with an increase in the incidence of inflammatory diseases. Modulation of the gut microbiota by ingesting probiotic strains of *L. reuteri* could be a promising preventive and therapeutic approach against many diseases and disorders.---- 1) Research supporting the application of various strains of *L. reuteri* in the treatment of common diseases of the digestive system, including infantile colic, diarrhea, constipation, functional abdominal pain, *Helicobacter pylori* infection, inflammatory bowel disease, diverticulitis, colorectal cancer, and liver diseases.----- 2) *L.*

reuteri can control body weight and obesity, improve insulin sensitivity and glucose homeostasis, increase intestinal integrity and immunomodulation, and attenuate liver disorders. ---- 3) *L. reuteri* is capable of inhibiting the colonization of pathogenic microbes and remodeling the composition of the commensal microbiota in the host.----- 4) *L. reuteri* may benefit the host's immune system. Reduce the production of proinflammatory cytokines while promoting the development and function of regulatory T cells. ---- 5) Colonization of *L.*

reuteri can reduce microbial translocation from the intestinal lumen to tissues, preventing inflammation. ---- 6) *L. reuteri* decreases intestinal pH and increases short chain fatty acids, such as butyric acid, which is essential for intestinal health.---- 7) *L-reuteri* improves tolerance in your diet, promoting the absorption of nutrients, strengthening your defenses.---- 8) *Lactobacillus reuteri* prevents post-antibiotic bone loss by reducing intestinal dysbiosis and preventing barrier alteration---- 9) The use of *L. reuteri* as an adjunct to non-surgical periodontal treatment can produce significantly better clinical results.-----

Posted On 04/26/2024

Guillermou

L. reuteri strain may help colic symptoms, improve digestion, and reduce the risk of premature birth. The probiotic L. reuteri can have a positive impact on gastrointestinal function and relieve colic symptoms in three ways; strengthening the mucosal barrier, increasing gastric motility and balancing the intestinal microbiota. Additionally, L. reuteri is the only probiotic that has been repeatedly shown in studies to reduce crying time in babies with colic. www.frontiersin.org/.../full (2018)----
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Posted On 04/26/2024

juststeve

Not only a reintroduction of the L. reuteri strain Gui, but of the foods to feed them. ;)

Posted On 04/27/2024

Rosebud10000

Indeed, making fermented vegetable is worth the effort. I eat huge amounts and in that case it does work out expensive to buy ready-made. Some extra tips I have found out: If you don't have a juicer the vegetables can be massaged by hand to release their own juice. This works well but whatever method is used the veg must be submerged in juice of some sort otherwise they rot. Also I have found that hygiene is quite important especially when reusing jars. They must be sterilized using boiling water or in a low oven otherwise one can get some wild and funky organisms causing rotting instead of fermentation. Fairly clean hands and not working near the compost bin goes without saying! Ditto only using organic veg. Making Kombucha and kefir are next on my list as they are also expensive to buy.

Posted On 04/26/2024

BevAnn22

Personally, by the grace of God, I have been able to (per my rheumatologist) put my autoimmune disease (lupus) into remission as of March 2024 from a diagnosis in 2013! I love organic yogurt & prefer Goat Milk Kefir, sauerkraut, Kimchi plus pre- & probiotics plus very little sugar & some organic raw honey! I try to include organic greens, romaine lettuce, broccoli, bok choy, butternut squash & cauliflower in an anti-inflammatory diet plus raw onions & raw garlic! My opinion is that eating an organic diet is like engaging in a warfare of my will & stay to be determined to feed my body nutritional nutrients to help overcome diseases that plague my body! Yes, I confess it is a daily battle! Dr Mercola's newsletters and Guillermo's comments plus others continue to help me be prepared for my daily battle for which I am grateful.

Posted On 04/26/2024

JKolbus

Fermenting veggies is so easy and there are endless options. An easy ferment: I grow cherry tomatoes, a wide variety. They can be grown in pots. I put a bunch of tomatoes in a Fido jar (look it up - makes fermenting so simple) with basil, lots of garlic, onions, any herbs. The resulting ferment lasts over a year in the refrigerator. Use it like salsa, it is fizzy and delicious!

Posted On 04/26/2024

tri1190

There is 1 ancient fermented food strangely missing from the long list of fermented foods with countless positive health benefits: Red wine --and it has never let me down. Blue cheese is number two on my list.

Posted On 04/26/2024

pjucla

Nothing better !! Thank u . I do hope others listen . And thanks GUI for all your research and comments.

Posted On 04/26/2024

louisstark

Poor buttermilk doesn't get any respect.

Posted On 04/26/2024

jef9075

Buttermilk (Raw Buttermilk) definitely should get more respect! www.youtube.com/watch

Posted On 04/26/2024

Is this why I find Koreans so "level headed"? If you've never been to Korea, you will be amazed by the amount of fermented veggies they eat. Amazingly (to me), it's ALL GOOD! Come back to the USA and buy the same fermented veggies (mostly Kimchi) and it's HORRIBLE! What's more amazing is that they don't eat just one side of fermented veggies at any given meal. They eat 4 or more. If they do eat only 1 side, it's KIMCHI! If you eat a traditional Korean meal it is the norm to have 6 or more side dishes of various fermented veggies.

When I say side dishes, I mean exactly that. It's not on your plate. They bring out small bowls of every fermented veggie imaginable. Like I said, all of them taste phenomenal! Since I can't buy these products in the USA, I've tried making them myself with lackluster results. I've gone so far as to take classes on how to do this in KOREA with dismal results back here in the US! I've been told by several people, and I've come to agree with them, that the quality of the ingredients is the problem.

Most of their produce contains no pesticides or herbicides and are non-GMO. So, there you go! Your fermented veggies are only going to be as good as the ingredients. We pay extremely high prices for imported Korean ingredients. As for the raw veggies that get mixed with the purchased ingredients, we try to grow those. Napa Cabbage is the main ingredient in Kimchi and it is CHEAP to buy in the USA because no one here uses it.

The quality of it is horrible. Growing it is very expensive! I have over \$500 just in the single raised bed that's 3'x9' and 15" tall that is dedicated to nothing but Napa Cabbage! I can buy 10 years worth of Napa cabbage for \$500. That doesn't include all the watering, fertilizing, time, and VARMIT control! Just this week I've shot 2 rabbits coming for my raised beds! I have electric fencing around them, but it doesn't stop the rabbits from trying to get in.

Posted On 04/26/2024

jamNjim

I'm sure everyone here has been to a Mexican Restaurant? You know the drill. They seat you and then bring out the Chips, Salsa, and Water. You go to an Italian Restaurant and you get Bread, Olive Oil (seasoned), and Water. In S. Korea, as soon as you are seated, you get 12 side dishes of fermented veggies, chop sticks, and water. In many cases, they will include fresh veggies like carrots, celery, and romaine lettuce.

Posted On 04/26/2024

jamNjim

I have a theory on my inability to make good kimchi in the USA. I believe the chemicals used in the crops have destroyed the microbiome that exist. This in turn creates a cabbage that has less Lactobacillus. Lactobacillus is the bacterium responsible for the fermentation of carbohydrates in a low-oxygen environment and it is what creates the pleasant-funkiness, sourness, and acidic qualities of Kimchi. Without ample amounts of Lactobacillus, the cabbage will still ferment, but in the wrong direction. The cabbage is less crisp, less pungent, and takes on more of a rice-wine-vinegar taste/smell, which I'm not a fan of!

I like white vinegar because it is more sour, pungent, and acidic than rice-wine or balsamic vinegar. It's why I'm a HUGE fan of sauerkraut! Unfortunately, my wife doesn't like sauerkraut! I've been baffled by this for 20+ years now. I can literally catch the next flight to S. Korea, go to the nearest grocery store to buy ALL of my ingredients (including the cabbage), and make perfect Kimchi. I can't do it in the USA even if my life depended on it. I don't get it.

Posted On 04/26/2024

Guillermou

Fermented foods are consumed in several European countries and the popularity of specific fermented foods can vary from region to region. However, some countries in Europe have a long history of consuming fermented foods as part of their traditional diets. Below are some European countries where fermented foods are commonly enjoyed: ---1. Germany: Germany is known for its sauerkraut, which is fermented cabbage, as well as various types of fermented sausages and bread. -- ---2. France: French cuisine includes a variety of fermented foods such as cheese, wine, and sourdough bread. French cheeses like Roquefort and Brie are famous for their unique fermentation processes.

---3. Russia: Fermented foods are an integral part of Russian cuisine. Examples include sauerkraut (kapusta kiszona), kefir, kvass (a fermented drink), and fermented cucumbers. ----4. Eastern Europe: Eastern European countries, including Poland, Hungary, and Ukraine, have a tradition of consuming fermented foods such as pickled vegetables, kefir, and various types of fermented dairy products. --- -5. Scandinavia: Fermented fish, known as surströmming in Sweden, and various forms of fermented dairy such as Icelandic skyr and Norwegian brunost are popular in Scandinavia. ----6.

Balkan Peninsula: Fermented foods such as yogurt, sauerkraut, and pickled peppers are commonly enjoyed in the countries of the Balkan Peninsula, including Greece, Bulgaria, and Serbia. ----7. Italy: Italy is known for its aged and fermented cheeses such as Parmesan and Pecorino, as well as its fermented sausages such as salami. ----8. Spain: Spanish cuisine features fermented foods such as olives, vinegar, and fermented sausages such as chorizo. It is important to note that the popularity of fermented foods can also vary within these countries, and different regions may have their own unique fermented specialties.

Posted On 04/26/2024

rrealrose

At the beginning of the pandemic, iHerb was nearly giving away lactobif (bifido baccillus) probiotic tablets. Wonder if you could soak into a ferment liquid, or grind to a powder and include with your fermentation mix. Just a hunch, as I have used Dr M's complete probiotics to ferment coconut water and lower its high sugar content. Works well!

Posted On 04/26/2024

Otorongo

Jim Jam, The way they serve food in most Italian restaurants is not the way we Italians really eat. They are so removed from the food and the sequence of serving the food. I may be a second generation Italian American but I am proud to be An American. Please note, It is not the Americans that have adulterated the food. It is the agribusinesses that have done that. Hence, unknowing people of all backgrounds have succumb to the adulterated "American Food System" and have fallen in, lock step with the perfect fruit or the absence of eating head to tale. Oh my gosh! And that darn dreaded dandelion it must be eradicated. Perfect food perfect lawns and on.

I for one was fortunate enough to learn foraging when it wasn't fashionable and to cook from scratch When TV dinners, casseroles and cake mixes were fashionable. I have always known junk food for what is and junk ingredients for what they are. I've been canning since the 1970's and have taught my children. They in turn have taught their spouses and in-laws, who all now profess that they cannot eat store bought or restaurant sauce. Including my second husband who claims he doesn't want to eat out because nothing has any taste. That's what happens once people eat real food. You start with knowing the farming methods.

If it doesn't start there you know they are not quality ingredients. All of my children garden and grow as much of their own food as they are able to. And I'm grateful that they didn't decide that mom is just old fashion. Even My grand-daughter and God grand-daughter join in making enough tomato sauce to last a year. Last year I started making fermented veggies and have been teaching friends and neighbors. And this year I made my first batch of Apple vinegar. It's sad that so many have been lured into the "ease" of everything to make our lives simpler only to result in giving us Dis-ease.

Posted On 04/29/2024

bpm4539

I am thinking to start making Kefir. I checked for Kefir grains. I see a quote of \$15 for 1 TBS, which I guess means 1 table spoon. Is this stuff so expensive, and is 1 TBS enough?

Posted On 04/28/2024

Janko

Of course Russians also have the sauerkraut but it goes by Russian name: kvashenaya kapusta,

Posted On 04/27/2024

Janko

Dear Guillermou, I am from Poland and...Kapusta kiszona is saurekraut but from Poland ,not from Russia.
Jan from Poland

Posted On 04/27/2024

Hughes

Where to get probiotic powder? Do you have a written recipe for this? Do jars need to be sterilized? Mary
Ann Hughes

Posted On 04/27/2024

londabohlreagan.com

What is the probiotic used in the fermented veggie recipe, how much probiotic & celery juice do I mix
together, and where do I purchase the probiotic? Thank you. Londa

Posted On 04/26/2024

jma3136

Carbs to alcohol doesn't sound like a good idea. I make my own kombucha from my own apple sauce. The good bacteria change the natural fructose into apple cider vinegar and the fruit pulp into short chain fatty acids. The yeast that would make alcohol can't survive in the ACV, so even calling the top layer a scoby is a misnomer because yeast or mold can not live in it.

Posted On 04/26/2024

rrealrose

Wonder how many realize that for every 8 or 9 signals from the gut to the brain, the brain sends 1 signal back to the gut? This came from Dr Tom O'Bryan years ago, in his Betrayal Series on autoimmunity. Yup, really important to consume ferments of all varieties, and also maintain a lot of variety of microbes in the gut (don't get stuck on just a few foods).

Posted On 04/26/2024

binspired2earthlink.net

Go to "Cultured Food Life" online , you will find starter cultures and thousands of fantastic recipes for all food and drink fermentations. Donna is the owner and she is a veritable wizard regarding fermented cultured foods. She collaborates with Dr. William Davis (author of Supergut and Wheatbelly), he has her cultures on his site. She is very well known and a really good human being.

Posted On 04/26/2024

shangrila114

Thank you for this post. I am going to study her site. Her story is so inspiring:
www.culturedfoodlife.com .

Posted On 04/27/2024

kjerstid

I cant find Mercola kinetic culture. I miss it, the sauerkraut was excellent!

Posted On 04/26/2024

emj69036

Blast from the past! Thanks for inserting the video (www.youtube.com/watch) from your kitchen. I watched it when I first started making sauerkraut but lost it along the way. Recently I've been wanting to add more vegetables; normally I use just onion/dill/caraway seed. I know others have asked you to bring your starter culture back to the Market. (Hint!)

Posted On 04/26/2024

mar9779

Doc used to sell a starter culture that worked great. I did find one that has the same ingredients plus 2 more at The Doctor Within. The probiotic capsules need to be emptied though to get the powder.

Posted On 04/26/2024

LSquare

Thanks for the referral, Mar. I'd actually just reached out to Mercola Market this past week to see if they would be restocking Kinetic Culture soon, and they replied that they would not be. I do want one, though, that creates a lot of K2, since I don't think that Natto is that easy to culture.

Posted On 04/26/2024

emj69036

Thanks for this, Mar. Can you suggest how many capsules do you use per quart?

Posted On 04/26/2024

mar9779

3 capsules per quart works fine at 75 degrees 3-4 days

Posted On 04/26/2024

LSquare

Thanks to the video above, which was used in an article a couple of years ago, I started fermenting and culturing my own vegetables. I started relatively simple, using a Dutch oven as my fermentation pot, but as I progressed (going to the Asian market to source gochugaru and brined, fermented shrimp), I then got a larger, plastic fermenting pot at Amazon (3.1 gal e-jen) that has a silicon liner to easily push air out, and it's now easier than ever. It can easily hold 2 heads of regular cabbage plus 2-3 big bunches of Napa cabbage, along with carrots and all of the other vegetables that I use. It's very easy to eat a cup or more at a time just by itself. I really want to thank Dr Mercola for the video; I'm not sure that if I hadn't watched it that I ever would've started fermenting food, but it really is so easy. The hardest part is slicing and shredding the vegetables by hand. Pickled carrot sticks and pickled cauliflower are really good, too.

Posted On 04/26/2024

Otorongo

LSquare. OH my gosh! fermented shrimp. Sounds awesome! How do you do it?

Posted On 04/29/2024

chrisphillips

i eat fermented foods everyday... hex brand is pricey but it doesn't take much...i crave small servings with my savories...

Posted On 04/26/2024

bpm4539

This is a very important article. Thank you doctor. So far i have been making only sauerkraut. This article inspires me to venture into more.

Posted On 04/26/2024
