

WELCOME!

Information about today's program

- Presentation will be about 40 minutes followed by a chance to ask questions.
- If you have a question for the presenter, you can type it into the Q & A box at any time.
- Recorded Video will be archived on the APDA Northwest YouTube channel



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APDA TAKE CONTROL

The Gut Biome & PD



Dr. Kelly Condefer
Movement Disorder Specialist
Confluence Health

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The Gut-Brain- Microbiome Axis

AND WHY IT MATTERS IN
PARKINSON'S.

KELLY CONDEFER, MD

DEPARTMENT OF NEUROLOGY,
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JULY 9, 2020

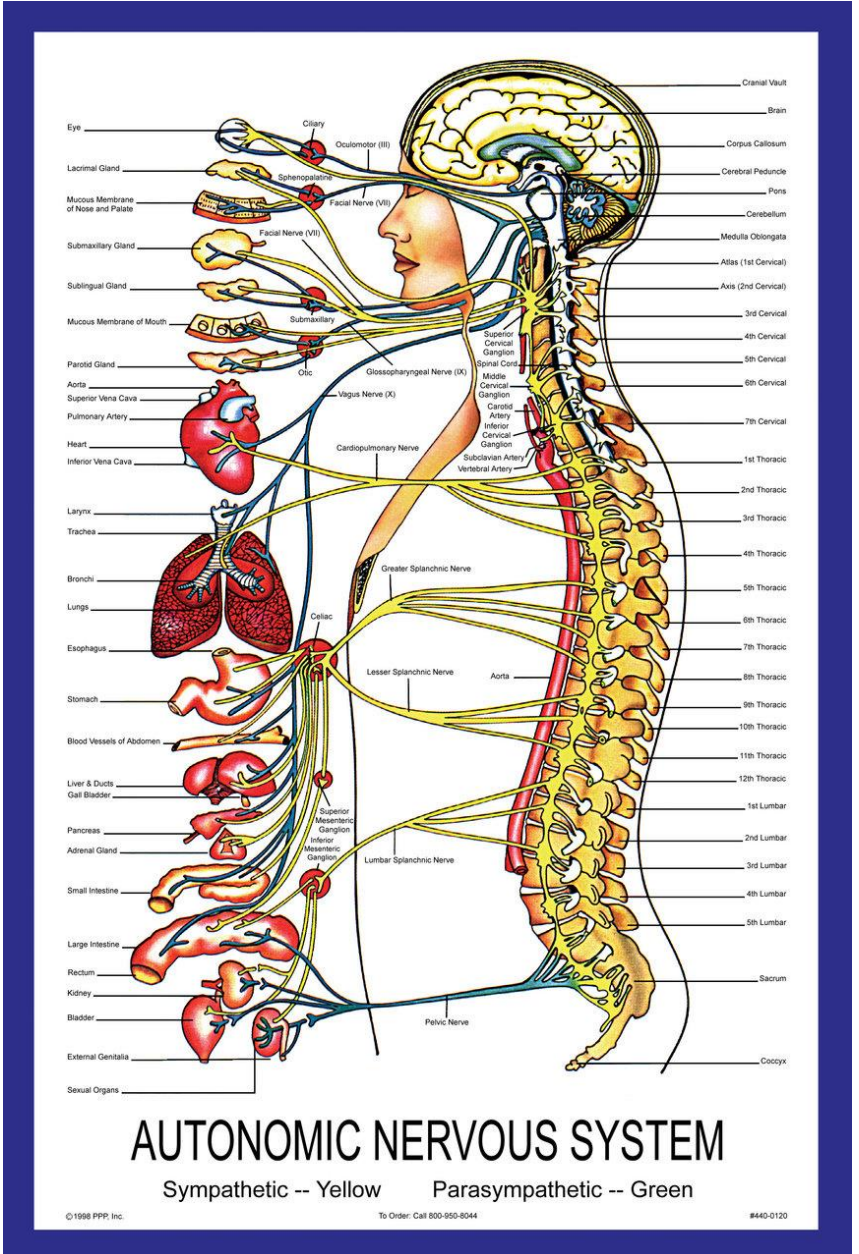


Traditional Chinese Medicine

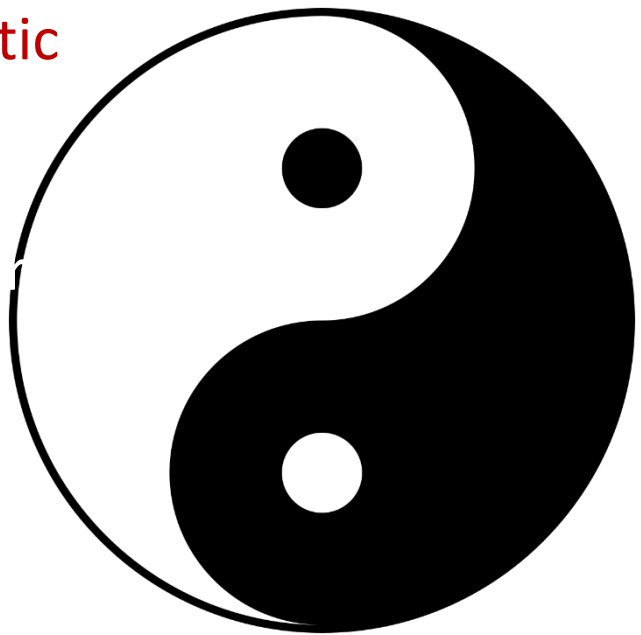


Ayurvedic Medicine

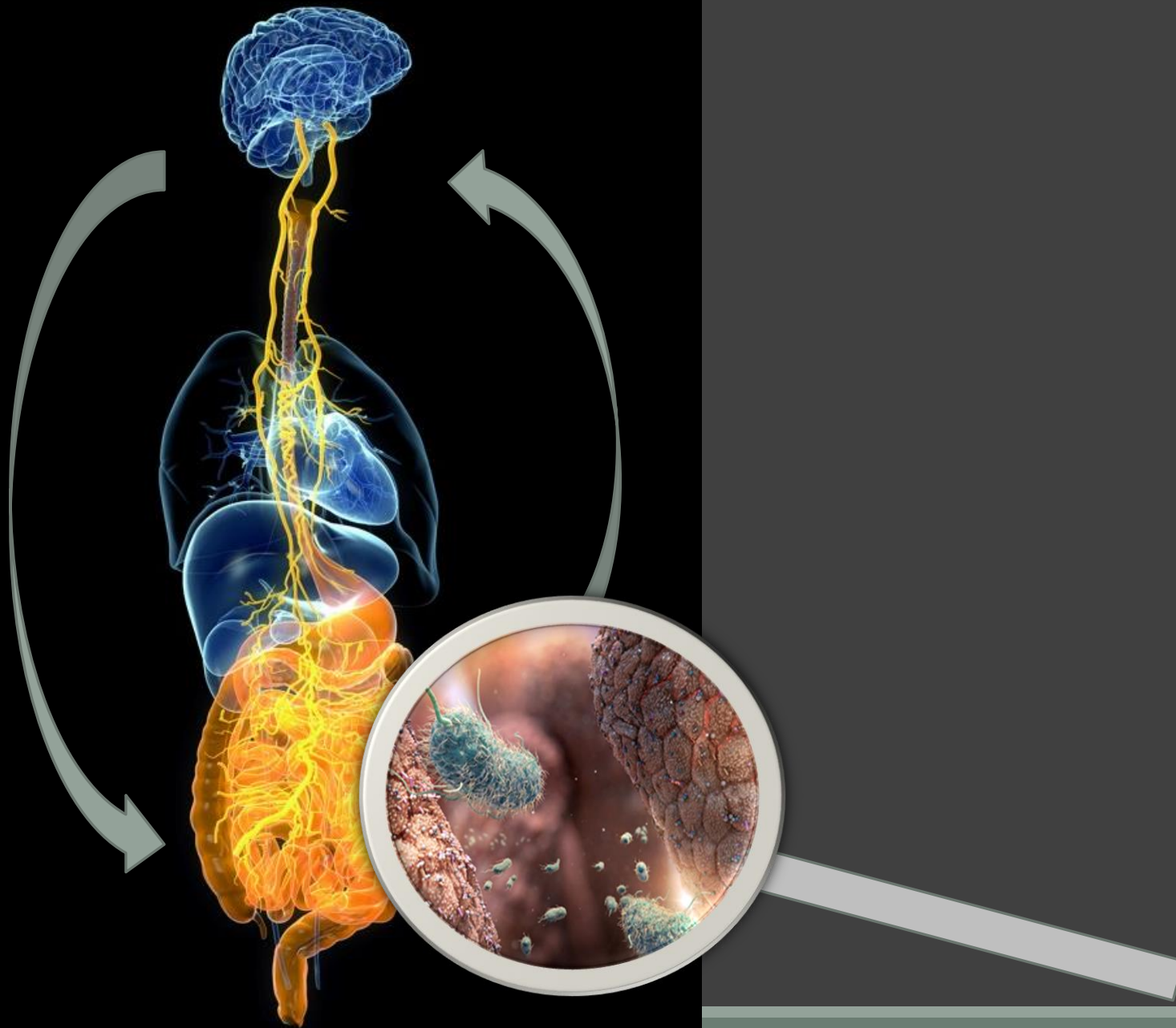




Yin
 Parasympathetic
 Restorative
 Calming
 Vagus nerve



Yang
 Sympathetic
 “fight flight or freeze”
 Activating
 Excitatory

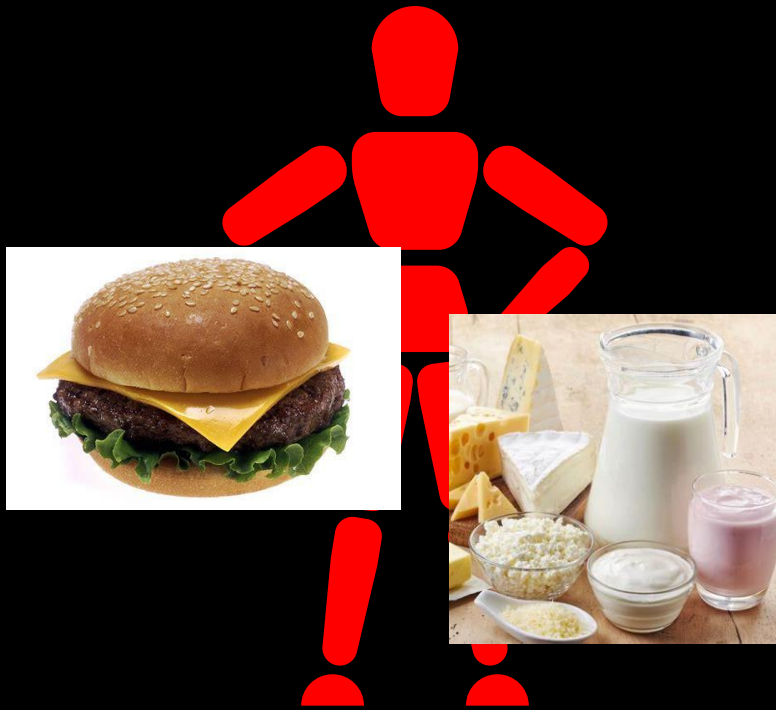


An iceberg floating in clear blue water. The tip of the iceberg is above the surface, while the much larger, jagged base is submerged underwater. The water is a deep, clear blue, and the sky is a lighter blue with some clouds. The iceberg's surface is highly textured with various ridges and crevasses.

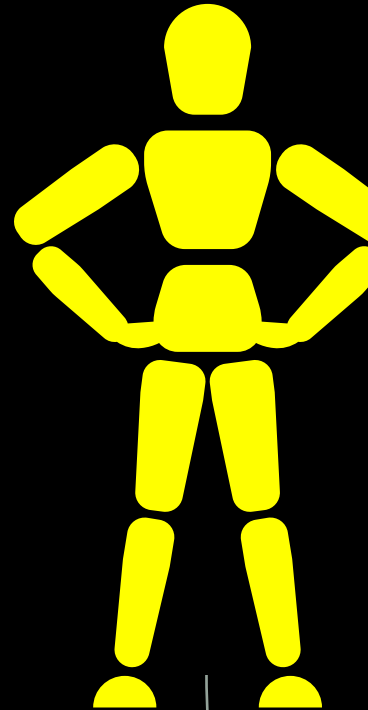
Human DNA:
20,000 genes

Bacterial DNA in every human
body:
2 to 20 MILLION genes

What's your enterotype?



Bacteriodes predominant



Prevotella/ Ruminococcus predominant

- **Probiotic:** bacteria that promote/support growth of other beneficial bacteria in gut
- **Prebiotic:** foods that nourish beneficial bacteria in the gut
- **Commensal:** resident bacteria that do us no harm when they are in balance; if out of balance can become pathogenic.
- **Pathogenic:** bacteria or other organisms that can cause infection/disease.

- **SCFA:** short chain fatty acids like butyrate– most of time these are beneficial.
- **LPS:** lipopolysaccharide– building block of cell wall of some bacteria; gets into bloodstream after we eat, also crosses blood brain barrier and is a trigger for neuroinflammation
- **Dysbiosis:** state of imbalance of the microbiome
- **Microbiome diversity:** healthy state of lots of different types of beneficial bacteria all in good state of balance.





Our “Inner Pharmacy”



Some factors that influence the makeup of our microbiome:

Modifiable

Diet

Pharmaceuticals

Stress response

Pollution

Pesticides in food

Antibiotic exposures

Psychological state

Exposure to nature,
animals

Set

Our genetics

Pre and perinatal factors
(mother's diet, breast
feeding, mother's stress
levels)

What can you do to improve your bacterial diversity and gut health?



Eat diet full of variety of **vegetables**, and high amounts of fiber. *Organic* where possible.

Grow a **vegetable garden**.



Go outside in the **woods**, breathe deep.

Try to **limit antibiotics** unless absolutely necessary.

Interact with **animals**.

Eat/drink **fermented** foods (make them yourself!).

Limit your exposure to chemicals of all kinds.

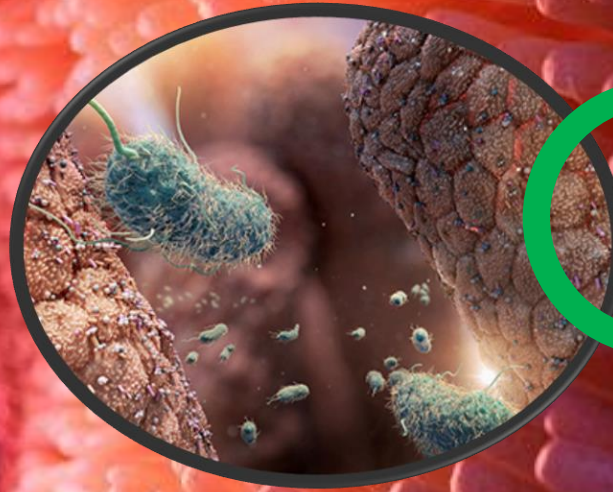
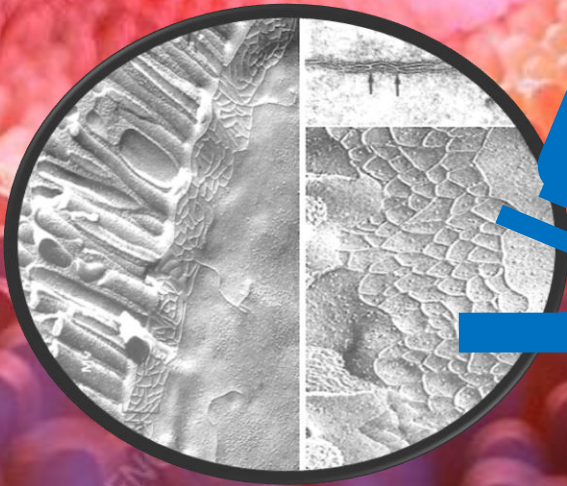
Probiotics –might be good to rotate different brands.

Adopt a mind-body practice like mindfulness, contemplative prayer, yoga, etc.

Functions of the intestinal mucosa, which houses our microbiome:

Keeps toxic and disease causing substances from entering our systems.

Orchestrates the absorption of nutrients from our diet, translating into the building blocks of life.





LPS LEVELS IN THE GUT INCREASE AFTER WE EAT FOOD; DIFFERENT LEVELS IN DIFFERENT TYPES OF FOOD.



LPS GETS REMOVED FROM GUT BY BOWEL MOVEMENTS;
BUT IF IT CROSSES THE INTESTINAL LINING CAUSES INFLAMMATION AND DISRUPTION OF GUT BRAIN COMMUNICATION.



LPS ENTERS ENTERIC NERVOUS SYSTEM AND TRAVELS TO BRAIN;
THIS DISRUPTS DOPAMINE FUNCTION AND RECEPTORS;



LPS MEDIATED NEUROINFLAMMATION HAS BEEN SHOWN TO BE A DRIVER OF NEURODEGENERATION IN AD, AND IN PD

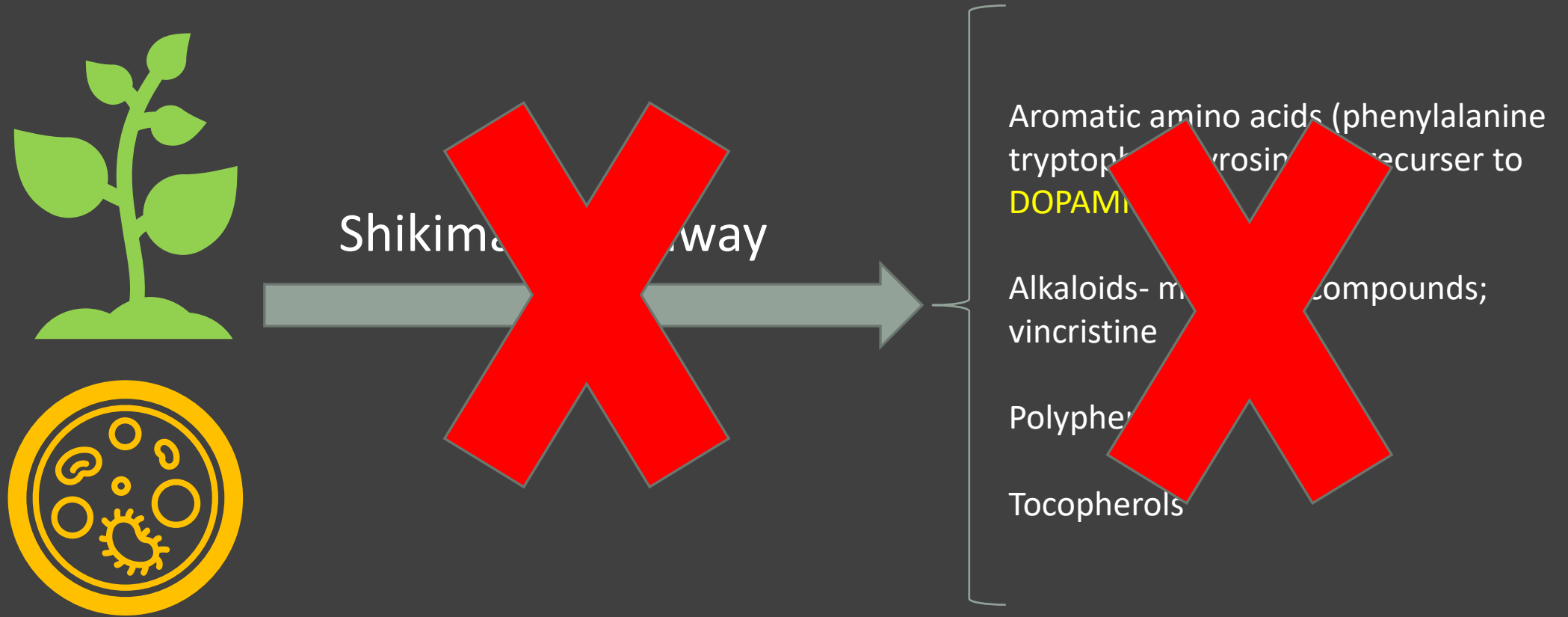
LPS and the neuroinflammation concept in Parkinson's.

Tips for managing constipation

- Warm prune juice and butter.
- “Dynamite prunes”- prunes soaked in senna tea.
- A good quality Probiotic.
- Warm water with raw honey.
- Aloe Vera juice.
- Acupressure points, massage, reflexology.
- Movement/ exercise.

Glyphosate (RoundUpTM)

damages the microbiome and contributes to “leaky gut” and “leaky brain”



What is known about the microbiome in relation to Parkinson's?

1. Decreased abundance of bacteria which produce SCFA (*lachnospiraceae*, *ruminoococcaceae*)
2. Overabundance of opportunistic pathogens in the gut microbiome (*porphyromonas*, *prevotella*, *corynebacterium*).
3. Elevated levels of probiotic bacteria that metabolize carbohydrate (e.g. *lactobacillus*, *bifidobacterium*).

Characterizing dysbiosis of gut microbiome in PD: evidence for overabundance of opportunistic pathogens.

Zachary D. Wallen, Mary Appah, Marissa N. Dean, Cheryl L. Sesler, Stewart A. Factor, Eric Molho, Cyrus P. Zabetian, David G. Standaert & Haydeh Payami. Parkinson's Disease volume 6, Article number: 11 (12 June, 2020)

Microbiome might explain why everyone reacts differently to carbidopa/levodopa treatment.

E faecalis– this particular bacteria seems to eat L-dopa, converting it into dopamine directly in the gut, which we do not want because this causes nausea, and the dopamine does not get to the brain where we need it;

Carbidopa/levodopa contains carbidopa in order to prevent conversion of levodopa to dopamine in the gut. But it seems that when E faecalis is present, the carbidopa does not work. . .

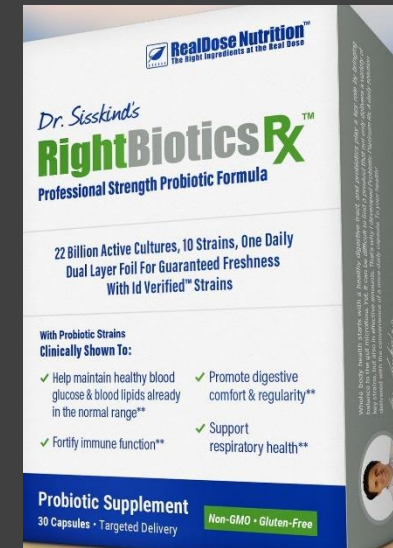
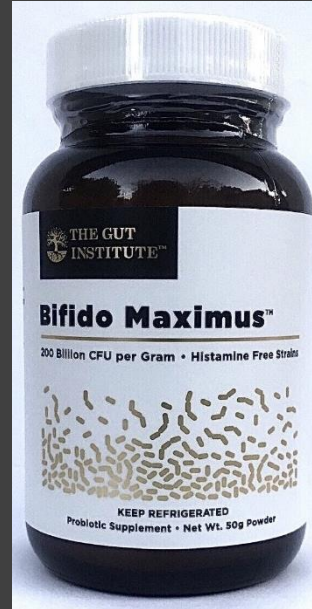
This is one reason why everybody with PD responds so differently to the drug carbidopa/levodopa.



Maybe a particular bacteria population also influences whether or not you develop dyskinesias from L-dopa, this is simply not yet known. . .



Should I take a probiotic?





Take Home Points

- Research on the gut brain microbiome axis is teaching us how the health of our intestinal lining and the bacteria that live there directly influences neurological disorders and diseases like Parkinson's.

-The communication between gut and brain is BIDIRECTIONAL– thoughts influence our gut and the state of our gut influences our brain. The bacteria translate the communication between the two.

-In Parkinson's disease the gut microbiome is disrupted but exactly how to manipulate the microbiome to treat or prevent Parkinson's is not yet clear.

-Lactobacillus species seem to be overabundant in the microbiome in Parkinson's; it may be better to avoid taking lactobacillus probiotics if you have PD.

-LPS seems to be a driver of neuroinflammation in Parkinson's; keep LPS levels low by eating a mostly plant based, whole foods diet, and taking measures to help constipation.

Clean food resources



www.detoxproject.org

EWG'S 2020 **DIRTY 12**

- | | | |
|-----------------|-------------|--------------|
| 1. Strawberries | 5. Apples | 9. Pears |
| 2. Spinach | 6. Grapes | 10. Tomatoes |
| 3. Kale | 7. Peaches | 11. Celery |
| 4. Nectarines | 8. Cherries | 12. Potatoes |



EWG'S 2020 **CLEAN 15**

- | | | |
|---------------|------------------------|---------------|
| 1. Avocados | 6. Sweet Peas (frozen) | 11. Broccoli |
| 2. Sweet Corn | 7. Eggplant | 12. Mushrooms |
| 3. Pineapple | 8. Asparagus | 13. Cabbage |
| 4. Onions | 9. Cauliflower | 14. Honey Dew |
| 5. Papaya | 10. Cantaloupe | 15. Kiwi |

QUESTIONS?

Please enter questions into the Q & A box

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information about future programs and services offered.

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APDA TAKE CONTROL

The Healing Power of Food



Wilma Shaw

Nutritional Therapy Practitioner &
Board Certified in Holistic Nutrition
Embrace Nutrition

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