

Effects of nutrition and the gut microbiome in GIST Patients.

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Review:



Benefits of proper nutrition



Nutrition and surgical procedures



Microbiome and cancer



What about exercise?



General Recommendations

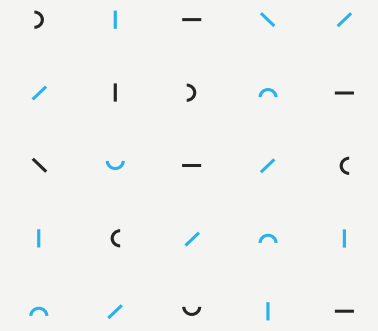


Questions

Benefits of proper nutrition

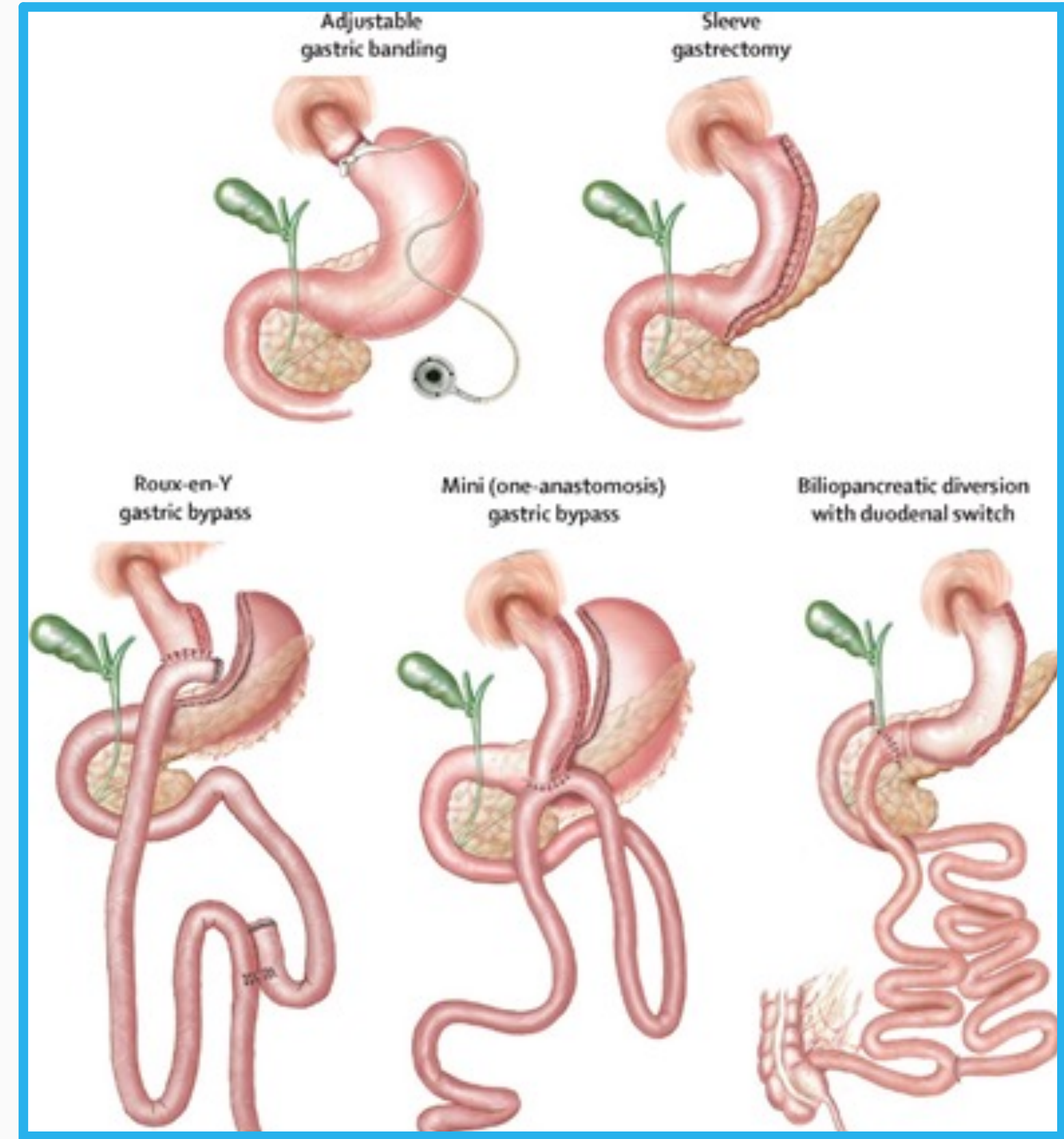


- 01** Sense of well-being
- 02** Reduces the risk of infections
- 03** Increase wound healing
- 04** Increase strength and energy
- 05** Helps tolerate the side effects .



Nutrition and surgical procedures

- Nutritional care in patients undergoing gastrointestinal surgery extends well beyond the perioperative period.
- Screening for malnutrition and deficiency in vitamins and trace elements is fundamental.
- Supplementation with protein powders may be suggested
- Be aware of dumping syndrome.
- Monitor weight loss, and to prevent deficiencies of micronutrients.

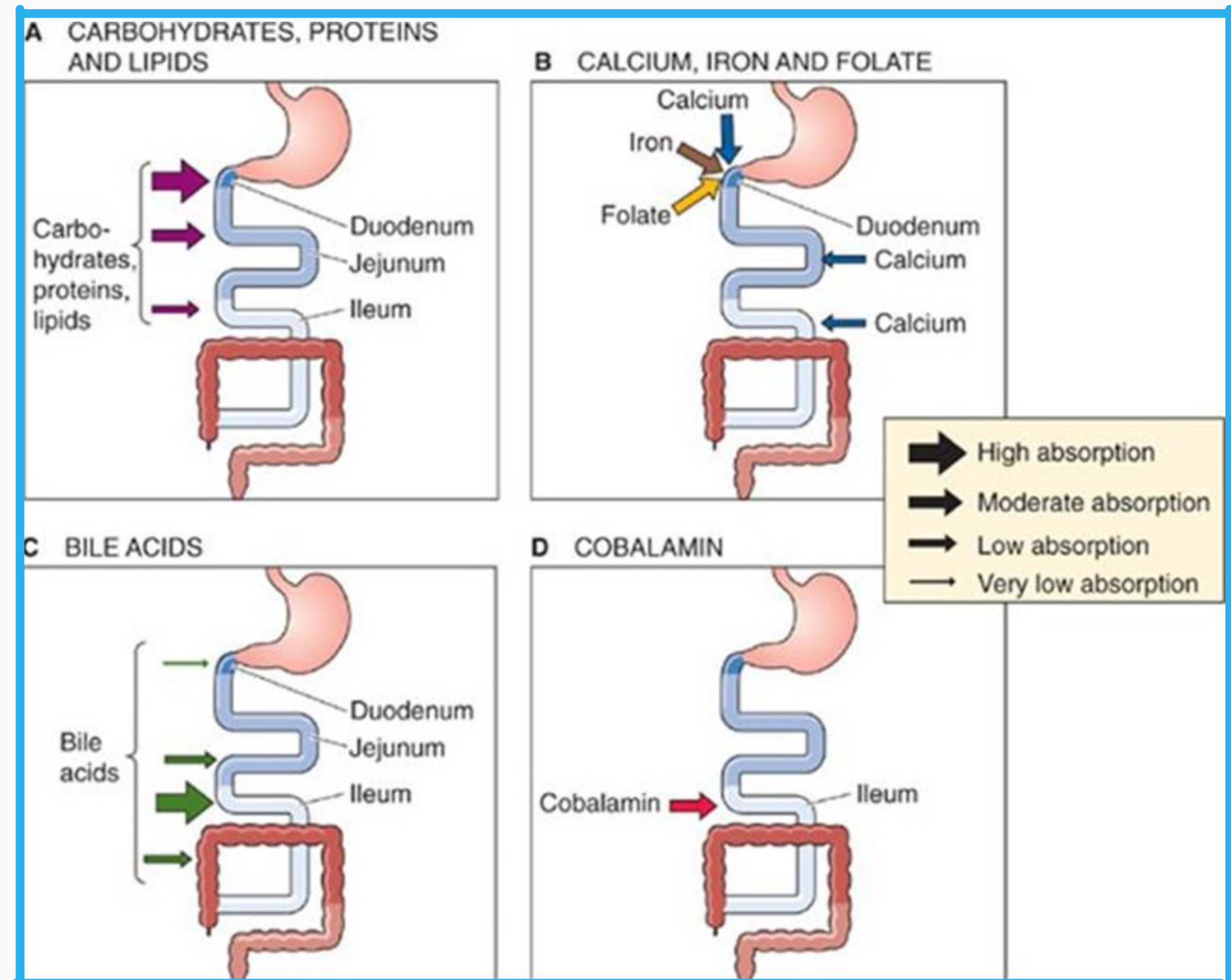


NUTRIENTS ABSORPTION

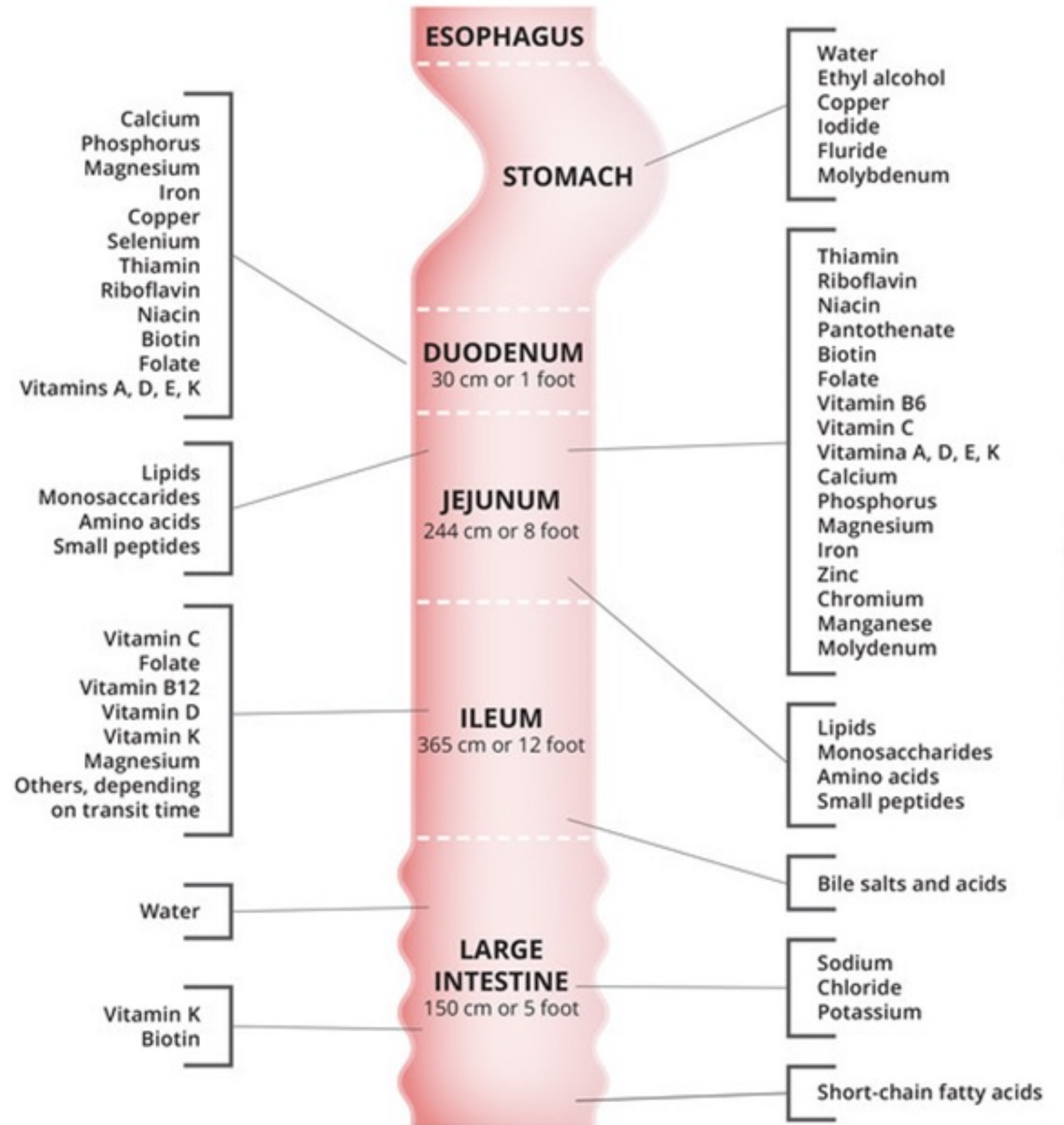
Gastrointestinal tract includes your mouth, stomach, small intestines and large intestines.

Approximately 92 to 97 percent of the nutrients consumed, which includes carbohydrates, protein, fat, fluid, vitamins and minerals, are absorbed through the GI tract,

-Sylvia Escott-Stum



NUTRIENTS ABSORPTION



Note: The duodenum, jejunum and ileum make up the small intestine.

Small Intestine - GIST

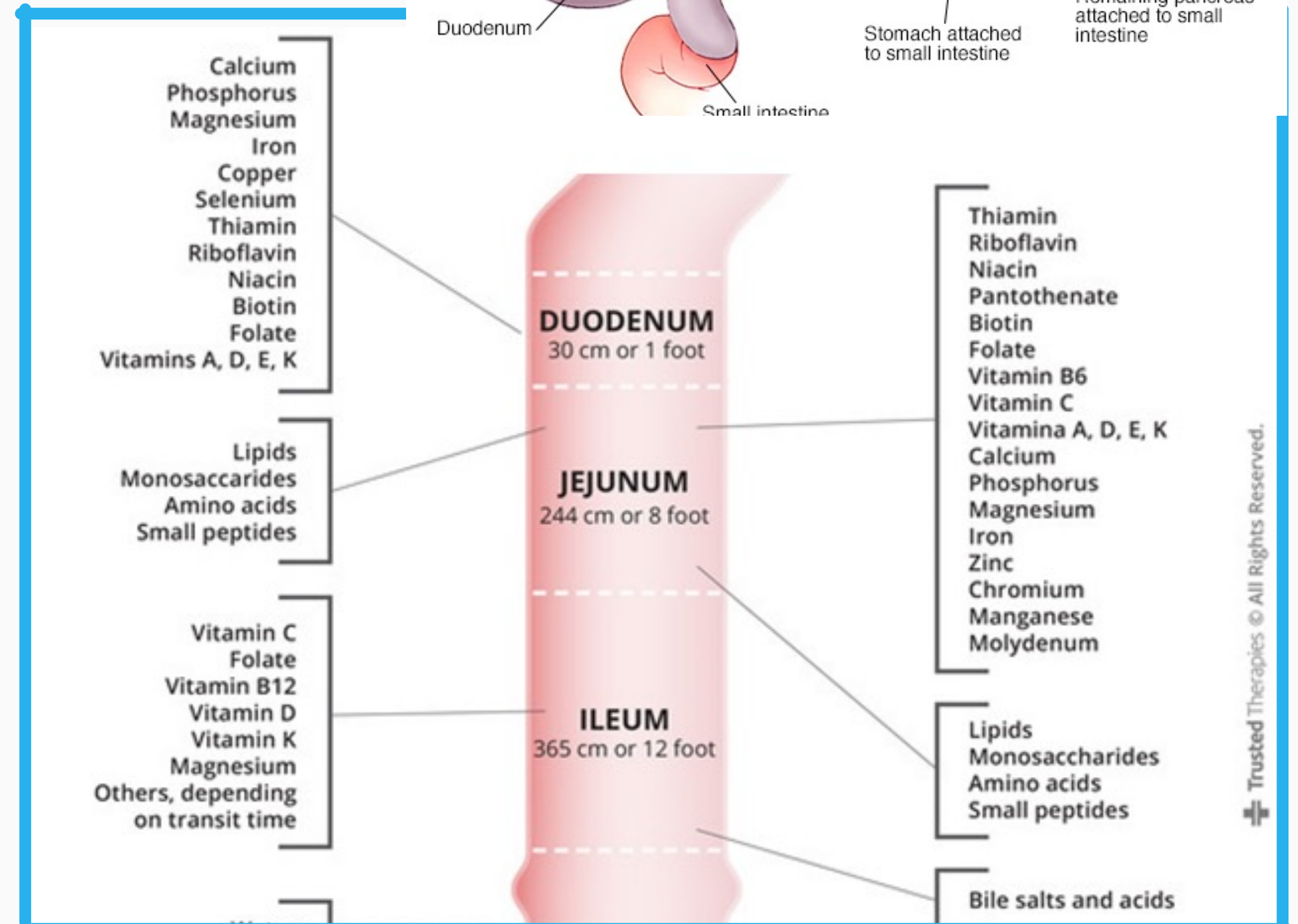
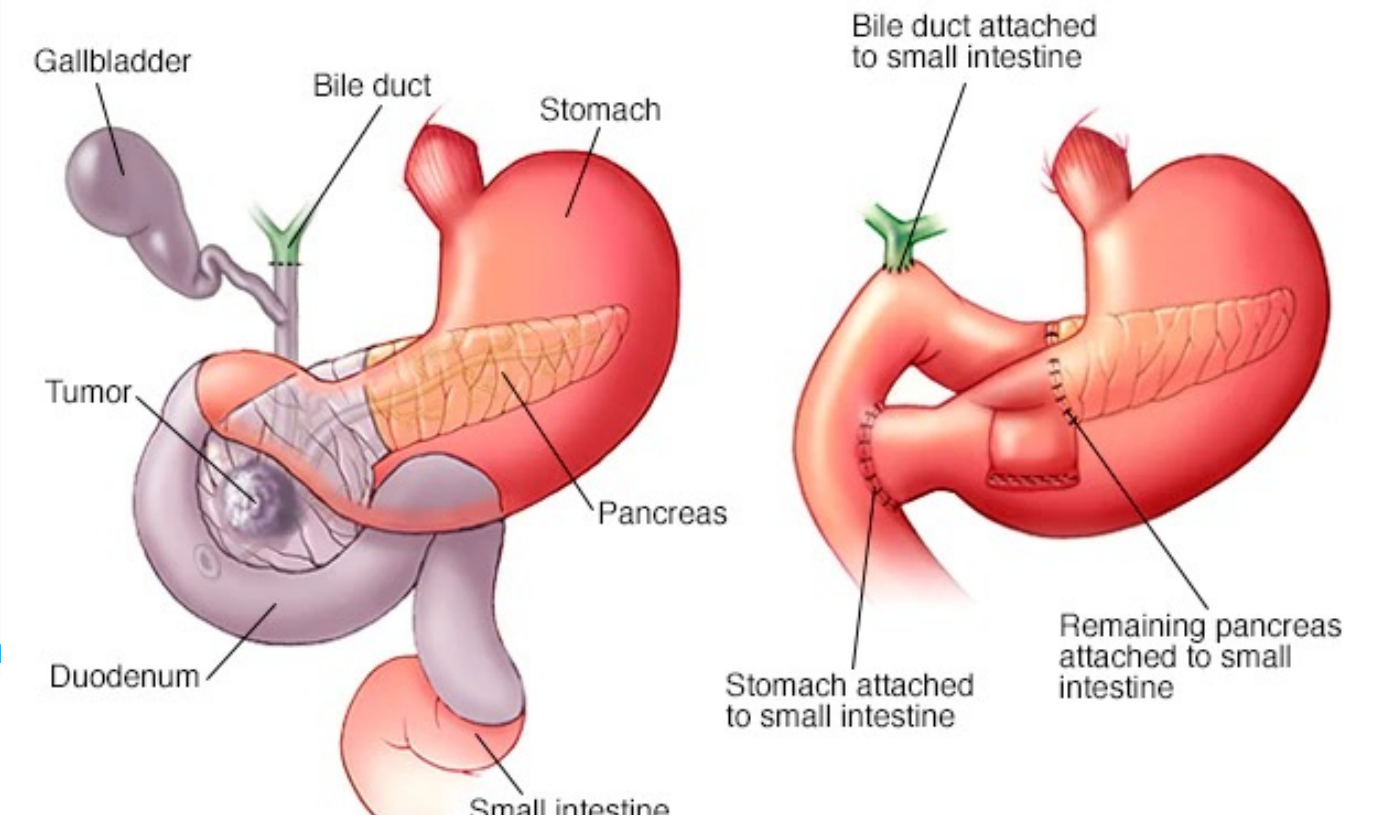
Risk

factors

- Malabsorption
- Diarrhea / constipation
- Feeling full

What can we do?

- Avoid foods with a lot of sugar (avoid adding sugar)
- Non inflammatory diet
- Low-FODMAPS diet (gluten, lactose, high fat food, sugar, and some vegetables and fruits)
- Avoid high fat foods

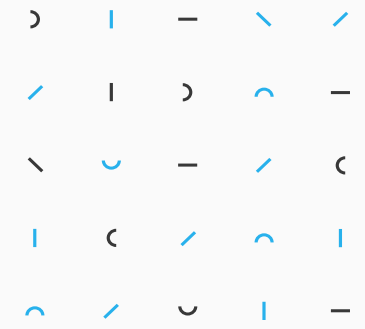


Low FODMAP Diet

A low FODMAP diet may help people with gastrointestinal problems like bloating, gas, or irritable bowel syndrome (IBS).

Avoid			Enjoy		
<p>Excess Fructose</p> <ul style="list-style-type: none"> • Fruit: apple, mango, nashi, pear, canned fruit in natural juice, watermelon. • Sweeteners: fructose, high fructose corn syrup, corn syrup, honey. • Concentrated fructose: concentrated fruit, large servings of fruit, dried fruit, fruit juice. 	<p>Fructans</p> <ul style="list-style-type: none"> • Asparagus • Beetroot • Broccoli • Brussels sprouts • Cabbage • Eggplant • Fennel • Garlic • Leek • Okra • Onion (all) • Shallots • Cereals: wheat and rye in large amounts (e.g. bread, crackers, cookies, couscous, pasta) • Fruit: custard apple, persimmon, watermelon • Misc: chicory, dandelion, inulin 	<p>Polyols</p> <ul style="list-style-type: none"> • Apple • Apricot • Avocado • Blackberry • Cherry • Lychee • Nashi • Nectarine • Peach • Pear • Plum • Prune • Watermelon • Vegetables: Green bell pepper, mushroom, sweet corn • Sweeteners: sorbitol (420), mannitol (421), isomalt (953), maltitol (965), xylitol (967) 	<p>Fruit</p> <ul style="list-style-type: none"> • Banana • Blueberry • Boysenberry • Canteloupe • Cranberry • Durian • Grape • Grapefruit • Honeydew melon • Kiwi • Lemon • Lime • Mandarin • Orange • Passionfruit • Pawpaw • Raspberry • Rhubarb • Rockmelon • Star anise • Strawberry • Tangelo 	<p>Vegetables</p> <ul style="list-style-type: none"> • Alfalfa • Artichoke • Bamboo shoots • Beat shoots • Bok choy • Carrot • Celery • Choko • Choy sum • Endive • Ginger • Green beans • Lettuces • Olives • Parsnip • Potato • Pumpkin • Red bell pepper • Silver beet • Spinach • Summer squash (yellow) • Swede • Sweet potato • Taro • Tomato • Turnip • Yam • Zucchini 	<p>Starch</p> <ul style="list-style-type: none"> • Gluten free bread or cereal products • 100% spelt bread • Rice • Oats • Polenta • Other: arrowroot, millet, psyllium, quinoa, sorgum, tapioca
<p>Lactose</p> <ul style="list-style-type: none"> • Milk: milk from cows, goats, or sheep. • Custard, ice cream • Yogurt • Cheese: soft, unripened cheeses like cottage, cream, mascarpone, ricotta 	<p>Galactans</p> <ul style="list-style-type: none"> • Legumes: Beans, baked beans, chickpeas, kidney beans, lentils 		<p>Misc</p> <ul style="list-style-type: none"> • Sweeteners - sucrose, glucose, artificial sweeteners not ending in "-ol", and sugar in small quantities • Honey substitutes - small quantities of golden syrup, maple syrup, molasses, and treacle 		<p>Dairy</p> <ul style="list-style-type: none"> • Milk - lactose-free milk, oat milk, rice milk, soy milk (check for additives) • Cheeses - hard cheeses, brie, and camembert • Yogurt (lactose free) • Ice cream substitutes - gelati, sorbet • Butter substitutes (e.g. olive oil)





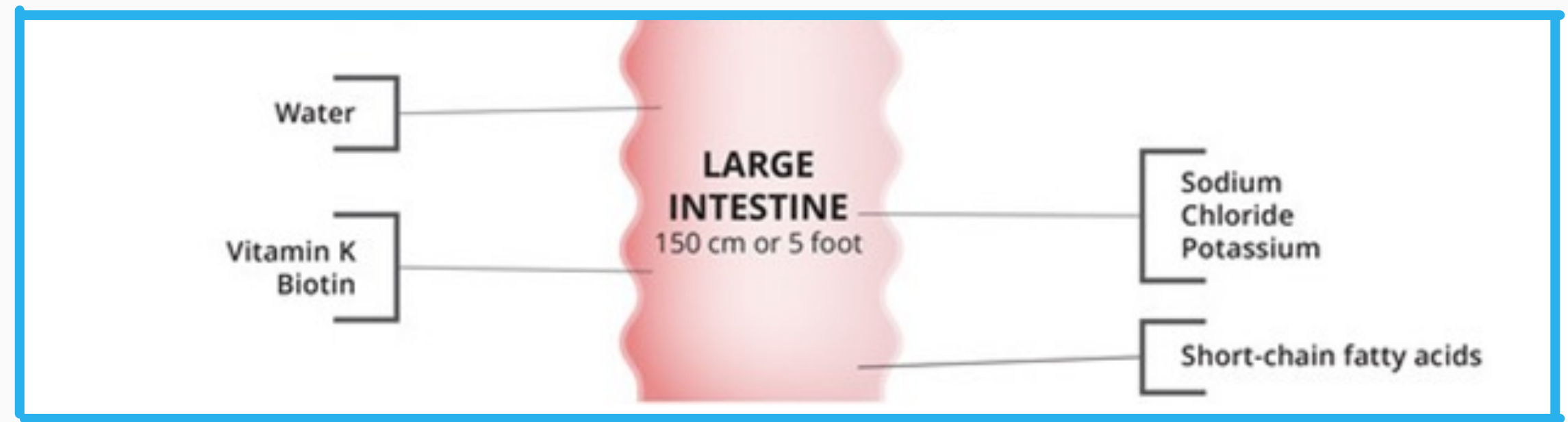
Colon - GIST

Risk factors

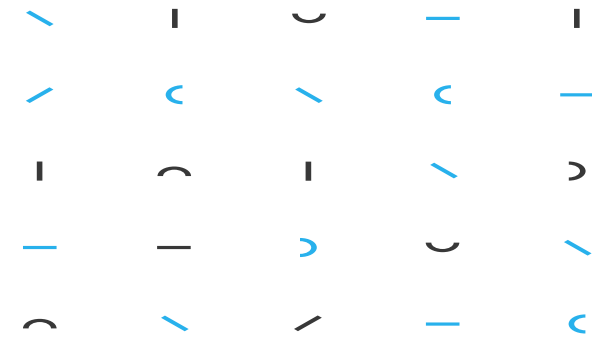
- Diarrhea
- Dehydration

What can we do?

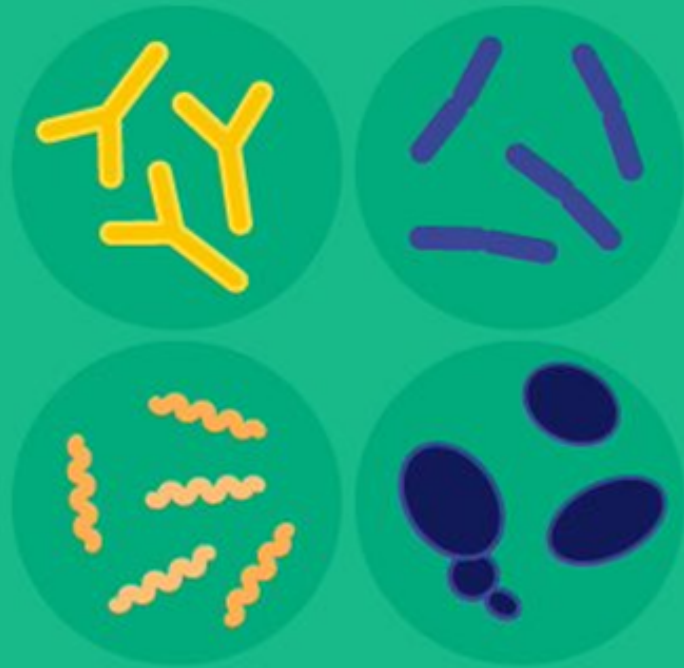
- Increase water intake
- May suggest electrolytes
- Astringent Diet



Microbiota and cancer.



microorganisms



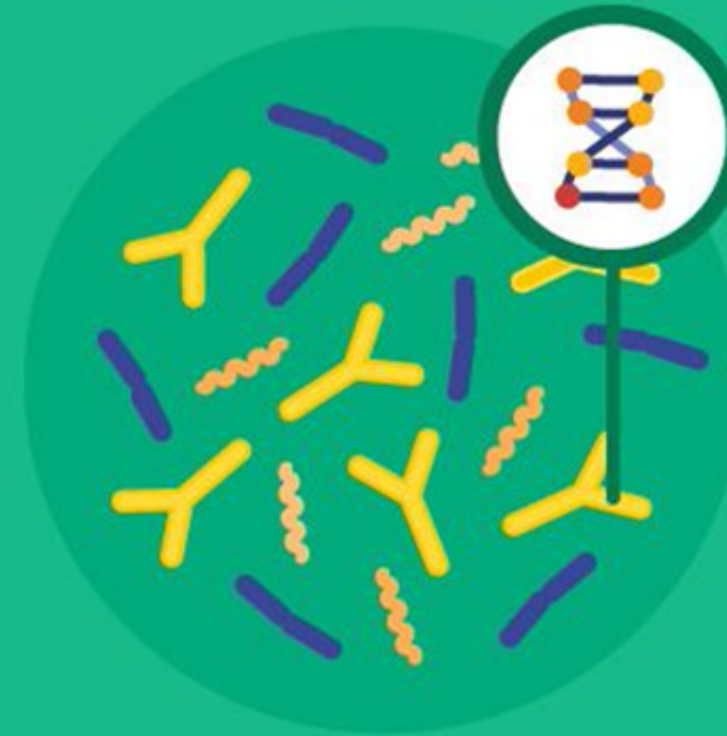
tiny organisms
living in all kinds of
environments

microbiota

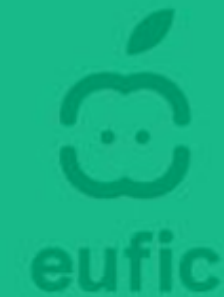


a community of
microorganisms in a
specific environment

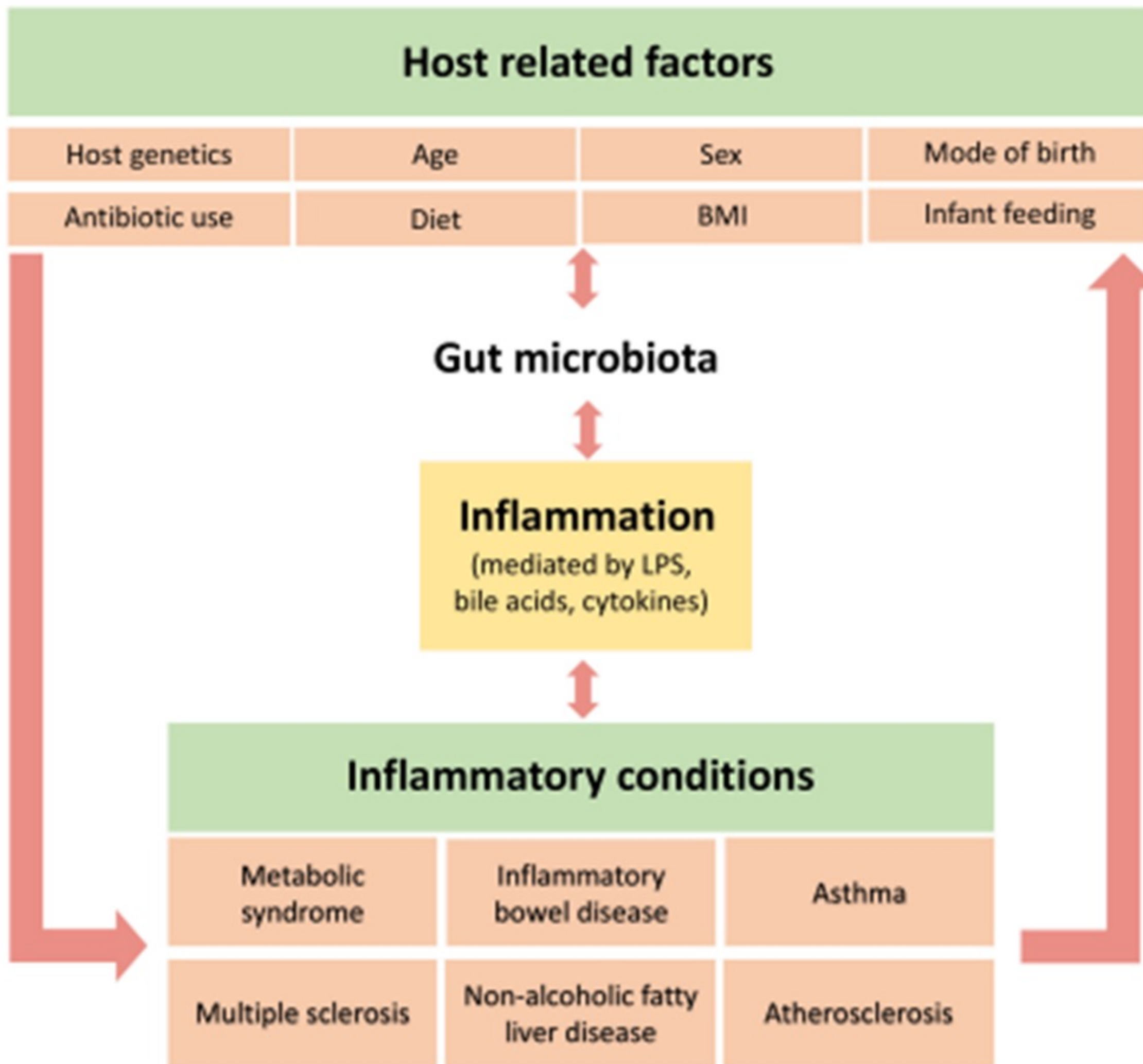
microbiome



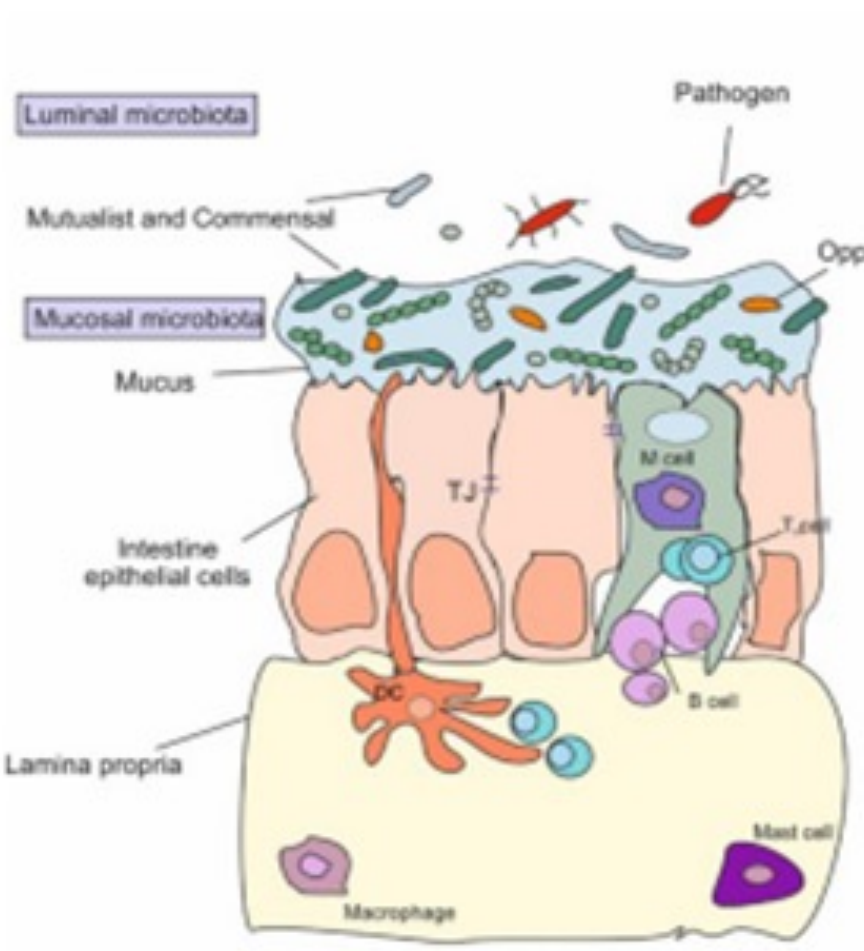
a collection of genetic
material from all the
microorganisms that are
part of the microbiota



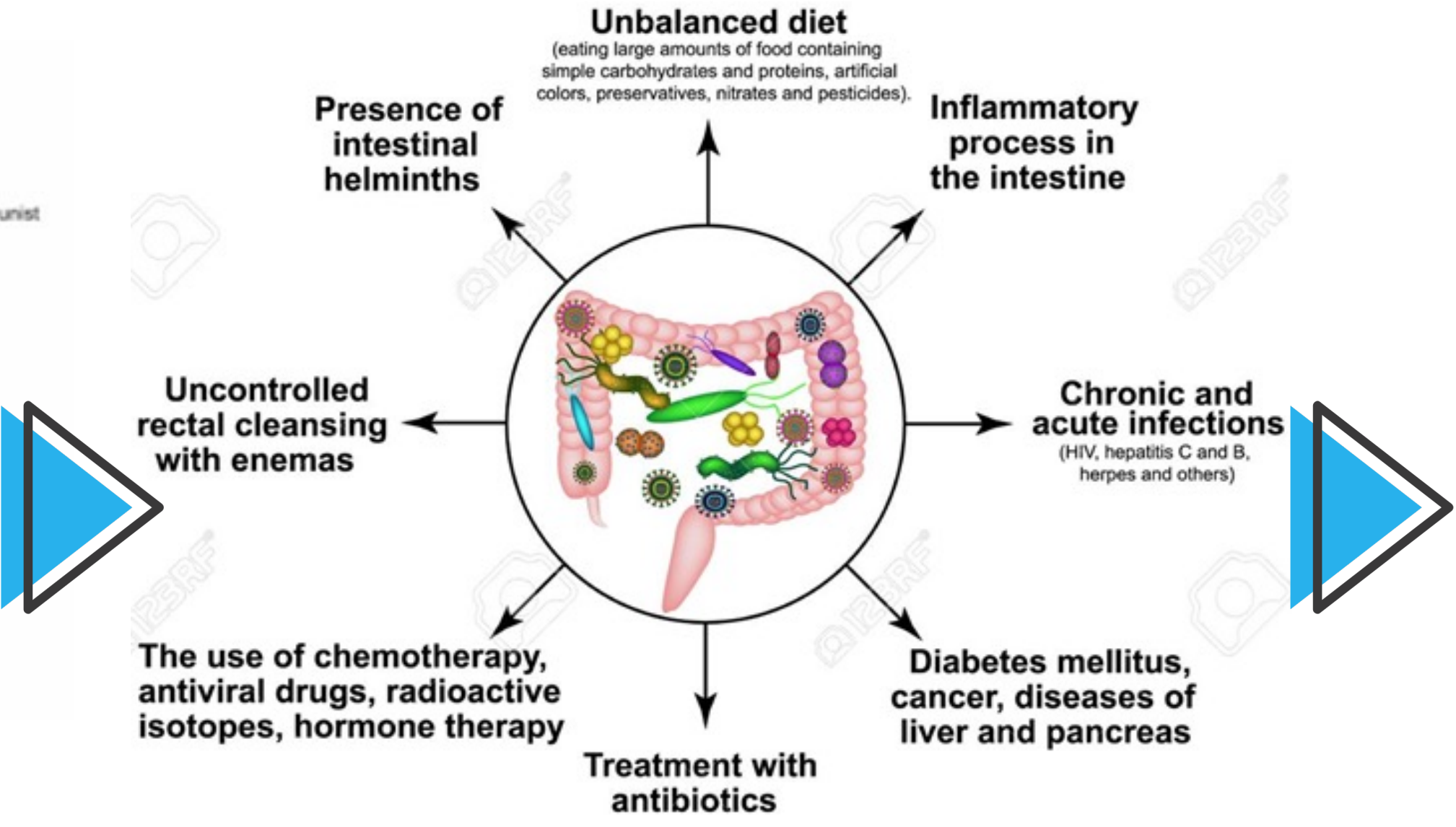
Microbiome & cancer



Microbiome & cancer

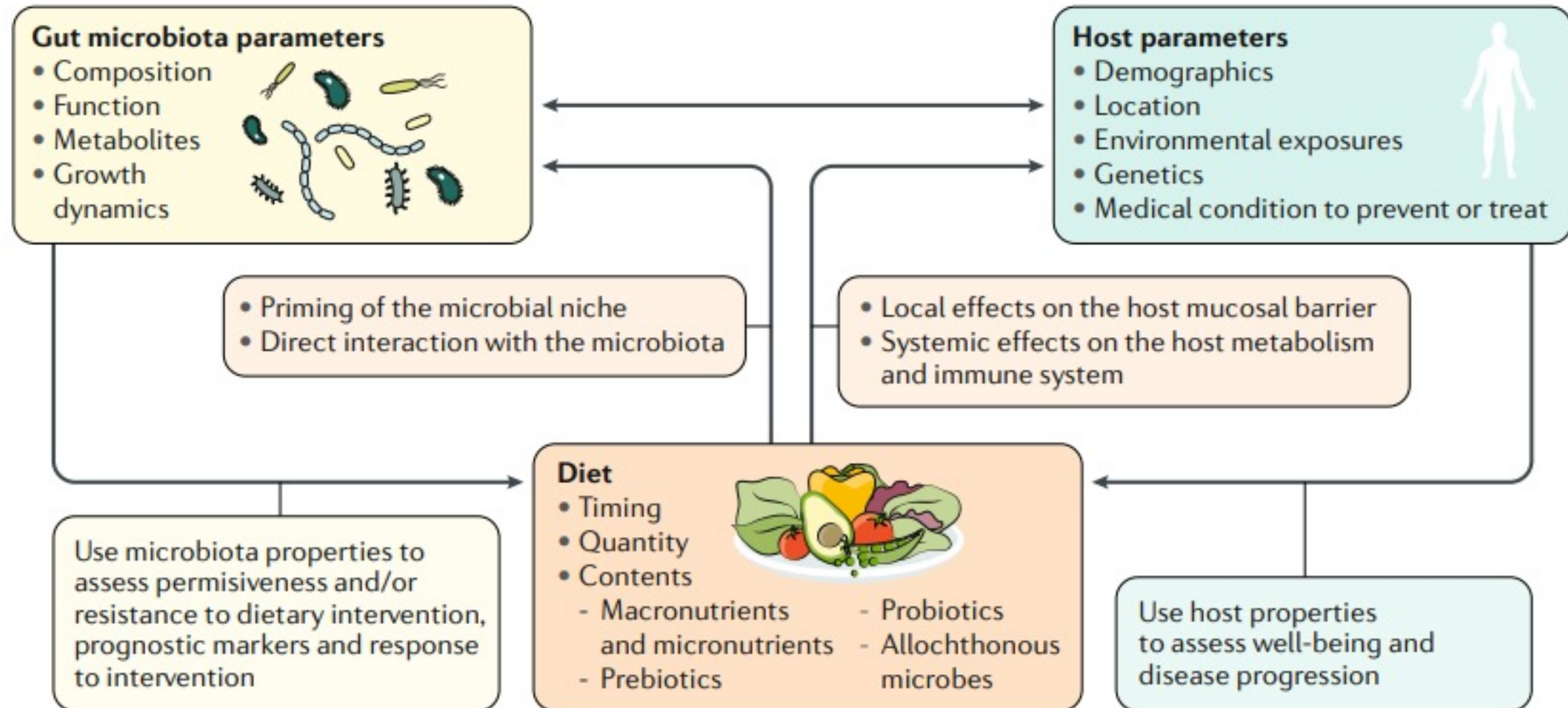


Normal Microbiota



Dysbiosis

Therapeutic principles in utilizing the food-microbiota axis



"Biotics" Definitions



Probiotics

'Live microorganisms that confer a health benefit on the host when administered in adequate amounts.'



Prebiotics

'Substrates that are selectively utilised by host microorganisms, conferring a health benefit.'



Synbiotics

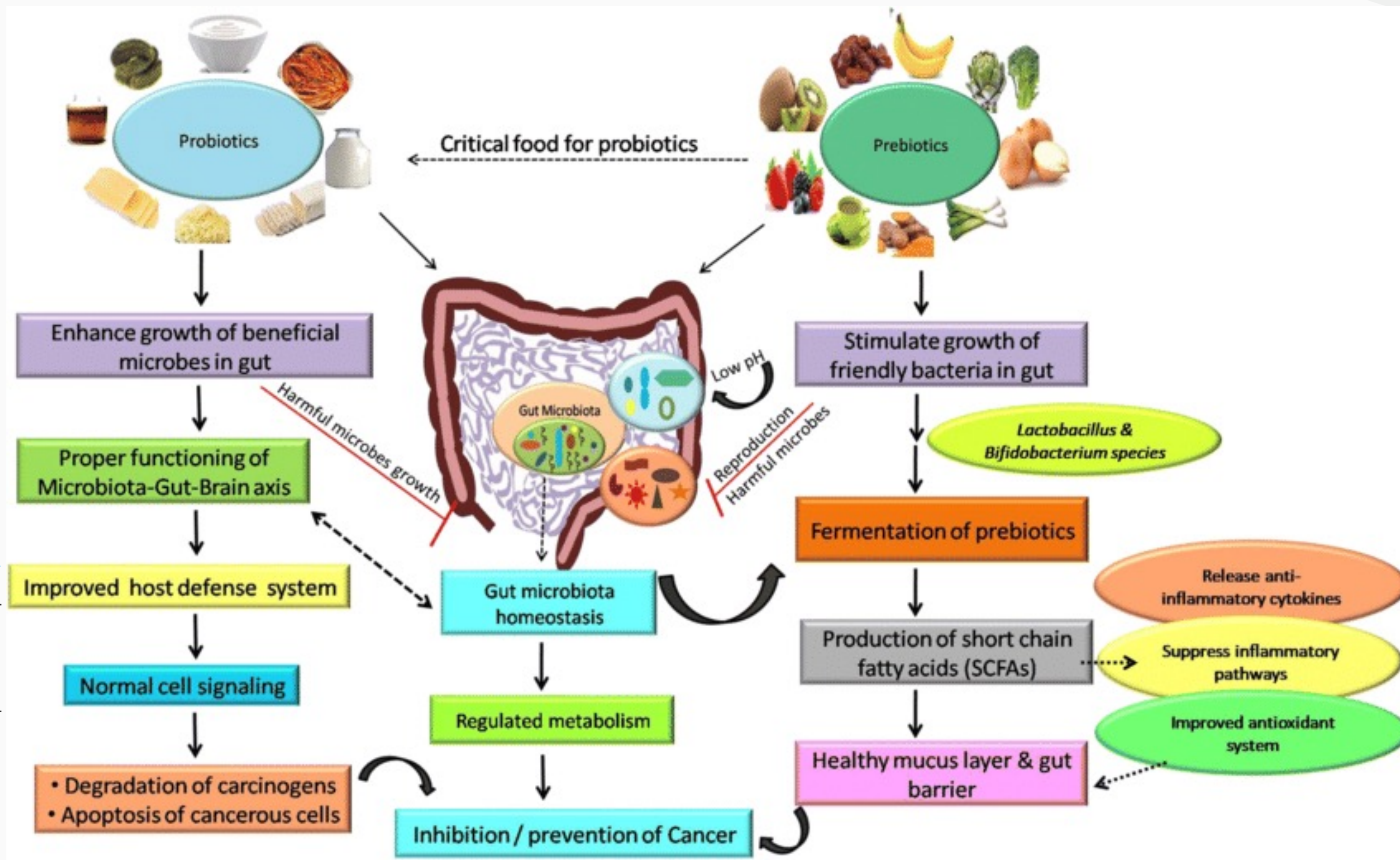
'Combination of both probiotics and prebiotics.'



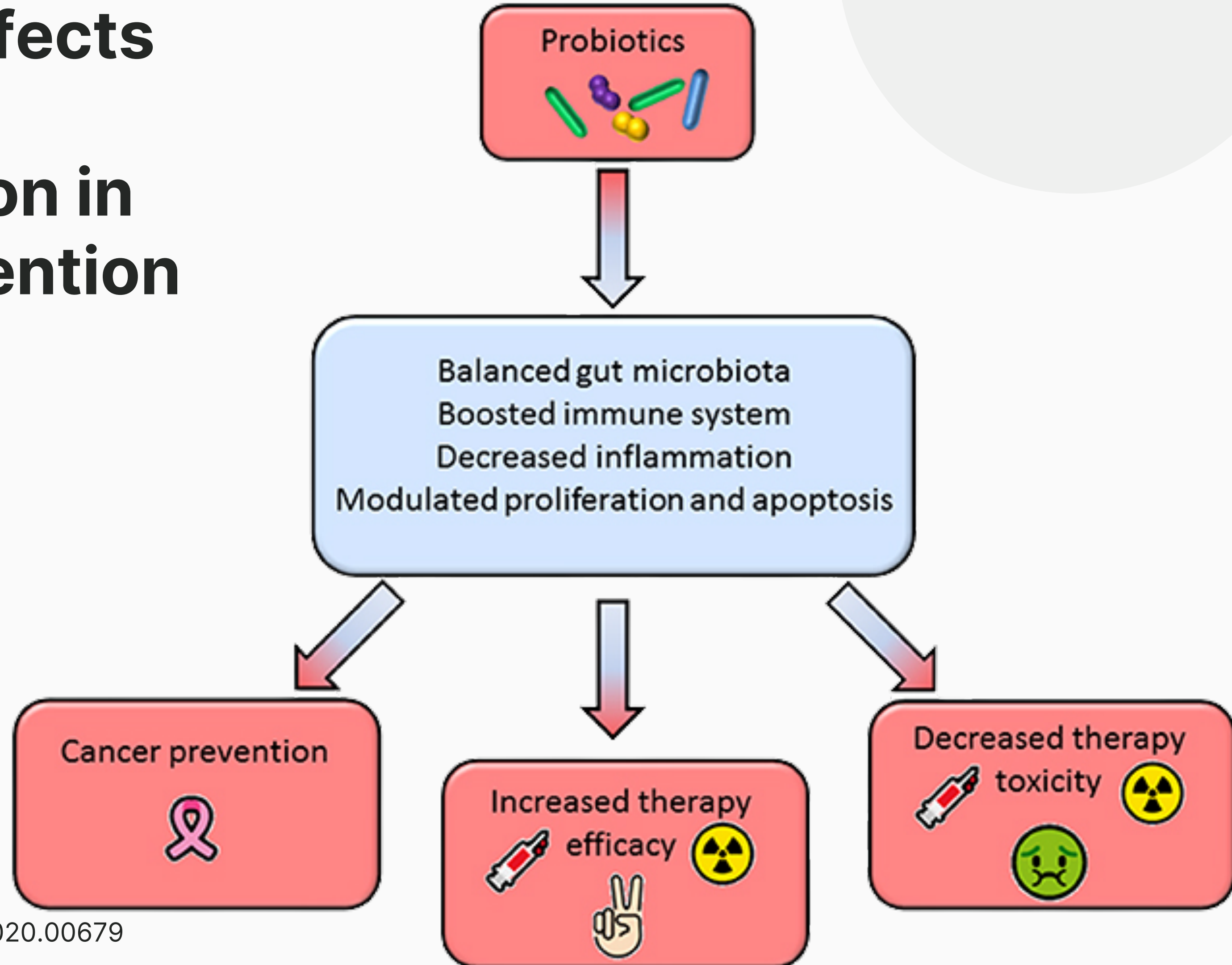
Postbiotics

'Compounds produced by microorganisms, released from food components or microbial constituents, including non-visible cells that, when administered in adequate amounts, promote health and well-being.'

Effects of probiotics and prebiotics on gut microbiota and cancer inhibition



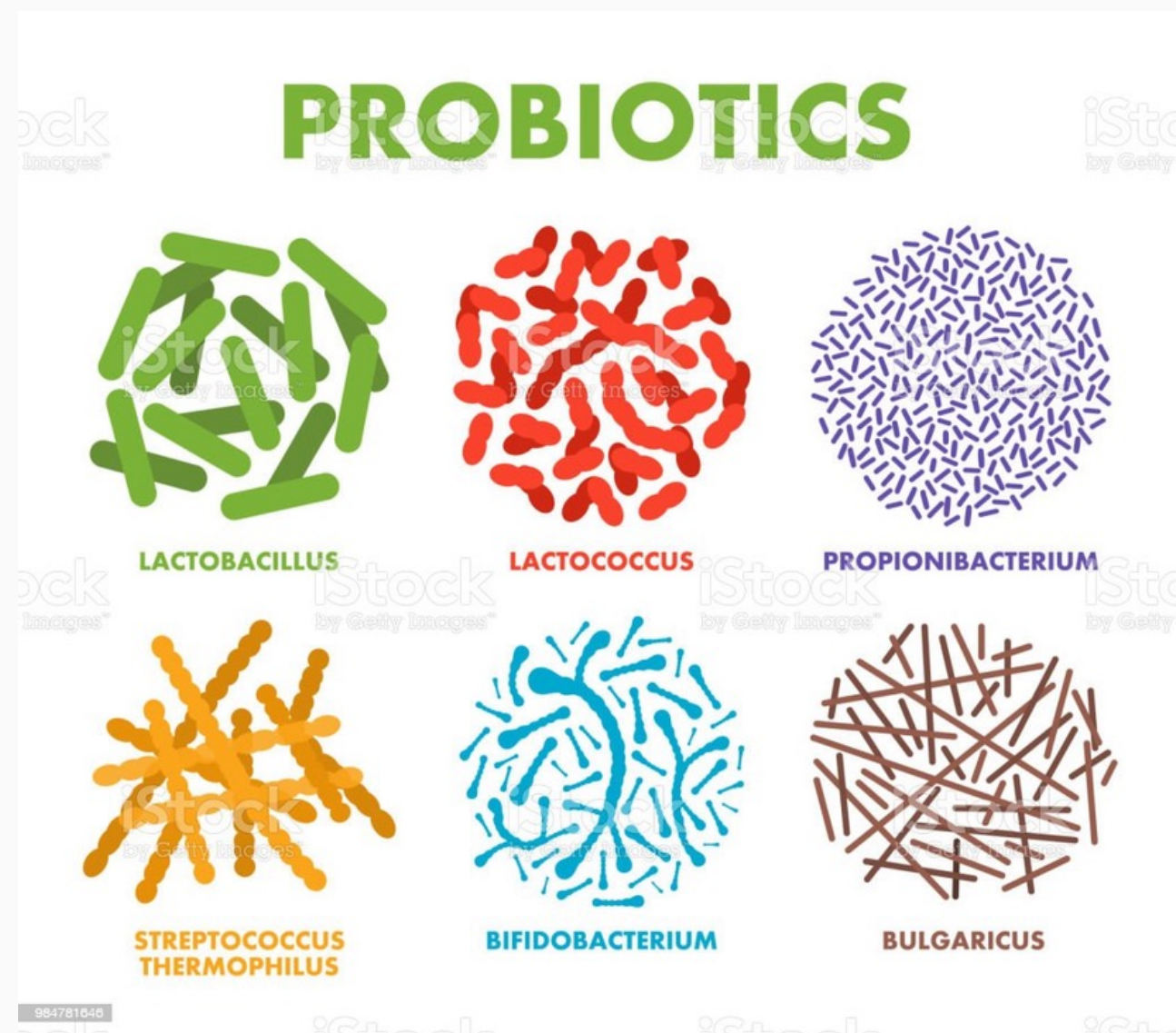
Beneficial effects of probiotics administration in cancer prevention and therapy.



Benefits of probiotics



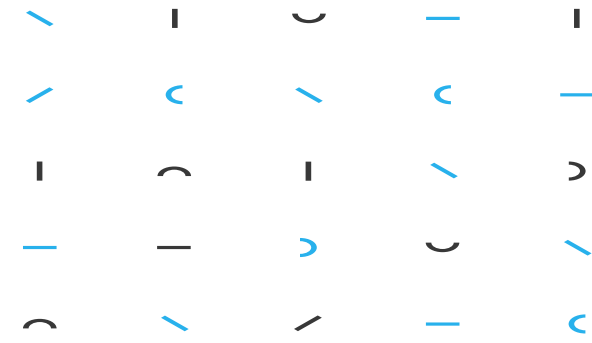
Administration of probiotics helps to restore the depletion of the gut microbiota and reduces the inflammation in those patients undergoing anti-cancer treatments



Protective mechanisms of probiotics against intestinal bacterial infection:

- Antimicrobial antibodies
- improvement of cell junction stability.
- Increase in IgA release by activated B cells,

What about exercise?



Exercise

American College of Sports Medicine (ACSM)
Guidelines for Cancer Survivors

Aerobic

150 min/week of moderate intensity, 75 min/week of vigorous intensity or a combination of the two

Resistance

Muscle strengthening activities of at least moderate intensity at least 2 days a week for major muscle groups

Flexibility

Stretch major muscle groups and tendons on days other activities are performed



ASCO Guideline. J Clin Oncol. 2020 Jul 20;38(21)

Free time activity per hour / week Overweight / Obesity (MET-hour)



N3.5 MET
5 – 8 h/sem



4 MET
4 – 7 h/sem



7 MET
2.5 - 4 h/sem



3.8 MET
5 - 7 h/sem



8 MET
2 – 3 h/sem

At least 30 minutes of moderate to vigorous physical activity, over and above usual activities, for 5 or more days a week;
45 to 60 minutes of intentional physical activity is preferable

Exercise induces changes in gut microbiota.

Progressive increase of physical activity level generates changes in the intestinal microbiota

Low ← ----- Cardiorespiratory Fitness -----> High

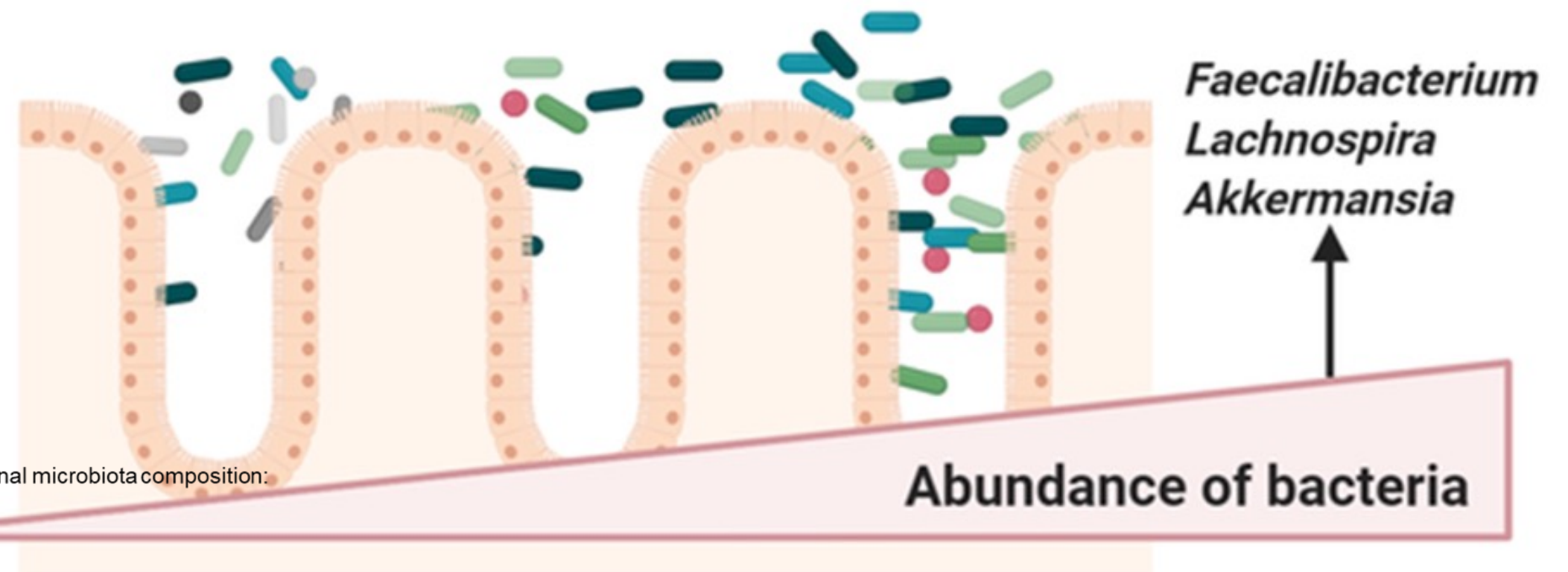


Physical inactivity

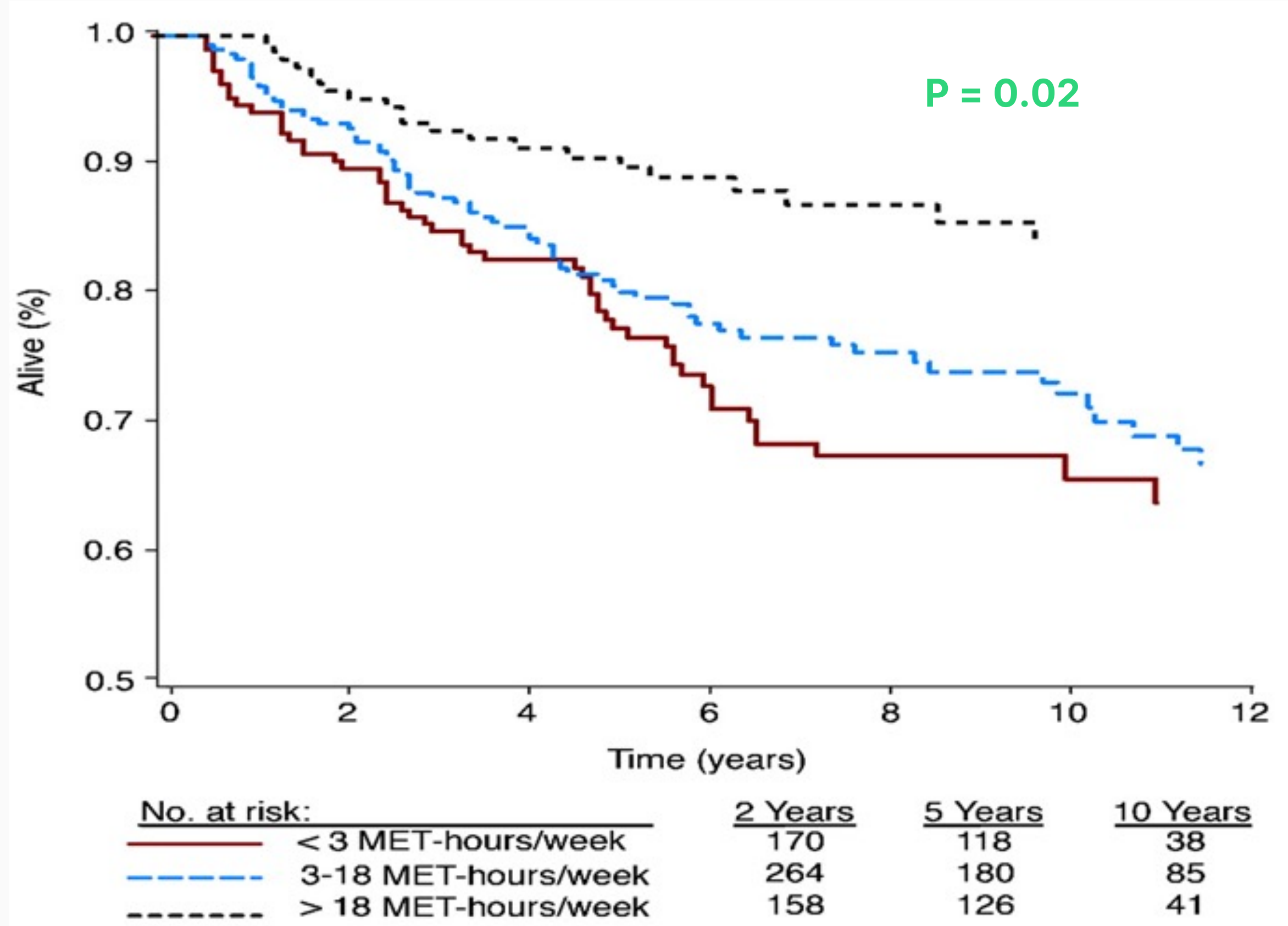
Light activity

Moderate activity

Vigorous activity



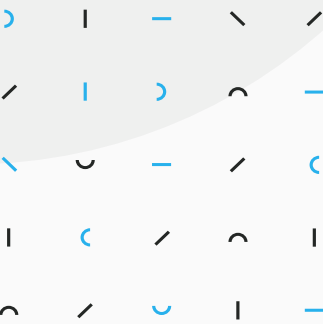
Overall survival and exercise after cancer diagnosis.



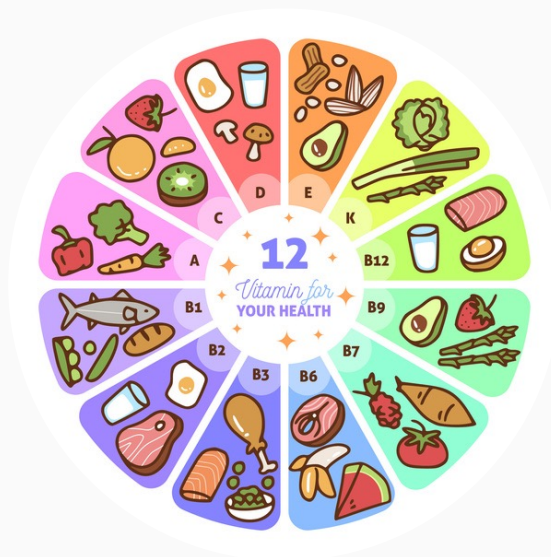
METS:
Metabolic
Equivalent of Task

General Recommendations

- Recovery from treatment side effects
- Achieve and / or maintain ideal body weight
- Decrease your fat intake 20-30% of total calorie consumption
- Choose plant-based diet
- Regular physical activity
- Drink alcohol in moderation
- Limit consumption of red and processed meats
- Limit your salt intake
- Drink water.



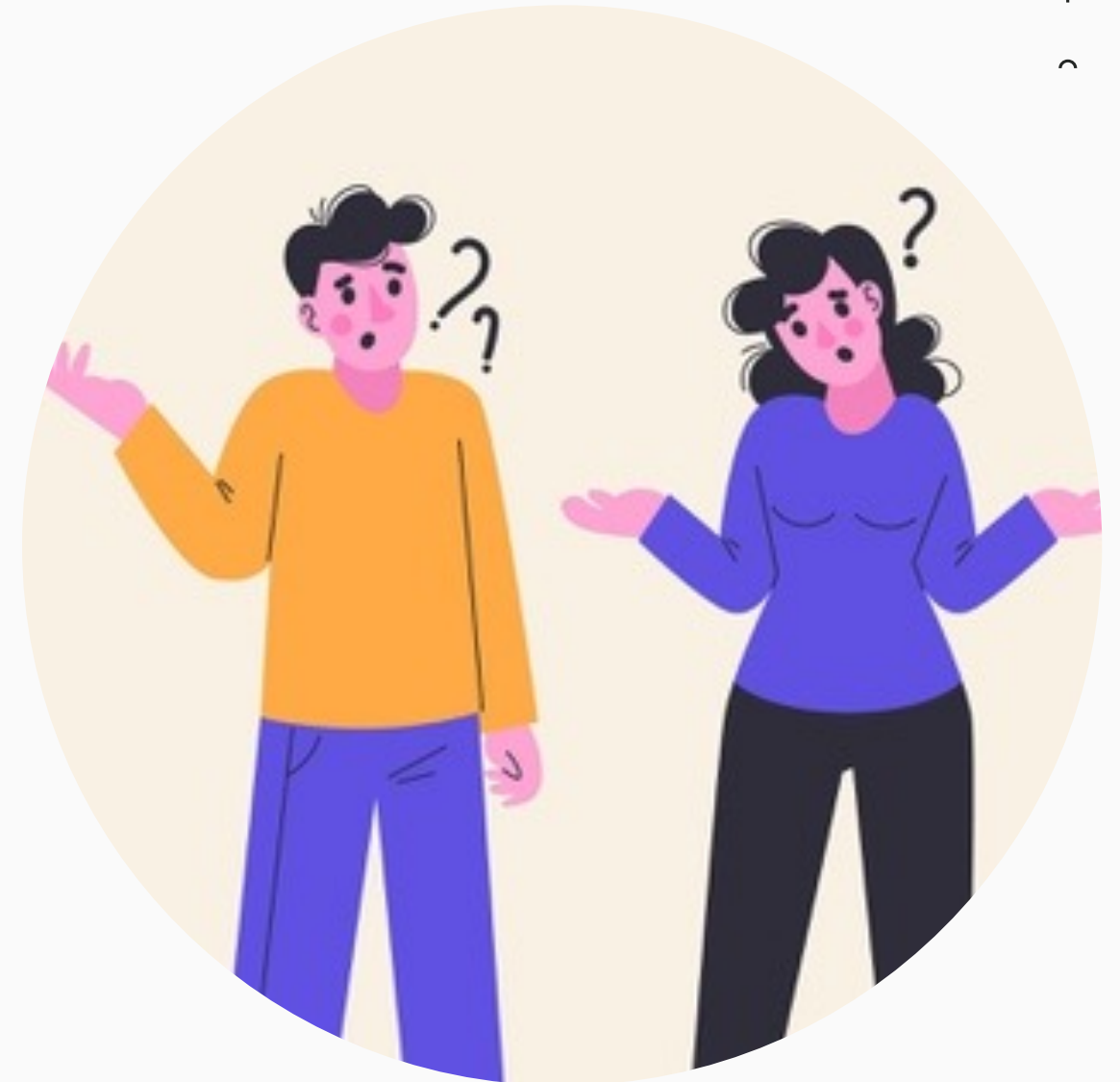
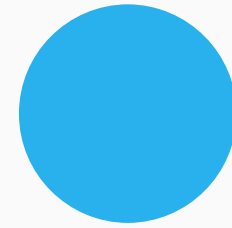
Plan your meals



"Let food be thy medicine and medicine be thy food."



Questions

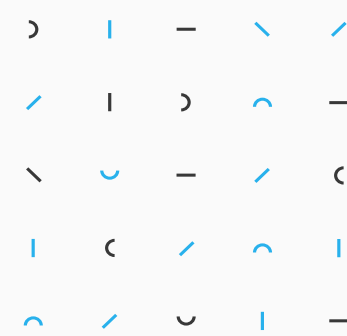


Thank you!

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