

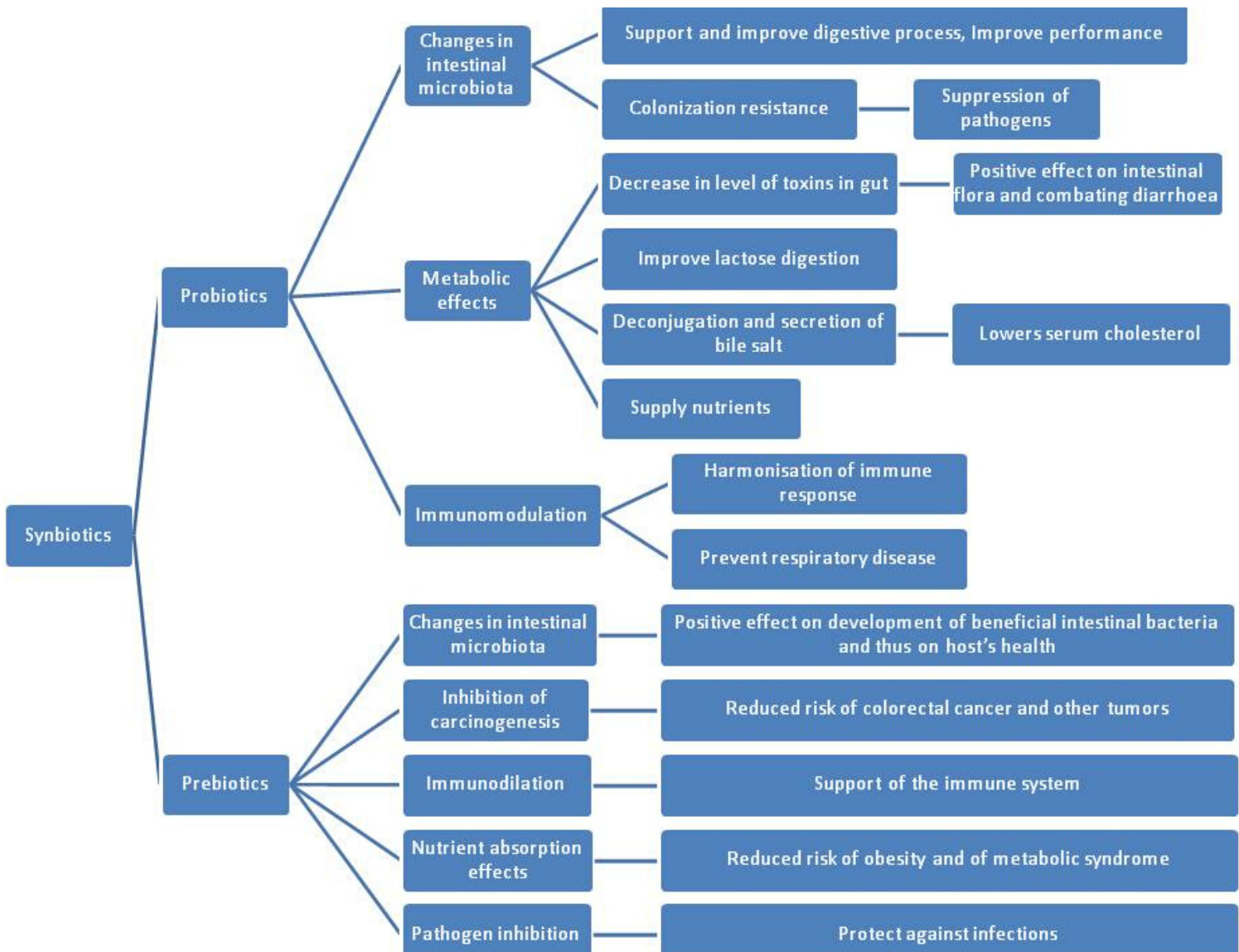
Gut Bacteria - The Basics

- You can think of the gastrointestinal tract as an ecosystem, colonized by a variety of bacteria (about 1,000 different species!)
- This ecosystem develops from birth - good bacteria are found in breast milk. It generally stays stable, but bacterial balance can be disrupted by diet, use of antibiotics, and environment
- Introducing good bacteria, called probiotics, to your body is overall, beneficial
- "Probiotic" comes from Greek, meaning, "for life"
- These are live strains of bacteria which affect health and assist bodily functions such as,
 - enhancing cell metabolism in the lining of your gut by producing short chain fatty acids (SCFAs) - SCFAs are an energy source for the cells lining your gut
 - protecting against pathogens (AKA "bad" bacteria) in part by colonizing spaces where bad bacteria could settle
 - educating your immune system - your body learns to tolerate probiotics and responds appropriately to pathogens
- Research shows...
 - Probiotics have a positive effect on Irritable bowel disease, inflammatory bowel disease, gastrointestinal disorders (ulcerative colitis), diarrhea, infections (Clostridium difficile, Helicobacter pylori), cardioprotection, and allergies
 - They are effective as part of treatment for obesity, insulin resistance, type 2 diabetes, non-alcoholic fatty liver disease
 - They have a prophylactic (preventative) effect on colon cancer, specifically



How do you support your bacterial buddies? With PREbiotics

- **"Prebiotics"** come from the foods that you eat - non-digestible food parts are fuel to probiotics
 - These are the undigested, unabsorbed parts of your food, like tomato skin, kernels of corn for example
 - They selectively nourish the good bacteria that are already present!
 - Prebiotic foods eaten with a probiotic increase the survival rate of your probiotics (acidic environments, like your stomach usually kill bacteria - prebiotics protect your good bacteria)
- When a prebiotic is eaten with a probiotic, it's called a **"synbiotic"**
 - The term "synbiotic" describes the synergistic action of the prebiotic and probiotic, combined
- Here's a closer look at the actions of probiotics and prebiotics within your body:



So what should you eat?!

Foods that feed good bacteria (probiotics)

- Raw vegetables and fruits like berries, tomatoes, artichokes, bananas, garlic, asparagus, onions, greens, chicory, legumes, oats, and whole grains
- fermented foods (kefit, miso, tempeh, saurkraut)
- Dairy products

Foods that feed bad bacteria (pathogens)

- Simple carbohydrates, simple sugars!

Beneficial bacteria - key species: look for live cultures on your yogurt, or other probiotic products

Bifidobacterium live in the colon

- Bifidobacterium longum, Bifidobacterium breve, Bifidobacterium infantis

Lactobacillus live in the intestines and vagina

- Lactobacillus acidophilus, Lactobacillus brevis, Lactobacillus bulgaricus, Lactobacillus casei