



Maintain Good Bacteria “Don't Kill Your Friends”



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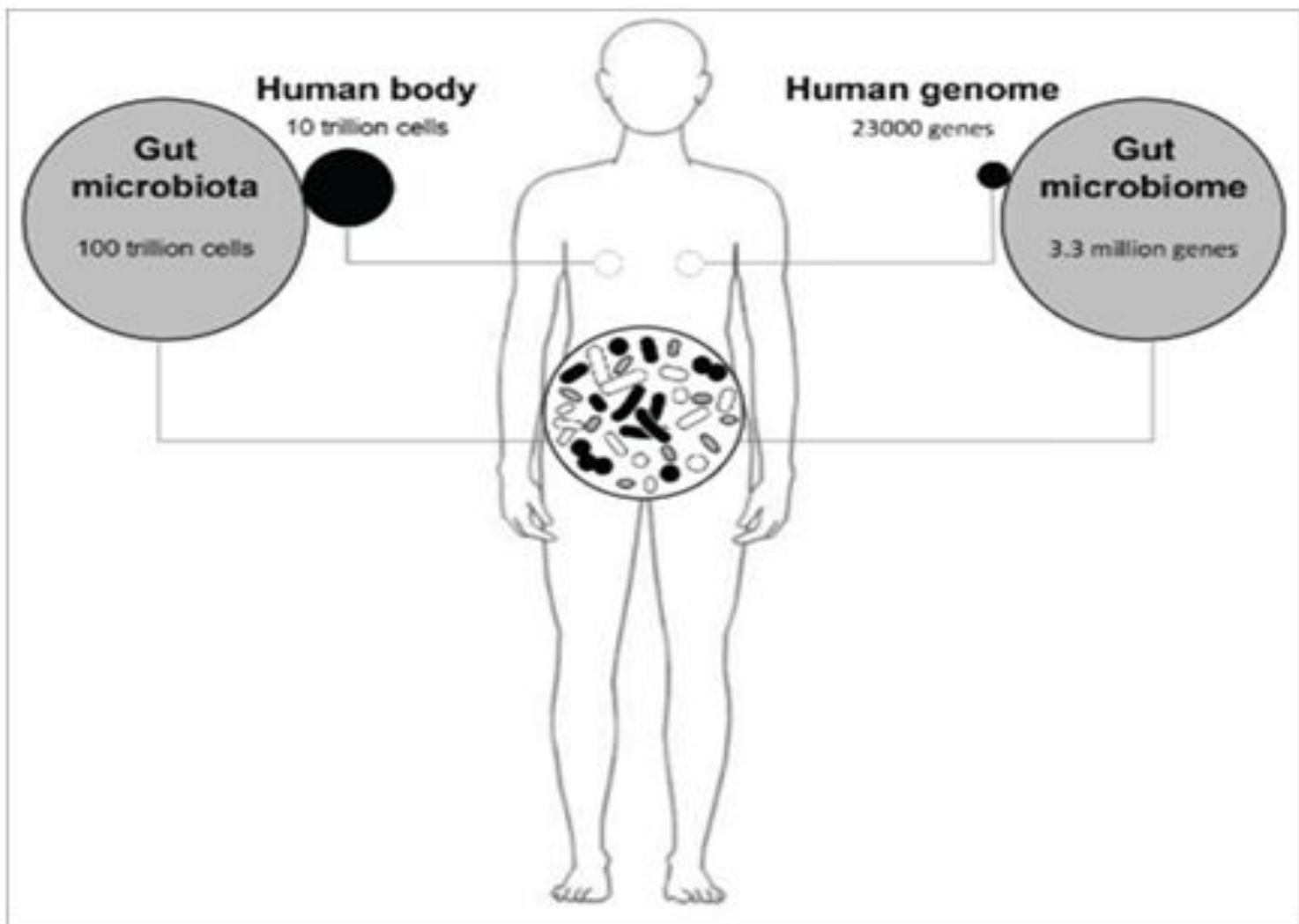
- Not so long ago, most people thought that the only good microbe was a dead microbe.
- in the past decade attitudes about the microbes living in our bodies has turned.

Bacteria aren't all bad... most are good

- not only those microbes are often not harmful,
- **we can't live without them**

Facts

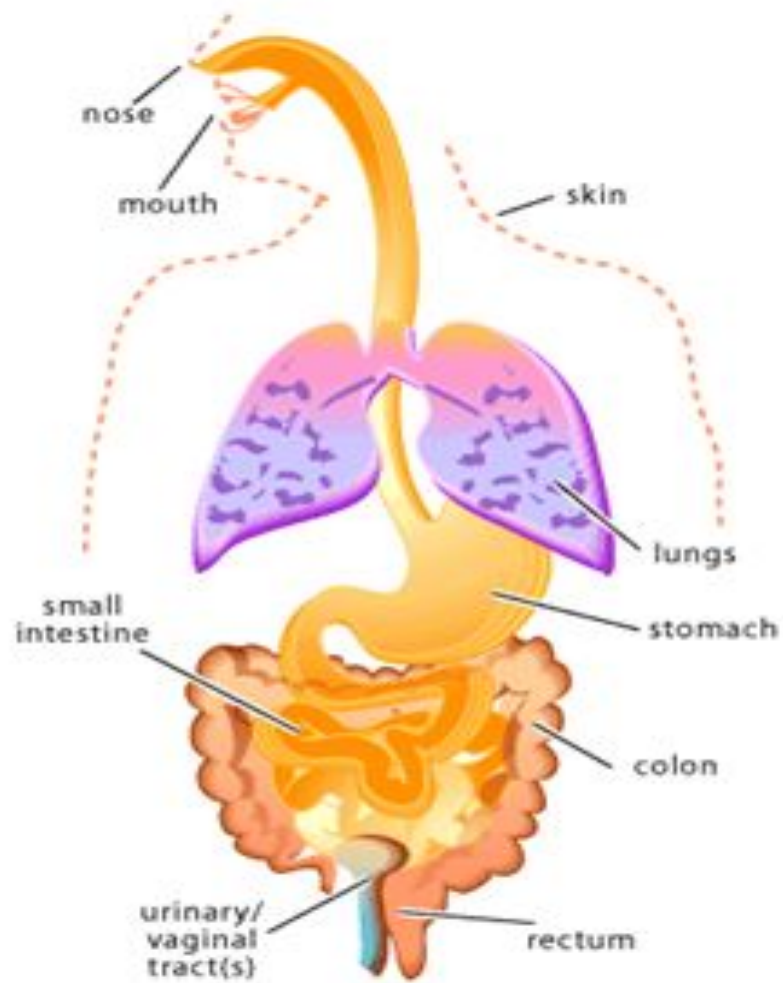
- we're more microbial than human.
- there are 10 times more microbial cells than human cells in our bodies,"



- We have ten main organs
- Good bacteria(microbial flora) are really like an 11th organ system.

HUMAN NORMAL BACTERIAL FLORA (the microbiota)

the full array of microorganisms (mainly
bacteria) that live on and in humans



BACTERIUM	Skin	Eyes	Nose	Pharynx	Mouth	Colon	Lower urethra	Vagina
<i>Staphylococcus epidermidis</i>	++	+	++	++	++	+	++	++
<i>Staphylococcus aureus</i> *	+	+/-	+	+	+	++	+/-	+
<i>Streptococcus salivarius</i>				++	++			
<i>Enterococcus faecalis</i> *				+/-	+	++	+	+
<i>Streptococcus pneumoniae</i> *		+/-	+/-	+	+			+/-
<i>Streptococcus pyogenes</i> *	+/-	+/-		+	+	+/-		+/-
<i>Neisseria meningitidis</i> *			+	++	+			+
<i>Escherichia coli</i> *		+/-	+/-	+/-	+	++	+	+
<i>Proteus sp.</i>		+/-	+	+	+	+	+	+
<i>Pseudomonas aeruginosa</i> *				+/-	+/-	+	+/-	
<i>Haemophilus influenzae</i> *		+/-	+	+	+			
<i>Lactobacillus sp.</i>				+	++	++		++
<i>Clostridium sp.</i> *					+/-	++		

Dysbiosis

**alteration in composition and
diversity of microflora**

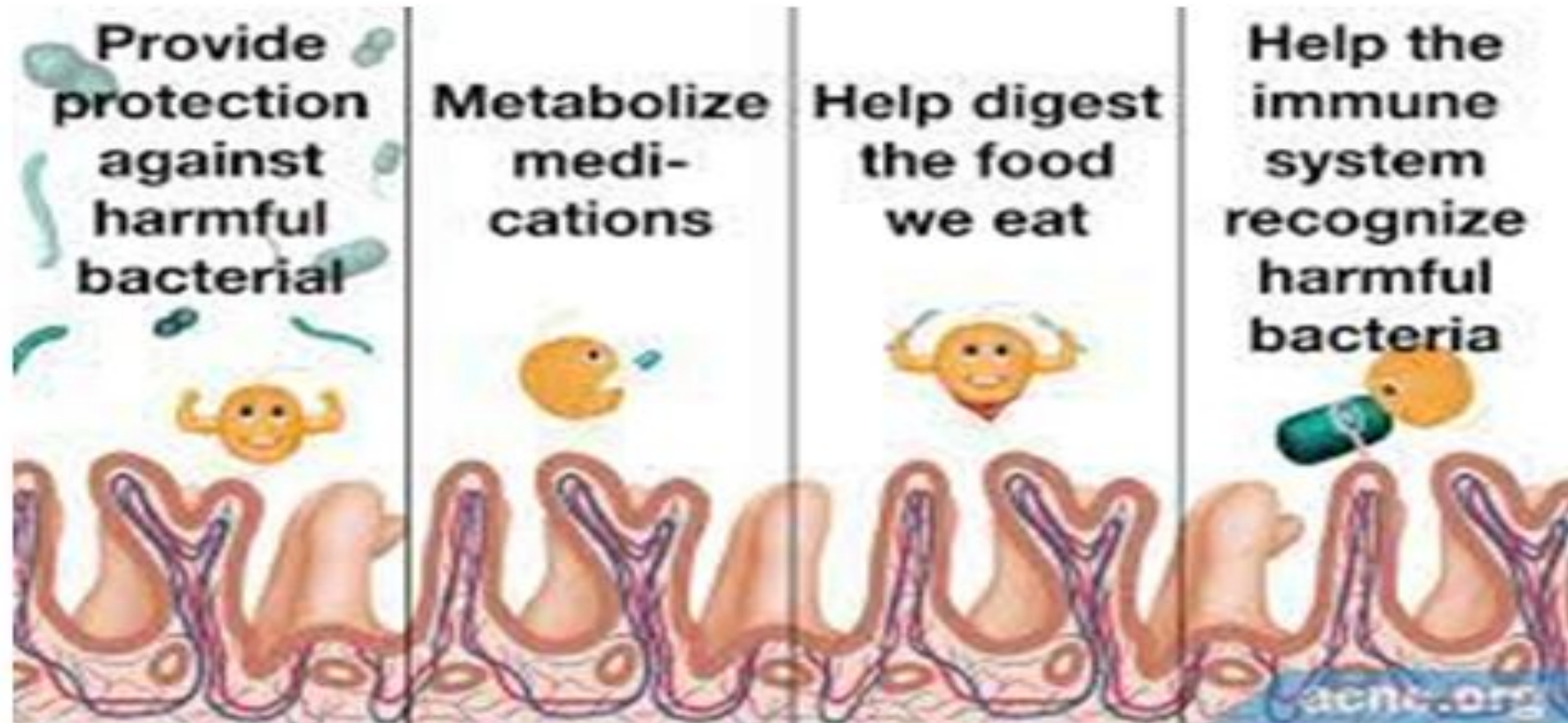
Main benefits of microbial flora

Immune

- They prevent colonization by pathogens by competing for attachment & nutrients.**
- They stimulate the development of lymphatic tissues**
- Some produce substances that inhibit pathogenic species. (Colicins)**

- They stimulate production of cross-reactive antibodies.
- Since the normal flora behave as antigens, they induce antibodies that cross react with similar antigens on pathogens, preventing infection or invasion

train the immune system, starting at birth.



Nutritional role

Some synthesize vitamins (K & B12).

May have digestive function

Prevention of some pathologies

Disturbance of microflora (dysbiosis)
may links with some diseases ,from
metabolic to mental health

obesity

- **microbiome's role in obesity by regulating energy absorption, central appetite, fat storage.....**

Mental health

- recent studies have linked the disturbance of microbiome composition to some behaviors, such as autism, extroversion, fear, and cognitive development.

- There is evidence that the microbes in guts send signals that can affect our minds.
- they secrete mood-regulating chemicals, including dopamine, serotonin

ASCVD

- the microbiome plays a crucial role in the development of ASCVD.
- The microbiome is directly involved in all steps leading to atherogenesis, including all major cardiovascular risk factors, hypertension, obesity, diabetes, and dyslipidemia

Cancer

It has been shown that dysbiosis is associated with some cancers

intact microbiota is able to regulate the tumor microenvironment

- **Recent studies :**
- **Changing in bacterial balance of the microbiome may play a role in :**

**diabetes, celiac disease,
asthma, food allergies.**

- **over-disinfection in children may increase their risk of autoimmune disease, obesity, and asthma.**

- we depend on a vast army of microbes to stay alive

Enemies of good bacteria

- **Antibiotics improper use**
- **unhealthy diet & life style**
- **tissue damage**
- **medical procedures**

How can you get healthy gut bacteria

- Eat fiber-rich foods (prebiotics) : plant-based foods, grains, legumes and beans
- Avoid unnecessary antibiotics
- Add fermented foods:(probiotics)
- Lower stress levels. ...
- Limit your sugar intake and fast foods

