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OUR MICROBIAL FRIENDS

The Digestive Tract Ecosystem

Gerald D. Abrams



Winter, 2009

10¹³ Mammalian Cells

10¹⁴ Microbial Cells







G.D. Abrams, University of Michigan Medical School







G.D. Abrams, University of Michigan Medical School















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Ilya Mechnikov

DEFENSIVE FUNCTIONS OF THE MICROBIAL FLORA

- PROVIDES "COLONIZATION RESISTANCE"
- STRENGTHENS MUCOSAL BARRIER
- STIMULATES IMMUNE SYSTEM

MICROBIAL FLORA

- ENZYMES PRODUCED
- VITAMINS PRODUCED
- SECRETIONS, FOODSTUFFS, DRUGS PROCESSED
- GI LINING CELLS NOURISHED



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PROBIOTIC

 A preparation containing live microorganisms that can enter the GI ecosystem and produce positive health effects.

PROBIOTIC

 A preparation containing live microorganisms which, upon ingestion in sufficient numbers, exert health benefits beyond basic nutrition.

PREBIOTIC

A substance or preparation which stimulates the growth of a potentially beneficial micro-organism(probiotic)

SYNBIOTIC

A mixture of probiotic and prebiotic.



(...) EXAMPLE G.D. Abrams, University of Michigan Medical School





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PROBIOTIC CAVEATS

- FEW CLINICALLY PROVEN EFFECTS
- STRAIN SELECTION PROBLEMATIC
- PREPARATION QUALITY VARIABLE
- SAFETY ISSUES REMAIN

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