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OUR MICROBIAL FRIENDS

The Digestive Tract Ecosystem

Gerald D. Abrams

Winter, 2009
$10^{13}$ Mammalian Cells

$10^{14}$ Microbial Cells
Ilya Mechnikov
DEFENSIVE FUNCTIONS OF THE MICROBIAL FLORA

• PROVIDES “COLONIZATION RESISTANCE”
• STRENGTHENS MUCOSAL BARRIER
• STIMULATES IMMUNE SYSTEM
METABOLIC FUNCTIONS OF THE MICROBIAL FLORA

- ENZYMES PRODUCED

- VITAMINS PRODUCED

- SECRETIONS, FOODSTUFFS, DRUGS PROCESSED

- GI LINING CELLS NOURISHED
G.D. Abrams, University of Michigan Medical School
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.
PROBIOTIC CAVEATS

• FEW CLINICALLY PROVEN EFFECTS
• STRAIN SELECTION PROBLEMATIC
• PREPARATION QUALITY VARIABLE
• SAFETY ISSUES REMAIN
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Slide 5: Department of Pathology, University of Michigan
Slide 6: Department of Pathology, University of Michigan
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