“The Vaginal Microbiome, Probiotics And The Balance Between Health and Disease”

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Dr. Reid was born in Scotland and received his PhD (1982) from Massey University, New Zealand. In 1990, he was Director of Research Services at the University of Western Ontario. In 1996, Dr Reid became Associate Director of the Lawson Research Institute and in 2001, he helped established the Advanced Surgical Technologies Program in the newly created Lawson Health Research Institute. Dr Reid is currently Assistant Director at the Lawson, focusing on international activities. He also directs the Canadian Research and Development Centre for Probiotics. Dr. Reid’s research primarily focuses on the microbiota of the urogenital tract. More recently, he has been investigating intestinal effects of probiotics. He and Dr. Andrew Bruce first described lactobacilli to prevent onset of urogenital infections in women. His strains Lactobacillus rhamnosus GR-1 and Lactobacillus reuteri RC-14, now owned by Chr Hansen of Denmark, were discovered before almost all the current commercial strains on the market. The probiotic is now sold in over 20 countries. These represent the first scientifically documented and clinically proven probiotics to benefit women’s health.

Abstract
How well do we currently diagnose and treat vaginal infections? The answer is badly. For over 40 years, the presentation of vaginal discomfort, discharge, elevated pH has been treated by metronidazole and clindamycin, and various anti-fungal agents. Assumptions have been made that organisms such as Gardnerella vaginalis are the causative agent in bacterial vaginosis (BV). In the past few years, molecular sequencing methodologies have challenged these long-held concepts. We have recently developed an Illumina deep sequencing technique and shown that BV can be represented by at least 4 clusters of pathogens, particularly Prevotella and Atopobium, while a healthy condition can be associated with at least two microbial profiles dominated by Lactobacillus crispatus and L. iners. Administration of metronidazole temporarily altered the bacterial abundance, but did not eradicate the pathogens or restore the healthy state in most cases. These data indicate that new methods are needed to diagnose an aberrant vaginal microbiota, and new, bacterial specific interventions are long overdue. The administration of lactobacilli to the vagina, either directly or via oral intake and natural passage from the rectum, was conceived in the early 1980s and 90s, and has been shown to offer a viable alternative intervention. Strains GR-1 and RC-14 appear to confer benefits through production of factors that interfere with pathogen colonization, virulence expression and survival, as well as immune modulation.