

Practitioner Guide

Restoring Vaginal Health

Intervention	Intervention Description (with Length)	Researched GU Conditions	Increase in Vaginal Lactobacilli	Side Effects	MOA and Protocol Notes
Probiotics GR-1 & RC-14	Oral <i>L. rhamnosus</i> GR-1 and <i>L. reuteri</i> RC-14 or placebo x at least 2 weeks (and up to 12 months, depending on the condition)	<ul style="list-style-type: none"> BV¹ Recurrent UTIs² Group B strep (during pregnancy)^{3,4} Vaginal dysbiosis⁵ Postmenopause⁶ 	Percent of patients with “high counts” of vaginal lactobacilli HIGHER in BV patients taking GR-1 and RC-14 (compared to placebo) ¹	None evaluated/reported in these studies ¹⁻⁶	Lactobacilli 1) are the dominant genus in the vagina of healthy/normal women, 2) reduce the growth of potential/opportunistic pathogens, and 3) produce lactic acid. GR-1 and RC-14 1) colonize the vagina, and 2) is used acutely & long term
Antibiotics followed by probiotics GR-1 & RC-14	Oral antibiotics (Metronidazole or Clindamycin x 7 days or Tinidazole single dose for BV; or Fluconazole single dose for CVV); followed by oral <i>L. rhamnosus</i> GR-1 and <i>L. reuteri</i> RC-14 or placebo x 2-4 weeks	<ul style="list-style-type: none"> BV⁷⁻¹¹ Candidiasis¹² 	Percent of patients with “high counts” of vaginal lactobacilli HIGHER in BV patients taking GR-1 and RC-14 (compared to placebo) ¹¹	Oral antibiotics can cause systemic side effects (C. diff-associated diarrhea, abdominal pain, nausea, diarrhea, and headache)	See above (re. lactobacilli, GR-1, and RC-14) GR-1 and RC-14 1) colonize the vagina and 2) is used adjunctively with antibiotics to enhance condition resolution acutely & long term
Antibiotics only	Oral antibiotics (Metronidazole or Clindamycin for BV) x 7 days Intravaginal (Miconazole, Clotrimazole) x 1-7 days	<ul style="list-style-type: none"> BV¹³ Candidiasis¹⁴ 	Higher “relative abundance” of lactobacilli after treatment ¹³	Oral antibiotics can cause systemic side effects (C. diff-associated diarrhea, abdominal pain, nausea, diarrhea, and headache)	Antibiotics 1) are antibacterial or antifungal and 2) are used acutely (short-term)
Boric acid (vaginal)	Vaginal boric acid insert or gel (for BV) x 7 days	<ul style="list-style-type: none"> BV¹⁵ Candidiasis¹⁵ 	Not evaluated ¹⁵	Not evaluated/reported in this study ¹⁵	Boric acid 1) interferes with microbial and fungal biofilms and 2) is used acutely (short-term)
Other prescription probiotics	Vaginal antibiotic gel (Metronidazole) followed by vaginal <i>L. crispatus</i> CTV-05 or placebo x 2-16 weeks	<ul style="list-style-type: none"> BV¹⁶⁻¹⁸ 	Higher detection of <i>L. crispatus</i> CTV-05 with probiotic (compared to placebo) ¹⁶	Safety and tolerability similar in the probiotic and placebo groups ¹⁶⁻¹⁸	<i>L. Crispatus</i> is a naturally occurring vaginal strain of lactobacilli

References:

- Vujic G et al. *Eur J Obstet Gynecol Reprod Biol.* 2013;168(1):75-79.
- Beerepoot MA et al. *Arch Intern Med.* 2012;172(14):704-712.
- Liu Y et al. *Nan Fang Yi Ke Da Xue Xue Bao.* 2020;40(12):1753-1759.
- Ho M et al. *Taiwan J Obstet Gynecol.* 2016;55(4):515-518.
- Chen C et al. *J Genet Genomics.* 2021;48(8):716-726.
- Petricevic L. *Eur J Obstet Gynecol Reprod Biol.* 2008;141(1):54-57.
- Vasundhara D et al. *Indian J Med Res.* 2021;153(4):492-502.
- Macklaim JM et al. *Microb Ecol Heal Dis.* 2015;26(0):1-8.
- Martinez RCR et al. *Can J Microbiol.* 2009;55(2):133-138.
- Cianci A et al. *Minerva Ginecol.* 2008;60(5):369-376.
- Anukam K et al. *Microbes and Infection.* 2006;8:1450e1454.
- Martinez RCR et al. *Lett Appl Microbiol.* 2009;48(3):269-274.
- Zwittink RD et al. *Eur J Clin Microbiol Infect Dis.* 2021;40(3):651-656.
- Surapaneni S et al. *Sexually Transmitted Disease.* 2021;48(10):761-762.
- Marrazzo JM et al. *Clin Infect Dis.* 2019;68(5):803-809.
- Cohen CR et al. *N Engl J Med.* 2020;382(20):1906-1915.
- Reznichenko H et al. *J Low Genit Tract Dis.* 2020;24(3):284-289.
- Bohbot JM et al. *J Gynecol Obstet Hum Reprod.* 2018;47(2):81-86.

