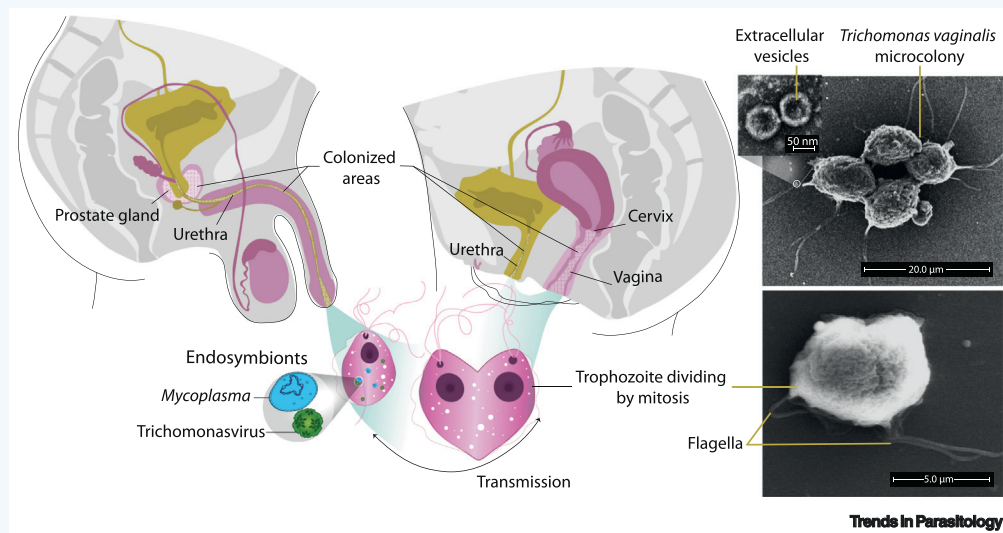


Trichomonas vaginalis

Marina Ferrari Klemm de Aquino,^{1,2} Annabel Sabine Hinderfeld,^{1,2} and Augusto Simoes-Barbosa^{1,2,*}

¹School of Biological Science, University of Auckland, New Zealand

²All authors made equal contributions



KEY FACTS:

While parasite colonization is inhibited by protective lactobacilli in the vaginal microbiota, *T. vaginalis* and the bacteria causing bacterial vaginosis amplify disease synergistically.

Metabolic interactions with *Mycoplasma* enhance the growth and weaken the macrophage-mediated killing of *T. vaginalis*.

5-Nitroimidazole treatment of trichomoniasis neither eliminates *Mycoplasma* nor counteracts the vaginal microbiome disturbances; hence novel therapies are necessary.

Despite hurdles of genome size (~160 Mbp and 60 000 protein-coding genes) and repetitiveness, CRISPR/Cas9 editing should advance genetic studies.

The extracellular protozoan parasite *Trichomonas vaginalis* colonizes the lower urogenital tract of humans: the vagina, ectocervix, urethra, and prostate, where trophozoites divide asexually and the transmission depends on sexual contact. Trichomoniasis is the most common, nonviral sexually transmitted infection worldwide, accounting for ~270 million cases each year. Pathogenesis has been well characterized in the female genital tract, where reproductive outcomes are clinically relevant, resulting in vaginitis with discharge. *T. vaginalis* often carries endosymbionts (*Mycoplasma* and *Trichomonasvirus* spp.) and is accompanied with vaginal dysbiotic microbiota containing mostly anaerobic bacteria. Host cell adhesion, phagocytosis, and lysis are the major virulence traits of *T. vaginalis*, with levels varying among strains. Immunopathogenesis is modulated by endosymbionts and the associated microbiota. Despite drug resistance being documented for decades, 5-nitroimidazoles remain the only treatment option.

DISEASE FACTS:

Trichomoniasis is associated with poor birth outcomes and increased risks of HIV transmission and cervical cancer.

Parasite clumping is strain dependent. Size-variable microcolonies dysregulate epithelium permeability or promote its destruction.

Parasite extracellular vesicles are immunomodulatory, 'priming' host cells and parasites for adherence.

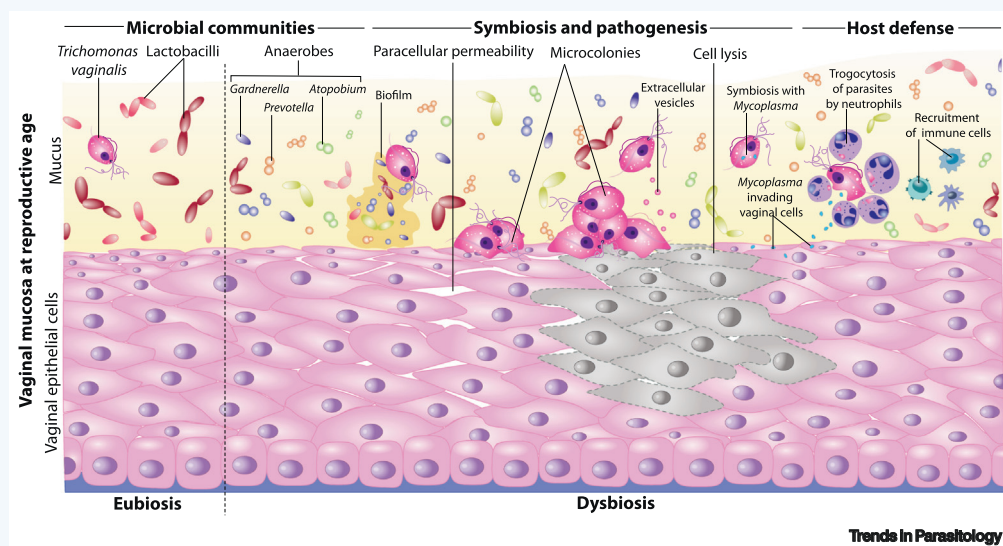
T. vaginalis-induced immunomodulation contributes to pathology, HIV spread, and immune evasion.

Neutrophils kill the parasites by trogocytosis, but reinfections are common due to insufficient immunity.

TAXONOMY AND CLASSIFICATION:

- KINGDOM:** Protozoa
- PHYLUM:** Parabasalia
- CLASS:** Trichomonadea
- ORDER:** Trichomonadida
- FAMILY:** Trichomonadidae
- GENUS:** *Trichomonas*
- SPECIES:** *T. vaginalis*

*Correspondence: a.barbosa@auckland.ac.nz
(A. Simoes-Barbosa).



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Resources

www.cdc.gov/dpdx/trichomoniasis/

[www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-\(stis\)](http://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis))

<https://trichdb.org/>

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