



Trichomonas vaginalis

Trichomonas vaginalis is an anaerobic, flagellated, parasitic protozoan and the etiological agent of trichomoniasis, one of the most common, non-viral sexually transmitted infections worldwide. *T. vaginalis* primarily infects the squamous epithelium of the human genital tract, where it replicates by binary fission. Although trichomoniasis is not a notifiable infection, the global incidence of *T. vaginalis* is estimated to be ~276 million new cases each year (Menezes, Frasson, Tasca, 2016), and therefore remains an important public health problem globally. Transmission through sexual intercourse is most common, whereas vertical transmission and transmission via fomites is rare.

Infection with *T. vaginalis* results in a range of clinical manifestations. The majority of women (85%) and men (77%) are estimated to be asymptomatic, and approximately one third of asymptomatic women become symptomatic within 6 months. Symptoms can present as urethral discharge and dysuria in both men and women, and can have significant negative consequences on patient's reproductive health. In women, sites of infection usually encompass the vagina, urethra and endocervix, and *Copilitis macularis*, also known as 'strawberry cervix' can be observed in up to 50% of women. Complications associated with *T. vaginalis* infections in women include infection of the adnexa and endometrium, as well as poorer birth outcomes such as pre-term delivery, pelvic inflammatory disease, low birth weights and premature rupture of membranes during pregnancy. In men, infection can cause epididymitis, prostatitis and decreased sperm cell motility, increasing the risk of infertility. Although rare, congenital infection via vertical transmission can result in vaginal and respiratory disease in neonates (Kissinger, 2015).

Infection with *T. vaginalis* also increases a patient's susceptibility to HIV and individual's positive for HIV display increased HIV acquisition and transmission (Kissinger, 2015). This, in conjunction with the health consequences associated with *T. vaginalis* infection, such as adverse pregnancy outcomes and increased risk of infertility, highlights the importance of early diagnosis in infected individuals. Nucleic acid amplification tests (NAATs) are the 'gold standard' for detection of *T. vaginalis*, therefore service users may wish to refer suspected samples to us where in-house PCRs are not available to them.

Our assay:

At Micropathology Ltd, we use a qualitative, single-round PCR assay which targets a fragment of the beta-tubulin gene for the detection of *T. vaginalis*. Currently, genital swabs are UKAS accredited specimen types for this assay, though other samples may be tested and reported alongside an appropriate caveat stating that the sample provided is not accredited or validated for this assay. Turnaround times are stated in the user manual (<http://www.micropathology.com/customer-downloads-handbooks.php>) with results usually available in practice much sooner than the given time frame. Where there is a delay, we are usually confirming a result and addressing clinical data given with the specimen.

References:

Menezes CB, Frasson AP, Tasca T (2016). Trichomoniasis - are we giving the deserved attention to the most common non-viral sexually transmitted disease worldwide? *Microbial Cell*. 3, 9. doi:10.15698/mic2016.09.526

Kissinger, P (2015). *Trichomonas vaginalis*: a review of epidemiologic, clinical and treatment issues. *BMC Infectious Diseases* 15, 307. doi.org/10.1186/s12879-015-1055-0