

## **Parasites in surgically removed appendices as a neglected public health concern: a systematic review and meta-analysis**

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### **Abstract**

The role of various parasitic infections in the occurrence of appendicitis is illustrated through cases recorded all over the world. The purpose of the current study was to estimate the global prevalence of parasite infestation (other than *E. vermicularis*) in appendectomy specimens. In the setting of the PRISMA guidelines, multiple databases (Science Direct, Scopus, Web of Science, PubMed, and Google Scholar) were explored in articles published until 28 September 2020. Totally, 62 studies (106 datasets) with 77, 619 participants were included in the analysis. The pooled prevalence of parasites in appendectomy samples was as follows; 0.012% (95% CI; 0.004-0.025) for *Ascaris lumbricoides*, 0.004% (95% CI; 0.001-0.009) for *Trichuris trichiura*, 0.025% (95% CI; 0.007-0.052) for *Schistosoma mansoni*, 0.002% (95% CI; 0.001-0.005) for *Taenia* spp., 0.061% (95% CI; 0.020-0.122) for *Entamoeba histolytica* and 0.034% (95% CI; 0.018-0.056) for *Giardia lamblia*. Our results demonstrated that the risk of appendicitis may increase in the presence of helminth and protozoan infections. As such, the most cases of parasites in appendectomy specimens were reported in developing countries. Regular screening plans for diagnosis, treatment and prevention are needed for prevention of parasitic infection as well as parasitic associated appendicitis, especially in endemic regions of the world.

**Keywords:** Prevalence; appendicitis; histopathological methods; parasitic infestation; worldwide