



## Vectors & parasites

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### IS INTESTINAL PARASITE INFECTION ASSOCIATED WITH OBESITY ? AN ECOLOGICAL ANALYSIS IN MEXICO

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**Background** - Obesity is a worldwide healthcare challenge. Recent studies have shown an association between both viral and bacterial infection with obesity. However, studies on the association between intestinal parasites and obesity are scarce. The aim of this ecological study is to evaluate the association between the approximated probability of infection with *Ascaris lumbricoides* (*A. Lumbricoides*) or intestinal protozoa (all reported intestinal protozoa excluding *Entamoeba histolytica* or *Giardia lamblia*) in 2000, 2006 and 2012 with BMI for age z-score (BMIz) in 2012 in Mexico.

**Methods** - For this purpose, we used publicly available individual-level data for BMIz in 2012 and state-level data on the incidence of infection with *A. Lumbricoides* or intestinal protozoa in 2000, 2006 and 2012 as a proxy for probability of infection.

**Results** - A higher proximate probability of infection in 2012 with *A. Lumbricoides* was associated with a lower BMIz in 2012. In contrast a higher proximate probability of infection in 2012 with intestinal protozoa was associated with a higher BMIz in 2012. A higher proximate probability of infection with *A. lumbricoides* and intestinal protozoa in 2000 and 2006 were associated with an increased BMIz in 2012.

**Discussion** - Our results suggest that there may be species specific effects of intestinal parasitic infection that may have both, short and long term consequences on health. Further research is needed to confirm these ecological associations and study the possible mechanisms. These findings have important implications for Mexico, given the context of a high incidence of parasitic infection and emerging obesity epidemic.