

Abstract

We studied physical fitness with the Harvard step test (HST), in primary schoolboys infected with hookworm (91% baseline prevalence), *Trichuris trichiura* (94%) and *Ascaris lumbricoides* (39-40%) who received a single 400 mg dose of albendazole or an identical placebo. Boys were examined, allocated at random to placebo or albendazole groups, treated, and re-examined 7 weeks later. The 2 groups did not differ significantly before treatment in age, anthropometry, haemoglobin levels, prevalence or intensity of the 3 helminth infections, or in initial HST fitness scores and heart rates. Seven weeks after treatment, the albendazole group (n = 18) exhibited significant improvements in fitness scores and heart rates at 1, 2, 3, and 4 min after the HST while in the placebo group (n = 15) these quantities had not changed significantly. After treatment, the albendazole group had significant decreases in the logarithmic egg counts for hookworm (80% reduction in arithmetic means) and *A. lumbricoides* (100% reduction); *T. trichiura* egg counts did not change significantly. The placebo group showed a borderline increase in the logarithms of hookworm egg counts and no significant change in *T. trichiura* and *A. lumbricoides* egg counts. Multiple regression analysis showed that the significant linear predictors of increase in HST score after treatment were decrease in resting heart rate after treatment, and decreases in hookworm egg counts and logarithms of *A. lumbricoides* egg counts after treatment. We conclude that single dose treatment with albendazole, despite continual exposure to reinfection, can allow improved physical fitness in schoolboys in areas where soil-transmitted helminths and protein-energy malnutrition are highly prevalent.