Dr. J. A. Turton et. al., published in *Tropenmed. Parasit.* 1975, 26, 196-200, titled “Haematological and immunological responses to the tapeworm *Hymenolepis diminuta* in man.” This paper constitutes one of the only pieces of research on the effects of deliberate inoculation with HDC in man and is interesting for several reasons. Although primarily aimed at determining changes in blood cells and immunoglobulins (antibodies) following inoculation with HDC, the method used gives some evidence as to the numbers of HDC which can be used without development of unwanted side effects.

The paper describes how Turton inoculated himself with HDC, initially 30 HDC were taken followed by a further 100 HDC 22 days later. Blood samples and other measurements were obtained following inoculation and it was found that there were no changes in red cell count, volume of packed red cells and haemoglobin levels. Calorie intake and body weight were also observed to remain stable. However, there was an observed increase blood viscosity and in parasite-specific antibody counts, which peaked at day 21 after the first inoculation. It was noted that previously reported side effects (in other, earlier papers) were not observed.

No parasite ova were observed in the subjects faeces, despite the fact that they were observed after 16 days in rats inoculated with the same batch of HDC that Turton had used. These results are important as it suggest that in humans, the HDC become established but are expelled by the human body before maturing into egg producing adults.

Turton then undertook another more detailed experiment a year after the initial experiment described above. Three blood samples were taken in a nine day period before inoculation and a further fourteen blood samples were taken following inoculation with 1000 HDC over a 24 four day period, in batches of 200.

Analysis again showed no change in red cell count, volume of packed red cells and haemoglobin levels, there was also no change in total leucocytes, neutrophils, lymphocytes, monocyte count, basophils and plasma cells. There was no change in serum transaminase enzymes. However, there was a three fold increase in eosinophils (Eos) peaking at 24 days post inoculation, levels then dropped but remained elevated compared to pre-inoculation levels. Again blood viscosity increased following inoculation and was observed to remain raised throughout the experiment.

There was also a maximum increase at day 21 following the first inoculation in IgG antibody levels with a less marked but significant increase in IgM antibodies. No changes in IgE were observed but is noted this could have been due to limitations of the method used to measure them.

It was noted that even with a total dose of 1000 HDC, no physical side effects were experienced.

In conclusion, the lack of changes in the transaminase enzymes and haemoglobin is highly suggestive that inoculation with HDC does not result in any tissue damage, while the observation of raised Eos, IgG and IgM were expected following exposure
to helminths but are the first to be reported following specific exposure to HDC. The study also suggest a very good side effect profile to even very high HDC numbers, although it is noted that the subject was a healthy male and that physical and biochemical response could potentially be different in individuals with pre-existing diseases.