

## Evaluation of flaxseed effects on non-alcoholic fatty liver disease (NAFLD) in rabbits submitted to a hypercholesterolemic diet

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### ABSTRACT

**Background:** The aim of the present study is to evaluate the role of flaxseed in non-alcoholic fatty liver disease, as well as on the lipid profile in rabbits submitted to hypercholesterolemic diet.

**Subject and Methods:** 32 male rabbits, weighing approximately 1.5kg and averaging four months of age, were distributed into three groups. Group 1 received standard food plus 0.5% of cholesterol from dried egg, during 8 weeks. Group 2 obtained the same diet in the first 4 weeks, and 8mg/kg of ground flaxseed was added in the remaining weeks. Lastly, group 3 was fed with the previous group's increased diet throughout the entire period. In the follow-up, the animals were euthanized, and liver blades were prepared to evaluate the histopathologic study. The evaluation score of NAFLD (ESN), as well as plasma levels of total cholesterol, LDL-cholesterol, HDL-cholesterol, triglycerides and body weight, were all determined.

**Results:** Increased levels of total cholesterol were obtained in both groups, with the smallest variation found in G3 ( $p=0.002$ ). This variation was also found when the levels of LDL-cholesterol were assessed ( $p=0.001$ ). There was a reduction of triglyceride levels at the end of the study in G3 ( $p=0.008$ ). A variation was noticed between the ESN groups, but the induced reduction was not statistically significant.

**Conclusion:** Further studies are necessary, in order to elucidate the effects of flaxseed in NAFLD as well as in diseases that have risk factors for the development of the disease.

**Keywords:** non-alcoholic fatty liver disease, flaxseed, experimental study, functional food