

# Evaluation of Structured Home-Based Exercise Protocol on Hepatic Fat Regression in Non-Alcoholic Fatty Liver Disease: A Pilot Controlled Clinical Trial

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## ABSTRACT

**Introduction:** NAFLD (Non-alcoholic fatty liver disease) is denoted by fat accumulation in liver without any evidence of ongoing or recent consumption of alcohol, viral infection or any etiology of liver disease. NAFLD is a quiet plague influencing 19% to 32% population of India with a worldwide predominance of 25.24%. There is no current FDA endorsed single line drug therapy for the treatment of NAFLD. According to the American Gastroenterological Association Exercise training along with dietary modification is a major component of treatment for NAFLD. Thus, the Primary aim of the study was to assess the effects of a structured Home-based Exercise on hepatic fat regression [Fibro scan-CAP, Liver enzymes] functional capacity and muscle strength in NAFLD.

**Methodology:** 08 patients diagnosed as having Fatty liver on USG of Abdomen and Fibro scan, age ranging from 30-55years, both the genders were randomly allocated in 2 groups via envelope method: Standard care group & Intervention Group respectively. Standard care group received appropriate advice for lifestyle modification prescribed by the Hepatologist in the form of diet and physical activity. Intervention Group were subjected for moderate to vigorous home-based exercise for duration of 8 weeks. For which individual patient were provided with the detailed booklet of exercise protocol. The Frequency of exercise was 5days/week. For prescription of exercise, Pre and post exercise parameters in form of Body mass index (BMI), 6MWT, muscle strength by Handheld dynamometer were assessed. Outcome measures included Fibro scan (CAP), Liver enzymes (AST & ALT), FBS, HbA1c, 6MWT, Hand-held dynamometer.

**Results:** 8 weeks of home-based exercise showed significant improvement in Fibro scan CAP value[mean±SD:262.5±33.63, p<0.05], AST[mean±SD:36.5±4.65, p<0.05], ALT[mean±SD:32.5±4.7, p<0.05], FBS [mean±SD:86±7.83, p<0.05], HbA1C[mean±SD:5.37±0.4, p<0.05], BMI[mean±SD:28.1±2.09, p<0.05], Functional capacity [mean±SD:523.75±49.5, p<0.05] and muscle strength[mean±SD:22.7±1.7, p<0.05] in NAFLD subject. The post-test comparison between the 2 groups showed significant distinction in favor of the exercise group in the above measured variables.

**Conclusion:** Structured home-based exercise diminishes fat deposition in liver as well as improves muscle strength and functional capacity in Non-alcoholic fatty liver patients.

**Keywords:** Liver disease, Fatty liver, Home exercise program

