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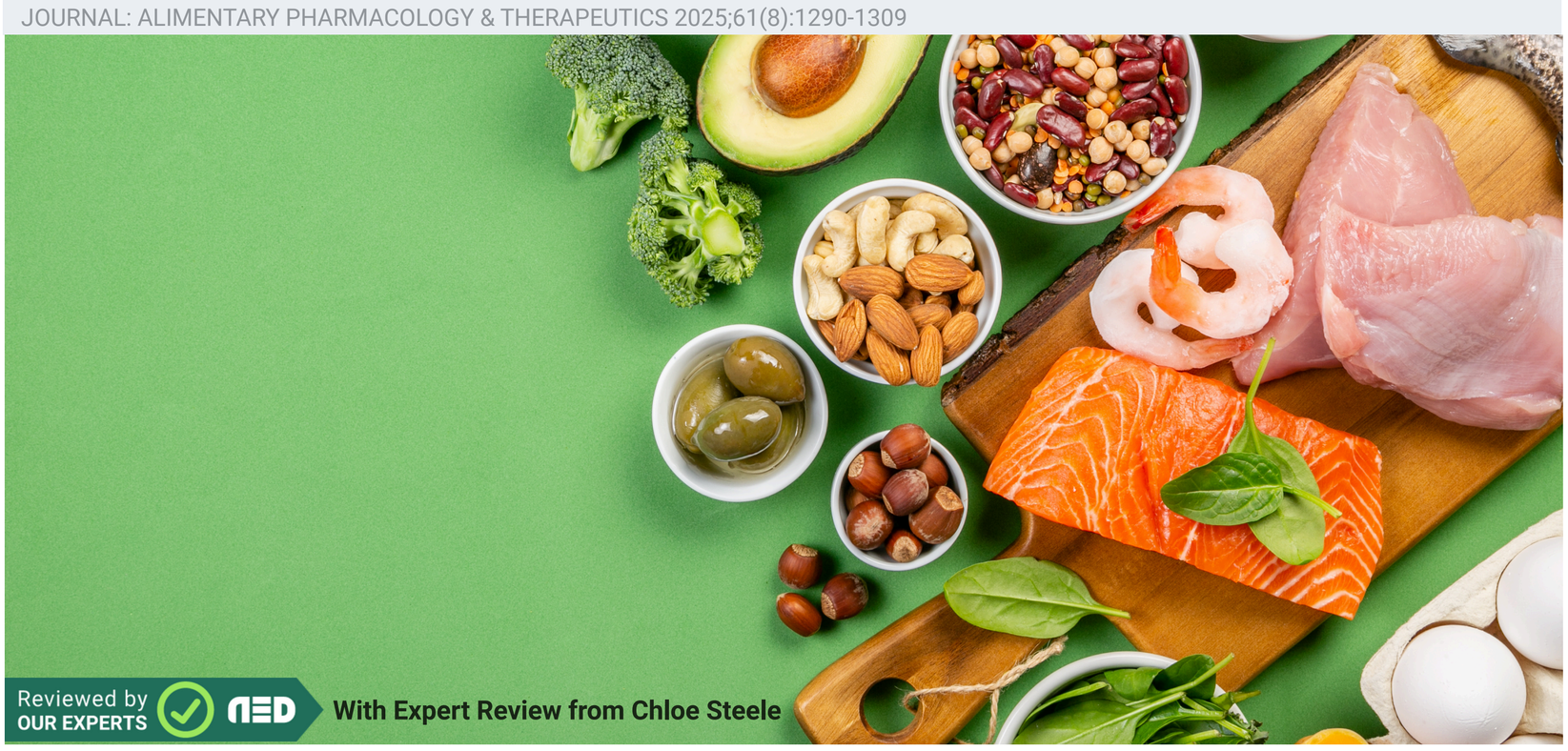
Nutrition & Exercise in Liver Health

Effects of a 12-Week Mediterranean-Type Time-Restricted Feeding Protocol in Patients With Metabolic Dysfunction-Associated Steatotic Liver Disease: A Randomised Controlled Trial-The 'CHRONO-NAFLD Project'

TRIADA BALI, SOFIA TSITSOU, EVANGELOS CHOLONGITAS, KALLIOPI-ANNA POULIA, EMILIA PAPAKONSTANTINOU, DIMITRIOS S KARAGIANNAKIS, MAGDALINI ADAMANTOU, ARISTI SARIDAKI
JOURNAL: ALIMENTARY PHARMACOLOGY & THERAPEUTICS 2025;61(8):1290-1309



Reviewed by OUR EXPERTS With Expert Review from Chloe Steele

The Mediterranean diet (MD) has been shown to improve outcomes in those with metabolic syndrome, possibly because of the antioxidants and anti-inflammatory foods it contains. Time restricted feeding (TRF) has also been suggested for individuals with MASLD.

This 12-week study aimed to compare the effects of a hypercaloric MD in a 10-hour TRF protocol. This was a randomised control trial (RCT) of 59 individuals with obesity/overweight and MASLD assigned to one of three intervention groups: hypercaloric MD (control), hypercaloric MD eating between 8am-6pm (eTRF) and hypercaloric MD eating between 12pm-10pm (lTRF).

The results showed that all groups lost body weight and fat mass, with small drops in muscle mass, improved blood pressure, and improvements to liver steatosis. Glucose metabolism improved in all groups, however unlike eTRF and control, insulin resistance and insulin sensitivity were unaffected with lTRF. Cholesterol levels were improved with lTRF and in the control group, which was not seen with eTRF.

Authors concluded that regardless of the timing there were benefits of the MD to metabolism in individuals with MASLD, although eating earlier may have further benefits to blood-sugar control. ■

The effects of intermittent fasting on antioxidant and inflammatory markers and liver enzymes in postmenopausal, overweight and obese women with rheumatoid arthritis: a randomized controlled trial.

ARYAN TAVAKOLI, HASTIMANSOOREH ANSAR, ABDOLRAHMAN ROSTAMIAN, ET AL.
JOURNAL: SCIENTIFIC REPORTS 2025;15(1):2357

Reviewed by OUR EXPERTS Expert Review from Karin Elgar

Postmenopausal women can face hormonal shifts, chronic inflammation and metabolic dysregulation leading to poorer health outcomes and quality of life. Intermittent fasting (IF) has emerged as a promising approach for targeting inflammation, however research is still in its infancy.

This study aimed to determine the effects of IF on inflammation, antioxidant markers, and liver enzymes with a view to it being used as a therapy in postmenopausal women. This was an 8-week parallel-randomised controlled trial of 44 overweight or obese postmenopausal women with RA who were given an eating window of 8-hours, a fasting window of 16-hours, and a 300 kcal deficit diet.

The results showed that there were significant improvements to the inflammatory markers malondialdehyde and nitric oxide, and the immune marker ratio neutrophils:lymphocytes. There were also improvements to the liver injury enzymes aspartate aminotransferase and alanine aminotransferase. The authors concluded that IF offers a benefit to postmenopausal women with RA and associated metabolic comorbidities. ■

Vitamin E for people with non-alcoholic fatty liver disease

AMILICA BJELAKOVIC, HONGYONG DENG, JIANG LIN, ET AL.
JOURNAL: THE COCHRANE DATABASE OF SYSTEMATIC REVIEWS 2024;10(10):CD015033

Vitamin E, a fat-soluble antioxidant, may be a potential therapy for those with NAFLD, however current evidence is conflicting. This study aimed to determine the beneficial and harmful effects of vitamin E supplementation alone and in combination with other vitamins and minerals in people with NAFLD. This was a systematic review and meta-analysis of 16 randomised controlled trials looking at dosages of vitamin E ranging from 298 IU to 1000 IU. The results showed that vitamin E reduced all-cause mortality, serious adverse events, and improved quality of life. Vitamin E in combination with vitamin C improved markers of liver injury. However, the authors had uncertainty in the evidence and concluded that this meant they could not deduce the effect of vitamin E alone or in combination with vitamin C for those with NAFLD. ■

High-Intensity Interval Training Reduces Liver Enzyme Levels and Improves MASLD-Related Biomarkers in Overweight/Obese Girls

Reviewed by OUR EXPERTS

WISSAL ABASSI, NIDHAL JEBABLI, NEJMEDDINE OUERGHI, ET AL.
JOURNAL: NUTRIENTS 2025;17(1):

With Expert Review from Sarah Cassar

High intensity interval training (HIIT) has been shown to have cardiometabolic benefits, however there is a lack of understanding on how HIIT can affect liver enzymes, especially in the paediatric population.

This study aimed to evaluate the effects of HIIT on MASLD-related biomarkers in adolescents with overweight/obesity. This was a 9-week randomised control trial of 33 adolescent girls with overweight/obesity were given either 3 HIIT training sessions per week, or maintained their usual school delivered physical education classes (control).

The results showed that HIIT improved levels of the liver enzymes, alanine aminotransferase and aspartate aminotransferase. Further benefits were seen in anthropometric measures, systolic blood pressure, blood lipid levels and physical speed and fitness with HIIT. The authors concluded that HIIT could be an effective exercise to prevent and reverse MASLD in adolescents with obesity. ■