



Can diet and exercise interventions improve body composition in liver cirrhosis? A systematic review

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Background: Sarcopenia & sarcopenic obesity are complications of liver cirrhosis associated with adverse outcomes.

Aim: This systematic review aimed to evaluate the effect of diet and/or exercise interventions on body composition (muscle or fat) in adults with cirrhosis.

Methods:

Population	• Liver cirrhosis
Intervention	• Diet or exercise, 4 weeks or more
Comparator	• Nil specified
Outcomes	• Body composition – CT, MRI, DXA, ultrasound, BIA or anthropometry



- 5 databases searched from inception to November 2021
- Inclusion criteria as per PICO. Single-arm studies included only if CT, MRI, ultrasound, DXA or BIA used
- Data extraction cross-checked
- Quality assessed using Cochrane Risk of Bias tools
- Meta-analysis unable to be performed due to heterogeneity in study interventions and outcome measures

Results:

- n=27 studies (22 controlled trials, 5 single arms)
- Small sample sizes n=6-120
- Only 1 study targeted overweight/obese population
- Moderate risk of bias mainly due to lack of blinding of assessors
- Duration 4 - 56 weeks

Most promising effects with:

At least 8 weeks

High protein diet

Supervised exercise 3 days / week

Potential added benefit of Branched Chain Amino Acids

Conclusions:

- Interventions require the synergistic effect of both diet & exercise for best improvements in body composition in cirrhosis.
- Suitably powered RCTs targeting overweight/obese populations and using guideline-recommended body composition measures are needed to clarify if sarcopenia and sarcopenic obesity is modifiable in patients with cirrhosis.