

Analysing the efficacy of Liver-Shrinking Diets Prior to Bariatric Surgery

A single-centre UK analysis of 2, 3 and 4-week dietary programmes

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WHY DO WE USE A LIVER-SHRINKING DIET?

Rationale

Reduce liver volume and improve access to the upper abdomen

Typical plans provide around 800–1000 kcal/day

Local practice

Patients were generally assigned:

- 2 weeks if BMI <50
- 4 weeks if BMI ≥50
- 3 weeks in selected patients, based on surgeon preference

Study aim

To assess whether 2, 3 and 4-week LSD groups differed in:

- BMI and weight change
- Liver size / morphology
- Intra-operative liver appearance
- Whether the diet affected the ability to proceed with surgery

The key comparison: does “longer” actually translate into a better operative liver?

THE LIVER-SHRINKING DIET

Milk replacement



Food diet



Meal replacement



Example structure and meal plan

Breakfast	1 carbohydrate portion	25g breakfast cereal
	1 dairy portion	200ml milk
	1 fruit portion	80g berries
Lunch	2 protein portions	Grilled chicken breast (200g)
	2 vegetable portions	160g cooked vegetables
Dinner	2 carbohydrate portions	100g cooked pasta
	1 protein portion	1 tin tuna
	1 vegetable portion	80g salad vegetables
Snacks (spread over the day)	1 fruit portion	2 satsumas
	1 dairy portion	125g diet yogurt

STUDY DESIGN

JAN–JUN 2025

UK bariatric centre

147

bariatric procedures

118

complete records analysed

**2 / 3 / 4
WEEKS**

LSD duration

29 patients excluded

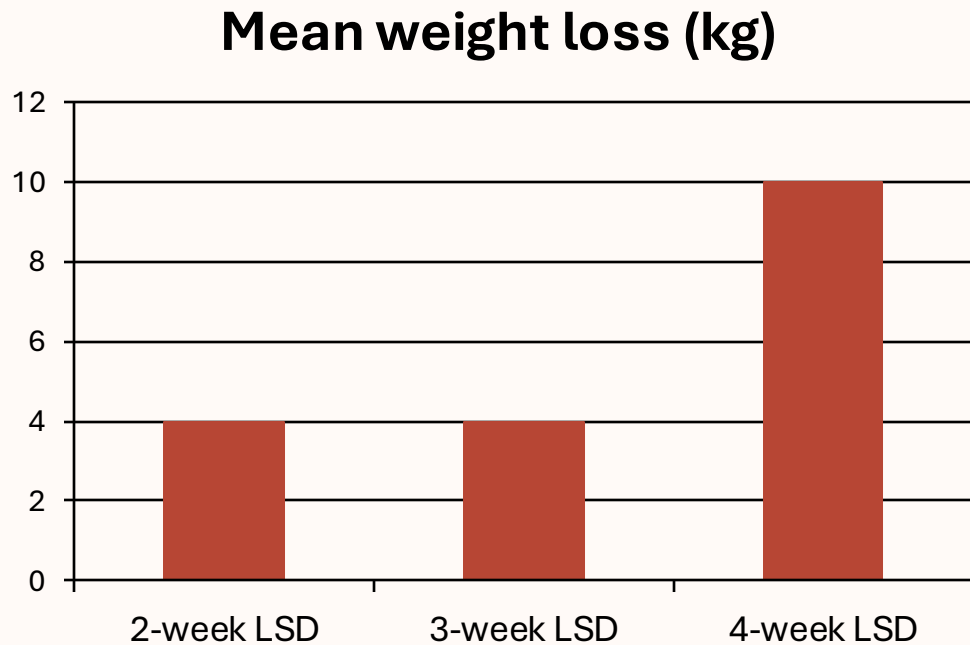
Incomplete data prevented analysis of weight, BMI or operative liver findings.

Cohort characteristics

Mean age: 45 years
Predominantly female: 85%
Data: electronic records + operative notes

Liver pathology and size were recorded from operative documentation and diagnostic laparoscopy.

RESULTS: LONGER DIETS PRODUCED GREATER WEIGHT LOSS



The 4-week group had the largest pre-operative weight reduction.

2 weeks

4% mean BMI reduction
≈4 kg weight loss

3 weeks

4% mean BMI reduction
≈4 kg weight loss

4 weeks

6% mean BMI reduction
≈10 kg weight loss

RESULTS: WHAT ABOUT THE LIVER?

2 WEEKS

~50%

normal liver morphology

~48%

hepatomegaly

3 WEEKS

~40%

normal liver morphology

~40%

hepatomegaly

4 WEEKS

62%

normal liver morphology

43%

hepatomegaly

Despite measurable weight loss, longer LSD duration did not clearly translate into a consistently better operative liver.

TAKE-HOME MESSAGE

Longer ≠ necessarily better operative conditions

1. Weight loss

The 4-week LSD produced the greatest mean weight loss: approximately 10 kg versus 4 kg with 2–3 weeks.

2. Liver findings

Liver morphology and hepatomegaly varied between groups, without a clear dose-response relationship.

3. Clinical Implication

Longer diets may increase weight loss, but this study does not show that duration reliably prevents difficulty completing surgery.

A PRAGMATIC APPROACH MAY BE MORE APPROPRIATE THAN ROUTINELY EXTENDING THE DIET

THANK YOU

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