

Efficacy of lipolytic injections with dietary modifications in weight management: A comparative study

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Abstract

Objective: Lipolytic injections are used in aesthetic practice to reduce localized fat. Their effectiveness may be enhanced when combined with dietary modifications. To evaluate the efficacy of lipolytic injections containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine, with and without dietary intervention, in reducing weight and waist circumference.

Methods: A randomized, prospective clinical study was conducted with 22 participants (67–89 kg). Group A (n = 11) received lipolytic injections only; Group B (n = 11) received injections with a high-protein, low-refined carbohydrate, low-fat diet. Weight and waist circumference were measured at baseline, 6 weeks, and 10 weeks. Paired t-tests were used for analysis.

Results: Group B achieved greater reductions at both 6 weeks (3.7 kg; 3.6 in) and 10 weeks (3.2 kg; 2.1 in) compared to Group A (1.5 kg; 2.2 in and 0.6 kg; 1.1 in, respectively).

Conclusion: Lipolytic injections combined with dietary modification are more effective for short-term weight and waist circumference reduction than injections alone.

Keyword: Lipolytic injections; Weight loss; Dietary changes; Waist circumference.

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Introduction

Obesity is a global health burden with aesthetic and medical consequences, including increased risk of diabetes, cardiovascular disease, and certain cancers.¹ Lipolytic injections are emerging as a non-invasive modality in aesthetic practice, aiming to reduce localized fat deposits. The formulation (lecithin, bromelain, riboflavin, L-carnitine, and L-arginine compounds) target fat metabolism through lipid emulsification, proteolysis and enhanced mitochondrial activity.²⁻⁶

While injections may reduce fat volume, combining

them with lifestyle changes could potentially improve outcomes.^{3,4} This study compares the efficacy of lipolytic injections with and without dietary modifications.

Material and Methods

This was a prospective, randomized study of 22 participants aged 32-48 years (weight range 67-89 kg). Participants were randomly assigned to:

Group A Lipolytic injections (containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine) only (n = 11).

Group B Lipolytic injections (containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine) plus dietary modification (n = 11).

Each group had 4 males and 7 females.

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Table 1 Demographic information and assigned interventions for participants in both study groups.

Characteristic	Group A (Lipolytic Only)	Group B (Lipolytic + Diet)
Number of Participants	11	11
Gender (M/F)	4 / 7	4 / 7
Average Age (years)	37.5 (range: 32–48)	36.2 (range: 32–48)
Average Starting Weight (kg)	77.4	76.3
Injection Type and Volume	Lipolytic solution containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine 20–30 ml/session	Lipolytic solution containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine 20–30 ml/session

Interventions

Participants received 20–30 mL of a compounded lipolytic solution containing lecithin, bromelain, riboflavin, L-carnitine, and L-arginine weekly for 10 weeks.

Group B was also instructed to follow a dietary regimen consisting of:

High-protein Focus on lean meats, poultry, fish, eggs, and nuts.

Low-refined carbohydrates Emphasizing fruits and vegetables while minimizing sugar and processed foods.

Low-fat Encouraging low-fat dairy products and avoiding fried foods.

Outcome Measures

Waist circumference and body weight were measured at baseline, 6 weeks, and 10 weeks. Statistical comparisons were made using paired t-tests, with significance set at $p < 0.05$.

Results

Group B showed significantly greater reductions in both parameters at 6 and 10 weeks (**Table 2**). At 10th week, the mean weight loss was 3.2 kg vs. 0.6 kg, and waist reduction was 2.1 inches vs. 1.1 inches in Groups B and A, respectively.

These results suggest an additive effect of dietary changes when combined with lipolytic injections, supporting integrated treatment approaches.^{3,4}

Our findings align with prior studies showing that lifestyle interventions enhance pharmacologic or aesthetic treatments.³⁻⁵ Lecithin aids lipid emulsification,⁶ bromelain contributes to proteolysis,⁷ and L-carnitine supports fatty acid oxidation.⁸ Riboflavin and L-arginine enhance mitochondrial and nitric oxide activity, respectively.^{9,10}

Combining these agents with caloric control likely enhances systemic fat mobilization and localized effects, consistent with prior systematic reviews of injection lipolysis.¹¹

Limitations The sample size was small, and adherence to the dietary protocol was self-reported. Future studies should include larger cohorts, validated dietary tracking, and longer follow-up.

Conclusions

Lipolytic injections combined with a structured dietary program are more effective for weight and waist circumference reduction than injections alone. This combination may enhance the outcomes of aesthetic fat-reduction protocols.

Table 2 Comparative outcomes of both study groups.

Measurement Period	Group A		Group B	
	Waist Reduction (Inches)	Weight Loss (kg)	Waist Reduction (Inches)	Weight Loss (kg)
Baseline	-	-	-	-
6 Weeks	2.2	1.5	3.6	3.7
10 Weeks	1.1	0.6	2.1	3.2

Declaration of patient consent The author certify that he has obtained all appropriate patient consent.

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Conflict of interest Author declared no conflict of interest.

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