

Integrating Lifestyle and Dietary Interventions with GLP-1 Receptor Agonists for Obesity Management: Preliminary Results of A Scoping Review

Brandon Arulanandam^a, Hajare Iraqi^a, Selin Altuntur^b, Kaberi Dasgupta^{c,d,e}

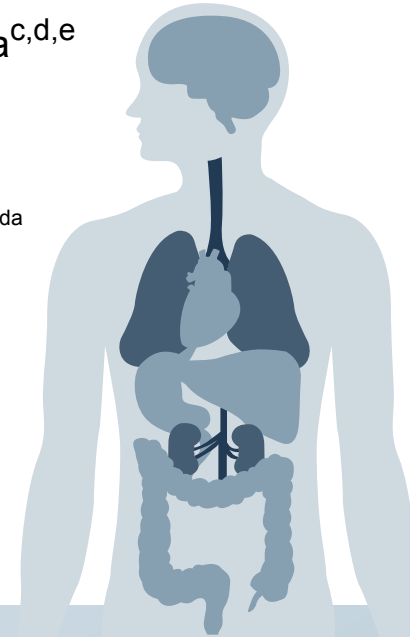
^aDepartment of Medicine, McGill University, Faculty of Medicine and Health Sciences, Montreal, QC, Canada

^bMcConnell Resource Centre Medical Library, McGill University Health Centre, Montreal, QC, Canada

^cDepartment of Medicine, Division of Internal Medicine, McGill University Health Centre, Montreal, QC, Canada

^dCentre for Outcomes Research and Evaluation, Research Institute of McGill University Health Centre, Montreal, QC, Canada

^eDepartment of Medicine, Division of General Internal Medicine, McGill University, Montreal, Quebec, Canada



LEARNING OBJECTIVES:

- Evaluate the comparative effectiveness of GLP-1 receptor agonist (GLP-1 RA) therapy alone and in combination with lifestyle interventions for improving glycemic and weight outcomes in individuals with obesity.
- Determine which lifestyle interventions are optimal for maximizing the glycemic and weight benefits of GLP-1 RAs.
- Identify gaps in the literature and the methodological quality of the available evidence regarding combined interventions involving GLP-1 RAs and lifestyle modifications.

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	Co-author	Conflict disclosures
1	Brandon Arulanandam	No conflicts of interest to disclose.
2	Hajare Iraqi	No conflicts of interest to disclose.
3	Selin Altuntur	No conflicts of interest to disclose.
4	Kaberi Dasgupta	No conflicts of interest to disclose.

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BACKGROUND:

- **GLP-1 RAs** produce substantial weight loss and glycemic improvements in RCTs (Wilding et al., NEJM 2021; Jastreboff et al., NEJM 2022). In large RCTs to-date, they are typically evaluated alongside the equivalent of 13 counseling sessions, which is not representative of standard real-world practice.
- **Lifestyle interventions** (ex. diet, exercise, behavioral support) are foundational and improve many metabolic and cardiovascular outcomes, but typically yield modest, short-lived effects on weight alone. (Jensen et al., JACC 2014)
- The **incremental benefit** of **structured lifestyle programs** in addition to **GLP-1 RA therapy** on weight and glycemic control remains unclear.

OBJECTIVE: Evaluate whether lifestyle interventions provide added benefits over GLP-1 RA therapy alone in improving weight and metabolic outcomes in individuals with obesity, with or without diabetes.

METHODS:

- Searched EBSCO, Cochrane CENTRAL, Embase, CINHALL, MEDLINE, Global Health, APA, PsychInfo, PubMed, Global Index Medicus & Web of Science from inception until Dec. 2024.
- 2 reviewers independently screened studies using Rayyan & following PRISMA guidelines.
- Included studies were assessed for bias & data extracted on weight & glycemic control outcomes.

RESULTS: from 7,721 articles, 5 studies published between 2016 and 2023 were included.

	Study Characteristics	GLP-1 RA/Lifestyle Intervention	Mean Weight ↓ GLP-1 RA vs. COMB	Mean HbA1c ↓ GLP-1 RA vs. COMB
Wadden et al. Obesity. 2019	USA single-center RCT 150 patients Follow-up: 52 wks	6 months of intensive behavioral therapy w/ counselling visits + Liraglutide 3mg/d alone or in combination 12 weeks of meal replacement	24 wks 10.1% ± 0.6 vs. 12.2% ± 0.6 (mean±SEM, p=0.017) 52 wks 11.5% ± 1.3 vs. 11.8% ± 1.3 (mean±SEM, p=0.863) Repeated-measures, linear mixed-effects models. Between-group differences and 95% CI not reported	24 wks 0.4% ± 0.03 vs. 0.5% ± 0.03 (mean±SEM , p>0.05)* 52 wks 0.5% ± 0.03 vs. 0.6% ± 0.03 (mean±SEM , p>0.05)*
Lundgren et al. NEJM. 2021.	Denmark single-center RCT 195 patients Follow-up: 52 wks	Liraglutide 3mg/d + low-cal diet lead-in alone or in combination with 12 month supervised exercise program	Initial weight: 109.7±14.9 kg; mean Δ after lead-in low calorie diet -13.1 kg (95% CI -13.7 to -12.4) Body fat percentage Δ : Tx difference: 1.9% (95% CI 0.5-3.3) 1.6% (95% CI, 0.6-2.6) vs. 3.5% (95% CI, 2.5-4.5)	0.13% (95% CI, 0.06-0.19) vs. 0.08% (95% CI, 0.03-0.15)
Kanai et al. Obes Pillars. 2024	Japan single-center retrospective 29 patients Follow-up: 52 wks	1 year out from lap-sleeve gastrectomy; max-tolerated dose of Semaglutide alone or in combination with one meal per day formula replacement	Not reported	0.40% vs. 1.45% (Student's t test, p<0.05)
Aniyam et al. Clin Nutr. 2024	UK single-center RCT 32 patients Follow-up: 2 wks	Semaglutide 1mg/d alone or in combination with very-low-calorie diet (600kcal/day as total meal replacement + 200kcal allowance)	5.9% ± 0.6 vs. 12.9% ± 1.4 (mean±SEM, one-way ANOVA with post-hoc Tukey's testing p < 0.001)	0.89% ± 0.28 vs. 1.91% ± 0.36 (mean±SEM, one-way ANOVA with post-hoc Tukey's testing p>0.05)
Sanchis et al. Nutr Hosp. 2024	Spain single-center RCT 68 patients Follow-up: 32 wks	Liraglutide 3mg/d alone or in combination with 13 sessions of nutritionist-guided food education program	3.45% vs. 9.08% (Mann-Whitney U test, p < 0.001)	Not reported

COMB: GLP-1 RA in combination with lifestyle intervention

While evidence is limited, the available evidence suggests that adding lifestyle and dietary interventions to GLP-1 RA therapy may enhance weight loss and glycemic outcomes in adults with obesity compared to pharmacotherapy alone.

Interpretation of the evidence is limited by heterogeneity of interventions, small sample sizes, exclusion of older adults and diabetics in several studies, as well as limited long-term data.

Further research is needed to confirm this signal and determine optimal intervention strategies and ensure safe, sustained use of GLP-1 RAs.

Ongoing scoping review. Additional data from an expanded search will be included in the final analysis.

