

GLP-1 Receptor Agonists in Adolescents with Severe Obesity

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Abstract

This commentary examines the role of GLP-1 receptor agonists (GLP-1 RAs) in adolescents with severe obesity, focusing on the intersection between metabolic benefit and mental health vulnerability. Recent trials demonstrate significant reductions in BMI and improvement in cardiometabolic outcomes among adolescents treated with GLP-1's, leading to inclusion in contemporary paediatric obesity guidelines. However, concerns remain regarding long-term psychological and neurodevelopmental effects, particularly as many clinical trials exclude young people with psychiatric comorbidity. Adolescents with obesity frequently experience anxiety, depression, weight stigma, disordered eating, and Adverse Childhood Experiences (ACEs), all of which may influence treatment engagement and outcomes. This article highlights the need for careful multidisciplinary assessment prior to initiating pharmacotherapy. We argue that prescribing decisions should extend beyond BMI alone and incorporate psychological wellbeing, eating disorder risk, social context, and family capacity to ensure safe, equitable, and developmentally appropriate obesity care.

Introduction

Paediatric obesity services are seeing increasing referral rates alongside the emergence of new pharmacological treatments for obesity. Among the most recent therapies introduced into paediatric practice are GLP-1 RAs. Their arrival has been accompanied by considerable public and media attention, often framing these medications as a transformative solution for obesity management.

GLP-1 RAs offer clear metabolic benefits for selected adolescents with obesity. However, their rapid uptake raises important questions for clinicians caring for young people with complex medical and psychosocial needs. Adolescence represents a critical developmental stage shaped by physical, psychological, and social vulnerability. Treatment decisions made during this period may have consequences that extend beyond weight or cardiometabolic outcomes.

This commentary does not argue against the use of GLP-1 therapies in adolescents. Rather, it reflects on how, when, and for whom these medications should be considered, particularly in young people with mental health vulnerabilities or disordered eating risks.

Emerging evidence for GLP-1 therapy in adolescents

Randomised controlled trials have demonstrated that GLP-1 RAs can lead to clinically significant reductions in body mass index (BMI) and improvements in cardiometabolic markers among adolescents with obesity. The STEP TEENS trial showed that once-weekly semaglutide, combined with lifestyle intervention, resulted in substantially greater BMI reduction compared with placebo in adolescents aged 12 to 17 years with obesity¹.

Reflecting these emerging data, the American Academy of Pediatrics (AAP) 2023 Clinical Practice Guideline recommends the consideration of anti-obesity pharmacotherapy, including GLP-1 RAs, as part of a comprehensive treatment plan for adolescents aged 12 years and older when lifestyle interventions alone are insufficient².

Despite these promising findings, important gaps remain. Long-term safety data in adolescents are limited, particularly regarding neurodevelopmental and psychological outcomes. Mental health endpoints are rarely reported in clinical trials, and relatively little is known about how adolescents experience appetite-suppressing pharmacological therapies. Many clinical trials evaluating GLP-1 RAs exclude adolescents with significant psychiatric comorbidity, including severe depression or a history of suicidality. While these exclusions are understandable from a safety perspective, they also limit the generalisability of trial findings. As a result, clinicians must often make treatment decisions for complex patients using evidence derived from more selective populations. These gaps are particularly relevant given the high prevalence of mental health comorbidity among young people with obesity.

Weight stigma and barriers to care

Adolescents living with obesity frequently experience weight-based stigma from peers, families, communities, and healthcare systems. Weight stigma refers to the discriminatory acts and ideologies targeted towards individuals because of their weight and size. Weight

stigma is a result of weight bias. Weight bias refers to the negative ideologies associated with obesity³. Weight stigma has been associated with depression, anxiety, disordered eating behaviours, and avoidance of healthcare⁴. In clinical settings, stigma may contribute to delayed presentation, reduced engagement with treatment, and mistrust of healthcare professionals.

Clinicians themselves may experience uncertainty when considering pharmacological treatment for adolescent obesity. Historically, management has focused heavily on lifestyle modification, with pharmacotherapy reserved for later stages of treatment. While lifestyle interventions remain an essential component of care, reliance on lifestyle modification alone may not be sufficient for adolescents with severe obesity and significant comorbidities.

Mental health vulnerability

The overlap between obesity and mental health disorders in adolescents is substantial. Anxiety, depression, school avoidance, and reduced healthcare engagement frequently coexist with obesity, while bullying, social isolation, and stigma may further worsen outcomes. Adolescents with obesity and coexisting mental health disorders experience poorer health outcomes and more complex healthcare needs than their peers^{5,6}.

Many adolescents referred to obesity services also present with significant psychosocial adversity, including trauma, family instability, socioeconomic stressors, and ACEs. These factors may contribute both to obesity development and difficulty engaging with traditional treatment models. The landmark ACE study demonstrated strong associations between childhood trauma and later severe obesity and chronic disease⁷.

Emerging evidence suggests that ACEs and disrupted attachment may contribute to obesity through altered stress regulation and emotional eating behaviours⁸. Difficulties with emotional regulation may increase vulnerability to eating in the absence of physiological hunger and contribute to long-term weight gain⁸⁻¹⁰.

Eating disorders risk

Disordered eating behaviors frequently coexist with adolescent obesity and remain under-recognized in clinical practice. Adolescents referred to obesity services may report binge eating behaviors, restrictive eating patterns, body image distress, or cycles of food restriction and overeating¹¹⁻¹³.

Prior to initiating GLP-1 therapy, clinicians should consider formal screening for eating disorder pathology, particularly in adolescents with significant body dissatisfaction, restrictive eating behaviors, binge eating symptoms, or previous eating disorder diagnoses.

Rapid weight loss and appetite suppression may interact unpredictably with underlying eating pathology. Reviews of weight-focused interventions in youth suggest that restrictive approaches may worsen psychological distress in vulnerable populations¹¹⁻¹³. These are not rare cases but common clinical realities that require careful psychiatric assessment during the overall evaluation before pharmacological treatment is initiated.

The role of adverse childhood events (ACEs)

ACEs are associated with increased risk of both obesity and mental health disorders across the life course. The landmark ACE study demonstrated strong associations between childhood trauma, severe obesity and chronic disease¹¹.

These findings highlight that obesity is frequently embedded within complex psychosocial histories rather than reflecting simple behavioural imbalance. For adolescents with histories of adversity, effective obesity treatment may therefore require approaches that integrate psychological and social support alongside medical management.

Traditional family-centred obesity interventions assume the presence of stable and engaged caregivers. For children in care, those living with family adversity, or those with limited social supports, reliance on lifestyle modification alone may inadvertently perpetuate inequity.

Clinical reflection

The complexity of these issues was highlighted by a recent case encountered in our clinical service. We cared for an adolescent with severe obesity who presented with abdominal pain and recurrent urinary symptoms following multiple courses of antibiotics prescribed remotely. Inpatient assessment revealed significant obesity-related multisystem complications. Imaging identified a large ovarian cyst with evidence of torsion and necrosis. Surgical intervention was considered high risk because of her extreme BMI, and a conservative approach was taken with the likely loss of ovarian function.

The young person described longstanding anxiety, healthcare avoidance, and experiences of weight-related stigma. These factors had contributed to delayed presentations and reduced engagement with medical care. During admission she required multidisciplinary input from paediatric, gynaecological, mental health, and complex obesity team members.

Given the severity of her obesity and the irreversible complications already sustained, pharmacological weight management, including consideration of GLP-1 RAs therapy, was discussed as part of her ongoing care. While such treatment offered potential metabolic benefit, it also raised concerns regarding appetite suppression, weight-focused messaging, and psychological impact in a young person with marked anxiety and healthcare avoidance.

This case illustrates the tension clinicians may face when balancing urgent physical health risks against potential psychological harms.

Toward thoughtful prescribing

As GLP-1 therapies become more widely used in adolescent obesity, careful prescribing frameworks are needed. Comprehensive assessment of mental health and eating behaviours should form part of routine evaluation prior to initiating pharmacotherapy. Multidisciplinary decision-making involving paediatricians, dietitians, psychologists, social workers and Child and Adolescent Psychiatrists are likely to be essential for safe implementation.

Clinicians should consider family capacity, stigma and ACEs. Monitoring should extend beyond BMI and metabolic parameters including psychological wellbeing, eating behaviours family engagement, and social supports.

Finally, structured risk-stratification tools may help clinicians move beyond BMI alone when making treatment decisions. The Edmonton Obesity Staging System for Pediatrics (EOSS-P) provides a more comprehensive framework by assessing obesity severity across metabolic, mental health, social, and functional domains¹⁴. This may help identify adolescents at highest risk of obesity-related harm and support earlier intervention for those unlikely to benefit from prolonged lifestyle-only approaches.

Conclusion

GLP-1 receptor agonists represent an important development in the treatment of adolescent obesity. However, their use should not be considered in isolation from the psychological and social contexts in which obesity develops. Adolescents with severe obesity frequently present with mental health vulnerability, exposure to stigma, and complex psychosocial histories. For this population, careful multidisciplinary assessment is essential when considering pharmacological treatment.

The challenge for clinicians is not simply whether GLP-1 therapies should be prescribed, but how they can be integrated into adolescent care in ways that address both metabolic disease and psychological wellbeing.

List of abbreviations:

B.M.I: Body Mass Index

GLP-1 RA's: glucagon-like peptide-1 receptor agonists.

BMI: body mass index.

AAP: American Academy of Paediatrics.

ACE: Adverse childhood experiences.

EOSS-P: Edmonton Obesity Staging System for Paediatrics.

Declarations of Conflicts of Interest:

Written informed consent was obtained by authors from the patient prior to submission of the occasional piece. The authors used A.I to condense the manuscript during preparation. Following the use of this tool, the authors reviewed and revised the text to ensure the accuracy of the content, and take full responsibility for the final version. Otherwise, none declared.

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