Case study: Managing type 1 diabetes and ARFID (avoidant/restrictive food intake disorder) in an 8-year-old child

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Avoidant/restrictive food intake disorder (ARFID) is an eating disorder in which an individual severely limits the amount or types of food they eat. This behaviour is related to sensory issues, lack of interest or fear of negative consequences, rather than to body image. Young people with type 1 diabetes can experience negative associations with eating, which may lead to the development of ARFID. There is, however, little evidence on the best approaches to clinical management when the conditions occur together. This case study of an 8-year-old girl with type 1 diabetes and ARFID describes how healthcare professionals ensured her nutritional safety and improved glycaemic control through careful clinical considerations and multidisciplinary collaboration.

Avoidant/restrictive food intake disorder (ARFID) is an eating disorder characterised by a dietary restriction that is not related to body image or weight concerns (American Psychiatric Association [APA], 2013). When it occurs within the context of type 1 diabetes, particularly in children and young people, the management of both conditions requires improved understanding from health professionals.

This case study describes the experiences of an 8-year-old girl diagnosed with both type 1 diabetes and ARFID. It also explores the additional considerations and implications for healthcare professionals when addressing these conditions comorbidly.

Case presentation

At the age of 6 years, Julia (pseudonym) presented to her local hospital in diabetic ketoacidosis and was diagnosed with type 1 diabetes. Management included multiple daily injections (MDI) therapy and continuous glucose monitoring via a Dexcom G6™ device.

In accordance with ISPAD guidance, dietetic support was offered from the point of diagnosis to address Julia's nutritional and psychosocial needs (Annan et al, 2022). Subsequently, it was found that Julia ate a limited range of approximately ten foods. Within this accepted range, Julia was brand-specific (for example, the only brand of frozen chips she would eat was McCain) and she adhered to strict routines around the preparation of her foods.

Julia's diabetes team later referred her to a specialist eating disorders service, who diagnosed her with ARFID at the age of 8 years. Presentations of ARFID are common in children with autism (Bourne et al, 2022) and Julia later received a diagnosis of autistic spectrum disorder (ASD). Although the impact of Julia's ASD is not explored here outside of the relationship with food, wider points of the psychological formulation and presentation should not be neglected when making adaptations in practice.

Contributing factors to ARFID

ARFID was first classified as an eating disorder

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Article points

1. Managing type 1 diabetes alongside ARFID in children brings unique clinical challenges.
2. The present case study of a young girl with both conditions highlights how diabetes management can exacerbate restrictive eating behaviours.
3. Collaboration between the diabetes team and specialist eating disorders service provided a safe, consistent and individualised approach to her care.
4. Early referral and tailored interventions reduced the girl's mealtime anxiety and improved her glycaemic control.

Key words
- ARFID (avoidant/restrictive food intake disorder)
- Children and young people
- Eating disorders
- Type 1 diabetes

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in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; APA, 2013). It was defined as a feeding disturbance characterised by at least one of three features: a lack of interest in food; avoidance based on sensory characteristics of food; and/or a concern regarding aversive consequences of eating.

Julia's assessment indicated that her presentation of ARFID was likely due to a combination of two key factors: sensory sensitivities in the context of ASD and concern around the aversive consequences of eating that can be understood within the context of her diabetes diagnosis. For Julia, food was associated with an insulin injection. Both she and her parents also feared that not managing to finish her pre-planned portion of food could result in an episode of hypoglycaemia.

In defining the aversive consequences of eating, Białek-Dratwa et al (2022) discussed fear related to a direct negative consequence of eating, such as choking or pain. For young people with type 1 diabetes, the aversive consequence may be more related to management of their diabetes, such as the need to carbohydrate count. Adolescents with type 1 diabetes may snack more frequently than their peers, yet eat an average of 75.9 fewer grams of carbohydrates per day (Baechle et al, 2018), highlighting how a diagnosis can impact a young person's relationship with eating, even without an eating disorder.

For some young people with type 1 diabetes, the direct negative consequence of eating may be the need to administer an injection. Fear of needles is more common in children with type 1 diabetes than in adults (Cemeroglu et al, 2015), but the specific impact this may have on willingness to engage with eating is unclear.

Although Julia exhibited signs of a restricted diet prior to her diabetes diagnosis, her parents reported that these became more pronounced in the 3 months post diagnosis. Approximately 6 weeks after diagnosis, the family prepared a bowl of plain basmati rice for her dinner and administered a bolus of insulin about 10 minutes before serving. Julia stated that she was not hungry and refused to eat the rice, despite significant encouragement from her parents. She became increasingly distressed, refusing all other offers of food or treatment for hypoglycaemia. The hypoglycaemia that resulted from receiving insulin without subsequent carbohydrate intake was ultimately treated with intramuscular glucagon. After this incident, Julia dropped rice from her rotation of "safe foods" and has not eaten it since.

Pressure to eat can negatively impact food intake and is associated with higher rates of picky eating (Zimmerman and Fisher, 2017). High levels of parental pressure to eat are linked to ARFID (Goncalves et al, 2018). Whilst pre-prandial insulin dosing is optimal (Annan et al, 2022), the pressure to eat after insulin administration could be considered to be an aversive experience that contributes to ARFID presentation.

A decision was made for Julia's insulin to be administered post-prandially as, although this is not ideal, it can still be considered safe and effective (Danne et al, 2003). This suggestion was made by her eating disorders team and established by her diabetes team, whilst Julia received help to manage her routines around eating. The focus was not on trying to expand her current range of foods, but on ensuring she was nutritionally safe within the foods she was already willing to eat and establishing routines around eating them. This was achieved with nutritional analysis and establishing her on a combination of multi-vitamin supplements.

As Julia and her family began to feel more confident that she would finish her meals, pre-bolusing was gradually reintroduced. Reduced anxiety about her capacity to finish foods lessened the perceived pressure on eating and subsequently increased her eating capability.

Screening and prevalence of ARFID in type 1 diabetes

There is a lack of literature on the prevalence of ARFID in those with type 1 diabetes. This may partly reflect the relatively recent entry of ARFID as a diagnosis in *DSM-5*. Niemelä et al (2024) posited that 24% of those with insulin-dependent diabetes have eating disorder symptoms, but the prevalence of ARFID within this group is unclear. A range of studies exploring its prevalence in the clinical eating disorder population report rates ranging from 1.5% to 64% (Dziewa et al, 2023). The estimated prevalence of ARFID in non-clinical samples of children and young people ranges from 0.3% to 15.5% (Willmott et al, 2023).

The lack of available data on ARFID alongside type 1 diabetes has led to its exclusion from systematic reviews of type 1 diabetes and eating disorders (Dean et al, 2024). Whilst the prevalence is difficult to determine, evidence suggests that type 1 diabetes often precedes the development of ARFID, indicating that having a diagnosis of type 1 diabetes may be a risk factor (Dziewa et al, 2023).

Although individuals with type 1 diabetes are more likely to develop eating disorders (Jaka et al, 2024), much of the research focuses on anorexia nervosa, bulimia nervosa or "T1DE" (type 1 diabetes with disordered eating). NICE recommends that people with diabetes are routinely screened for eating disorders. The Diabetes Eating Problem Survey – Revised (DEPS-R) is the most used primary screening tool for establishing the likelihood of disordered eating behaviours (DEBs) in individuals with type 1 diabetes (Niemelä et al, 2024). However, DEPS-R focuses on DEBs related to body image, rather than the factors that are more likely to be prevalent in young people with ARFID.

Regarding other screening measures, Pursey et al (2020) expressed scepticism over the validity of 48 different screening tools for DEBs in individuals with type 1 diabetes, owing to the high risk of bias in non-validated tools. As well as considering the lack of effective screening tools for ARFID in individuals with diabetes, Doherty et al (2021) questioned the ethics of screening for ARFID where there may not be scope to refer on to specialist services, an important factor considering the lack of clear pathways and specific services for ARFID care (Harrison, 2025). However, a lack of specialist services does not negate the role of the diabetes team in being able to recognise and adapt care to the individual needs of their patients, such as for those with ARFID.

Management of ARFID and type 1 diabetes

The early referral of Julia to a specialist eating disorders service enabled her to receive multidisciplinary support for her symptoms of ARFID. A scoping review of 50 studies reported that ARFID management often entails a behavioural intervention, cognitive behavioural therapy or family-based intervention dependent on the individual's age and formulation, alongside multidisciplinary approaches to support medical and nutritional health (Willmott et al, 2023). It is important for diabetes teams to work in collaboration with a specialist eating disorders service, where available, to ensure specialist knowledge in managing both conditions and consistency of advice across both services.

An example for Julia was the capacity for her to choose which foods to eat, thereby relieving pressure around mealtimes and reducing the likelihood of further restricting her range of accepted foods (Zimmerman and Fisher, 2017). The diabetes team reflected this consistency by encouraging the availability of multiple hypoglycaemia-treatment options (e.g. two types of fruit juice plus Glucogel) where feasible, thereby reducing the pressure to eat one particular food and giving an element of choice. Such suggestions were often presented by the eating disorders team with regard to what was likely to benefit Julia from a psychosocial standpoint. Her diabetes team was then able to adopt or adapt these suggestions in a manner that still ensured safe diabetes management.

Julia's eating disorders team focused on establishing routines around "safe" foods for Julia. This gave her a sense of safety at mealtimes, despite possible fears or anxieties about the negative consequences of not eating. Julia and her family gradually reintroduced pre-bolusing at mealtimes, initially administering insulin alongside food and working up to giving it 10 minutes before eating.

At this point, Julia still had a working diagnosis of ARFID but was discharged from her eating disorders team, with the option for future re-referral. At the point of referral to the eating disorders team, Julia had an HbA_{1c} of 67 mmol/mol. After 2 years of working in tandem with her diabetes team to improve her relationship with food, her HbA_{1c} had decreased to 57 mmol/mol at discharge.

Ensuring that Julia was nutritionally safe throughout this process required careful dietetic guidance. For young people with type 1 diabetes and ARFID, approaches to nutritional wellbeing require careful consideration and nuance. ISPAD guidelines emphasise "healthy eating principles" in improving diabetes outcomes, with a focus on maintaining ideal body weight and optimal macronutrient distribution, where possible (Annan

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et al, 2022). However, individuals with ARFID often have diets that lack fruits or vegetables, are high in heavily processed foods and fail to meet adequate nutritional or energy needs (Harshman et al, 2019). Indeed, whilst ARFID can be diagnosed based on a feeding disturbance that causes a marked interference with psychosocial functioning, the diagnostic criteria often associate ARFID with significant weight loss, nutritional deficiency, or dependence on enteral feeding or nutritional supplements (APA, 2013). However, for young people with ARFID, it is not easy to offer healthier food alternatives, as they may opt to go hungry rather than eat foods that are outside of their "safe" range (Białek-Dratwa et al, 2022). The work of dietitians across diabetes and specialist eating disorders services is vital in establishing what can be considered a "healthy" diet within the narrow parameters that a diagnosis of ARFID may allow.

Conclusion

Evidence for the management of type 1 diabetes within the context of ARFID is limited. Whilst the current literature indicates that type 1 diabetes could be a risk factor for ARFID, there is little outlining the best approaches to clinical management in either diabetes teams or specialist eating disorders services. Multidisciplinary teams need to collaborate on how best to adapt to the needs of each individual who experiences these conditions comorbidly in order to facilitate the best health outcomes. ■

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American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders: DSM-5* (5th edition). APA, Washington, DC, USA

Annan SF, Higgins LA, Jelleryd E et al (2022) ISPAD Clinical Practice Consensus Guidelines 2022: Nutritional management in children and adolescents with diabetes. *Pediatr Diabetes* **23**: 1297–321. Available at: https://bit.ly/4jCmHYu (accessed 07.01.26)

Baechle C, Hoyer A, Castillo-Reinado K et al; the German Pediatric Surveillance Unit (ESPED) and the DPV-Science initiative (2018). Eating frequency and carbohydrate intake in adolescents with type 1 diabetes differ from those in their peers and are associated with glycaemic control. *Exp Clin Endocrinol Diabetes* **126**: 277–86

Białek-Dratwa A, Szymanska D, Grajek M et al (2022) ARFID-strategies for dietary management in children. *Nutrients* **14**: 1739

Bourne L, Mandy W, Bryant-Waugh R (2022) Avoidant/restrictive food intake disorder and severe food selectivity in children and young people with autism: A scoping review. *Dev Med Child Neurol* **64**: 691–700

Calcaterra V, Mazzoni C, Ballardini D et al (2020) Disturbed eating behaviors in youth with type 1 diabetes: An exploratory study about challenges in diagnosis. *Diagnostics* **10**: 1044

Cemeroglu AP, Can A, Davis AT et al (2015) Fear of needles in children with type 1 diabetes mellitus on multiple daily injections and continuous subcutaneous insulin infusion. *Endocr Pract* **21**: 46–53

Danne T, Aman J, Schober E et al; ANA 1200 Study Group (2003) A comparison of postprandial and preprandial administration of insulin aspart in children and adolescents with type 1 diabetes. *Diabetes Care* **26**: 2359–64

Dean YE, Motawea KR, Aslam M et al (2024) association between type 1 diabetes mellitus and eating disorders: A systematic review and meta-analysis. *Endocrinol Diabetes Metab* **7**: e473

Doherty AM, Egan AM, Dinneen S (2021) *Mental Health, Diabetes and Endocrinology*. Cambridge University Press, Cambridge: 31–40

Dziewa M, Banka B, Herbet M, Piatkowska-Chmiel I (2023) Eating disorders and diabetes: facing the dual challenge. *Nutrients* **15**: 3955

Gonçalves S, Vieira AI, Machado BC et al (2018) Avoidant/restrictive food intake disorder symptoms in children: Associations with child and family variables. *Children's Health Care* **48**: 301–13

Harrison A (2025) Falling through the cracks: UK health professionals' perspective of diagnosis and treatment for children and adolescents with avoidant/restrictive food intake disorder. *Child Care in Practice* **31**: 141–51

Harshman SG, Wons O, Rogers MS et al (2019) A diet high in processed foods, total carbohydrates and added sugars, and low in vegetables and protein is characteristic of youth with avoidant/restrictive food intake disorder. *Nutrients* **11**: 2013

Jaka S, Pokhrel S, Patel A et al (2024) Demographics, psychiatric comorbidities, and hospital outcomes across eating disorder types in adolescents and youth: insight. *Front Child Adolesc Psychiatry* **3**: 1259038

Niemelä PE, Leppänen HA, Voutilainen A et al (2024) Prevalence of eating disorder symptoms in people with insulin-dependent-diabetes: A systematic review and meta-analysis. *Eat Behav* **53**: 101863

Pursey KM, Hart M, Jenkins L et al (2020) Screening and identification of disordered eating in people with type 1 diabetes: A systematic review. *J Diabetes Complications* **34**: 107522

Willmott E, Dickinson R, Hall C et al (2023) A scoping review of psychological interventions and outcomes for avoidant and restrictive food intake disorder (ARFID). *Int J Eat Disord* **57**: 21–61

Zimmerman J, Fisher M (2017) Avoidant/restrictive food intake disorder (ARFID). *Curr Probl Pediatr Adolesc Health Care* **47**: 95–103