

FASD Hub Australia

Information on Fetal Alcohol Spectrum Disorder (FASD) for all Australians

FACT SHEET
FOR HEALTH
PROFESSIONALS

1

Eating problems among children with FASD

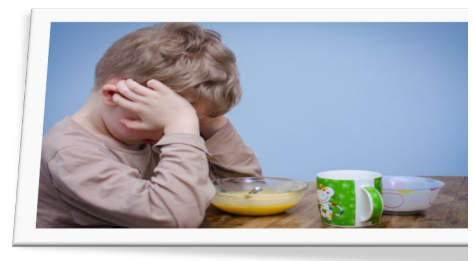
The FASD perspective

Atypical eating behaviours are more common among children with Fetal Alcohol Spectrum Disorder (FASD) and other neurodevelopmental disorders, such as Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactive Disorder than in typically developing children¹. Many children with FASD who have eating problems are not able to interpret their body signals and do not know when they are full/satiated or when they are hungry. They may exhibit behaviours associated with Pica disorder¹, avoidant/restrictive food intake disorder, and binge-eating disorder². Compared to typically developing children, children with FASD are more likely to have a delayed oromotor development and so tend to be introduced to solid foods at a later age, they also tend to experience a delay in self-feeding and the acquisition of age-appropriate eating skills¹. They are more at risk of nutritional deficiencies than typically developing children^{3,4} have a higher incidence of hyperphagia^{3,5} and are more likely to be overweight or obese⁶.

Children with FASD are more likely to seek or avoid food compared to typically developing children⁷. Seeking behaviours result from impairments in satiety. Caregivers reported that such children “never [feel] full or satisfied”, continually snack, have a strong desire to drink, attempt to sneak/steal food or steal money to buy food, eat too quickly and in some cases exhibit pica^{1,3,7}. These eating behaviours resemble hyperphagia seen in Prader-Willi syndrome. Children with FASD who exhibit avoidance behaviours are more likely to have oral aversion, frequent food refusal, poor appetite and are to be referred to as picky eaters. They may have with extreme sensitivities to smell, texture, taste, temperature and/or appearance of food and avoid a range of foods^{1,3}. They have also been reported to eat slower than typically developing children, have mealtime disinterest and poor self-regulation at mealtimes^{1,7}.

Assessment

A multidisciplinary approach by a paediatrician or general practitioner, dietician, psychologist, speech therapist and occupational therapist (OT) is recommended to identify the type of eating problem and the underlying mechanisms. A mealtime and nutritional assessment (including feeding and diet history) should be conducted by a dietician, OT and speech therapist to identify underlying reasons that the child experiences abnormal eating behaviours and patterns and to assess the child’s skills and deficits.



As children often behave differently outside their home environment, and around other people, questionnaires completed by the caregiver, such as the Children's Eating Behaviour Questionnaire may be beneficial to assess the eating styles of the child⁸. Possible physical complications, such as suck-swallow-breath synchrony, gastrointestinal disorders and poor motor skills, as well as a delay in oromotor development caused by anomalies of the lip/palate and poor muscle development of the jaw and/or tongue should also be examined as these can affect the child's eating behaviours, food preferences, and nutrient intake³. The clinician should also consider the child's medication, which may influence appetite e.g. risperidone tends to increase appetite; stimulants, such as methylphenidate, reduce appetite⁹.

Management strategies

The best management strategies, regardless of the eating behaviour, include daily monitoring of eating using tools such as food diaries; and ensuring routine and control of what food is available. While children should be provided with healthy food choices, it is important to help children develop a language about food and discuss what they do and don't like, so that they can share this information with others. Often a more accommodating perspective may need to be adopted that works from the basis of the child's current needs. The caregiver may need to adapt the type of food, cooking method, temperature and/or presentation of the food depending on what their child will eat, and gently shift food preferences over time (for some strategies, see table below). Caregivers should be provided with nutritional education (e.g. limiting sugar-sweetened beverages, including juice), and nutritional counselling to emphasise the importance of scheduling regular meal and snack times and limit distractions. Clinicians should suggest strategies to caregivers about the frequency of offering new foods, or in some cases blending non-preferred foods with preferred food to improve nutrition⁷.

Food seeking or binge eating behaviours

Strategies for children with food seeking or binge eating behaviours focus on supervision, monitoring and management of the child's eating. Supervised eating includes eating at mealtimes, with no uncontrolled snacking during the day. It is recommended that the family eat together at the table (with no tv/distractions) or for the individual to eat alone so that they can learn about their body signals without being distracted. Sometimes excessive eating (especially at night) may need to be managed and food security increased (e.g. locking cupboards or fridges and limiting access to money to purchase food). Locking food away can help reduce anxiety about food as the individual will know that they are not able to access food. Providing a food schedule that outlines what the individual will eat throughout the day and when can also reduce anxiety about food and meltdowns due to unmet expectations.

Avoidance behaviours

Strategies for children with avoidant behaviours include increasing a child's tolerance and interest towards various foods and food preparation. For example, getting older children to help in the garden, create meal plans or help with the preparation and cooking of food can increase their interest and motivation around eating. A systematic review of interventions for increasing acceptance of new foods among individuals with developmental disorders (e.g. ASD, attention deficit hyperactivity disorder, intellectual disability) provides detail on various strategies that may be useful for practitioners and caregivers¹⁰. All studies within a clinical (19 studies) and home setting (9 studies), including those which included parental implementation, appeared to be effective. Those carried out in the home setting included prompts, fading techniques and positive reinforcement. Environmental changes at mealtime seemed to be less effective than behavioural interventions (e.g. escape extinction, systematic desensitisation and reinforcement). Some strategies included in the review are provided in the table below. However, as most of the 36 studies were single-case studies, comprised mainly of participants with ASD and not focused on children with FASD, the level of effectiveness that these strategies have among the FASD population is not yet known.

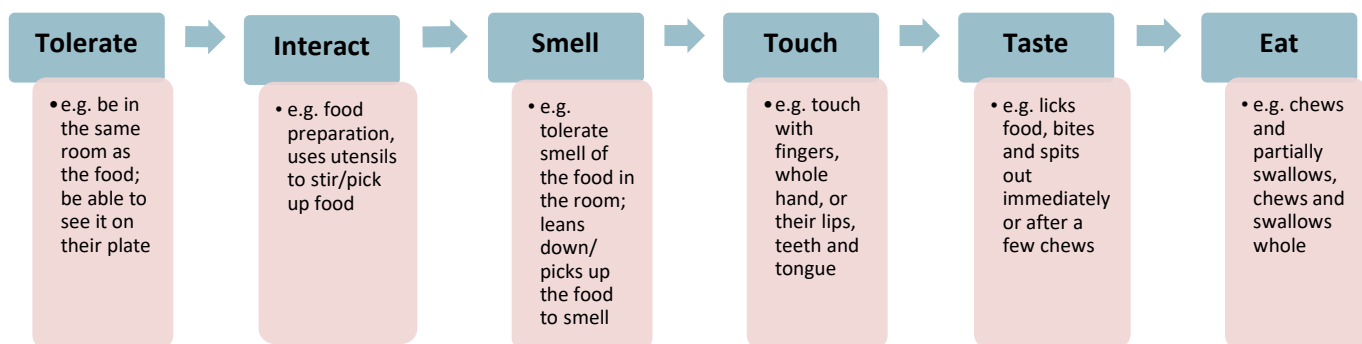
Strategy	Example
Positive reinforcement	Praise, reward charts, access to toys
Systematic desensitization	Reduce avoidance behaviour by gradually increasing exposure
Modelling	Watch others (e.g. caregiver) eat the non-preferred food
Using new foods similar to those previously accepted	Matching food group, brand, colour, texture, etc
Probability sequences	Put spoonful of preferred food in the mouth before asking them to put a spoonful of non-preferred food in the mouth
Provide choice	Allow the individual to choose between different non-preferred foods
Escape extinction*	Holds a spoon close to the mouth until the food is accepted
Physical guidance *	Assist with accepting food into the mouth

Note: *while effective, escape extinction and physical guidance should only be tried after exposure and reinforcement techniques.

The following interventions administered by an OT may improve the child's food selectivity and sensitivity: Sensory Integration; Sequential Oral Sensory Approach; and Differential Reinforcement of Alternative Behaviour¹².

Sensory Integration (SI)¹²: SI focuses on mealtime behaviour and aims to create a calm-alert state for mealtime. To do so, sensory modulation and discrimination, self-regulation, motor planning and posture as well as tactile, kinaesthesia, and vestibular inputs are monitored and documented by an OT in a playful atmosphere. The OT will then utilise this information to determine the best approach. For example, if the child is tactile avoidant the OT may decide to assist with sensory modulation using kinaesthesia before introducing the child to textured food. For an effective sensory integration session most of the following 10 elements should be included: (1) Physical safety; (2) sensory opportunities; (3) support and maintain appropriate levels of arousal; (4) collaborate in activity choice; (5) guided self-organization; (6) the environment engages the child; (7) the activities are tailored to ensure the child is successful; (8) meeting the 'just right' challenge (i.e. increase in complexity when the child is successful); (9) playful context; and (10) fostering a therapeutic alliance.

Sequential Oral Sensory (SOS) Approach¹²: SOS is a play-based approach to feeding that uses a variety of foods and positive reinforcement to teach children how to progress through the 32 steps involved in eating. The 32-step feeding hierarchy includes the following six categories:



The SOS approach is conducted by an OT and speech therapist and includes posture, sensory, motor, behavioural, learning and nutritional factors to evaluate and manage a child's eating problems. To utilise the SOS approach the OT should first evaluate the child's diet to determine if the child is sensitive or selective with food. For example, an OT may begin by observing the child's interaction with food and note if the child avoids specific food and if there are any sensory processing difficulties/sensitives (e.g. similar texture, colour, smells

etc) or behavioural basis (e.g. avoids vegetables, only eats lollies with various texture, colour smells etc). If the child displays food avoidance due to sensory processing (e.g. smell) the OT may decide to grade foods introduced to the child (e.g. less aromatic like rice to more aromatic like an orange). The OT can then progress through the hierarchy based on a graded approach to expose the child to new textures, colours, tastes, smells and temperature. If the avoidance is behavioural the OT may use a session to introduce a child to a new food, encourage the child to play with the food through social interaction and then encourage the child to eat the food, and reward them for doing so (e.g. with play). At any time, the therapist can return to a lower step if the child's level of stress becomes too great.

Differential Reinforcement of Alternative Behaviour (DRAB)¹²: DRAB is an applied behavioural analysis technique used to treat food selectivity among children with ASD by reinforcing positive behaviour and diminishing negative behaviour via the use of a reward system. For example, praise, preferred foods or toys can be used by an OT to entice a child to eat new foods and engage in age appropriate feeding behaviour, while also ensuring caregivers are included in the intervention process. The OT needs to determine what reward system would work best for the child, ensure the child understands the expected outcome/goal of the session, provide verbal prompts while the child eats and administer the reward immediately after the child demonstrates the desired behaviour (e.g. trying, licking or eating the food). The OT can use probability sequencing and gradual grading until the child eats the entire piece of non-preferred food. The approach can be successfully implemented by a caregiver, as long as they include grading and use a preferred reward with strict adherence. As DRAB is based on classical conditioning it is more easily administered than SOS or SI, but only addresses food selectivity not food sensitivity.

Eating Disorders

All eating disorders including anorexia nervosa, bulimia nervosa and binge eating disorder can arise at any stage of life in both males and females, unfortunately they tend to go undiagnosed and untreated¹³. The Royal Australian and New Zealand College of Psychiatrists (RANZCP) recommend the following general principles when treating eating disorders: a) person-centred informed decision-making approach, where treatment options are discussed with the individual and their family (where appropriate); b) involving family and significant others as partners in the assessment and treatment process, while also providing the family appropriate support and information; c) recovery-oriented practice that encapsulates mental health care and overall wellbeing; d) the treatment should be provided in the least restrictive setting; e) utilise a multidisciplinary approach including medical, dietetic and psychological interventions; f) smooth transitions of care (e.g. between general practice, emergency departments, medical wards and specialist services); and g) culturally informed and appropriate approaches to diagnosis and treatment¹³.

A comprehensive assessment of the child should be taken to confirm the diagnosis, including a thorough history of the symptoms, medical complications and current risk, psychiatric comorbidity, and cognitive changes due to starvation (if applicable)¹³. The RANZCP¹³ provides a detailed overview of the treatment of eating disorders. However, the level of evidence tends to be modest and limited to a small number of studies. Some of the treatments for adolescents with Anorexia Nervosa are provided below. For more information on eating disorder treatments and their level of evidence see Hay et al., (2014). Clinicians should refer a child for further assessment if there is diagnostic uncertainty or comorbid psychiatric symptoms. If there is concern about delay in weight gain, growth or development because of nutritional restriction, paediatric and psychiatric review should be sought.

Anorexia Nervosa (AN)¹³: Psychoeducation, support and a positive therapeutic relationship are crucial to maintain throughout treatment. Family based treatment is the most studied treatment for children and adolescents and has been shown to be more effective in the treatment of adolescents with AN than individual therapy. However, treatment with ego orientated individual therapy, adolescent focused therapy and some

individual treatments such as cognitive behavioural therapy have also found to be effective in adolescents with AN. Caution should be given around refeeding syndrome, which is a serious and potentially fatal complication of refeeding an individual who have been malnourished for an extended period of time. There is little evidence to support inpatient care for adolescents with AN, with experts recommending outpatient therapy as the initial treatment. There is also insufficient evidence to recommend medication in adolescents with AN, and caution should be taken regarding other medications to relieve symptoms of AN, such as antidepressants.

Evidence: No specific interventions have been tried for eating behaviours or eating disorders among individuals with FASD. However, there is some evidence for interventions trialled in other disabilities. Currently, the best strategy for managing hyperphagia or food-seeking behaviour and obesity in other disabilities (e.g. Prader-Willi syndrome) is to restrict dietary intake and ensure food security and regular exercise¹¹. A systematic review regarding the food selectivity and sensitivity in children with ASD was conducted to explore the effectiveness of SOS, SI and DRAB interventions¹². The authors recommended DRAB to be utilised for food selectivity issues, and SI to be utilised for food sensitivity. They concluded that all three approaches may be beneficial but the evidence for SOS and SI is limited and more research is required. As SOS addresses both food selectivity and food sensitivity (but currently lacks a strong body of evidence) it is suggested to be used as a secondary approach¹².

Medication: There is no evidence for psychotropic medications being effective for eating disorders. Medication for appetite stimulation is not recommended. It should be noted that ADHD is common among children with FASD and some of the stimulant medication used for ADHD may suppress appetite.

Developed by: Lisa Cannon, Dr Lauren Rice, Professor Elizabeth Elliott, Dr Anne Morris

Copyright: FASD Hub Australia

Date: 26 March 2020



References

1. Amos-Kroohs RM, et al. Abnormal eating behaviors are common in children with fetal alcohol spectrum disorder. *J Pediatr*. 2016; 169: 194–200.
2. American Psychiatric Association (APA). Feeding and Eating Disorders. In: *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. APA; 2013.
3. Werts RL, et al. Inappropriate feeding behaviors and dietary intakes in children with fetal alcohol spectrum disorder or probable prenatal alcohol exposure. *Alcohol Clin Exp Res*. 2014; 38(3): 871–8.
4. Fuglestad AJ, et al. Inadequate intake of nutrients essential for neurodevelopment in children with fetal alcohol spectrum disorders (FASD). *Neurotoxicol Teratol*. 2013; 39: 128–32.
5. Amos-Kroohs RM, et al. Does prenatal alcohol exposure cause a metabolic syndrome? (Non-)evidence from a mouse model of fetal alcohol spectrum disorder. *PLoS ONE*. 2018; 13(6): e0199213.
6. Fuglestad AJ, et al. Overweight and Obesity Among Children and Adolescents with Fetal Alcohol Spectrum Disorders. *Alcohol Clin Exp Res*. 2014; 38(9): 2502–8.
7. Evans SF, et al. Atypical eating behaviors identified in children with fetal alcohol spectrum disorders, aged 3 to 5 years, using the Children’s Eating Behavior Questionnaire in a caregiver-reported online survey. *Intellect. Disabl. Diagn. J*. 2016; 4(4): 191–203.
8. Wardle J, et al. Development of the Children’s Eating Behaviour Questionnaire. *J Child Psychol Psyc*. 2001; 42(7): 963–70.
9. Mela, M, et al. The Utility of Psychotropic Drugs on Patients with Fetal Alcohol Spectrum Disorder (FASD): a systematic review. *Psychiat Clinical Psych*. 2018; 28(4): 436–45.
10. Chawner, L. R., Blundell-Birtill, P., & Hetherington, M. M. (2019). Interventions for Increasing Acceptance of New Foods Among Children and Adults with Developmental Disorders: A Systematic Review. *Journal of Autism and Developmental Disorders*, 49(9), 3504–3525. <https://doi.org/10.1007/s10803-019-04075-0>
11. Tan Q, Orsso CE, Deehan EC, Triador L, Field CJ, Tun HM, Han JC, Müller TD, Haqq AM. Current and emerging therapies for managing hyperphagia and obesity in Prader-Willi syndrome: A narrative review. *Obesity Reviews*. 2019; 1-18.
12. Reinoso G, et al. Food Selectivity and Sensitivity in Children with Autism Spectrum Disorder: A Systematic Review Defining the Issue and Evaluating Interventions: *JNZAOT*. 2018;65(1):36–42.
13. Hay, P., Chinn, D., Forbes, D., Madden, S., Newton, R., Sugenor, L., Touyz, S., & Ward, W. (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian & New Zealand Journal of Psychiatry*, 48(11), 977–1008. <https://doi.org/10.1177/0004867414555814>