

# **Behavior Analytic Approaches to Promote Enjoyable Mealtimes for Autistics/Individuals Diagnosed with Autism and their Families**

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Cognitive Science and Psychology



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# Contributors

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Chapter 1

**An Introduction to  
Mealtime Challenges in Autism**

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**Abstract**

This introductory chapter will provide an overview of documented mealtime challenges for autistics/individuals diagnosed with ASD, including the prevalence and potential underlying causes of these challenges. Further, the specific types of mealtime challenges that autistics/individuals diagnosed with ASD may experience and the impact of these challenges on the family system will be discussed. In addition, we will review the organization and chapters of this book to provide the reader with an understanding of the overall goals and structure of the text. Specific focus will be given to the goals of increasing positive mealtime interventions that focus on antecedent and reinforcement-based procedures, and developing collaborative, compassionate, and culturally responsive assessment and treatment of mealtime challenges for autistics/individuals diagnosed with ASD.

**Keywords:** Positive mealtime intervention, autism, mealtime challenges

\*\*\*

Throughout this book, we will discuss the nature and scope of mealtime challenges for autistics/individuals diagnosed with autism spectrum disorder (ASD) and approaches for the assessment and treatment of these mealtime challenges. The goals of this book are to introduce the reader to a wide array of procedures that may assist in reducing the difficulties that some autistics/people diagnosed with ASD experience at mealtimes, and to provide a comprehensive approach to the considerations associated with intervening in this area. Careful attention is given to ethical mandates and to the importance of working with an expert, multidisciplinary team to assess challenges comprehensively and develop individualized intervention targets that are socially significant to the individual and their family. Within intervention, current evidence-based practices are reviewed, along with a number of emerging procedures that may be relevant in particular contexts. Finally, we review effective procedures to train and support caregivers and staff members who implement these interventions. Throughout the book, the focus is on providing humane, compassionate mealtime intervention based on the science of applied behavior analysis (ABA), including the individual and relevant stakeholders maximally in intervention, and making real-world, positive impacts in the life of the individual and family.

This introductory chapter will provide an overview of documented mealtime challenges for autistics/individuals diagnosed with ASD, including the prevalence and potential underlying causes of these challenges. In addition, we will review the organization and chapters of this book to provide the reader with an understanding of the overall goals and structure of the text.

### **Nature and Scope of the Problem**

Mealtime challenges are a commonly recognized difficulty in children with and without developmental disabilities. It has been estimated that 20-50% of typically developing children experience eating challenges (Benjasuwantep et al., 2013). It can be difficult to determine the exact prevalence, as there has not been agreement on explicit and universal definitions for what constitutes an eating challenge, and commonly used definitions have changed over time (Art-Rodas & Benoit, 1998; Benjasuwantep et al., 2013; Kerzner et al., 2015). Challenges with eating can lead to limited intake of food and nutritional deficits (Levin et al., 2014; Peterson et al., 2016). In turn, these outcomes are associated with health issues, including malnutrition, obesity, failure to thrive, poor growth, psychosocial deficits, and learning and behavior problems (Levin et al., 2014; Peterson et al., 2016).

## **Prevalence of Mealtime Challenges in Autistics/Individuals Diagnosed with ASD**

While mealtime challenges are commonly observed in the general population (Arts-Rodas & Benoit, 1998; Benjasuwantep et al., 2013), prevalence has been asserted to be higher for individuals with developmental disabilities (Benjasuwantep et al., 2013) and even higher for autistics/individuals with ASD (Curtin et al., 2015; Kodak & Piazza, 2008; Schreck et al., 2004). More specifically, feeding problems have been asserted to occur for between 72% (Schreck et al., 2004) and 90% (Kodak & Piazza, 2008) of autistics/individuals with ASD. Similar to the general population, determination of exact prevalence is challenging due to inconsistent definitions and classifications of mealtime challenges.

Most commonly, mealtime challenges exhibited by autistics/individuals diagnosed with ASD include restricted patterns of eating (Ledford & Gast, 2006; Nadon et al., 2011; Schreck et al., 2004). These restricted patterns most frequently involve eating a limited number of foods (i.e., food selectivity; Twachtman-Reilly et al., 2008). This pattern of difficulty was highlighted by Curtin et al. (2015), who found that children diagnosed with ASD displayed more food selectivity when compared to a sample of typically developing children. Eating a limited number of foods can impact the whole family, requiring the family to access particular items with regularity, increasing spousal stress, and changing the foods eaten by other members of the household (Curtin et al., 2015). Selective eating can also impact the health of the autistic/individual diagnosed with ASD, as nutritional deficits can lead to malnutrition and, when the foods eaten are high in fat and sugar, obesity, Type 2 diabetes, chronic constipation, and hypertension (Peterson et al., 2016; for more information on the health impacts of selective eating, see Chapter 12: Food Dudes: The Super Highway to Healthy Eating for all Children).

Restricted patterns of eating may also include rigidity around aspects of the feeding environment, such as requirements for particular conditions in order for successful eating to occur (e.g., specific food presentation, specific setting for mealtimes; Schreck et al., 2004). Finally, inappropriate and challenging mealtime behaviors may be observed when restricted patterns are not permitted (Ausderau & Juarez, 2013; Crowley et al., 2020). These inappropriate mealtime behaviors (IMBs) can include refusal, pushing food away, and more dangerous forms of behavior, such as aggression and self-injury (Fleck et al., 2019; Gale et al., 2011; Hagopian et al., 1996; Peterson et al., 2019). IMBs can result in increased stress for the individual diagnosed with ASD and their caregivers (Ausderau & Juarez, 2013; Curtin et al., 2015).

## **Underlying Causes of Mealtime Challenges**

Mealtime challenges are complex and can be difficult to evaluate and treat due to the multitude of underlying causes that can evoke and maintain them (Twachtman-Reilly et al., 2008). It is imperative that providers from multiple disciplines are involved in the assessment and intervention of mealtime behaviors to ensure that the underlying causes of mealtime challenges are well understood for each individual (for more information, see Chapter 2: Multidisciplinary Approaches to Mealtime Interventions and Chapter 3: Assessment of Mealtime Behaviors). Underlying causes of mealtime challenges can span medical, motor, sensory, and behavioral domains, and often include more than one of these domains (Twachtman-Reilly et al., 2008). Particularly for autistics/individuals diagnosed with ASD, differentiating the cause of mealtime challenges can be difficult as behavioral challenges related to the individual's disability may make it more challenging to discern physiological causes (Twachtman-Reilly et al., 2008).

Twachtman-Reilly et al. (2008) noted that feeding disorders of children diagnosed with ASD are less likely to include severe dysphagia and motor difficulties. This may indicate that, in most cases, physiological and behavioral issues are more likely to be the primary cause than medical issues (for more information on specific medical and motor challenges that may cause mealtime challenges, see Chapter 2: Multidisciplinary Approaches to Mealtime Interventions). Two types of physiological issues that have been asserted to commonly impact eating challenges for autistics/individuals diagnosed with ASD are sensory processing issues and gastrointestinal (GI) issues (Twachtman-Reilly et al., 2008). Sensory processing issues may impact eating as the smell and texture of particular foods and drinks may be aversive to an individual (Leekam et al., 2007; Twachtman-Reilly et al., 2008). In addition, other sensory aspects of the environment (e.g., a loud school cafeteria, a visually overwhelming restaurant) may be distracting or overwhelming, making it challenging to focus on eating (Seiverling et al., 2019; Twachtman-Reilly et al., 2008). GI issues may be more likely to evoke feeding challenges for autistics/individuals diagnosed with ASD than their typically developing peers, as it is commonly believed that autistics/individuals diagnosed with ASD are at higher risk for GI issues (Horvath et al., 1999). However, the findings of studies about the prevalence of GI issues for individuals diagnosed with ASD have been inconsistent (Black et al., 2002; Horvath et al., 1999). What is clear, is that individuals who experience GI issues are more likely to present with a poor appetite and, relatedly, to eat a more limited number of foods (Williams et al., 2000). Consequently, autistics/individuals diagnosed with ASD with GI issues may be more likely to present with food selectivity.

When it comes to behavioral issues exhibited by autistics/individuals diagnosed with ASD, mealtime challenges are often conceptualized as a form of restricted and repetitive behavior (e.g., Crowley et al., 2020; Ledford & Gast, 2006; Silbaugh et al., 2017). This diagnostic characteristic of ASD may explain the increased prevalence of mealtime challenges, and particularly selective eating, for autistics/individuals diagnosed with ASD. In addition, Twachtman-Reilly et al. (2008) asserted that other behavioral issues including deficits in executive function, social, and language skills may be related to increased mealtime challenges in the population of individuals diagnosed with ASD. These skill deficits may be particularly relevant in the context of challenges associated with the completion of mealtime routines and responding to the social demands of mealtimes, including eating in the presence of varied people.

### **Specific Mealtime Challenges**

The specific challenges related to mealtime behavior exhibited by autistics/individuals diagnosed with ASD can vary greatly. Given the high prevalence of issues related to eating a limited number of foods, treatment is often a result of an individual's food selectivity (Crowley et al., 2020; Ledford & Gast, 2006; Najdowski et al., 2010). Autistics/individuals diagnosed with ASD have been observed to select foods because of a variety of variables, including particular textures, flavors, or appearances (Schreck et al., 2004). This selectivity around what the individual will eat can result in a restricted diet of a finite set of foods.

Restricted diets can include foods from a single or limited set of food groups. For example, an individual may eat only grains, including cereal, crackers, and bread. Diets restricted to limited food groups can be problematic as the foods consumed are unlikely to meet an individual's nutritional needs. Nutritional deficits can lead to malnutrition, illness, and other negative health outcomes (Levin et al., 2014; Peterson et al., 2016). Poor health associated with nutritional deficits can result in missed education and social opportunities due to fatigue and time spent in medical treatment (Nadon et al., 2013).

Restricted diets may be even more narrowly defined by including, for example, only specific brands of food (e.g., McDonald's french fries). As previously discussed, there are significant health problems associated with limited types of food intake. In addition, there are other challenges related to this severe inflexibility. While a parent or family may be willing to put in the time, expense, and effort required to meet their child's selective eating pattern, there may be times when that particular brand or food may be unavailable. For instance, during the COVID-19 pandemic, there were times when specific brands or foods were entirely unavailable. Under these conditions, rigidity could lead to major problems if an individual is entirely unwilling to consume

an alternative food. The individual may become further at risk for serious malnutrition or health issues.

An individual may require supplementation to food intake if nutritional needs are continuously not met. Many families may rely on liquid supplements (e.g., PediaSure). However, some individuals may also refuse to consume these supplements. This can lead to the necessity for medical interventions, such as the placement of a gastric tube that allows the individual to have nutritional needs met without engaging in the act of eating (Weber & Gutierrez, 2015). These more intrusive measures are associated with additional sets of challenges to the individual, including the trauma of the placement of and ongoing use of the medical device, limitations to engagement in a variety of physical activities, embarrassment for the individual and their family, and other potential medical side effects (Ojo et al., 2019; Twachtman-Reilly et al., 2008).

Another common mealtime challenge for autistics/individuals diagnosed with ASD is a failure to self-feed (Tarbox & Bermudez, 2017). Failure to self-feed can be a result of motor deficits, but has also been observed with autistics/individuals diagnosed with ASD who do not have motor impairments (Rivas et al., 2014). While these individuals may accept food when presented by others (e.g., therapist, parent), inability to self-feed can lead to issues within a variety of settings for the individual and the family system. For example, in a school setting, there may not be a therapist or teacher that is available or qualified to provide physical support with eating for the individual. If this is the case, the individual may go for long periods of time without eating during the school day or, alternatively, have a modified school day in order to avoid prolonged periods without food. In contexts in which someone can feed the individual within the school setting, being fed in front of peers who are capable of self-feeding may be socially stigmatizing (Rivas et al., 2014). In either case, this could substantially impact the individual's availability for quality educational and social experiences.

For families, an individual's inability to self-feed may also prove complex and challenging. The individual may require specialized support with eating that requires parents to engage in complicated procedures and utilize specific equipment (e.g., Nuk brush). These complex procedures may require resources, including time and money, that may be limited within the household. In addition, the level of expertise required may be such that parents are not capable of providing the needed support. Even if the family is trained in providing the necessary supports, the requirement to provide physical support to their child may limit the child's exposure to experiences outside of the home, as the family may not feel comfortable or capable of providing needed eating support to their child in community settings (e.g., restaurants, family or friends' homes).

While some individuals may show the capacity to feed themselves, they may display other challenges during mealtimes that make the overall experience less successful and enjoyable for themselves and their families. This can include deficits in behaviors that surround eating, such as coming to and staying at the table at mealtimes. These deficits may also be accompanied by excesses in IMBs.

IMBs may be minor and focused on manners associated with mealtimes, such as eating with hands, chewing with mouth open, and leaving the table without asking. While these challenges may be minor in comparison to challenges associated with detrimental health outcomes, they can still create barriers for families. Families may experience stress around planning and engaging in mealtimes, particularly in the community (Curtin et al., 2015). Parents may feel concerned about bringing their child to a restaurant or family members' home if the child is likely to run around during the mealtime. Consequently, even low-risk IMBs could limit the child and family's access to social opportunities and trips further from home that may require a mealtime outside of the family's residence.

Similarly, another mealtime challenge that can have wide-reaching impacts on an individual and family's lives is the latency to and duration of eating behavior. For some individuals, a slow pace of initiating eating or completing meals can result in lengthy mealtimes (Jenkins et al., 2017). While the individual may eventually intake an appropriate amount of food, family activities may be limited by the length of mealtime required for the individual, with other family members suffering as a result. For example, a parent sitting for 2 hr with one child while they eat may not have time to support another child with their homework. Within a school setting, the individual may have only a limited amount of time scheduled for lunch and may, therefore, eat only a small amount of food in the time allotted or, if provided additional time to eat, may miss out on other activities scheduled after lunch (e.g., recess, academic content). Conversely, individuals engaging in rapid eating are at risk for a variety of health-related issues, including obesity, aspiration, and vomiting, and may also experience negative social consequences of their pace of eating (Anglesea et al., 2008; Page et al., 2017; for more information see Chapter 11: Rapid Eating Interventions).

Other IMBs can be relatively more intense and impactful on an individual's ability to eat. IMBs such as pushing food away, throwing food, and turning away from the table may limit the individual's intake of food. More severe and dangerous behaviors, such as aggression and self-injury, may result in limited food intake and potential harm to the individual and others in the environment. IMBs at all levels of intensity can be problematic because of limitations to food intake, and because of the situations that can arise in response to these

behaviors (Binnendyk & Lucyshyn, 2009). For example, negative reinforcement contingencies can develop in response to dangerous mealtime behaviors. In these cases, the parent or therapist presenting the food may become less likely to engage in the presentation of food to avoid the onset of dangerous behavior. The impact on families can be particularly problematic, leading to stressful situations and further unhealthy mealtime routines (for further detail on unhealthy mealtime routines that can arise as a result of IMBs, see Chapter 13: Increasing Family Involvement Through Caregiver Training).

### **Impact on the Family**

As previously noted, the impact of mealtime challenges is felt by the entire family (Bui et al., 2013; Curtin et al., 2015; Greer et al., 2008). High levels of worry and stress around mealtime challenges are reported by families (e.g., Curtin et al., 2015). Food intake is a core foundational and life-sustaining need for children. When intake is poor, and especially when it results in decreased growth and/or negative health consequences, parental anxiety increases (Johnson et al., 2014). The worry can be extreme, especially if families are worried about issues such as dehydration, failure to thrive, and nutritional deficiencies. This worry can then exacerbate behavioral issues (Zlomke et al., 2020).

Furthermore, feelings of self-efficacy may be reduced, and parents can feel woefully inadequate in resolving the difficulties (Curtin et al., 2015; Greer et al., 2008). Parents have reported a sense of shame about having a high level of difficulty around a daily and routine parenting task (Ausderau & Juarez, 2013; Nadon et al., 2013). Often, parents report feeling inept and embarrassed by the continued and escalating challenges (Gorlin et al., 2016). These feelings can be exacerbated by the rarity of the experience, as they may not know anyone who has had or who is experiencing similar challenges (Gorlin et al., 2016). If parents do reach out to others, they may hear advice and descriptions of strategies that do not work for their child, and which are not well suited to resolving significant challenges. Ineffective attempts to access support sometimes leads to even more despair, and further reduces self-efficacy.

Mealtime challenges can also directly disrupt family life and family activities (Ledford et al., 2008). It is not uncommon for mealtimes to become sources of tremendous conflict, and for families to dread them (Nadon et al., 2011; Twachtman-Reilly, 2008). It may be difficult to attend to anything other than IMBs and other mealtime challenges during meals, and other children may feel neglected (Ausderau & Juarez, 2013). The function of meals as a time to connect as a family may be lost and it may become increasingly difficult to have others in the home for a meal. This pattern may result in siblings avoiding asking friends to dinner, or visits from other family members ending before dinner. At

times, a child's eating "rules" or preferences pose challenges to the family's schedule or disrupt other activities. It may be that the child will eat a particular food, but only in a particular location. For example, a child may eat a banana each day, but only at the supermarket. The mother of this child may alter the family's schedule to ensure access to a banana in the supermarket. While this may seem like a small accommodation, it can become a hindrance when a trip to the grocery store is inconvenient (e.g., when other family events are scheduled back-to-back) or unsafe (e.g., in a snowstorm).

Challenges related to mealtimes may also make it difficult for the family to go outside of the home for meals, especially if the trip or activity will span a mealtime or several mealtimes. In many cases, individuals struggle with food ingestion to a greater extent in unfamiliar contexts (Kuschner et al., 2015). This added struggle can make many typical family activities seem untenable or impossible. Families may avoid neighborhood barbecues, team picnics, and extended family gatherings, especially if the individual's challenges are more extreme in novel situations. It may become too difficult or too unpleasant to go out to dinner. Day trips may be avoided, especially if food flexibility might be needed. For example, a family might worry that a trip to the zoo would be too difficult, since it is not possible to control the brand of chicken nuggets or apple juice served. Vacations may be similarly difficult to plan. Parents may fear that disruptions in the supply of preferred items might result in a refusal to eat and, therefore, may elect to avoid this scenario.

Challenging mealtime behavior may take a toll on the child, on the parents, and on the family as a whole (Thullen & Bonsall, 2017). Often, IMBs increase the frustration the parent feels, and leads to a reduction in their feelings of efficaciousness as a parent. The long-term nature of eating problems and related IMBs intensifies these consequences, and creates patterns of interaction that may be difficult to break.

Coercive interaction is one of the most difficult consequences of mealtime challenges (Kerzner et al., 2015). Due to the stress and effort associated with treating mealtime challenges, caregiver behavior may evolve into a pattern of cajoling, bargaining, threatening, begging, and demanding compliance with eating. In the initial stages, a parent may begin by distracting the child with preferred activities, sweetly asking the child to please eat. They may also try to make the food itself or the eating process more preferred. For example, they may pretend that the food is an airplane as it comes by spoon toward the child or use dinosaur toys to cheer for each consumed bite. As time goes on, and/or as anxiety about nutrition and health increases, parents often, understandably, become more desperate. In this stage, they may engage in highly emotional pleas to eat, accompanied by anger or tears. They may resort to begging the child to please eat in these emotional states. Another potential consequence at

this stage is threats. Parents may begin to threaten the loss of toys or activities unless the child eats. Even if these threats succeed (i.e., the child eats), there are negative consequences and long-term implications that are difficult for the family. Mealtimes may become a battleground, characterized by a standoff, and resolved by unpleasant and coercive patterns of behavior that threaten the parent-child bond and exhaust all parties.

By the time a family enters treatment, there may be a long history of these interactions that can be difficult to understand and to treat (Borowitz & Borowitz, 2018). Often, parents present in an almost bewildered manner, asking, “How did we get *here*?” These patterns evolve slowly, and are shaped by unsuccessful earlier attempts. Frustration and desperation take hold, and encourage parents to try new, and sometimes more aggressive, approaches. At times, the more coercive approaches seem to work (i.e., food is ingested). This makes it more likely that the parent(s) will resort to the more draconian approaches more often and earlier in the chain.

Still, the use of such procedures has many unwanted consequences. It may be that the child no longer eats unless such procedures are invoked. It may also begin to impact the relationship as a whole. The use of punishment-based methods may make the child avoid the person providing the punishment; that is, the child may distance from the parent in other ways. There may be fewer positive and playful interactions between parent and child. Family stress may be high in anticipation of eating. Mealtimes may become a time of anxiety and trepidation, and other functions of the mealtime, such as connection and togetherness, may fade.

When families reach out for help, the situation may be fraught with a history of failure, with worry about the child’s wellbeing, and with a broad shadow of familial impact. There may be additional concern over intervention, including fear of things getting worse, low confidence in their ability to implement procedures, and general hopelessness (for more information on working with families during these high-stress times, see Chapter 13: Increasing Parent Involvement Through Caregiver Training).

### **The Need for More Family-friendly Interventions**

Mealtime intervention is indeed formidable, and the family may have a great deal of concern over it for the reasons outlined previously. They may have difficulty finding a primary provider that understands the severity of the issue. Even if the provider does understand the severity of the concern, there may be difficulty finding a specialist provider with adequate expertise in this area (Peterson et al., 2021).

Once appropriate providers are identified, interventionists may also model and instruct the family to implement procedures that are unlikely to result in follow-through (Tarbox et al., 2010). Some common effective approaches to treat mealtime challenges include procedures that families find difficult to implement (Vazquez et al., 2019). For example, procedures that rely on escape extinction have been extremely successful in treating mealtime challenges, but may be difficult for families to implement with high degrees of fidelity. In some variations of procedures that rely on escape extinction, parents are asked to hold a spoon of food close to the child's mouth until the food is ingested and to ensure that the child eats any expelled food (e.g., Piazza et al., 2003). While effective, families have reported that these procedures are difficult to implement and that they may not do it (Tarbox et al., 2010, Vazquez et al., 2019).

The emergence of treatments for mealtime challenges that do not rely on intrusive procedures such as escape extinction is extremely important and is a cause for hope (Cihon et al., 2021; Weber & Gutierrez, 2015). However, it is important to remember that eating problems exist on a continuum. Those who are more severely impacted, and who have longer histories of mealtime challenges, may still require more intrusive interventions and slower paths to generalization by the family. It is important, however, to develop, identify, and use less intrusive interventions to treat mealtime challenges whenever possible.

### **Preview of This Book**

#### **Preferred Terminology**

In light of the need for positive approaches to mealtime challenges, this book outlines important considerations for the assessment and treatment of the aforementioned challenges with a focus on positive methods of intervention that may help advance treatment. As we move into the overview of the book and descriptions of these approaches, we want to review some choices of terminology we (as editors) have elected to consistently use.

We have chosen to refer to these challenges as mealtime behavior. Since meals are a part of family life, and since the impact of food selectivity and other mealtime challenges are felt by the whole family, we have chosen to focus on the individual's behavior (and the family members' behaviors) at family mealtimes.

We will specifically avoid the terms feeder and feeding whenever possible. We will also generally avoid the use of the term acceptance to describe ingestion or eating. Instead, we will focus on successful mealtime behavior as a broad goal, and on eating/food intake as a smaller scale target behavior.

## **Organization of the Book**

This book is organized into four major sections focused on an individualized approach to assessing and addressing mealtime challenges, considerations for assessment and intervention, specific interventions, and stakeholder generalization and training. A brief overview of the sections, and chapters within each, is provided below.

### **Section One: A Comprehensive and Individualized Approach**

Section One includes chapters on the need for multidisciplinary intervention, comprehensive assessment, and individualized goal development. As editors, we have a strong commitment to conveying the complexity of mealtime issues, and ensuring readers are presented with the full continuum of difficulties associated with mealtime behavior. We approach mealtime behavior as an extraordinarily complex phenomenon that is influenced by learning history and biological constraints and conditions. As such, it is absolutely imperative that assessment and intervention are done by a multidisciplinary team. Only a multidisciplinary team possesses the expertise in all relevant areas, and this helps to ensure that issues are not missed in assessment.

In Chapter 2: Multidisciplinary Approaches to Mealtime Interventions, Seiverling, Jusko, Rodriguez, Kuljanic, and Weaver discuss the vital roles that speech pathologists, occupational therapists, physicians, and nutritionists play in the treatment of mealtime challenges. Issues in physical chewing and swallowing must be evaluated to ensure safe intervention. In addition, physical growth and other indicators of health must be continuously assessed. Finally, nutritional status must be evaluated by an expert, so that food expansion is maximally informed and is linked to nutritional needs.

Assessment is extraordinarily important, as it lays the foundation for every step of intervention, and ensures that the individual is being viewed through a lens that includes the biological, nutritional, and behavioral realms. Casey, McMahan, and Reed discuss the importance of and methodologies for the assessment of mealtime behavior in Chapter 3: Assessment of Mealtime Behaviors. In this chapter, the authors highlight the value of understanding the underlying causes and function of mealtime challenges in order for therapists to most effectively support autistics/individuals diagnosed with ASD experiencing mealtime challenges. Casey, McMahan, and Reed explore different assessment methods that can be used to develop a comprehensive understanding of mealtime challenges.

The process of assessment leads to the development of goals. Goals of mealtime interventions have commonly focused on areas such as increasing the number of foods an individual consumes and accepts. In identifying

individual targets for intervention, it is necessary to consider if there are additional goals that should be prioritized, and that are contextually necessary for family success with mealtimes. For example, mealtime interventions that focus on staying seated for increasing durations of time, participating in mealtime conversation, and using appropriate manners while at the table are important ancillary skills. In addition, mealtime interventions have frequently prioritized consumption of food over independent self-feeding. While consumption of food is important for safety, independent self-feeding is important for the sustainability of the success of mealtime interventions and for independence throughout the individual's life span. These and other issues related to mealtime goals are addressed by Marshall and Cihon in Chapter 4: Mealtime Goals: More Than Just Consumption.

### **Section Two: Considerations for Mealtime Assessment and Intervention**

Section Two addresses additional considerations that need to occur prior to and during the assessment and intervention of mealtime challenges. Specifically, it is essential that behavior analysts consider ethical mandates and cultural factors that are relevant to intervening in this area. As behavior analysts, we are obligated to assess our own skill set and expertise before assessing or treating any challenge. If a behavioral difficulty falls outside of our scope of competence, we must either bring in an additional team member with expertise into the intervention team or refer the individual to someone who possesses that skill set. Mealtime behavior is an area where this obligation is paramount in importance. Given the life-sustaining nature of food intake and, accordingly, that ineffective intervention may have life-threatening consequences, this obligation to ensure adequate expertise for intervention is essential.

Specialization in eating requires more than reading literature or attending workshops. Given the complexity and variability of presenting problems in this area, it is important that an interventionist apprentice with an expert. In that context, it is important for the trainee to be supervised in their practice and to be trained to criterion. Continued contact with training is also needed, as the clinician needs to remain connected to the evolution of the skill set so as to continually provide state-of-the-art interventions. These are ethical mandates, and it is imperative that every member of the team evaluate their own competence in meeting the clinical needs of the client and the family. Tereshko and Weiss highlight these and other ethical obligations that must be thoughtfully and thoroughly considered when treating mealtime challenges in Chapter 5: Ethical Challenges with Addressing Mealtime Behaviors.

Cultural competence and cultural responsiveness (Fong et al., 2016; Fong et al., 2017) have received more attention in recent years, and there have been calls to action within the field of behavior analysis to increase the infusion of

cultural humility into our work (e.g., Wright, 2019). This is especially compelling in mealtime interventions, as families have widely differing values, traditions, and levels of comfort that should be taken into account when planning assessment and treatment. In Chapter 6: Cultural Considerations for Mealtimes, Tereshko, Marya, and Orland review cultural considerations relevant to mealtime challenges and treatments. This discussion includes tools and strategies that practitioners can utilize to evaluate and increase their focus on the impact of culture on mealtimes.

### **Section Three: Interventions**

The primary focus of this book is on interventions to address mealtime challenges for autistics/individuals diagnosed with ASD, and this content is covered in Section Three. As previously noted, mealtime intervention research has often focused on methods that rely on the use of punishment or escape extinction. These and other restrictive interventions, such as physical guidance, have been observed to be consistently effective in improving acceptance and consumption of food and drink (Borrero et al., 2013; Hagopian et al., 1996; Piazza et al., 2003). Despite their effectiveness, these commonly used interventions have also been found to lack social validity, as reported by caregivers, and to be difficult for caregivers to implement with fidelity (Tarbox et al., 2010; Vazquez et al., 2019). However, it continues to be important to emphasize these interventions given their strong efficacy and their potential requirement when treating the most severe forms of restricted eating and food refusal.

One way to conceptualize intervention is along a continuum. The goal of the interventionist is to select the appropriate treatments for the presenting behaviors, and more intrusive procedures remain relevant and essential when the challenges deem them necessary. As editors, we strongly believe it is also imperative to understand the impact and value of less intrusive interventions on improving mealtime behaviors for autistics/individuals diagnosed with ASD. The antecedent and reinforcement-based interventions covered in this book provide the reader with information about alternative approaches to addressing mealtime challenges. These interventions have been used to target a variety of mealtime goals, including increasing acceptance and consumption of foods and decreasing IMBs and disordered feeding (e.g., packing, rapid eating; Ahearn, 2003; Anglesea et al., 2008; Buckley & Newchok, 2005; Ewry & Fryling, 2016; Levin & Carr, 2001; Tanner & Andreone, 2015).

In Chapter 7: Shaping, Systematic Desensitization, and Graduated Exposure, Tanner provides an in-depth discussion about the use of shaping, systematic desensitization, and graduated exposure to address mealtime challenges. She reviews the research showing that these interventions have been successfully used in the treatment of mealtime challenges (Hodges et al., 2017; Koegel et al.,

2012; Tanner & Andreone, 2015) and provides recommendations for practitioners about effective practices when using shaping, systematic desensitization, and graduated exposure to treat mealtime challenges for their clients.

In Chapter 8: *Having Fun While Eating: Using a High-Probability Instructional Sequence to Increase Food Consumption*, Patel discusses the use of high-probability (high-p) instructional sequences to improve mealtime behaviors. Previous research is reviewed and used to highlight important variations in the procedure, including varying degrees of topographic similarity between high-p and low-p responses (e.g., kissing food and eating food, respectively) and the use of high-p instructional sequences in isolation or as part of a treatment package including escape extinction. Finally, Patel presents the clinical implications of this research, showing how practitioners can apply these strategies with their clients with mealtime challenges.

The use of fading to improve mealtime behaviors is explored by King, Lewis, Martone, and Fischer in Chapter 9: *Fading Procedures in the Treatment of Mealtime Behaviors*. The authors provide a thorough overview of different types of fading used in the treatment of mealtime challenges (e.g., stimulus fading, respond fading, prompt fading, texture fading) and examine how these procedures can be effectively implemented in isolation or as part of a broader treatment package. Specific attention is given to the use of fading for increasing both eating and drinking.

In Chapter 10: *Using Modeling to Increase Diet Selection and Teach Mealtime Behaviors*, Ivy and Williams discuss how modeling can be used to increase the variety of foods eaten as well as to improve the mealtime behavior of autistics/individuals diagnosed with ASD. The authors discuss important considerations for and the underlying mechanisms of modeling, then provide a thorough review of research on modeling in the context of mealtime treatment, before focusing on how modeling can be used by practitioners and in caregiver training. Within the chapter, the authors highlight recommendations for practitioners and areas of future research to continue to push forward the use of modeling as an effective intervention for treating mealtime challenges.

Interventions for rapid eaters are covered by Fryling and Jimenez in Chapter 11: *When Eating Too Fast is the Problem*. Fryling and Jimenez provide an overview of the literature about intervening with clients whose pace of eating poses potential safety, behavioral, and social challenges. In addition, the authors discuss how mindfulness-based interventions might also be incorporated into treatment for autistics/individuals diagnosed with ASD who have difficulty with pacing their eating.

Finally, a chapter on the Food Dudes program introduces the reader to a highly innovative systems-level intervention that has both preventative value

and impact as an intervention. In Chapter 12: Food Dudes: The Super Highway to Healthy Eating for all Children, Horne, McCreery, and Walker discuss the importance of children eating a healthy variety of foods, the history and research behind the Food Dudes program, and the application of the Food Dudes program to special education settings.

#### **Section Four: Stakeholder Generalization and Training**

Section Four addresses topics on training and supporting stakeholders. In Chapter 13: Increasing Family Involvement Through Caregiver Training, Tereshko and Bowman review information on training parents and other caregivers to implement mealtime interventions with their family members. Tereshko and Bowman highlight the benefits of caregiver training for the caregiver and the autistic/individual with ASD, the perspective of caregivers, and methods for effective and socially valid training of caregivers.

In Chapter 14: Building Staff Competency to Create Positive and Effective Mealtimes Through Training and Supervision, Tereshko discusses staff training methods and highlights the importance of using evidence-based practices for initial training, supervised experience, and the attainment of competency. While the field of behavior analysis has a robust literature base on staff training and supervision to support these recommendations, there is a dearth of research related to training staff members to conduct mealtime assessment and intervention. Therefore, this chapter highlights the need for further research on staff training specific to mealtime interventions.

The book concludes with Chapter 15: Where do we go From Here? Future Directions for the Development of Enjoyable Mealtimes. In this chapter, the editors, Tereshko, Weiss, Cihon, and Marshall, brought together recommendations for future research, assessment, and intervention approaches from the chapters throughout the book. In addition, the authors highlighted other important considerations for practitioners and researchers interested in the application and study of mealtime interventions.

#### **Conclusion**

The goal of this book is to introduce readers to this area of behavioral need, to review approaches to assessment and intervention for this complex set of problems, and to present a comprehensive review of intervention approaches that reflect a continuum of treatment options. It is our sincere hope that this opens a dialogue within the profession about the problems that exist in the area of mealtime behavior. Furthermore, we hope to inspire practitioners and researchers to devote more time and energy to identifying and refining the least

restrictive, effective, and compassionate approaches to improving mealtime experiences.

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