It is known that babies are capable of varied and numerous communication cues to indicate hunger, appetite, satiation, and satiety. In the hours following birth, neonates signal hunger through agitation, arousal, and ultimately a distress cry. Newborns are also capable of indicating preferences for familiar odors through orientation of the head and mouth. They show a liking towards sweet tastes and a dislike towards bitter tastes. Breast milk contains diverse flavor components, and is perceived as sweet. Thus, infants are equipped to prefer sweetness from birth as a highly adaptive mechanism, whereas an aversion to bitterness may be a protective mechanism against toxins in early life. Breastfeeding increases the likelihood that infants will accept new tastes including bitter tasting vegetables. In addition to the gusto-facial responses associated with basic tastes, which are shared with other non-human primates, infants are known to use gaze, gesture, and vocalization to signal interest and disinterest in foods. These behaviors change over the course of a meal, indicating that infant communication cues are sensitive to changes in need state. These behavioral cues have been coded during mealtime interactions between caregivers and infants, providing evidence of the dynamic nature of the experience. We have conducted a series of studies to investigate communication of infant appetite. These studies have revealed that the number and sophistication of appetite cues increases with age; more frequent feeding cues are observed at the beginning than at the end of a meal showing that cue frequency changes with satiation, that breastfed infants exhibited more engagement and disengagement cues than those who had been formula-fed and that breastfeeding mothers provided fewer distractions during the meal, set up a more ideal feeding environment, and fed more responsively than those who did not breastfeed.

Responsive feeding, where caregivers identify, interpret, and respond to infant cues is recognized as important in promoting self-regulation and preventing over or under-feeding. Research suggests that parental responsiveness to their child’s hunger, appetite, and satiety signals is critical for
the development of healthy eating habits and may affect the weight status and growth rates of their child. For example, a non-responsive feeding style may affect both the frequency of meals offered and the quantities eaten. It is important to support parents to identify, interpret, and respond to these cues (feeding in response to hunger cues, ending feeding in response to satiety cues). However, issues related to attachment, mental health, feeding beliefs, and practices may interfere with responsive feeding. For example, mother-infant attachment and experience of breastfeeding facilitates maternal responsiveness. In addition, babies who have been breastfed display a greater frequency of feeding cues during the meal [1–3]. This demonstrates the bi-directionality and interdependence of infant communication during a feed, namely that more responsive feeding is associated with more proficient communication by the infant. Overall, observational methods have revealed the complex ways in which infants signal energy needs to their caregivers, and in turn whether or not caregivers recognize and react to these signals as part of responsive feeding.

Recently, educational resources have been developed to enhance responsive feeding in caregivers. We have developed an online, video-facilitated educational tool to support parents, caregivers, and healthcare professionals to recognize ways in which infants communicate appetite. To date, we have found that mothers are able to identify hunger cues with ease but are less confident in recognizing and responding to satiation/satiety cues. Potential applications of these methods include interventions to prevent overfeeding and childhood obesity.

Reference