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Professor Catherine Forestell is an Associate Professor in the Department of Psychological Sciences at William & Mary in Virginia, USA. She received her PhD in Experimental Psychology from Dalhousie University in Nova Scotia, Canada where she conducted research on learning and memory processes in rats.

Upon completion of her dissertation she worked as a postdoctoral fellow and research associate at the Monell Chemical Senses Center in Philadelphia. Since her arrival at William & Mary in 2007, she

has taught courses in developmental and health Psychology and Research Methods. She also conducts research that focuses on understanding how early experiences play a role in the development of flavor and food preferences and addictive behaviors in children and adults.

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Early flavor experiences and their adaptive role during weaning and beyond

Over the past 30 years, we have gained important insights into the unique flavor world in which children live and the chemosensory factors involved in their acceptance and rejection of foods.

Behavioral studies using a variety of techniques have demonstrated that infants begin learning about the flavors of foods within their culture before birth.

By the last trimester, the taste and olfactory receptors are capable of detecting the continually changing flavor profile of the amniotic fluid, which reflects the mother's cuisine. Because breastmilk also contains volatiles from the maternal diet, these flavor experiences continue after birth if mothers choose to breastfeed. In contrast to breastfed children, those who are formula fed are exposed to a monotonous flavor-profile and may be less accepting of flavors and foods that differ from the flavor profile of their formula at weaning.

These early exposures, one of the first ways children learn about flavors, "fine-tune" their innate sensory responses and contribute to individual differences in food acceptance. At weaning children continue to learn from varied chemosensory experiences.

Those who are repeatedly exposed to a wide array of healthful foods learn to like these foods and are more accepting of novel foods.

Whereas those who are routinely fed sweet- and salty-tasting foods learn to prefer these foods. In combination, these findings suggest that mothers who consume an array of healthy foods throughout pregnancy and lactation, and feed their children these foods at weaning will promote healthful eating habits in their children that will lead to long term health benefits.