EATING EVEN IF NOT HUNGRY: THE POWER OF HEDONIC FEEDING CIRCUITS

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A major challenge for modern neuroscience is to understand how the brain controls food intake, which may lead the way toward better treatment options for feeding disorders. One obvious reason to eat is to satisfy our hunger, but we can easily ignore these hunger signals and avoid eating. Oppositely, we can often eat well beyond what is necessary to survive. These examples of 'non-homeostatic' feeding may have a very important evolutionary role, for example in allowing us to accumulate energy stores for future uncertain times. However, in modern society that lacks strong evolutionary pressure, one idea is that non-homeostatic feeding may be a contributing factor to feeding disorders including anorexia and obesity. We have investigated how two brain areas, the nucleus accumbens and lateral hypothalamus, work together in the control of non-homeostatic food intake. Our study took advantage of genetically modified mice that permit the observation and control of different cells in the brain. We were able to identify subsets of cells in the accumbens and hypothalamus that are responsible for controlling non-homeostatic food intake. The future characterization of these cells may permit identification of novel therapeutic targets that limit maladaptive feeding behavior.