



F4T \ \ FOODFORTHOUGHT: THE EPIGENOMICS OF EATING DISORDERS

Austria \ Belgium \ Canada \ Finland \ France \ Germany \ Israel \ Italy \ Luxembourg \ Poland \ Portugal \ Romania \ Spain

Food gives us the energy and nutrients that we need to survive. However, overeating in today's society can lead to unwanted, debilitating effects on our health. It is now becoming clear that our genes have an important role in controlling how we respond to starvation and overeating. Foods high in fat, salt and sugar, for example, manipulate our brain in a way similar to drugs of abuse, and may thus be addictive.

Since genes have different roles in different parts of our brain, we need to understand how those genes exactly function in the different brain regions and within the specialized cell types. Toward this goal, five European groups have teamed up to study how our genetic makeup responds to starvation, compulsive overeating and habitual food-seeking. We delve deep into the brain of two model organisms, which share all fundamental mechanisms involved in feeding and behavior with humans. Using latest generation DNA sequencing methods and computational modeling, our joint project seeks to provide a list of genes within specialized brain regions likely to contribute to eating disorders. With this detailed insight into how our genes shape our interaction with food, we will have a more systematic, genome-wide insight to further our understanding of how obesity and addictive behaviors develop. In the long term, our novel approach is a timely opportunity to work toward novel drugs that could improve the lives of millions.

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