

## **Perinatal Dietary Predictors of Childhood Behavioral Problems and Temperament**

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### **Abstract**

Mental and physical health problems are related to early temperament. An important example is attention-deficit/hyperactivity disorder (ADHD), which is strongly related to temperament and exacts a heavy toll on children and families, yet has poorly understood etiology. Identifying the early precursors and causal mechanisms for this behavioral problem is of central importance to eventual public health prevention. Whereas much of the field has focused on genetics, the current proposal assumes genetic liability interacts with prenatal environment.

This study examines a very common prenatal input, maternal high fat diet intake, in a nonhuman primate model. If successful this would be the first demonstration in a primate model that maternal high fat diet influences offspring temperament and ADHD-related behavior and would set the stage for further grant applications. The offspring of control and high-fat diet fed mothers will complete a series of controlled behavioral challenges to determine the effects of the high fat diet on key behavioral domains including anxiety and fear, reactive aggression, impulsivity, and activity level.

An attractive feature of the proposal is that the behavioral tasks can be used in monkeys or in human children with little change, facilitating across species comparisons. The tasks are well validated, but their use here is novel. These methods have not been previously used to study dietary effects of this nature. If successful, the project will open new insights into etiology of common and costly behavioral disorders and support larger scale grant applications in 2012.