The Role of Mother's Genes and Environment in Postpartum Depression

by

Colter Mitchell[1*],
Daniel Notterman[2],
Jeanne Brooks-Gunn[3],
John Hobcraft[4],
Irwin Garfinkel[5],
Kate Jaeger[1],
Iulia Kotenko[2],
and Sara McLanahan[1*]

[1]Office of Population Research, Princeton University
[2]College of Medicine, Pennsylvania State University
[3]Teachers College and the College of Physicians and Surgeons, Columbia University
[4]Department of Social Policy and Social Work, University of York
[5]School of Social Work, Columbia University
*To whom all correspondence should be directed

Abstract

Studies of human molecular genetics and social environment interactions on health have relied heavily on the diathesis-stress model that treats genetic variations and environments as being either risky or protective, thereby diminishing the interactive space. We attempt to expand this space by 1) combining two polymorphisms (5-HTTLPR and STin2 VNTR) of the serotonin transporter gene (5-HTT) and 2) using a less truncated measure of the environment—socioeconomic status (SES)—in an examination of depression in the first year after the birth of the child (PPD). Using the Fragile Families and Child Wellbeing study (N=1206) we find evidence of significant gene-environment interplay between the two 5-HTT polymorphisms and SES on PPD. More critically, we find evidence that some people are genetically more or less reactive to the environment, resulting in a crossover of risks of PPD for the most reactive groups.