Today’s piece was prepared by Rebecca Wu, MS4, based on a New York Times article [Years of Education Influenced by Genetic Makeup, Enormous Study Finds](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.nytimes.com_2018_07_23_science_genes-2Deducation.html&d=DwMF-g&c=aBkXpkKi7gN5fe5MqrMaN-VmRugaRb1IDRfSv2xVRy0&r=oP9RZ_hRRKW_Un11N-mm61QOfZnOirJ5OCPxH9cojE4FKc2kQg3hWFs1dnM2lTmQ&m=Vn-8XvY0cR8AtsGt0VdrGCi25UTq2GP7BCozMO5FilY&s=jpIyTnrUxEmDhV9qNoAUKqPPTpnbTQVq9b6PdM243iU&e=).

The article discusses a recent study in Nature Genetics on a genome-wide association study (GWAS) of educational attainment. The study looked at the level of education of 1.1 million individuals and identified 1,271 genetic variants presumed involved in neuronal communication and associated with increased duration of schooling. While the article appropriately summarized that the findings could not predict education level in any individual, and that the amount of variance these genes could explain was low (on the order of days), the headline and opening paragraph sensationalize the findings and exaggerate their applicability.

The article also addresses some of the limitations of the study, such as the homogeneity of the study population and inability to generalize the findings to those of other races or nationalities. However, it fails to mention other important biases, such as the inability to control for the effect of the parents’ level of education and the subsequent rearing environment on their child’s educational attainment. While the article does mention that environmental influences such as wealth and parental education have a larger role in determining a child’s educational attainment than genetics, it misinterprets this association. Instead, the article states that the research findings suggest that these genes are directly altering the behavior of the parents to change the child’s learning environment for the better.

With further high-powered studies identifying genes with statistical significance, marketing by genetic testing companies whenever such studies are published, and increasing interest by the public in direct-to-consumer genetic testing, clinicians and families should be informed of the costs and limitations of genetic research and testing.

**RESOURCES FOR FAMILIES ON GENETICS:**

[Talking Glossary of Genetic Terms](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.genome.gov_glossary_&d=DwMF-g&c=aBkXpkKi7gN5fe5MqrMaN-VmRugaRb1IDRfSv2xVRy0&r=oP9RZ_hRRKW_Un11N-mm61QOfZnOirJ5OCPxH9cojE4FKc2kQg3hWFs1dnM2lTmQ&m=Vn-8XvY0cR8AtsGt0VdrGCi25UTq2GP7BCozMO5FilY&s=E1ozqrLQ8pLoQEnoJSr56N_v5yNnziaStPcnL1Nu_gE&e=) *NIH Human Genome Research Institute*

[Genetics Home Reference](https://urldefense.proofpoint.com/v2/url?u=https-3A__ghr.nlm.nih.gov_&d=DwMF-g&c=aBkXpkKi7gN5fe5MqrMaN-VmRugaRb1IDRfSv2xVRy0&r=oP9RZ_hRRKW_Un11N-mm61QOfZnOirJ5OCPxH9cojE4FKc2kQg3hWFs1dnM2lTmQ&m=Vn-8XvY0cR8AtsGt0VdrGCi25UTq2GP7BCozMO5FilY&s=dzso316NNcXnK5gY7Wh-Pfd9RFzmJ0-z12H6wgPYfqE&e=) *NIH resource with consumer-friendly info about the effects of genetic variation on human health*

**Resources for Clinicians:**

[Social Science Genetic Association Consortium](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.thessgac.org_faqs&d=DwMF-g&c=aBkXpkKi7gN5fe5MqrMaN-VmRugaRb1IDRfSv2xVRy0&r=oP9RZ_hRRKW_Un11N-mm61QOfZnOirJ5OCPxH9cojE4FKc2kQg3hWFs1dnM2lTmQ&m=Vn-8XvY0cR8AtsGt0VdrGCi25UTq2GP7BCozMO5FilY&s=1Rfgo0fYZGI3bXCgtntyp0_OIP9lhPUV25S9EyQXZ7c&e=)

*Document prepared by the study co-authors regarding the implications and limitations of their study findings and the GWAS methodology.*

[How to interpret a Genome-wide Association Study](https://urldefense.proofpoint.com/v2/url?u=https-3A__jamanetwork.com_journals_jama_article-2Dabstract_181647&d=DwMF-g&c=aBkXpkKi7gN5fe5MqrMaN-VmRugaRb1IDRfSv2xVRy0&r=oP9RZ_hRRKW_Un11N-mm61QOfZnOirJ5OCPxH9cojE4FKc2kQg3hWFs1dnM2lTmQ&m=Vn-8XvY0cR8AtsGt0VdrGCi25UTq2GP7BCozMO5FilY&s=3Zu6Jpn7Ne6w6avRcUqmFJg2ZXgcksHZot84x10SW9M&e=)

*JAMA Special Communication on the interpretation, application, and limitations of GWAS.*

And that’s today’s Developmental & Behavioral Pediatrics: IN THE NEWS!