

# Screening Embryos for Psychiatric Conditions: Public Perspectives, Ethical and Social Issues

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## Introduction

The number of genomic loci identified to be associated with psychiatric disorders have substantially increased over the last decade. Alongside developments in polygenic embryo screening (PES; or PGT-P), the use of polygenic risk scores (PRS) to predict the genetic likelihood of polygenic traits (e.g., height, skin tone) and conditions (e.g., psychiatric disorders), it is now possible to screen embryos intended for invitro fertilization for genetic risk of psychiatric conditions such as schizophrenia or autism spectrum disorders. Private companies have started to offer PES for some psychiatric conditions; however, many ethical issues have been raised in the academic literature.

Concerns about the use of PES broadly have included little evidence of clinical utility, limited portability of the PRS used in PES to populations underrepresented in the genome-wide association studies (GWAS) on which they are based, potential for exacerbating healthcare disparities, and impacts on patient autonomy. In addition to these issues, PES for psychiatric disorders may bring forth additional ethical matters that warrant careful consideration given the potential for exacerbating stigma and discrimination related to these conditions.

The works below serve as a starting point for examining the ethical, clinical, social issues related to the use of PES for psychiatric conditions, and bring forward the views of clinicians, patients, and the public on the use of this technology for screening and selecting embryos. For more information, we invite you to visit the following website we developed for the community: <https://www.polygenicembryo.org>. Given the commercial availability of PES, we invite the Federal Trade Commission to evaluate the claims made by companies offering these service, and medical professional organizations to establish guidelines regarding the appropriateness of using PES in reproductive medicine.

## Technical Limitations and Ethical Considerations Relevant to PES for Psychiatric Traits

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## Potential Clinical Utility of PES

- Murray, G. K., Lin, T., Austin, J., McGrath, J. J., Hickie, I. B., & Wray, N. R. (2021). [Could polygenic risk scores be useful in psychiatry? A review](#). *JAMA Psychiatry*, 78(2), 210-219.
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## Clinician, Patient, and Public Perspectives on PES

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- Pereira, S., Muñoz, K. A., Small, B. J., Soda, T., Torgerson, L. N., Sanchez, C. E., Austin, J., Storch, E. A., & Lázaro-Muñoz, G. (2022). [Psychiatric polygenic risk scores: Child and adolescent psychiatrists' knowledge, attitudes, and experiences](#). *AJMG Part B: Neuropsychiatric Genetics*, 189(7-8), 293-302.
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