# Born Smart?

### **Overview**

Are some people born smarter? Research seems to say yes, with important caveats. Intelligence is shaped strongly by genetics, but also by evolutionary history, culture, and environment. Understanding these roots can help individuals build on their strengths and create more resilient, fulfilling lives.

## **Key Findings & Insights**

#### **Genetic Foundations**

Intelligence is highly polygenic: individual genes have tiny effects, but together they now explain about 10% of the variation in European-ancestry populations (Reis & Spinath, 2025). Heritability rises with age, from around 40% in childhood to nearly 70% in adulthood (Segal, 2025). Ancient DNA studies are hinting at a positive selection for cognitive traits over the past 10,000 years, e.g. in West Eurasian and East Asian populations (Akbari et al., 2024; Piffer, 2025; Olalde et al., 2018; Lamnidis et al., 2018).

#### **Evolutionary and Cultural Context**

Cognitive-related genetic variants first emerged between 400,000–600,000 years ago, with significant shifts around 4,000 years ago (Libedinsky et al., 2024; Kaczanowska et al., 2022). Some researchers claim that traits linked to intelligence were favoured as societies developed agriculture, hierarchies, and dense urban centres (Piffer, 2025; Olalde et al., 2018). Cultural values matter too: discipline, rationality & achievement predict student success & economic growth across 86 countries (Becker et al., 2024). Small gains in average IQ greatly increase the number of high performers; driving innovation and societal progress?

#### The Genetics of Opportunity

Socio-economic status may now have partly heritable components, with traits supporting success passing genetically across generations (Abdel Abdellaoui et al., 2025). Genes interact with environment: supportive settings amplify genetic potential, while harsh environments suppress it (Reis & Spinath, 2025).

#### Conclusion

Genetics do influence intelligence, but outcomes depend on culture, education, and environment. Some people are, in a sense, 'born smart', but life experience shapes how that potential unfolds. Recognising your strengths, and nurturing them, may lead to a more resilient, satisfying, and meaningful life. In short: Genes plant the seed. Life shapes the tree. You don't need perfect genes to thrive. In supportive settings, your natural strengths are more likely to emerge. That's why mindset, education, and culture still matter; they shape how your potential unfolds.

Reis, A., & Spinath, F. M. (2025). The genetics of intelligence. Deutsches Ärzteblatt International, 122, 38–42. https://doi.org/10.3238/arztebl.m2024.0236 (Peer-reviewed)

Akbari, A., et al. (2024). Pervasive findings of directional selection realize the promise of ancient DNA to elucidate human adaptation. bioRxiv. https://doi.org/10.1101/2024.03.29.583231 (Preprint) Piffer, D. (2025). Ancient genomics and cognitive ability: Evidence and controversies. Intelligence. (In press, peer-reviewed — no final citation yet)

Kaczorowski, K., Ganglberger, F., Chorney, K., Galik, B., Hess, A., & Haubensak, W. (2022). Molecular archaeology of human cognitive traits. Cell Reports, 40(9), 111267. https://doi.org/10.1016/j.celrep.2022.111267 (Peer-reviewed)



Mean IQ	Proportion IQ > 145 (%)	Number IQ > 145 (per 10,000)
95	0.04	4
105	0.38	38



Zhou, Q., Gidziela, A., Allegrini, A. G., Cheesman, R., Wertz, J., Maxwell, J., ... & Malanchini, M. (2025). Gene-environment correlation: the role of family environment in academic development. *Molecular Psychiatry*, *30*(3), 999-1008. Wolfram, T., Ruks, M., & Spinath, F. M. (2024). Disentangling genetic and social pathways of the intergenerational transmission of cognitive ability–A nuclear twin family study. *Research in Social Stratification and Mobility*, *94*, 100980. Becker, D., Coyle, T. R., & Rindermann, H. (2024). Unraveling the nexus: Culture, cognitive competence, and economic performance across 86 nations. Intelligence, 104, 101768. https://doi.org/10.1016/j.intell.2024.101768 (Peer-reviewed)

becker, by, cyter, in cyter, and antibernamin, in (2024). On overlang the nexts, currate, cognitive completence, and exchange the promance actors on another internet energy (2024). (2017). (

Segal, N. L., & Pratt-Thompson, E. (2025). Developmental trends in intelligence revisited with novel kinships: Monozygotic twins reared apart vs. same-age unrelated siblings reared together. Personality and Individual Differences, 229, 112751. https://doi.org/10.1016/j.paid.2024.112751 (Peer-reviewed)

Libedinsky, I., et al. (2024). Mapping the genetic evolutionary timeline of human neural and cognitive traits. bioRxiv. https://doi.org/10.1101/2024.04.04.583461 (Preprint)

Woodley of Menie, M. A., Younuskunju, S., Balan, B., & Piffer, D. (2017). Holocene selection for variants associated with general cognitive ability: Comparing ancient and modern genomes. Twin Research and Human Genetics, 20(4), 271–280. https://doi.org/10.1017/thg.2017.37 (Peer-reviewed)

Irving-Pease, E. K., Muktupavela, R., Dannemann, M., & Racimo, F. (2021). Quantitative human paleogenetics: What can ancient DNA tell us about complex trait evolution? Frontiers in Genetics, 12, 705341. https://doi.org/10.3389/fgene.2021.705341 (Peer-reviewed) Olalde, I., Brace, S., Allentoft, M. E., Armit, I., Kristiansen, K., Booth, T., ... & Reich, D. (2018). The Beaker phenomenon and the genomic transformation of northwest Europe. Nature, 555(7695), 190–196. https://doi.org/10.1038/nature25738 (Peer-reviewed) Lamnidis, T. C., Majander, K., Jeong, C., Salmela, E., Wessman, A., Molseyev, V., ... & Schiffels, S. (2018). Ancient Fennoscandian genomes reveal origin and spread of Siberian ancestry in Europe. Nature Communications, 9, 5018. https://doi.org/10.1038/s14167-018-07483-5 (Peer-reviewed)