

PubMed

Format: Abstract

Full text links

PEDIATRICS

FINAL VERSION

Pediatrics. 2007 Jan;119(1):e232-40.

XXY (Klinefelter syndrome): a pediatric quantitative brain magnetic resonance imaging case-control study.

Giedd JN¹, Clasen LS, Wallace GL, Lenroot RK, Lerch JP, Wells EM, Blumenthal JD, Nelson JE, Tossell JW, Stayer C, Evans AC, Samango-Sprouse CA.

Author information

Abstract

OBJECTIVE: An extra X chromosome in males (XXY), known as Klinefelter syndrome, is associated with characteristic physical, cognitive, and behavioral features of variable severity. The objective of this study was to examine possible neuroanatomical substrates of these cognitive and behavioral features during childhood and adolescence.

METHODS: MRI brain scans were acquired for 42 XXY and 87 healthy XY age-matched control males. We compared these 2 groups on regional brain volumes and cortical thickness.

RESULTS: Total cerebral volume and all lobar volumes except parietal white matter were significantly smaller in the XXY group, whereas lateral-ventricle volume was larger. Consistent with the cognitive profile, the cortex was significantly thinner in the XXY group in left inferior frontal, temporal, and superior motor regions.

CONCLUSION: The brain-imaging findings of preferentially affected frontal, temporal, and motor regions and relative sparing of parietal regions are consistent with observed cognitive and behavioral strengths and weaknesses in XXY subjects.

PMID: 17200249 DOI: [10.1542/peds.2005-2969](https://doi.org/10.1542/peds.2005-2969)

[Indexed for MEDLINE]

Publication type, MeSH terms, Grant support

LinkOut - more resources