

Genetic analyses of overactive behavior in 9689 3-year-old male and female twin-pairs

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Research questions

Overactive behavior in young children is a predictor of later ADHD. Which factors cause variation in overactive behavior in 3-year-olds?

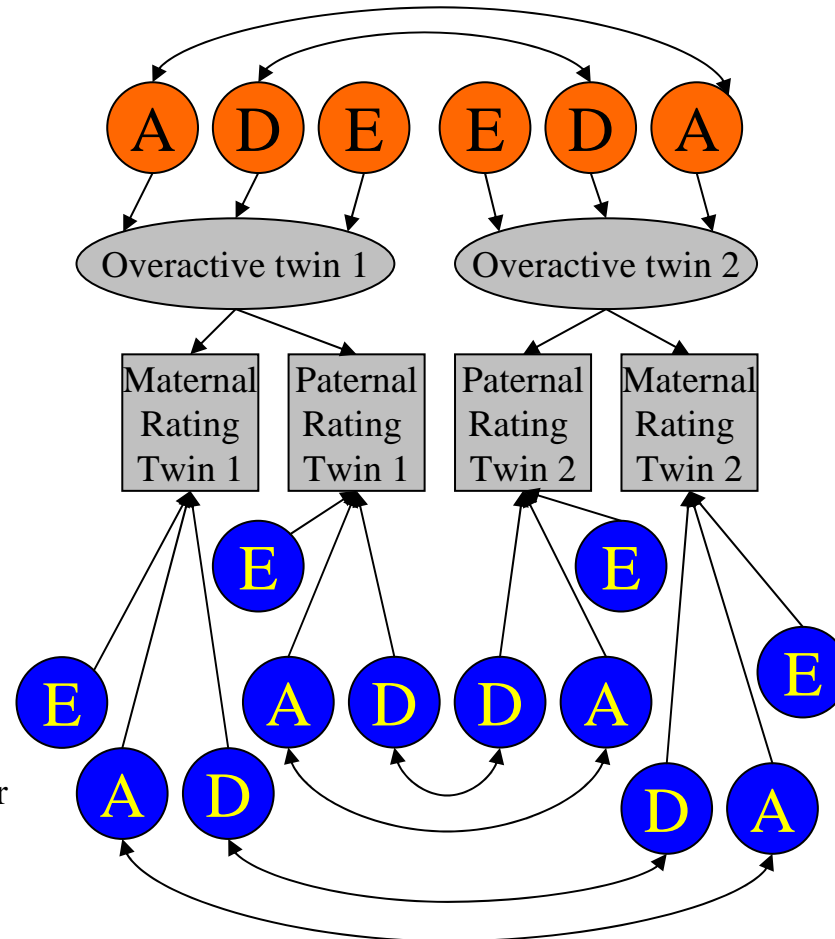
Does the answer to this question depend on the person who rates the behavior of the child?

Methods & Subjects

Mothers and Fathers of 9689 3-year-old twin-pairs completed the Child Behavior Checklist (CBCL). This poster reports on the five item overactive behavior scale.

Model

Variation in overactive behavior is explained by additive genetic factors (A), dominant genetic factors (D), and non-shared environmental influences (E).



Note :

A correlates 1 in MZ twins, and .5 in DZ twins

D correlates 1 in MZ twin, and .25 in DZ twins

Common and unique factors

We distinguish **common factors** (factors that influence both maternal and paternal ratings), and **unique factors** (factors that influence maternal and paternal ratings only).

Results

Maternal and paternal ratings of overactive behavior at age 3 are influenced by **common D** (49%), and **common E** (19%). In addition, they are influenced by **unique A** (18%), **unique D** (2%), and **unique E** (12%), leading to a total heritability of 69 %.

Conclusions

Variation in overactive behavior in preschool children is influenced primarily by genetic factors. Non-shared environmental factors are also present. The largest part of these influences are the same for both parents but unique factors can not be ignored.