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Testosterone plays an important role in mammalian brain development; exposure during critical periods of early development produces permanent behavioural changes. Prenatal exposure to high levels of testosterone has a substantial influence on sex-typical play behaviour, including sex-typed toy preferences and playmate preference.

Subjects and methods: The case group consisted of 29 CAH girls and 11 CAH boys. The typically developing group consisted of 35 girls and 25 boys. K-SADS was used to screen the children for co-morbid psychiatric diseases. Progressive Coloured Matrices was used to determine their IQs. The play activity questionnaire to study their sex-typed play. Hormonal profile (testosterones, progesterone and delta 4 androgens) was done for the cases.

Hypothesis: we hypothesized that elevated prenatal exposure to testosterones will cause masculinization of behavior and play in girls with CAH but will not affect boys.

Results: Girls exposed to high levels of androgen prenatally, because of the genetic disorder congenital adrenal hyperplasia, show increased male-typical play. They preferred to play with masculine object items (cars and trucks), rough-and-tumble play and war play. They were less interested in pretend play than the typically developing girls. No differences were seen in the active and adventurous play. CAH girls showed preference for boys as playmates.

CAH boys showed the same pattern of behavior as the typically developing group but with restricted (less) interest in most of the play items.

All cases were on glucocorticoid treatment so the hormonal levels were within range.