



Why do boys and girls behave differently?

Some experts believe that the way in which boys and girls are raised determines behaviour. We now know that is not completely true. The fact that males differ by just one Y chromosome could help to explain why certain behaviours are more dominant in one sex than the other.

Scientists have found that all foetuses are female in the first six weeks after conception. After this, testosterone surges through the brain of the male foetus, depleting the communication and emotional centres of some cells and promoting the growth of cells responsible for aggressive behaviour. In the absence of the testosterone rush, the areas of the brain responsible for language, creativity, emotion and social development continue to grow unperturbed.

Oestrogen and testosterone, structure many of the anatomical and physiological differences between male and females. However, the idea that biology is responsible for gender differences has evoked considerable controversy. Many people believe that social and environmental factors have a much greater influence than hormones on how children learn, play and behave in everyday life.

Differences from birth

From birth, sex differences soon become apparent. For example, newborn boys weigh more than girls and they are slightly longer. They generally cry more than girls and tend to be less placid and more demanding. In contrast, baby girls are generally stronger and they develop faster. They are more responsive to the human voice, which is why they talk sooner. They also spend more time looking at faces and making eye contact. Their growth rate is also more predictable than boys who have sudden growth spurts. Because their brains and central nervous

systems develop sooner, girls can also control their bowels and bladders at a much earlier age.

In the pre-school years, girls are better at dance and balance activities than boys. They also perform better in reading and writing tasks when they go to school and are more creative and imaginative in role-play games. Girls also become more sociable than boys, but are more emotional in their relationships with other people. Boys however, tend to be more boisterous, competitive and outgoing, but more prone to language disorders and behavioural problems.

In girls, the cerebral cortex, which plays a key role in memory, attention, language processing and motor co-ordination, develops sooner than in boys. The part of the brain that is responsible for the transfer of information from the right to the left side is also better developed. This is why girls tend to read and write sooner, have better pronunciation and grammar and perform better academically than boys. Boys however, develop more connections on the right side of the brain, which explains why they are better at puzzles and ball games and are less fearful in exploring their surroundings. After puberty these differences begin to level out.

Puberty

The second major hormonal rush occurs during puberty, which takes about four years from the beginning to the end. High levels of oestrogen and testosterone make major, lasting changes to the body. Not surprisingly, many adolescents experience difficulties in adapting to their changing bodies, emotions and emerging sexualities. For example, females may become more sensitive and anxious and males may become more aggressive. Although social and environmental factors may be partially responsible, the underlying biology is still there.

Generally, males produce 10 to 20 times more testosterone as a female, which has the effect of making the body taller, stronger and heavier, the bones bigger, the shoulders broader, the legs, arms and feet longer, the fingers thicker and the skull stronger. Testosterone is also responsible for the prominent Adam's apple, body and face hair and deepening of the voice.

Brain weight and volume is also greater by about 15% in males. Early research based on brain size tried to prove that male brains were more superior to female brains. However, when the size of the brain is compared to body weight, the difference is small. Nevertheless, part of the hypothalamus responsible for sexual behaviour is actually 2.2 times larger in males.

Oestrogen is significantly higher in females and its effect in puberty brings about a broader pelvis, thicker thighs, a longer abdomen, a deeper navel, protruding breasts, rounder buttocks and knees and a much heavier fat deposit. Although these features may not apply to the whole population, detectable differences provide important signals that enable us to determine whether or not a person is male or female.

Gender awareness

Biology clearly plays a major role in development and behaviour. However, social influences begin to work before birth. For example, if parents know the sex of their baby, this can have a profound effect on their preparations and future expectations. When the baby is born, the parents may respond more quickly to the cries of a girl, cuddle her more often and treat her more delicately than a boy. Baby boys may experience more rough-and-tumble play and parents are more likely to encourage them to explore their surroundings. Babies soon notice differences in the way that the mother or father behaves or reacts towards them. This can have a significant impact on their behaviour when they go to school.

It doesn't take very long for the child to realize that they are a boy or girl according to the clothes that they wear. By the time the child goes to pre-school, clothes will be selected according to gender expectations. Clothing effectively imposes the first artificial gender clue on the child and marks the beginning of sex recognition.

By the age of three years, the impulse for girls to display nurturing behaviour and for boys to engage in noisy, boisterous play is very strong. Parents may unwittingly show more enthusiasm when a boy plays with construction toys than with dolls or tea-sets. Even if they make an effort not to stereotype, the parent may reinforce traditional notions of masculinity. Generally, boys and girls that are encouraged to play with dolls are more likely to grow up prepared for the role of parenthood.

Children are strongly influenced by the roles and activities undertaken by their parents. If a boy sees his father doing household chores and looking after the baby, he will integrate the information into his developing definition of what men do. If a girl sees her mother playing football, she will grow up with the idea that girls play sports. Other influences such as television and books reinforce the idea that certain activities are for boys or for girls, but not both. As the years pass, these gender signals become deeply embedded in the brain and may be re-enacted when children become parents themselves.

Peer pressure also reinforces traditional gender roles. It can come in the form of taunting, bullying and even exclusion if the child does not fit the traditional role that other children have been exposed to. A derogatory remark can soon make a boy drop a doll or dress-up activity and move on quickly to a fire truck or mechanical toy. The message is clear: girls can play with anything, but boys leave the nurturing activities to girls.

Boys and girls also behave differently in group play. Girls want to be included, so their behaviour and language is aimed at promoting the development of close, intimate relationships. Because social skills develop more slowly in boys, friendships are often superficial and short-lived. They are more likely to give orders or threats, interrupt and attention-seek to increase their popularity and status within the group. This is one reason why boys are often aggressive in the presence of authority figures.

Boys and girls may be treated differently by teachers, who instinctively respond more positively to the quiet play of girls and more negatively to the aggressive play of boys. Negative criticism can lead to disruptive behaviour, attention deficient problems and stuttering, which are essentially boy disorders. However, these behaviours have nothing to do with intelligence.

Some boys may display consistently female behaviour regardless of nurturing or coaxing by the parent. There is now considerable evidence to suggest that such behaviour cannot be reversed. Some people have felt that they were in the wrong body, even as a child, and have led tortured lives as a result. We now know that oestrogen-based products used during pregnancy can have a significant effect on male behaviour throughout life. Similarly, girls exposed to high levels of testosterone in utero are more likely to show turbulent and aggressive behaviour in childhood.

A positive approach

What is clear is that from pregnancy to puberty, hormones shape our bodies and to a large extent, our behaviour. At the same time, society determines the clothes, mannerisms and other traits that we have. Indeed, life would certainly be much less interesting without them! Even if it is impossible to avoid all gender stereotyping, there are plenty of things that parents and practitioners

can do to promote positive attitudes in children-regardless of sex. Here are a few ideas:

- Give boys and girls lots of hugs and cuddles
- Let boys know that it's okay to express emotions and affections
- Don't discourage boys from crying-they can't get in touch with their feelings or those of others if they cannot express their emotions
- All children have some creative ability, so allow them access to the whole range of materials from painting and drawing to construction and mechanical toys
- Encourage boys and girls to engage in rough-and-tumble play and to be adventurous both indoors and outdoors
- Don't avoid noisy, boisterous play in boys-it doesn't mean that they are more likely to grow up to be violent. Research shows that boys who engage in playful rough-and-tumble are more likely to do well in school
- Don't be alarmed if boys enjoy taking care of stuffed animals and dolls - they benefit from this type of play as much as girls and gain valuable nurturing skills for the future
- Encourage children to make their own choices about the things that they play with and the things that they do-this increases self-esteem, confidence and motivation
- Don't wait until children talk to you-if you do, then you will lessen their ability to communicate

- Praise children for their achievements no matter how small-something that appears insignificant to an adult can be really important to a child
- Don't put the message across that sports are only for boys-girls enjoy them too
- Provide action and adventure books that appeal equally to boys and girls
- Use right-brain techniques to encourage reading, writing and arithmetic skills in boys-they learn more easily when activities involve actions, colour, pictures and patterns

Even if we try not to treat boys and girls differently, influences such as social experiences, peer pressure and education may determine that path that they take in the future. Although the gender gap has narrowed in recent years, the hard fact is that limited opportunities for both sexes and unfairness in society still exist. However, if we understand the biology and the socialisation processes behind behaviour, the better prepared we will be to minimise their negative effects and enhance their positive ones.

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