Hello... and thank you!

Welcome to the first Hormones and Child Behaviour Study newsletter!

Thank you for participating in the study. Many of you invited us to visit you in your home, and many of you came to visit us at City University, London, or at the University of Cambridge - thank you for taking the time to do that!

The study team carried out hundreds of visits with families from all over the UK between September 2006 and February 2011. You are receiving this newsletter because your child or children participated in the study, and we want to update you on what we’ve found. Since we saw our last family in 2011, we have been analysing the data that we collected, as well as writing research reports and submitting them for publication. You can read about the results that we have published to date in this newsletter.

If your contact details have changed, you can let us know if you’d like - our details are on the back page. Likewise if you have any questions about the study, please ask! This newsletter also contains details of the team currently working to get more findings published.

So, read on to find out what we have discovered so far. Thank you again for your patience, commitment and time!

Best wishes,
The Study Team

Did you know...

Our most northern participants lived in Aberdeenshire
The most southern were in Plymouth
The most eastern were in Norwich
The most western were in Lisburn

Personality traits

What we know already
A popular theory about autism is that it is more common in boys than in girls, because boys are exposed to high concentrations of androgens before birth and girls are not. Autism originates early in childhood and involves difficulties in social communication and interaction, as well as restricted or repetitive behaviour or interests. If exposure to androgens before birth contributes to autism, girls and women with CAH might be more likely to have autism, or might have more personality traits related to autism, such as difficulty with social communication.

How you helped
Parents completed a questionnaire to assess traits related to autism in children aged between 4 and 11 years. Questionnaires were completed for 153 children: 81 children with CAH (38 boys and 43 girls) and 72 unaffected siblings or cousins (31 boys and 41 girls).

What we found out
The autistic traits scores for the four groups of children did not differ. These findings do not support the suggestion that androgen exposure before birth causes autism or increases autistic traits. Our results suggest that girls with CAH are not at increased risk of autism, or of difficulties with social communication or other characteristics related to autism.

The full paper can be read here: http://onlinelibrary.wiley.com/doi/10.1111/jcpp.12602/full
Working memory

What we know already
Working memory is the part of memory that allows you to hold information in your mind and use it over a short period of time. You use working memory, for example, when you follow a set of instructions. Working memory also is useful for learning in some subject areas, including maths and reading. Treatment with glucocorticoids, such as those used in the treatment of CAH, can affect working memory.

How you helped
Children completed a vocabulary test and the Digit Span task, which is a test of working memory. During the Digit Span task, a researcher reads out a string of numbers and the child is asked to repeat the numbers aloud in the same order. The second part of the task asks the child to repeat the numbers in reverse order. For both parts of the task, the list of numbers gets longer as the task goes on. During the vocabulary test, children are asked to explain the meaning of words read to them by a researcher, with the words becoming increasingly more difficult as the test goes on. A total of 107 children completed the two tests: 57 children with CAH (26 boys and 31 girls) and 50 unaffected siblings or cousins (20 boys and 30 girls).

What we found out
Children with CAH – both boys and girls – performed somewhat less well on average on the working memory test than unaffected children. These results suggest that, as a group, the children with CAH showed reduced working memory compared to unaffected siblings and cousins. In contrast, all four groups of children performed equally well on the vocabulary test. This is important, because it indicates that the reduced performance seen on the Digit Span task does not reflect an overall reduction in cognitive performance.

The full paper can be read here: http://www.sciencedirect.com/science/article/pii/S0018506X14002396

Did you know...
170 children took part in the study - 95 girls and 75 boys.

Want to learn more about the current research team?
Turn to the back page...

Modelling & labelling

What we know already
As a group, girls with CAH like to play with toy vehicles more than other girls do, and they like to play with dolls less than other girls do. But why? One possibility is that girls with CAH are less responsive to social cues about what girls and boys are expected to like doing. In general, children tend to model, or imitate, the object choices and behaviours of people of the same sex more than those of people of the other sex. They also respond to gender labels, preferring objects – for example, toys – and activities that have been labelled as appropriate for their own sex. We examined the possibility that girls with CAH are less likely than other children to model the behaviour of others of the same sex and less likely to be interested in objects that have been labelled as for children of their sex.

The full paper can be read here: http://rstb.royalsocietypublishing.org/content/371/1688/20150125

We carried out 328 study visits with 97 families, between 2006 and 2011!

What we found out
Girls with CAH were less likely than children in the other three groups to be interested in objects that had been chosen by models of their own sex or that they had been taught were for their own sex. This may be part of the reason why girls with CAH have somewhat different toy interests than other girls.

What you helped
Children completed a task to assess responses to models of the same and of the other sex. They watched videos that showed four men and four women choosing objects from 16 gender-neutral pairs – for example, a pen and a pencil. All of the men always chose the same object – for example, the pen – and all of the women always chose the other object - for example, the pencil. After seeing the video, children were asked which object from each of the 16 object pairs they preferred.

Children also completed a task to assess responses to gender labels. They saw pictures of four toys: a green balloon, a silver balloon, an orange xylophone and a yellow xylophone. They were taught that two of the toys – for example, the green balloon and the orange xylophone – were ‘for girls’ and the other two toys were ‘for boys’. Later, children played in a room that contained the four toys, and they were asked which toys they preferred. A total of 153 children completed the tasks: 81 children with CAH (38 boys and 43 girls) and 72 unaffected siblings or cousins (31 boys and 41 girls).

The full paper can be read here: http://rstb.royalsocietypublishing.org/content/371/1688/20150125

We carried out 328 study visits with 97 families, between 2006 and 2011!
What we know already
Gender role behaviour is behaviour that is associated with being male or female in our society. Gender identity is the sense of self as male or female, and satisfaction with being male or female.

On average, girls with CAH have reduced female gender role behaviour. For example, as a group they are more interested in boys’ toys and activities than other girls are. Women with CAH sometimes have reduced female gender identity. There is less information on gender identity at younger ages.

How you helped
Children who were aged 4 to 11 years were interviewed to assess gender role behaviour and gender identity. Parents also completed a questionnaire and were interviewed regarding their child’s gender role behaviour and gender identity. A total of 161 children and their parents completed at least one of these assessments: 81 children with CAH (38 boys and 43 girls) and 72 unaffected siblings or cousins (31 boys and 43 girls).

What we did
We looked at results for each measure separately. We also calculated scores for gender role behaviour and gender identity incorporating information from all three measures, using a technique called factor analysis.

What we found out
Girls with CAH, on average, showed less female-typical gender role behaviour and gender identity compared to unaffected girls. Boys with and without CAH did not differ in gender role behaviour or gender identity.

Girls with CAH who showed the least female-typical gender role behaviour were the most likely to show reduced female-typical gender identity.

The full paper can be read here: https://link.springer.com/article/10.1007/s10508-014-0385-0