

## Small changes to a child's head size should not concern parents

May 18 2015

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Measuring the size of a child's head is done routinely worldwide to screen for possible learning or developmental problems but new research out today [18 May] suggests that differences within the normal range of measurements are common – and mainly due to human error – and should not unduly concern parents.

This new research, based on over 10,000 participants in Children of the 90s at the University of Bristol, calls into question the practical value of using head measurement as a screening test as it could mean many [children](#) undergo unnecessary tests such as MRI scans and referral to specialists.

Researchers from the universities of Bristol and Glasgow found that most children (more than eight in ten, 85 per cent) who had very small heads went on to develop normally. Only a small number of children developed later educational or development problems, though this was more common than in children with normal-sized heads (15 per cent compared to 4.5 per cent).

At the same time, most children (more than nine in ten, 93 per cent) who turned out to have developmental problems later in life had heads that were within the normal size range.

The researchers also found that increasing or decreasing head size and very large heads were unrelated to later problems.

Increasing head size can be an important indicator of hydrocephalus (fluid on the brain) but this is a rare condition affecting only about six in 10,000 children, while as many as one in seven children showed increasing head size in the first year.

The information the researchers used for their analysis were:

- the children's head circumference measurements taken at multiple time points from the age of two months to 24 months both in baby clinics and by research staff;
- the children's IQ results measured at age seven. A low IQ was defined as an IQ below 70;
- the children's educational records taken from the Pupil Level

Annual Schools Census dataset for 2003/4 when they were aged 11.

The researchers also used educational records to identify the number of children recorded as needing extra classroom support with a statement of [special educational needs](#) (SEN) at the age of 11.

Health records were analysed by a team of researchers led by a developmental paediatrician to identify all children with a range of neuro-developmental problems including learning disabilities, speech problems, autism, epilepsy, ADHD and behavioural problems.

Speaking about the findings, the report's first author, Dr Charlotte Wright from the University of Glasgow, said: "It seems to be hard to measure heads reliably. Our research shows that most apparent abnormalities turned out to be human errors, rather than real differences. We would argue that measuring [head size](#) in healthy infants can cause unnecessary anxiety for parents and should only be used when there are other concerns about a baby's development or head growth.

"We would recommend that a child's head is measured once in the early days of life and once more before the age of six months and that the UK's Health Child Programme be reviewed in light of this evidence.

"Any parent concerned about their child's growth or development should always speak to their health visitor or GP in the first instance."

**More information:** "Head Growth and Neurocognitive Outcomes." *Pediatrics* peds.2014-3172; published ahead of print May 18, 2015, [DOI: 10.1542/peds.2014-3172](#)

Provided by University of Bristol

Citation: Small changes to a child's head size should not concern parents (2015, May 18)

retrieved 23 April 2024 from

<https://medicalxpress.com/news/2015-05-small-child-size-parents.html>

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