"Why I believe the new school age growth charts are not 'fit for purpose' "

There is a growing consensus amongst community health professionals that the new school age growth charts are inaccurate and misleading. In the first of an occasional series of opinion pieces **Tam Fry** believes they are simply "not fit for purpose" and wants them to be recalled and revised. Here he explains his reasoning

Tam Fry *Honorary Chairman of the Child Growth Foundation*

Background

In our last issue (*JFHC 22.5*) we announced that the Royal College of Paediatrics and Child Health (RCPCH) has been asked to revise the new school age growth charts[1], which were launched in May 2012. Following their launch, the School and Public Health Nurses Association (SAPHNA) quickly advised its members not to use them because of allegedly inaccurate information included within them and controversial statements surrounding puberty. It transpired that neither SAPHNA nor the Department of Health's own school nursing adviser had been involved in the compilation and wording of the charts.

The Child Growth Foundation, which had also been excluded from the college's Growth Charts Expert Working Group, anticipated that the charts would be withdrawn until revisions had been agreed. However, with the charts still in circulation. Tam Fry, Honorary Chairman of the Foundation, and somebody who has been involved in compiling growth charts for a generation, believes they should be withdrawn until substantive changes are made. Here he makes his case for their removal.

"The Child Growth Foundation can cite many more reasons than SAPHNA *as to why these overly complicated charts should be recalled, but three main issues stand out."*

BMI

The new RCPCH 2-18 years growth charts appear to ignore the universally accepted method of BMI for identifying and monitoring unhealthy weight. The RCPCH has ditched any use of BMI centiles and substituted a graphical interpretation of BMI (see *Figure* 1). Furthermore, the graphic is linked to a "grid" which is so cramped that it allows the health professional only to plot the extreme BMI range (see *Figure* 2). It therefore completely fails to cater for 89% of the childhood population in the "healthy BMI range", an important omission when considering the National Obesity Observatory's (NOO) warning to the government several years ago. NOO cautioned the Department of Health (DH) back then that, in its efforts to tackle obesity, it should be aware that many thousands of children in the healthy BMI range today could well be in the overweight range tomorrow[2].

To compound the problem, the look-up graphic is only an approximate guide and admits to being accurate only to a quarter of a centile space. This means that if a health professional were to follow the RCPCH's preferred definition of centile terminology (see page 42), a child whose BMI centile falls significantly below the BMI cut-off for overweight and obese must now be regarded

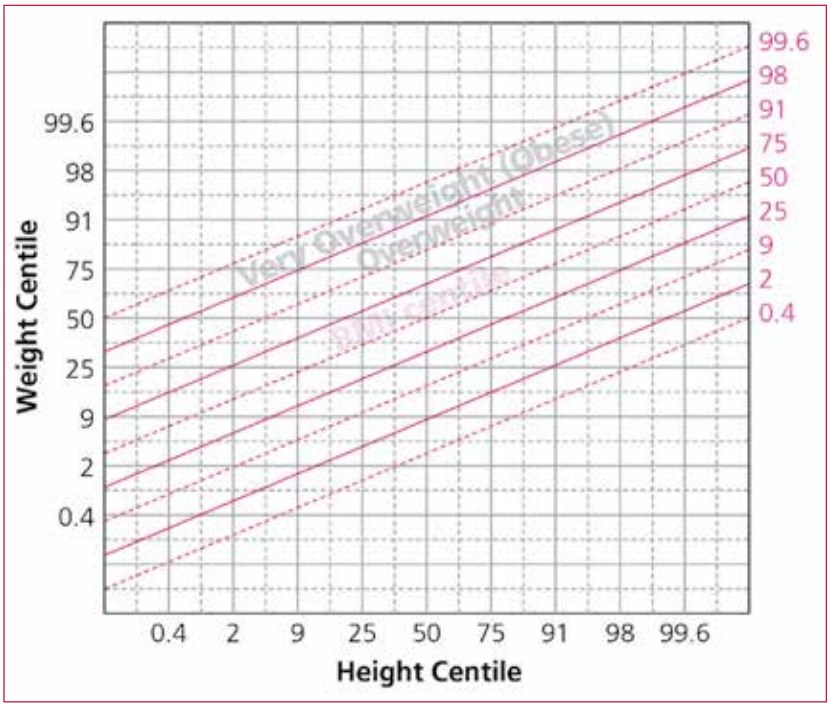

Figure 1

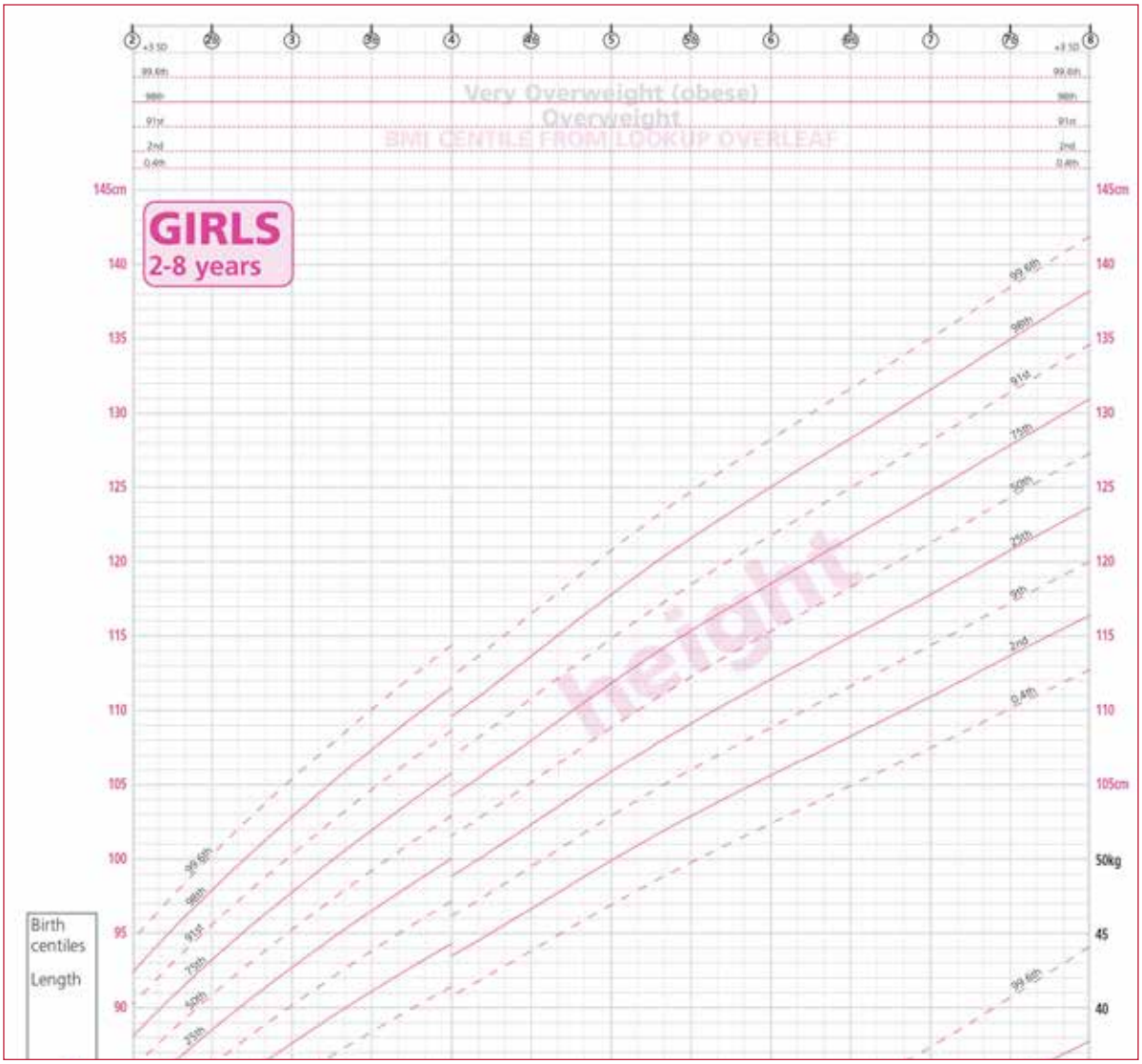

Figure 2

as being overweight or obese. Additionally, the look-up graphic will automatically label a perfectly normal tall child as being "very overweight". You can check this for yourself by finding the coordinate for a child on the 98th centile for height and weight.

This, I believe, falls into the same trap as the National Child Measurement Programme (NCMP), which notoriously sends letters to parents erroneously labelling their perfectly healthy children as being "fat", without first having checked their build. It is quite dangerous to refer a child for being overweight/underweight on the basis of BMI alone: judgment on their physique is essential prior to making any unhealthy weight referral. In my view, it is unforgivable that a growth chart destined for use in primary care has the capacity to refer untold numbers of children for further medical attention when no referral may be needed. Finally, the chart's omission to provide space in its data recording boxes to write in actual BMI figures just compounds the problem.

Centile terminology

I am baffled by the RCPCH's decision to persevere with its definition of centile terminology (introduced with the UK-WHO charts). It requires that any child with his or her growth plotted within a quarter centile space of a major centile should be now be regarded as being on that major centile. If that sounds double-Dutch, take a look at the college's own illustration, opposite (*Figure* 3). In poor English it implies that the symbols "<" and ">", which have traditionally been medical shorthand meaning "less than" or "greater than", should no longer be used and new terminology must replace them. In the absence of any published literature stating that the symbols "<" or ">" are no longer valid, the new terminology is, I'd argue, inaccurate and ridiculous. In practice this means, for instance, that two five-year-old boys, weighing in at 21.3kg and 22.7kg respectively, should now both be reported as being 22.0kg. Think of the safeguarding implications!

For the sake of clarity, if the RCPCH insists on retaining its terminology, the accompanying caption should read:

The value of any plot that falls within a quarter of a centile space above/below a major centile line should now be described as having the value of that centile (*e.g.* 91st).

Pubertal assessment

Some 50 years ago a brilliant English endocrinologist, James Mourilyan Tanner, described the five stages of puberty, and published ratings and observations to assist health professionals to identify them[3]. Since then his seminal work has been respected and unchallenged worldwide – even when the age at which children enter puberty may be occurring earlier in their lives. Unchallenged that is, until now, when the RCPCH has peremptorily decided to reduce Tanner's stages to three and his ratings to zero. As with centile terminology, it would be customary to convene a high-level multidisciplinary meeting to rubber-stamp such a break from tradition, but no such meeting has taken place. Until it is convened, I would recommend that health professionals ignore the new interpretation and stick to the five-stage puberty assessment.

The new charts also advise health professionals to undress children to discover which pubertal stage they have reached. School nurses are seemingly encouraged to visually check that a boy's penis is growing or his scrotum reddening and – in the cases of girls – check the status of her pubic hair and nipple development. This suggestion is probably the one that has disturbed SAPHNA the most and I share their incredulity that the RCPCH ever came to consider such instructions as being suitable for primary care use.

Conclusion

I would like to see the whole of the pubertal years centiles redesigned, the Tanner ratings for the timing of puberty reinstated and proper attention given to BMI. The President of the RCPCH, Dr Hilary Cass, is fully aware of all my concerns regarding the new school age health charts and I hope that due note will be taken of them and revisions will be made as early in 2013 as is possible. Watch this space...

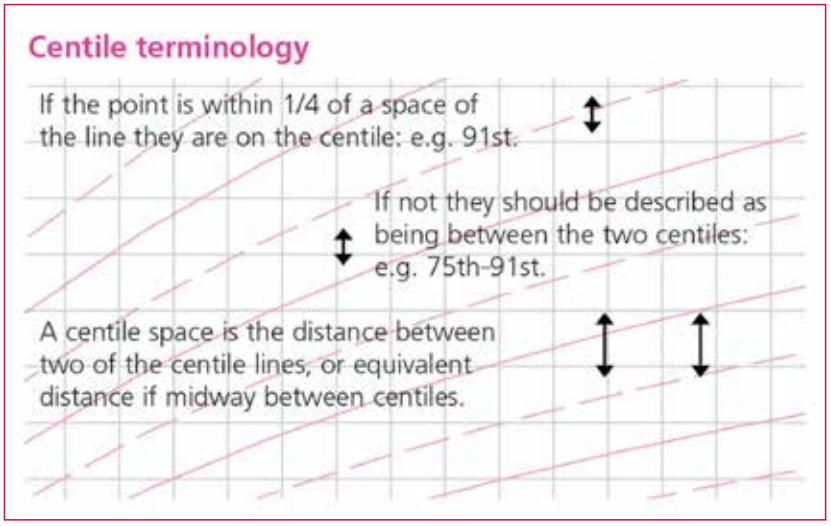

Figure 3

References

1. Royal College of Paediatrics and Child Health. *UK 2-18 Years Growth Chart Resources*. 2012. http://www.rcpch.ac.uk/child-health/research-projects/uk-who-growth-charts/uk-growth-chart-resources-2-18-years/uk-2-18-yea [Accessed November 2012]

2. National Obesity Observatory (NOO). 2012. http://www.noo.org.uk/ [Accessed November 2012]

3. Tanner JM. Puberty and the Tanner Stages – developed by Professor James M Tanner. 2012. http://www.childgrowthfoundation.org/CMS/FILES/Puberty_and_the_Tanner_Stages.pdf. 2012. [Accessed November 2012]. See also: http://www.nhs.uk/Conditions/Puberty/Pages/Symptoms.aspx [Accessed November 2012]