

# PostScript

## LETTER

### Test weighing for term and premature infants is an accurate procedure: author's reply

Drs Meier and Engstrom<sup>1</sup> raise a number of issues regarding our paper and its conclusions.<sup>2</sup> Their first concern is our use of the terms "precision" and "accuracy", which they claim are incorrect. Although it is true that the term "precision" can be used to capture repeatability of a measurement (as Meier and Engstrom have reported themselves), it can be (and has been) also used in the fashion that we describe.<sup>3</sup> Meier and Engstrom's assertion that our definition is incorrect is, therefore, incorrect—it is just different. The same goes for our definition of accuracy. It is correct that our results differ from previous studies, including those of Meier and Engstrom. We agree that this may be because of different measurement conditions. While test weighing may perform reasonably well under strictly controlled conditions (as Meier and Engstrom have shown), probably such conditions cannot be implemented in practice. It is not the performance of the test weighing under laboratory conditions that is important, it is its performance "in the field" (ie on a busy newborn ward under daily practical conditions) that counts. As our results clearly show, test weighing is an unreliable procedure to estimate milk intake under those conditions. This has been recognised by authors of other letters.

The scale we used was carefully described, with the brand name, type number, design aim (to weigh infants in single grams) and measurement characteristics (we reported the repeatability—or precision, if we follow Meier and Engstrom's definition—of measurements which was very good, with a standard deviation of repeated measurements of <1 g or <0.5%). This should reassure Drs Meier and Engstrom that this scale was, indeed, designed to measure reliably down to the single gram. The measurement characteristics of our scale are not inferior to the scales used by Meier and Engstrom, which, in their words, were "specifically designed to detect such small differences in weight". The Royal Dutch Pharmaceutical Society, whose published guidelines we followed, apparently uses stricter standards for weighing purposes than Drs Meier and Engstrom do. It would be shortsighted to call the American standard "incorrect"—it is just different. Although Drs Meier and Engstrom correctly raise the point that test weighing may be reliable under strictly controlled conditions, our results clearly show that it is not in daily clinical practice. That does not justify the qualification that our results are "incorrect" or theirs are correct. They are just different, and complementary. We believe that our results justify the abandoning of test weighing in daily clinical practice, and it seems from the other letters that this view is endorsed by others.

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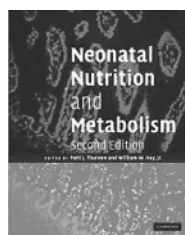
## References

- 1 Meier PP, Engstrom JL. Test weighing for term and premature infants is an accurate procedure. *Arch Dis Child Fetal Neonatal Ed* 2007;92:F155–6.
- 2 Savenije OEM, Brand PLP. Accuracy and precision of test weighing to assess milk intake in newborn infants. *Arch Dis Child Fetal Neonatal Ed* 2006;91:F330–2.
- 3 Streiner DL, Norman GR. "Precision" and "accuracy": two terms that are neither. *J Clin Epidemiol* 2006;59:327–30.

## BOOK REVIEW

### Neonatal nutrition and metabolism

Edited by Patti J Thureen and William W Hay. Published by Cambridge University Press, New York, 2006, £165.00 (US\$300.00), pp 692. Hardback. ISBN 0-5218-2455-9.



In an age when babies are surviving at earlier gestations, it is vital that we have an accurate and up-to-date understanding of their extrauterine metabolic and nutritional requirements. We now know that optimum fetal and neonatal nutrition is reflected in long-term health, therefore all

the information and advice that we gather can only be beneficial. This book has it all.

Reference books are becoming less fashionable as the internet has come to the forefront. However, I think this is a book which should be part of the reference library of all neonatal units. But it is not for the faint hearted. It is a large and weighty volume, packed full of text, with few charts, graphs and tables, and no photographs or pictures. It certainly is not a book to be read from cover to cover even by the most studious of neonatologists.

As I opened the book and perused the first few pages, I was immediately struck by the huge number of contributors. Over 60 are listed, from the USA, Canada, Italy, the Netherlands and the UK; an impressive gathering of knowledge. But it is this mix of knowledge that can create a book with the most recent advances in a specialist area of which little has been previously known. As the editor quite rightly states, being provided with such expert up-to-date knowledge gives the reader "stimulation to pursue new research to resolve the problems that still exist".

*Neonatal Nutrition and Metabolism* has 46 chapters, some of which are fairly general, such as "Fetal nutrition" and "Postnatal growth in preterm infants". These chapters

cover the nutritional requirements of "normal" premature babies and preterm babies with specific pathologies, such as congenital heart disease and bronchopulmonary dysplasia. Thus the book is not just for tertiary neonatal units. Much of the text is applicable to babies of later gestations with the common neonatal complications. I found the chapter on gastro-oesophageal reflux particularly useful. A table comparing the physiological "happy spitter" refluxers with the pathological "scrawny screamers" simplifies the evaluation. A detailed description of the pathophysiology is followed by sections on investigation and treatment options.

One chapter I found intriguing and especially stimulating was Chapter 40, "Nutritional assessment of the neonate". It has a review of the nutritional assessment tools that are currently available, with a chart mapping all the factors which should be considered during the assessment. The following text is divided into "Medical record review", "Nutritional intake", "Laboratory assessment" and finally "Anthropometrics" (body measurements). A fascinating diagram annotates the changes in body composition from the second trimester through to the first year of life. This is a very useful chapter as it gives practical advice to the clinician faced with assessing the nutritional status of a neonate.

Although initially daunting due to its size and lack of visual aids, this book contains a wealth of knowledge in a very specialised area. Parts of it can be applied to every baby on a neonatal unit. Optimal nutrition is critical in weeks 22–40 of postconceptional age for the best possible long-term neurodevelopmental and neurocognitive outcome. This book will certainly aid our clinical acumen in optimising nutrition in preterm infants.

Katie Malbon

## CORRECTIONS

doi: 10.1136/adc.2006.107458corr1

D Türkbay. Pneumopericardium in a term infant on nasal continuous positive airway pressure (*Arch Dis Child Fetal Neonatal Ed* 2007;92:F168). The second and third authors of this article, Ugur Dilmen and Nahide Altug, were erroneously omitted. We apologise for this error.

doi: 10.1136/adc.2006.109850corr1

G Greisen. Neonatal transfers – a thin layer of glue to keep the service network together? (*Arch Dis Child Fetal Neonatal Ed* 2007;92:F159–60). The paper that this Perspective comments on was referenced incorrectly. The correct reference 1 is: Cusack JM, Field DJ, Manktelow BN. Impact of service changes on neonatal transfer patterns over 10 years. *Arch Dis Child Fetal Neonatal Ed* 2007;92:F181–4.