

# Fantoms

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## OESTROGEN, PROGESTERONE AND CHRONIC LUNG DISEASE

Neonatologists unfamiliar with the arcana of bronchopulmonary dysplasia (BPD) could be forgiven for being surprised at the intrusion of sex hormones into a world dominated by cytokines, modes of ventilation, vitamin supplementation and corticosteroids. Yet the rationale for supplementing preterm infants' nutrition with estradiol and progesterone is there, and Trotter *et al* have done a randomised controlled trial to test the effectiveness of these two hormones empirically, when given together, in reducing the risk of BPD. Unfortunately the messages we take away from this paper are not entirely the ones the authors intended. First, we see how a power calculation does not necessarily translate into a study with sufficient power, if the attrition of subjects from the intervention arm is not adequately allowed for. Second, we see how an underpowered pragmatic randomised controlled trial can nevertheless be salvaged by the use of multivariable analysis, and that this is particularly powerful when the non-intervention arm is not contaminated by deliberate or inadvertent administration of the agents under test. Finally we can conclude that since there was a dose response in terms of more hormone leading to less risk of BPD in the intervention arm, it is actually highly likely that sex hormone supplementation is of genuine value. We now need a rerun of this trial, with rather more babies.

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## OXYGEN: QUESTIONS AND ANSWERS

Questions first. Tin and Gupta present a review of the controversies surrounding oxygen therapy for preterm babies, reminding us yet again how shocking it is that we have got to the 21st century without knowing what are the optimal oxygen saturations to target in the care of very immature babies. Fortunately the BOOST 2 studies now under way should shed much needed light on this crucial issue. For some answers to the questions

of what oxygen concentration a spontaneously breathing newborn baby would get when offered 100% oxygen through a Laerdal bag or in a cupped hand, we must thank Dawson *et al*. What we still don't know, of course, is whether any newborn baby needs this offering of extra oxygen in the first place.

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## GENES, INTELLIGENCE AND CYCLOOXYGENASE

How many are the twists and turns of the continuing saga of cyclooxygenase (COX) inhibition in preterms. With indometacin we can shut ducts, sometimes; we can reduce intraventricular haemorrhage (yet not improve neurodevelopmental outcome); we can reduce cerebral and mesenteric blood flow; we can harm the kidneys and the gut. Maybe ibuprofen is safer, maybe not. Now Harding *et al* find that a variant of the COX2 gene is associated with a worse neurodevelopmental outcome, suggesting that the activity of COX2 may be neuroprotective, and offering a mechanism by which the paradoxical effects of indometacin might be understood. This is very interesting, and though it is unlikely at to alter the way in which we treat patent ducts, those who still use early "prophylactic" indometacin treatment might think twice about continuing to do so.

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## NURSE QUALITY WINS OVER NURSE QUANTITY

The UK Neonatal Staffing Study (UKNNSS) has been a hugely important practical investigation into the relation, if any, between numbers of neonatal nurses, their skills and their workload, and the clinical outcome of babies. Here, Hamilton *et al* dissect out the contribution of specialist neonatal qualifications among neonatal nurses, when other factors predicting risk of death have been allowed for, and they find that there is a clear association between the proportion of specialist trained nurses in a shift, and reduced neonatal mortality. This proportion appears to be more important in preventing death than apparent understaffing in relation to "adequate" staffing. Since there will never be a randomised controlled trial to demonstrate rigorously that this association is causal, it will remain the strongest evidence we will ever have that "education, education, education" is the way forward; and that simply providing more pairs of non-specialist hands will not do.

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## NEONATAL NETWORKING: WHERE HAS IT GOT TO?

The straight, and short answer to this question that Marlow and Gill address, is... not as far as it could. They outline the factors that seem to have assisted some networks, and the barriers and institutional constraints that appear to have impeded others. What seems fairly clear is that good data on activity within a network is central to its ability to function, and that there are tensions, and inherent conflicts of interest, within network structures. They suggest that the ability of networks to share practices and learn from each other might be worthwhile, and that some external evaluation would be valuable. It is hard to argue against this suggestion. Might it be for the British Association of Perinatal Medicine to take up the challenge, or for an organisation at one remove, such as the Kings Fund or the National Perinatal Epidemiology Unit?

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## OWN GOAL

Finally, our thanks to all the readers who wrote to point out that the cover photo of the January issue showed a person tenderly holding a small preterm infant whilst wearing a wristwatch. Nurses would normally ask parents to remove items such as watches, bracelets and jewelled rings before first washing their hands, then handling their baby; medical and nursing staff should remove such items as they prepare for work. At *Archives* we should be illustrating best practice, and we are sorry that this picture, so endearing in other ways, fell short of that.