A child with severe asthma does not respond well to inhaled β agonist plus in- tratropium and oral steroid. Should you then give intravenous salbutamol or aminophylline? Researchers in London (Thorax 2003; 58: 306–10) have come down in favour of aminophylline. They randomised 44 children to a single bolus of salbutamol (15 μg/kg over 20 minutes then saline infusion) or aminophylline infusion (5 mg/kg over 20 minutes then 0.9 mg/kg/h). Asthma severity at 2 hours was similar in the two groups but the salbutamol group needed oxygen for longer, and stayed in hospital longer (85 v 57 hours) than the aminophylline group. More work is needed to compare salbutamol infusion or multiple boluses with aminophylline infusion (or both drugs). 

For partial liquid ventilation (PLV) the lungs are filled with perfluorocarbon and ventilated with gas using a conventional ventilator. There is evidence from experiments on newborn lambs that PLV with continuous distending pressure might improve lung growth. A study in six US centres (Journal of Pediatric Surgery 2003; 38: 283–9) of 13 neonates with congenital diaphragmatic hernia and on extracorporeal life support has been said by the researchers to have produced encouraging, though not statistically significant, results. Compared with the five patients on standard mechanical ventilation the eight given PLV with continuous positive airway pressure of 5–8 cm H₂O had a shorter time on ECMO (9.8 v 14.5 days), greater survival (6/8 v 2/5), and more days off the ventilator in the first 28 days (6.3 v 4.6 days). A definitive trial is needed. 

Nutritional rickets is common in the Arab countries. In the United Arab Emirates breast feeding rates are high and vitamin D supplements are recommended for breast feeding infants but often not given. A study of 90 Arab and South Asian (mostly Pakistani) mothers and infants in Abu Dhabi (Journal of Pediatrics 2003; 142: 169–73) has confirmed that most are vitamin D deficient. At a median infant age of 6 weeks 55 of 90 mothers and 64 of 78 infants had low (<10 ng/mL) serum concentrations of 25-hydroxy vitamin D. These infants had high serum concentrations of alkaline phosphatase and parathyroid hormone. Vitamin D intake in the mothers was low. Vitamin D supplementation is important for breast feeding infants in the United Arab Emirates. 

Bacterial contamination of the vagina (abnormal vaginal flora or bacterial vagino- nosis according to its degree) is associated with subclinical endometritis, miscarriage, and preterm delivery but treatment trials have given varying results. Now researchers in London have reported a trial of oral clindamycin in early pregnancy (around 16 weeks) in which the rate of miscarriage or preterm birth was reduced from 16% to 5% (Lancet 2003; 361: 983–8). The rate of spontaneous preterm delivery was reduced from 11.6% to 4.5% and of miscarriage from 4.1% to 0.8%. Despite this, treatment did not affect mean gestation at delivery, mean birthweight, the rate of low birthweight, or the rate of admission to the neonatal intensive care unit. 

Better control of wound infection, resusci- tation, nutrition, control of hypermetabolic response, and management of inhalation injury may all have contributed to a better prognosis after severe burns reported by some, though not all, centres in recent deca- des. One of the world’s leading centres for the care of burned children is in Galveston, Texas where 60% of children survive severe burns (>80% of total body surface area), often with a good quality of life after recovery. Researchers there (Lancet 2003; 361: 989–94; see also commentary, ibid 980–1) now insist that prognosis cannot be determined accurately early on and all severely burned children should be offered care in a specialist burns centre. Their prediction model, which proved 97% accurate, includes responses and progress over several weeks of treatment in addition to initial findings. In the UK decisions on whether to initiate treatment are often based on the total area of the burns, age, inhalation injury, and the areas of the body that are involved. There is a move to estab- lish a few centres of excellence throughout the UK.

Consider, if you will, the speckled wood butterfly. Rapid early growth is not a good thing for this creature: it increases its susceptibility to predation but also suffers as a result of growing too quickly too soon. Now follow up of babies included in a trial of preterm formula published in Archives in 1984 has suggested (Lancet 2003; 361: 1089–97) that nutritionally-induced rapid growth in early infancy might predispose to type 2 diabetes and an increased risk of cardiovascular dis- ease in later life. These researchers measured plasma concentrations of 32–33 split proinsulin (a marker of insulin resist- ance) in 216 adolescents who had partici- pated in the 1980s trial and found higher concentrations (mean 7.2 v 5.9 pmol/L) in those who had been randomised to the nutrient-enriched preterm formula and had put on more weight in the first two weeks of life. Despite this, they refer to the possible adverse effects on the brain of early undernutrition in preterm infants and conclude that it might be better to pro- mote growth in preterm infants even in the first few weeks. The implications for term infants are uncertain but infant feeding recommendations may have to be changed as knowledge advances.