Although antenatal and neonatal interventions have increased survival and improved long-term outcomes for very preterm (<32 weeks gestation) infants, the incidence of necrotising enterocolitis (NEC) and late-onset (nosocomial) infection remains high. Attributable mortality is >20%, especially for severe NEC and Gram-negative bacillus or fungal infection.

These conditions are now responsible for more deaths beyond the early neonatal period than any other causes. NEC and late-onset infection are also associated with important morbidities including reduced nutrient intake and slow growth, a longer duration of intensive care and hospital stay, and a higher incidence of long-term neurological disability. Recent research efforts have focussed on the possible role of “immunonutrients” in promoting functional adaptation of the immature gastrointestinal tract in order to reduce the incidence and severity of NEC and late-onset infection in very preterm infants.

I will discuss the evidence-base for key interventions including the use of maternal or donor breast milk, prebiotics and probiotics, essential amino acids (glutamine and arginine) and other immunomodulatory products including lactoferrin.