About 3% of human fetuses are born small for gestational age (SGA). More than 90% of those SGA infants catch-up growth and normalise their body size by the age of 2 yr.

Longitudinal studies have disclosed that SGA-catch-up children tend to become hyperinsulinemic, viscerally adipose and to show an abnormal adipokine profile by 4–6 years of age, even if not obese. Between 6 and 8 years, their circulating levels of sex hormone binding globulin (SHBG) start to be low, and those of dehydroepiandrosterone-sulphate (DHEAS) start to be high; in girls, precocious pubarche (pubic hair < 8 yr) may emerge as clinical marker. A mismatch between early adipogenesis and later lipogenesis, accounting for lipoxicity, dys-adipokimemia and insulin resistance, seems to encompass this sequence; postnatal overweight amplify these risks. Beyond the age of 8 years, such SGA children tend to experience an early onset of puberty with rapid progression, that may lead to a lower adult stature; low birthweight girls with precocious pubarche are also at increased risk for developing hyperinsulinemic androgen excess in adolescence. In these girls, insulin sensitisation with metformin started in prepuberty and maintained throughout puberty appears to decrease visceral and hepatic adiposity, and to have normalising effects on serum insulin, lipids, leptin and adipokines, on the tempo of puberty, on final stature, and on the prevalence of androgen excess in adolescence.

Paediatric Emergency Medicine I

More than 25 million children visit annually the emergency department (ED) in Europe. The number of ED attendance, short stay-hospital admittances and children with minor problems is increasing. Are the current models for emergency care failing to meet the community needs? The challenge remains to prioritise and identify the potential severely ill child from the majority of children with self-limiting diseases. Delayed recognition and treatment of potential life threatening diseases may have disastrous implications.

Triage aims to manage patient flow safely at the emergency department and to ensure that patients, who need direct medical attention, are correctly identified and treated. The Manchester triage is an algorithm based on 52 flowcharts for specific presenting problems and discriminators indicate one of the five urgency categories. The system was first validated and modified for children at the emergency department in the Sophia Children’s Hospital. The modified MTS improved correct triage in different European emergency departments.

The next step is the clinical evaluation; the febrile child is the most common presentation. The predictive value of alarming signs of the NICE traffic light system and vital signs only had moderate predictive value for serious illnesses. The combination of alarming signs and CRP had good predictive value and this “feverkidstool” (www.erasmusmc.nl/feverkidstool) can be easily applied in practice.

Signs and symptoms could change in time and therefore safety netting is needed if the patient does not have a final diagnosis or a risk for complications. Risk factors for revisits and safety netting strategies are discussed.