Abstract:

There are special challenges in implementing parenteral nutrition (PN) in paediatric patients, which arises from the wide range of patients, ranging from extremely premature infants up to teenagers weighing up to and over 100 kg, and their varying substrate requirements. Age and maturity-related changes of the metabolism and fluid and nutrient requirements must be taken into consideration along with the clinical situation during which PN is applied. The indication, the procedure as well as the intake of fluid and substrates are very different to that known in PN-practice in adult patients, e.g. the fluid, nutrient and energy needs of premature infants and newborns per kg body weight are markedly higher than of older paediatric and adult patients. Premature infants<35 weeks of pregnancy and most sick term infants usually require full or partial PN. In neonates the actual amount of PN administered must be calculated (not estimated). Enteral nutrition should be gradually introduced and should replace PN as quickly as possible in order to minimise any side-effects from exposure to PN. Inadequate substrate intake in early infancy can cause long-term detrimental effects in terms of metabolic programming of the risk of illness in later life. If energy and nutrient demands in children and adolescents cannot be met through
enteral nutrition, partial or total PN should be considered within 7 days or less depending on the nutritional state and clinical conditions.

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