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Infants and young children are at particular risk of iron deficiency and its associated consequences for growth and development. The main objectives of this thesis were to quantify iron intakes, status and determinants of status in two year olds; explore determinants of neonatal iron stores; investigate associations between iron status at birth and two years with neurodevelopmental outcomes at two years and explore the influence of growth on iron status in early childhood, using data from the Cork BASELINE (Babies after SCOPE: Evaluating Longitudinal Impact using Neurological and Nutritional Endpoints) Birth Cohort Study (*n*=2137). Participants were followed prospectively with interviewer-led questionnaires and clinical assessments at day 2 and at 2, 6, 12 and 24 months. At two years, there was a low prevalence of iron deficiency and iron deficiency anaemia in this cohort, representing the largest study of iron status in toddlers in Europe, to date. The increased consumption of iron-fortified products and compliance with recommendations to limit unmodified cows' milk intakes in toddlers has contributed to the observed improvements in status. Low serum ferritin concentrations at birth, which reflect neonatal iron stores, were shown to track through to two years of age; delivery by Caesarean section, being born small-for-gestational age and maternal obesity and smoking in pregnancy were all associated with significantly lower neonatal iron stores. Despite a low prevalence of iron deficiency in this cohort, both a mean corpuscular volume <74fl and ferritin concentrations <20µg/l were associated with lower neurodevelopmental outcomes at two years. An inverse association between growth in the second year of life and iron status at two years was also observed. This thesis has presented data from one of the largest, extensively-characterised cohorts of young children, to date, to explore iron and its associations with growth and development.