Long term effects of glutamine-supplementation in very low birth weight infants.

In the Netherlands, around 2000 infants are born before 32 weeks of gestation. These infants are at increased risk of adverse short and long term outcome. Over the past decades, advances in obstetrical and neonatal management have resulted in increased survival rates among these infants. A lot of research in this area is focused on the effects of therapies in neonatal period (short-term outcome). However, these infants still have an increased risk of (long-term) complications in terms of mental and physical disabilities, behavioural problems, lung problems and infections. Therefore, long-term studies in these infants are essential.

Annelies van Zwol studied the long-term effects of glutamine supplementation in neonatal period in premature infants. Glutamine is an amino acid, essential for the synthesis of proteins. Glutamine can act as a fuel for rapidly proliferating cells such as cells of the gastrointestinal tract and immune system. In neonatal period, glutamine supplementation may reduce the number of serious infections, as was shown in an earlier study. At the ages one and six years, infants had less frequently atopic dermatitis after glutamine supplementation in neonatal period, as found by questionnaire. No effect on cytokine responses (immune responses) was found. The gastrointestinal tract of infants with allergic symptoms was less frequently colonized with Bifidobacteria compared to infants without allergic symptoms, while no effect of glutamine-supplementation on colonization was found. At the age of 2 years, infants with a serious infection in neonatal period had a lower score on the mental scale (Bayley Scales of Infant Development BSID-III) than infants without serious infection.