Feeding and Autoimmunity in Down’s syndrome Evaluation Study (FADES)

Key Words : Down's Syndrome, feeding, autoimmunity, infants, children

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Abstract

To develop a family acceptable study protocol and establish the feasibility of creating a national cohort of infants with Down’s syndrome (DS) to study the associations between early infant feeding, infections and the development of autoimmunity in DS. This study will be set up as a partnership between the NIHR, Bristol Biomedical Research Unit in Nutrition; The University of Bristol, School of Clinical Sciences, Diabetes Research Group; Imperial College London, Department of Medicine and the Down’s Syndrome Association.

Children with DS have increased risk of thyroid, pancreatic and coeliac autoimmunity likely related to lifelong defects in intrinsic immunity. Furthermore, the increased risk of pancreatic autoimmunity is associated with an earlier age of diabetes presentation, suggesting an accelerated or exaggerated process in the autoimmune destruction of islet β cells. The rationale of this study is to study factors known to be important in autoimmunity in the general population, in a population known to be at increased risk of organ specific autoimmunity, namely children with DS.

Nationwide recruitment of newborns with Trisomy 21 from as near to birth as possible through collaboration with the Downs Syndrome Association (DSA), aiming to recruit approximately 100 participants per year. The research design allows longitudinal follow-up (5 years) of the natural history of feeding regimes, the appearance of antibodies to BSA and markers of autoimmunity as well as analysis of the gut microbiome. Data will be collected at baseline, 6, 12, 24, 36, 48 & 60 months. Data to include birth history, medical history, stool, urine and blood samples, feeding history