MRC Autism Research Forum
Gut and the Developing Child

Date: 9 December 2002
Location: The Commonwealth Institute, Kensington High Street, London W8 6NQ (020 7603 3412)
Aim: The aim of the forum was to bring academics in relevant disciplines together, to address the research areas of disordered gut function in children, with particular reference to children with autism spectrum disorders, as highlighted in the recent MRC Review of Autism.

Programme

Professor Carol Dezateux (Professor of Paediatric Epidemiology at the Institute of Child Health, and Chair of the MRC Autism Research Steering Group) briefly described the MRC Autism Research Initiative. This initiative was set up by the MRC in the light of the £2.5 million given by the English Department of Health, and the subsequent £250,000 from the Chief Scientist’s Office of the Scottish Executive, to take forward the research recommendations of the MRC Review on Autism: Epidemiology and Causes (2001).

Professor Jewell (Gastroenterology Unit, Nuffield Department of Medicine, University of Oxford, and former Chair of the Physiology Subgroup on the MRC Autism Review) gave a brief overview of the recent MRC Autism Review, focussing on its findings with regard to abnormal physiology and infections.

There followed 4 talks on various aspects of gut physiology, with open discussion of issues that arose from the presentations and their relationship to research on autism spectrum disorders.

Professor Allan Mowat (Professor of Mucosal Immunology, Division of Immunology, Infection and Inflammation, University of Glasgow) gave a presentation focussing on his research on the basic mechanisms underlying the development of oral tolerance, and its relevance to the immune response against pathogens such as viruses, and in chronic inflammation.

Professor Stella Knight (Antigen Presentation Group, Northwick Park Hospital, Faculty of Medicine, Imperial College) gave a presentation on antigen presentation, with reference to the gut. Her talk concluded with some preliminary data on the potential effects of modification of gut microflora by probiotics.

Professor John Meddings (Division of Gastroenterology, University of Calgary) gave a presentation on the study of intestinal permeability, describing the current state-of-the-art techniques being used, and highlighting potential pitfalls in interpretation.
of results. giving some examples of disease correlations. He concluded by discussing some of the research opportunities in autism.

Professor John Cummings (Department of Molecular & Cellular Pathology, University of Dundee) gave an overview of investigating effects of diet on the composition and metabolic activities of the large intestinal microflora in health and disease.

These talks were followed by a short presentation on case definition in autism spectrum disorders, given by Professor Tony Bailey (Professor of Autism Research, University of Oxford). This talk included discussion of the appropriate diagnostic tools to be used and potential confounds as well as consideration of the broader phenotypes found in autistic spectrum disorders.

Topics that were discussed during open discussion included:

• The use of appropriate controls, both positive and negative phenotypic controls, but also consideration of age and developmental stages.

• The difficulty in distinguishing between an association and causation, and the potential confounding effects of co-morbidities.

• The importance of eliminating potential sources of bias and generalisability of research findings to a wider population.

• The ethical challenges of potentially invasive investigations in children, particularly those with autism spectrum disorders.

The meeting concluded with a short presentation by Dr Chris Watkins (MRC Autism Programme Manager) of the MRC and its funding schemes. An explanation of the application procedure was described, where dedicated resources have been given by the Department of Health in England and the Chief Scientist’s Office of the Scottish Executive.