

Institute for Children and Young People's Mental Health

at King's College London & Maudsley Hospital

Our research spans from the basic neurobiology underpinning autism through clinical risk factors and the testing and implementation of interventions to improve core autism and common co-occurring symptoms. We produce more scientific papers in autism than any other institution in the world.

Understanding the causes of autism and co-occurring problems.

In research based in the MRC Centre for Neurodevelopmental Disorders, we use animal models and other neuroscience methods, such as pluripotential stem cells, to model the biological basis of autism, in order to gain new insights about neural perturbations that give rise to atypical development.

Our clinical research starts in foetal life and is following children as they mature in order to understand vulnerability and resilience to autism and related conditions. We are using this information to tailor interventions for parents and children to help children reach their full potential.

Our clinical research involves babies, children and adults and includes studies of the mechanisms underpinning core autism symptoms and the development of distressing co-occurring problems, such as attention-deficit hyperactivity disorder (ADHD), anxiety, depression, intellectual difficulties and behaviours that challenge. We also make use of large cohort studies and clinical populations to increase our understanding of autism.

Our researchers are analysing the neurobiology and neuropsychology of people with ASD by investigating how genetic and epigenetic changes linked to ASD affect brain development. We also back-translate our results from genetic and clinical studies to animal models, in which a detailed analysis of the mechanisms controlling the assembly of specific neural circuits is possible.

We also study why autistic people have much higher rates of neurodevelopmental mental health problems, including ADHD, challenging behaviour and anxiety and depression. This involves large-scale twin studies and more focussed investigations of element social cognition such as face processing and mentalizing abilities, with the aim of translating our research findings into screening, diagnostic, epidemiological, intervention, and 'at risk' studies. With US colleagues using a unique 25year cohort we have begun the development of a tool for characterising the likely adult outcome for children referred for autism.

Developing and testing new interventions.

We work closely with other UK groups in trials of parent-focussed therapies for children with and at risk for autism. Novel psychosocial interventions aim to reduce emotional and behavioural problems, which are so prevalent in young autistic children. We are also conducting medication trials in children and young people with ASD with the aim to improve some of the core difficulties associated with the condition. For example, we are the UK lead for a trial of arbaclofen for ASD in the UK, as part of the EU-AIMS programme of research, and are participating in the trials for balovaptan, a new treatment developed by the drug company Roche.

Our combination of researchers, triallists and clinicians provide a unique complement of experts to develop and evaluate these treatments.

Our clinical services - Adult Services

Our adult services include local and national outpatient services that include individuals both with and without intellectual disability. These services provide assessment of core diagnostic features together with treatment recommendations for commonly co-occurring conditions (e.g. epilepsy, sleep

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problems, ADHD, depression, anxiety and obsessive-compulsive disorder). We also provide inpatient services for individuals with very complex problems that cannot be addressed in the community; and we provide the only UK service designed specifically for assessment in prisons. Our services have been rated as 'outstanding' by the CQC and has won the 'Autism Treatment Team of the Year' award from the National Autistic Society.

Key Publications:

- Pickles, A., McCauley, J. B., Pepa, L. A., Huerta, M. & Lord, C., (2019 /In press) *The Adult Outcome of Children Referred for Autism: Typology and Prediction from Childhood*. J Child Psychol Psychiatry.
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- Palmer, M., Tarver, J., Paris Perez, P., ... Simonoff, E., Scott, S., & Charman, T. (2019). A novel group parenting intervention to reduce emotional and behavioural problems in young autistic children: Protocol for the Autism Spectrum Treatment and Resilience (ASTAR) pilot randomised controlled trial. *BMJ Open*, 27, e029959.
- Simonoff, E., Jones, C., Baird, G., Pickles, A., Happe, F., & Charman, T. (2012). Severe mood problems in adolescents with autism spectrum disorder. *Journal of Child Psychology & Psychiatry*, 53(11), 1157-1166.
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- Milosavljevic, B., Leno, V.C., Simonoff, E., Baird, G., Pickles, A., Jones, C.R., Erskine, C., Charman, T. & Happé, F., (2016). Alexithymia in Adolescents with Autism Spectrum Disorder: Its Relationship to Internalising Difficulties, Sensory Modulation and Social Cognition. *Journal of Autism and Developmental Disorders*, 46, 1354-1367
- McEwen, F.S., Stewart, C.S., Colvert, E., Woodhouse, E., Curran, S., Gillan, N., Hallett, V., Lietz, S., Garnett, T., Ronald, A., Murphy, D., Happé, F. & Bolton, P. (2016) Diagnosing Autism Spectrum Disorder in community settings using the Development and Well-Being Assessment: Validation in a UK population-based twin sample. *Journal of Child Psychology and Psychiatry*, 57, 161-170.
- Tick, B., Colvert, E., McEwen, F., Stewart, C., Woodhouse, E., Gillan, N., Hallett, V., Lietz, S., Garnett, T., Simonoff, E., Ronald, A., Happé*, F. & Rijdsdijk*, F. (2016). Autism Spectrum Disorders and other

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