University of South Australia | Sansom Institute

Autism Research Group

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research group members

Staff

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Students

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collaborations

Assoc. Prof Robyn Young	director EIRP, flinders university
Dr Alison Lane	school of health sciences, unisa
Mr John Petkov	director, applied statistic unit, whyalla, unisa
Prof Andy Koronios	head, school of computer and information science, unisa
Mr Jon Martin	CEO, autism SA

reasearch questions

Research has focused on development of a laboratory test to diagnose and phenotype autism, investigation of the causes of autism and identification of optimal interventions for individuals with autism.

key research outcomes

Development of a phenotyping tool to identify categories within the autism spectrum

Clinical and observational data from clients (n=72) of the Early Intervention Research Program (EIRP) for children with autism at Flinders University has been compiled in a database and will be used to identify distinct autistic subtypes. It is intended that this information will be used to determine aetiology, treatment response and predictable prognosis. This data will be linked with genomic and metabonomic data in order to form an **autism bioresource** which will fuel further autism research.

Genomics and autism

DNA (cheek cells) has been collected from 24 clients of the EIRP for children with autism at FU and their typically developing siblings. This has enabled an autism DNA bank to be established in South Australia. The genetic association between autism and the gene BDNF has been explored. BDNF is a gene that is associated with obsessive compulsive disorder. This research is ongoing and the establishment of an autism DNA bank will enable our research group to progress current understanding of the genetic basis of autism by investigating other genes.

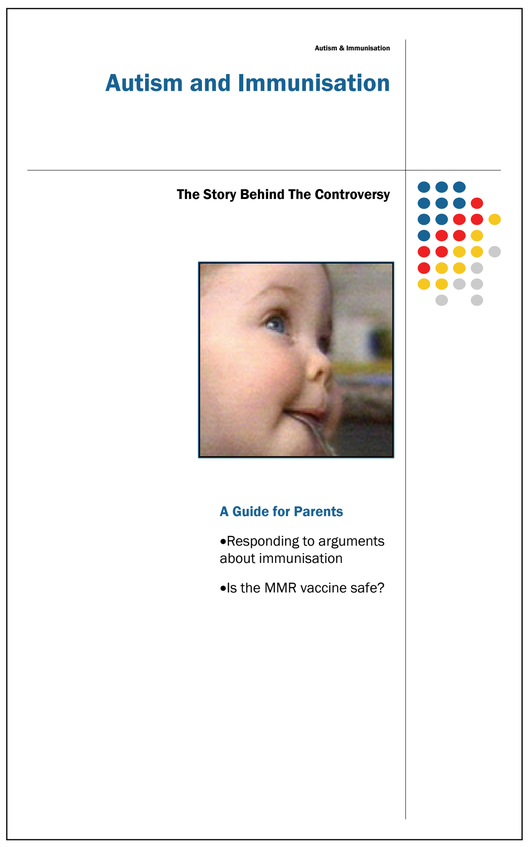
key research outcomes

Metabonomics and autism

Urine samples have been collected from EIRP clients (n=24) and their typically developing siblings (n=19) and subjected to metabonomic analysis. The aim of this aspect of the research was to develop a laboratory test to hopefully assist with the diagnosis and subclassification of individuals with autism. Remarkably, our preliminary results indicate that we are able to predict that a child has autism with a 78% ± 12% success rate. These are extremely promising results and highlight the potential power of this technique in differentiating autistic from non-autistic children.

Autism and immunisation

This aspect of the research sought to investigate the perceptions and beliefs that parents of children (with and without autism) have regarding the alleged link, how they arrived at them and to identify the information needs of parents surrounding this important issue. Focus groups were conducted with parents of autistic children and surveys were distributed to both parents of autistic children and those of typically developing children. An extensive literature search was conducted and a booklet has been prepared presenting the "science" to dispel the myth of the alleged link that is pitched specifically at the concerns of parents. This booklet is available through UniSA, the EIRP and Autism SA.



future directions

Further development of the autism bioresource

Development of the autism bioresource is continuing and ethics approval has being gained which enables us to invite individuals with autism who are clients of Autism SA and their typically developing siblings to participate in further research. At present a further 35 families have been recruited and samples are being processed.

Autism and complementary medicines and dietary interventions

From past studies it has been recognised that these forms of treatment are widely used in autistic children. The results from face-to-face interviews with parents/carers of children with autism, in addition to an extensive literature review, will be used to generate a set of guidelines for healthcare professionals, parents and others to enable them to make informed decisions about using these interventions in autistic children.

Autism and sensory processing

Together with Occupational Therapist Dr Alison Lane from the School of Health Sciences, this project has focused on collecting sensory processing data from children with autism enrolled in the EIRP. This information will be included in the autism phenotyping tool that is currently being developed.

funding

Cure Autism Now- 'Investigation of aetiology, determination of prognosis and optimisation of interventions in autism using metabonomics' (US$20,000)

recent publications

Angley M, McKinnon R, Young R & Evans A, (2006) 'Autism and children: Can the pharmacist help?' *Australian Pharmacist* vol. 25 no. 6 pp. 468-472.

Lim, Y.Z., Tait, P., Young, R., McKinnon, R. & Angley, M (2006). 'Immunisation and autism: Sifting myth from reality?' *Australian Pharmacist* vol. 25 no. 7 pp. 554-558.

Lim YZ, Young, R, Tait, P & Angley M (2005) 'Autism and Immunisation: The story behind the controversy' A guide for parents. A deliverable from the honours thesis prepared by Yun Zi Lim. ISBN 1920927468