Welcome! We are a University of Alberta initiative integrating research, clinical care, education, and community engagement to advance precision medicine in autism and neurodevelopmental conditions.

The research group is led by Dr. Daniel Moreno De Luca

Why PRISMA?

Prisms are simple yet elegant objects that transform a single stream of light into a beautiful spectrum of colours, helping us see the full story. In a similar way, our work uses genetics to reveal the diverse biological pathways that influence neurodevelopment and health.

Our Precision Medicine in Autism (**PRISMA**) group aims to understand the unique strengths and challenges of **people** with autism and other neurodevelopmental conditions, in the context of the rare genetic changes that can be found in up to 1 in 3 of **them**.

This approach helps us better understand individual differences and improve care.

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PRISMA

PRECISION MEDICINE IN AUTISM

CURIOUS ABOUT AUTISM & GENETICS?

Learn how genetics relates to autism, what testing does, and what it means for families.

Genetics and Autism

What is precision medicine?

Precision medicine focuses on using our unique genetic and biological characteristics so that healthcare can be personalized based on that information, helping tailor interventions, supports and monitoring for those who need it.

Why is genetics relevant to autism?

Genetic information can help explain why autism occurs, especially when other medical or developmental conditions are present. It can guide care, support early identification of needs, and inform family planning.

Is autism genetic? Will my child be autistic if I am?

Autism is strongly influenced by genetics. In fact, if we bring together the many individually rare genetic causes for autism, they can collectively explain up to 30% of cases. In addition, genetic does not mean inherited, and many times, these genetic changes are not present in the biological parents but happen spontaneously, which we call de novo.

Do environmental factors contribute to autism?

Research suggests that some environmental factors (for instance, some infections during pregnancy) may slightly increase likelihood but do not determine outcomes on their own. Importantly, within environmental factors, it has been robustly proven that vaccines DO NOT cause autism.

Genetic Testing in Autism

Is genetic testing meant to cure autism?

No. It helps guide care and planning.

Is genetic risk inevitable?

No. It increases likelihood, not certainty.

What does genetic testing involve?

A blood or saliva sample is used to look for genetic changes. Genetic counselling helps to prepare for and interpret results.

What is the cost for genetic testing in Alberta?

It is covered by Alberta Health when eligibility criteria are met and testing is recommended by a physician.

Will my genetic information be safe?

There are laws such as the Genetic Non-Discrimination Act to help protect people.

Genetic Concepts and Interpretation

What does heritability mean?

A measure of how strongly genetic a medical or mental health condition is. Interestingly, it does not mean that this condition is inherited from parents to their kids.

Can environment help reduce genetic risk?

While environment cannot change someone's genetic makeup, it can influence how people adapt and cope, and their quality of life. Genetic influence does not remove the importance of support and context.

Does genetic risk mean something is inevitable?

No. Genetic changes may increase the chances of an outcome; they don't not guarantee it. There is wide opportunity to help people achieve their maximum potential based on strengths and challenges in the context of genetic changes.

Rare Genetics

What is a copy number variant (CNV)? What is a deletion and duplication?

A copy number variant is when a small piece of a chromosome is missing (deletion) or duplicated (duplication). If they lead to clinical consequences, they are called pathogenic.

What can I do if my kid has/I have a pathogenic CNV?

Monitor development alongside your physician team, seek supports if needed (e.g., speech therapy, occupational therapy, physiotherapy), collaborate with schools and workplaces, and attend regular checkups.

How can I contribute to the greater understanding of rare genetic conditions?

Participating in research studies and patient registries helps advance our collective knowledge.

More Questions?

Scan the QR code to see the full FAQ on our website. If you have more questions, don't hesitate to contact us: prisma@ualberta.ca

www.precisionmedicineinautism.org/faq