

A mitoPodcast Interview with Dr. Vanessa Gonçalves



MEET DR. GONÇALVES

Dr. Gonçalves is an Independent Scientist at the Centre for Addiction and Mental Health's Molecular Brain Sciences department. She is also an Assistant Professor in the Brain and Therapeutics division of the University of Toronto's Department of Psychiatry.

BACKGROUND OF RESEARCH

Dr. Gonçalves is searching for changes and genetic markers in the DNA code of the mitochondria that could be associated with the risk of developing neuropsychiatric disorders like schizophrenia. This is because mitochondria produces energy for the brain and is vital to its function.



WHAT HAS SHE FOUND?

Dr. Gonçalves published 2 large studies investigating mitochondrial gene association with schizophrenia. She found an association of 9 mitochondrial genes with increased risk for schizophrenia. 4 of those genes showed altered gene expression in post-mortem brains of individuals with schizophrenia. Also, rare genetic variants in mitochondrial DNA have been found that could play a role in schizophrenia development.

HER NEXT STEPS?

Dr. Gonçalves wishes to explore the gene-gene interactions and gene-environment interactions that could be important in schizophrenia development. Also, she wants to investigate the interaction between the sex chromosomes and mitochondria genes in order to get a broader picture of the genetic architecture of mental illness.



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ACCELERATING DRUG DEVELOPMENT?

Innovating new techniques like stem cell techniques to grow 3D brains and to simulate mitochondrial dysfunction in these models might give us new perspectives into disease and treatment options for patients.

WHY IS COLLABORATION IMPORTANT?

Bringing experts from a variety of fields exposes all involved to new ideas that maybe were never thought of before, and ultimately stimulates innovation.



FINAL MESSAGE AND ANY QUESTIONS?

We need dialogue between scientists, patients and all in the community to make sure we are answering the right questions and to deliver results for patients. You can contact Dr. Gonçalves at vanessa.goncalves@camh.ca if you have any questions about her work.



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podcast!**