

# Does having mixed ancestry help protect you from motor neurone disease?

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Could the key to unlocking the secret of motor neurone disease lie in the collaboration between two small island nations, Ireland and Cuba? Researchers from Trinity College Dublin are heading to Latin America to begin a major new research project which will examine whether the likelihood of developing motor neurone disease (MND/ALS) is reduced in people with mixed ancestral backgrounds.

Earlier studies by researchers at Trinity suggest that the incidence of MND is lower in populations with mixed ancestral backgrounds such as Hispanic and African American populations. This new research project will test the hypotheses that mixed ancestry may have a [protective effect](#) on developing MND by establishing new registers of the incidence, prevalence and risk factors for MND/ALS in three Latin American countries: Cuba, Chile and Uruguay.

These three countries are particularly valuable for this research because they have high percentages of the population who come from a mixed ancestral background. 85% of the population in Uruguay is of European extraction. In Chile the majority of the population is of mixed ancestral background including Spanish and Amerindian, and in Cuba, the population is of Spanish, African American and Amerindian origins. The different locations of the studies will also enable the team in Trinity to analyse any influence of latitude on MND prevalence as well as genetic risk.

Orla Hardiman, Professor of Neurology in Trinity and Director of the

National Specialist Clinic for ALS/MND at the National Neuroscience Centre Beaumont Hospital said: "This project is the culmination of our painstaking work over the past 16 years that has challenged conventional wisdom that MND is the same the world over.

Demonstrating and understanding the reasons for the real differences across populations of different ancestral origin will help us to unlock the mysteries of this tragic illness. Our research will allow us to find new and more effective drugs by comparing the different clinical and genetic profiles, and identifying and targeting pathways that increase the risk of developing disease."

The study has received \$800,000 funding from US Centers of Disease Control and Prevention. This is the first time that the US has provided federal funding to permit any sort of study in Cuba. While Cuba and Ireland are both small island nations, Cuba is almost the opposite to Ireland in terms of the level of mixed ancestral backgrounds, as Ireland has a relatively simple genetic substructure. In Cuba the population is mixed but there is no stratification based on race - so colour does not correlate with socioeconomic status as it does in the US where MND registers currently exist. The structure of the Cuban health system also means that everybody can be identified and studied equally.

The epidemiological studies will be carried out in the same way as studies in Europe, in which Trinity was a leading partner, and which contributed to a huge database of 1600 MND patients and 3000 controls, called the EUROMOTOR dataset. The EUROMOTOR study has determined the clinical features and exposure risks in patients drawn from 5 well established population based registers of MND, including the Irish MND register. The new data from Latin America will give tremendously valuable new, comparable data to analyse and to test the idea that mixed ancestry may result in a lower risk of developing MND. These insights are invaluable in determining the causes of MND and

possible ways to prevent or treat it.

Professor Hardiman continued: "Ireland has the longest running ALS/MND register in the world, and the Irish ALS/MND research team is internationally recognized as a strong leader in clinical and epidemiological research. The funding provided by the CDC is in recognition of this international standing."

Provided by Trinity College Dublin

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