

PRESS RELEASE

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New study links gut microbiota strains with more severe strokes and poorer post-stroke recovery

(4 May 2022, Lyon, France) A new study has identified strains of gut microbiota that are associated with more severe strokes and worse post-stroke recovery, revealing that the gut microbiome could be an important factor in stroke risk and outcomes¹.

The study, presented today at the European Stroke Organisation Conference (ESOC 2022) pinpointed specific groups of bacteria associated with poorer neurological recovery from ischaemic stroke both in the acute phase (24 hours) and after three months.

The research identified multiple types of bacteria were associated with ischemic stroke risk, including *Fusobacterium* and *Lactobacillus*. *Negativibacillus* and *Lentisphaeria* were associated with a more severe stroke in the acute phase (at 6 and 24 hours respectively) and *Acidaminococcus* related to poor functional outcomes at three months.

Dr Miquel Lledós, lead author from the Sant Pau Research Institute Stroke Pharmacogenomics and Genetics Laboratory, Barcelona, Spain, commented “The influence of the gut microbiome – the trillions of bacteria and other microorganisms that live in the gut – is a modifiable risk factor associated with the risk of stroke and with post-stroke neurological outcomes. However, most research has previously been done in animal models.”

“In this study we took faecal samples – the first samples taken after the event – from 89 humans who’d suffered an ischaemic stroke. Comparing with a control group, we were able to identify multiple groups of bacteria that were associated with a higher risk of ischaemic stroke.”

An ischaemic stroke occurs when a clot or other blockage blocks the blood supply to the brain and is the most common type of stroke. In Europe, 1.3 million people suffer a stroke every year and it is the second most common single cause of death².

“The discovery opens the exciting prospect that, in the future, we may be able to prevent strokes or improve neurological recovery by examining the gut microbiota. In other pathologies, clinical trials are being carried out where researchers replace the intestinal flora through dietary changes or faecal transplantation from healthy individuals and this should be studied further in the stroke field.”

The association between certain strains of gut bacteria and risk of ischaemic stroke was reinforced in another study presented at ESOC this week by a team from Yale University, Connecticut, USA³.

The researchers analysed statistics from the Flemish Gut Flora Project and the MEGASTROKE consortium, using a technique called Mendelian Randomisation (MR) which measures variation in

genes to examine the causal effect of an outcome or exposure. The study identified 20 microbial traits significantly associated with the risk of developing at least one subtype of ischaemic stroke.

ENDS

Notes to Editors:

A reference to the European Stroke Organisation (ESO) Conference must be included in any coverage or articles associated with this study and research.

For more information or to arrange an expert interview, please contact Luke Paskins or Sean Deans on luke.paskins@emotiveagency.com, sean.deans@emotiveagency.com or press@eso-stroke.org, or call +44 (0) 208 154 6396.

About the Study Author:

Dr Miquel Lledós is from the Sant Pau Research Institute Stroke Pharmacogenomics and Genetics Laboratory, Barcelona, Spain.

About ESO:

The European Stroke Organisation (ESO) is a pan-European society of stroke researchers and physicians, national and regional stroke societies, and lay organisations, founded in December 2007. The ESO is an NGO comprised of individual and organisational members. The aim of the ESO is to reduce the burden of stroke by changing the way that stroke is viewed and treated. This can only be achieved by professional and public education and making institutional changes. ESO serves as the voice of stroke in Europe, harmonising stroke management across the whole of Europe and taking action to reduce the burden.

Four Facts on Stroke:

1. In 2017, there were 1.12 million first strokes in the EU, 9.53 prevalent stroke cases and 460,000 stroke-related deaths⁴
2. In 2017, there were 7.06 million disability adjusted years lost due to stroke in the EU⁴
3. By 2047 it has been estimated there will be an additional 40,000 strokes per year in the EU (a rise of 3%)⁴
4. 80% of premature heart disease and stroke is preventable⁵

References:

1. Influence of the gut microbiome in ischemic stroke risk and ischemic stroke outcome, presented at the European Stroke Organisation Conference, 4 May 2022.
2. Status and Perspectives of Acute Stroke Care in Europe | Stroke (ahajournals.org)
3. The gut microbiome influences the risk of acute ischemic stroke: a mendelian randomization study, presented at the European Stroke Organisation Conference, 5 May 2022.
4. <https://www.ahajournals.org/doi/10.1161/STROKEAHA.120.029606>
5. <https://www.euro.who.int/en/health-topics/noncommunicable-diseases/cardiovascular-diseases/data-and-statistics>