

JOINT EVENT ON

6<sup>th</sup> European Conference on**Predictive, Preventive and Personalized Medicine & Molecular Diagnostics**

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**2<sup>nd</sup> World Congress on Human Genetics**

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**Bacterial genetics: Could gut microbiota become a diagnostic biomarkers or therapeutic treatment for neurodegenerative disease?****Ellie Wright**

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Recent studies suggest that the gut microbiota modulates brain health and neuroinflammation. More and more evidence points to gut microbiota as a very important determining factor for prevention of neurodegenerative diseases. This research aims to look at the latest findings in the gut microbiota and their role in neurodegenerative disease like ALS, Parkinson's disease, Alzheimer's disease and multiple Sclerosis. In a bidirectional system of gut-brain, when the composition of gut microbiota is altered and lead to increase in the intestinal permeability allowing bacterial peptidoglycan to translocate to the brain. Some gut microbiota implicated in the reactions of peptides or short chain fatty acids could affect gene expression and inflammation within the central nervous system. Some studies suggest that GI tract microbiota secrete pro-inflammatory neurotoxins including surface lipopolysaccharides (LPSs) playing a role in the brain health. The complex communication gut-brain involves the neural and humoral pathways with three cytokines implicated in signaling pathways  $TNF\alpha$ ,  $IL-1\beta$ , and  $IL-6$ . The gut-microbiota-to-brain routes have received increasing attention for their ability to modulate brain function and this research aims to review the possible underlying mechanisms of neuro-inflammation and neuro degeneration related to the gut microbiota.

**Biography**

Ellie Wright is passionate about research in the field of natural medicine. She obtained a Bachelor Degree at Arizona State University with Summa Cum Laude in 2008. She is graduated with a Master's degree (ASU) and graduate certificate in Geriatric and Gerontology from Arizona University. In 2015, she received a Doctoral Degree from Southwest College of Naturopathic Medicine, Tempe, AZ, USA.

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