Twin hearing study helps discover gene that influences hearing ability

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The largest ever genome wide association study on hearing ability has identified the salt-inducible kinase 3 (SIK3) gene as a key influencer in how well we can hear, particularly at high frequencies. This significant new finding by King's College London, co-funded by charities Action on Hearing Loss and Age UK, increases the understanding of the causes of hearing loss, which affects 10 million people in the UK and could lead to future treatments.

The study involved 4,939 adults from across Europe, including the G-

EAR consortium and a group of 1,022 volunteers from TwinsUK. Researchers looked for tiny changes in their genomes that correlated with their hearing ability, finding a single change in the gene SIK3. SIK3 protein was then shown to be present in the cochlea of mice, which is consistent with the gene being involved in hearing.

Dr Frances Williams, who led the research, said: 'Hearing loss in adults is a complex condition involving both genetic and environmental factors, but we still know very little about the genes involved which is why this research is so important.'

Dr Ralph Holme, Head of Biomedical Research at Action on Hearing Loss, the only UK charity dedicated to funding biomedical research into hearing loss, said: 'Hearing Loss is a hidden health condition that can isolate people from friends and family, eroding their quality of life. By funding research, such as the study led by King's College London, to understand why people lose their hearing, we believe that treatments and a cure could be possible within our lifetime.'

Professor James Goodwin, Head of Research at Age UK, the national charity for older people, said: 'The majority of people with hearing loss in the UK are older people – a staggering 6.4 million aged 65 and over. Loss of our senses as we age can cut us off from the outside world so research breakthroughs like this one are vital if we are to tackle this condition more effectively, and so improve quality of life for older people.' The research was published in the *Journal of Human Molecular Genetics* on Tuesday 5 August 2014.

More information: The paper 'Salt-inducible kinase 3, SIK3, is a new gene associated with hearing' is available online: hmg.oxfordjournals.org/content … jkey=D4bNnCS8hAzOpKZ

Provided by King's College London