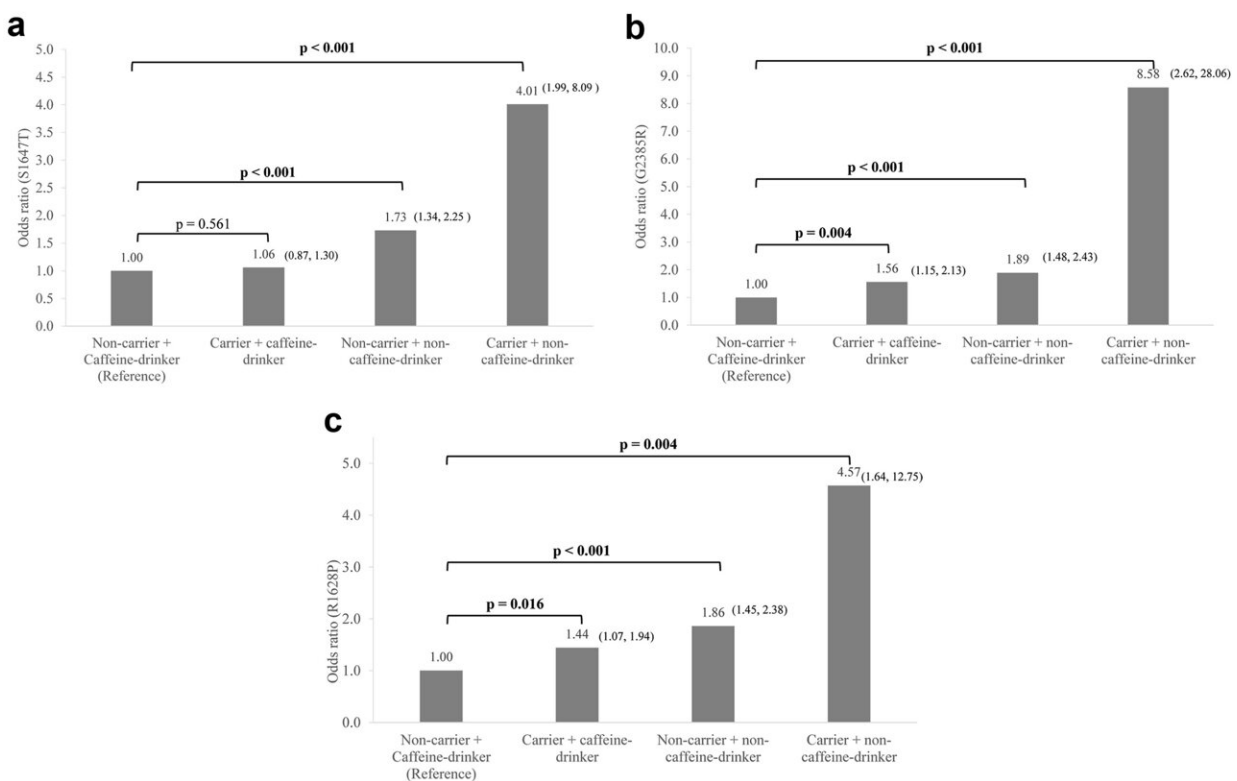


Caffeine intake interacts with Asian gene variants in Parkinson's disease, may lower risk

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Comparing ORs for PD stratified by genetic carrier status at LRRK2 risk loci and caffeine consumption. a. Comparing ORs for PD stratified by genetic carrier status at S1647T loci and caffeine consumption. b. Comparing ORs for PD stratified by genetic carrier status at G2385R loci and caffeine consumption. c. Comparing ORs for PD stratified by genetic carrier status at R1628P loci and caffeine consumption. Credit: *The Lancet Regional Health - Western Pacific* (2023). DOI: 10.1016/j.lanwpc.2023.100877

People with Asian gene variants that are linked to PD and who regularly drink tea or coffee containing caffeine have a four to eight times lower risk of getting the condition compared to non-caffeine drinkers who carry the PD genes, according to [new research](#) by the National Neuroscience Institute. In fact, tea and coffee drinkers who carry the PD gene lower their risk of PD to below that of non-caffeine drinkers who do not carry the gene.

"Caffeine is known to have a potential protective effect against PD and other neurodegenerative conditions, but we have shown that it can significantly cut the risk of PD and level the playing field for Asians who are genetically at higher risk of PD and are currently symptom-free," said the study's Principal Investigator, Professor Tan Eng King, Deputy Chief Executive Officer (Academic Affairs) and Senior Consultant, Department of Neurology, National Neuroscience Institute.

Announcing the findings today at the 10th [Singapore International Parkinson Disease and Movement Disorders Symposium](#), Prof Tan said that [caffeine](#) is known to decrease inflammation of neurons in the brain which helps to reduce [cell death](#), but it is not yet known how caffeine interacts with the Asian PD gene variants.

The study, which involved 4,488 subjects, showed that those with Asian specific genetic variants have a 1.5 to 2 times higher risk of developing PD. There are two known Asian gene variants which occur most frequently in East Asians. Up to 10% of the Singapore population carry one of these gene variants which are located in the coding region (responsible for translating into proteins).

All participants completed a validated caffeine intake questionnaire. The average caffeine dose intake of study participants was 448.3 mg among

PD cases and 473.0 mg in the healthy controls—the equivalent of 4 to 5 cups of Western style brewed Arabica [coffee](#) (235ml/8 fl oz per cup) or 2 cups of traditional Singapore kopi made from Robusta coffee beans, which have a higher caffeine content than Arabica coffee beans.

While the protective benefits of caffeine also appeared to increase with [higher doses](#), those who drank less than 200mg of caffeine per day still cut their risk of PD. Taking 400 milligrams of caffeine a day is generally regarded as a safe intake for most healthy adults.

Parkinson's disease is the fastest growing neurodegenerative condition globally and more than 8,000 people are living with PD in Singapore. This only represents the tip of the iceberg as a recent study by NNI showed that 26% of the local older population exhibit mild parkinsonian signs. Prof Tan says that these findings are a positive step forward in the fight to prevent this disabling condition.

"This research has important implications for the prevention of PD, especially in countries like Singapore where the Asian gene variants are common. Tea and coffee are readily available and culturally accepted in most Asian societies and consuming caffeine within normal limits offers an easy, pleasant and sociable way for people to potentially reduce their risk of PD."

The paper is published in *The Lancet Regional Health—Western Pacific* journal.

More information: Yi-Lin Ong et al, Caffeine intake interacts with Asian gene variants in Parkinson's disease: a study in 4488 subjects, *The Lancet Regional Health—Western Pacific* (2023). [DOI: 10.1016/j.lanwpc.2023.100877](https://doi.org/10.1016/j.lanwpc.2023.100877)

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