News

Why might eating more meat help those with the Alzheimer's gene reduce their risk?



Relatively high meat consumption was associated with a decreased meat consumption and cognitive decline in people with the APOE4 allele in the 4/4 genotype.
Among this population, eating a higher percentage of unprocessed meat was likewise linked to lower all-cause mortality.

The greatest risk factor for Alzheimer's disease is the APOE4 allele.

According to a recent observational study from Sweden, individuals who had a genetic risk factor for Alzheimer's disease were less likely to get this type of dementia if they ate a lot of meat.

According to a news statement from the study's author, Jakob Norgren, PhD, "those who ate more meat overall had significantly slower cognitive decline and a lower risk of dementia, but only if they had the APOE 3/4 or 4/4 gene variants."

Given that the majority of dietary recommendations for preventing Alzheimer's or age-related cognitive decline have concentrated on consuming plant-based foods, this finding may be surprising.

According to Norgren, "there is a lack of dietary research into brain health, and our findings suggest that conventional dietary advice may be unfavourable to a genetically defined subgroup of the population."

What actions did the researchers take?

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Researchers from the Karolinska Institutet conducted the study, which was published in JAMA Network OpenTrusted Source. They examined data for 2,157 persons over 60 who lived in Stockholm, Sweden.

The Swedish National Study on Aging and Care-Kungsholmen (SNAC-K), which tracked persons for up to 15 years, provided the data.

Up to the age of 78, each individual would get an evaluation every six years. They would then undergo examinations every three years.

The participants would report at each assessment:

How much meat did they eat in the past year? What percentage of the meat was processed? How much unprocessed red meat did they eat in comparison to poultry?
In addition, the researchers searched for data demonstrating changes in cognitive performance over time and for new dementia diagnoses.

Whether or if individuals had particular genetic variations was another important variable that the researchers were interested in. APOE 3/4 and APOE 4/4 were these gene variations.

APOE: What is it?

A gene called APOE aids the body in producing a certain kind of protein that may interact

with fats to form molecules known as lipoproteins, which are involved in the regulation of cholesterol.
APOE can exist in three distinct forms, or alleles: APOE2, APOE3, and APOE4. Since each parent contributes one allele, there are six potential variations: 2/2, 2/3, 2/4, 3/3, 3/4, and 4/4.

The greatest risk factor for Alzheimer's disease is the APOE4 allele. The allele in the 4/4 genotype is present in a considerable proportion of individuals with the illness.

According to Norgren in the press release,

"This study tested the hypothesis that people with APOE 3/4 and 4/4 would have a reduced risk of cognitive decline and dementia with higher meat intake, based on the fact that APOE4 is the evolutionarily oldest variant of the APOE gene and may have arisen during a period when our evolutionary ancestors ate a more animal-based diet."

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What did the scientists discover?

Researchers discovered that the amount of meat ingested by individuals with the APOE 3/4 and 4/4 genetic variations seems to mitigate cognitive decline and dementia prevalence.

Those with the APOE 3/4 and 4/4 variations had more than twice the risk of dementia compared to those without these variants among those who consumed the least amount of meat.

However, those with these genetic variations who consumed the most meat did not have a higher risk of dementia or cognitive impairment.

An estimated 870 grams (g) of meat were consumed per week by the group the researchers identified as having the highest meat intake.

According to co-author Sara Garcia-Ptacek in the press release, the kind of meat consumed also affected the results.

Regardless of APOE genotype, a lower percentage of processed meat in overall meat consumption was linked to a lower risk of dementia, according to Garcia-Ptacek.
In a follow-up research, eating a higher percentage of unprocessed meat was likewise linked to fewer deaths among those with the APOE genetic variations.

More research based on interventions is needed.

Norgren was questioned by Medical News Today why he believed that individuals with APOE 3/4 and 4/4 had a lower risk of dementia and a slower rate of cognitive decline when they consumed more meat.

"We can only speculate at this point," he informed us. Since protein consumption didn't seem to account for the results, we performed further studies that looked at blood and dietary vitamin B12 levels. There, we also observed variations between APOE genotypes, indicating that the "food matrix," or the way nutrients are supplied in food, may be important.

The researchers note that unprocessed red meat consumption has an effect on those with APOE4, and other studies have found similar findings in large cohorts.

It is important to note that this new study was observational, meaning it does not necessarily demonstrate that the differences in risk the researchers identified were caused by meat eating. The next step to further explore this association will be follow-up intervention research.

In a media briefing, Tara Spires-Jones of FMedSci stated, "This type of investigation cannot prove that the meat consumption was the cause of reduced dementia risk as other factors like socioeconomic status likely influence unprocessed meat consumption."

Spires-Jones, who was not engaged in the study, is the Director of the Centre for Discovery Brain Sciences at the University of Edinburgh in the United Kingdom.

Individuals with APOE 3/4 and 4/4 "may have different dietary needs."

MNT asked Norgren what he thought about this in light of the study's findings because a lot of dietary recommendations for cognitive health center on diets that are high in plants and relatively low in meats.

"Our findings suggest that APOE 3/4 and 4/4 carriers may have different dietary needs, but it's possible that such recommendations still benefit a large portion of the population," he stated.

"A potential mismatch between their specific needs and official dietary recommendations could have a large impact at the population level because this genetic subgroup accounts for the majority of Alzheimer's cases," Norgren continued.

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"The potential for dementia prevention could be substantial if future research confirms these findings and allows us to develop more individualized recommendations," he informed us.

Additionally, MNT discussed the results with Steven Allder, MD, a consultant neurologist at Re:Cognition Health who was not engaged in the study.

According to Allder, "the study reinforces the importance of a personalized approach." "The ideal ratio of protein sources, including lean meats, may vary depending on genetics, cardiovascular risk, and lifestyle, even though plant-focused diets are still generally beneficial."

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