

In the future could Christmas dinner protect your heart?

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(PhysOrg.com) -- Eating turkey or other fowl in the future could lead to a healthier heart according to researchers from the University of Reading. Experts found that boosting the amount of omega-3 fatty acid in chicken feed increases the quantity of this beneficial acid in the edible meat.

Oily fish, such as salmon, are a key source of long-chain [omega-3 fatty acids](#), which are known to reduce the risk of [cardiovascular disease](#). However currently 70 percent of the UK population do not eat oily fish,

and with the incidence of cardiovascular disease increasing, finding an alternative dietary source for omega-3 is hugely important. On average, the population of the UK currently consumes under half the UK Government's recommended daily intake of long chain omega-3.

In theory, the long-chain omega-3 fatty acids can be synthesised in the body from other fatty acids found more commonly in the diet (such as some [vegetable oils](#) and [green leafy vegetables](#)), but research suggests that this synthesis doesn't happen efficiently, especially in men. This synthesis occurs in steps, and it is thought that the first step of converting plant oil to long-chain omega-3 fatty acids is the biggest hurdle. This first step produces a fatty acid called stearidonic acid (SDA).

A solution could be to find a way of skipping this step and getting stearidonic acid into the diet, which can then be converted into the beneficial long-chain omega-3 fatty acids when in the body. In this study, published in the [British Journal of Nutrition](#) and funded by Monsanto Company, chickens were fed soya bean oil specially enriched with SDA to find out if this meant that their edible meat would contain increased amounts of SDA.

Dr Caroline Rymer, from the University of Reading's Division of Food Production and Quality in the School of Agriculture, Policy and Development, and Principal Investigator on the project said: "Our results showed that feeding chickens a diet rich in stearidonic acid produced edible meat enriched with SDA. One hundred grams of breast meat from birds fed their conventional diet had just 13 mg of SDA. One hundred grams of breast meat from the birds fed the enriched soya oil had 520 mg of SDA. The minimum recommended intake of long-chain omega-3 fatty acids is 450 mg per day. Any negative effects on the taste and smell of the meat, which can happen when feeding chickens directly with omega-3 fatty acids in the form of fish oil, were reduced.

"The health benefits of eating oily fish are evident, but a relatively low number of people consume this food source. Therefore, transferring the health benefits gained from eating oily fish to another more popular food such as chicken could reduce the risk of heart disease for a large proportion of the population."

Further work is needed to confirm that humans convert SDA to long-chain omega-3 fatty acids efficiently. If that is the case, this approach could provide an alternative means of improving the long-chain omega-3 fatty acid consumption of the population.

More information: The effect of feeding modified soyabean oil enriched with C18 : 4n-3 to broilers on the deposition of n-3 fatty acids in chicken meat, C. Rymer, G. F. Hartnell and D. I. Givens, School of Agriculture, Policy and Development, University of Reading, *British Journal of Nutrition*, [doi:10.1017/S0007114510004502](https://doi.org/10.1017/S0007114510004502)

Provided by University of Reading

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