

Fish oil helps pigs through operations

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Tests with pigs show that a diet rich in fish oil improves recovery after operations. The same positive effects could apply to humans too.

Pigs should be fed fish oil before and after operations. It helps them through the difficult procedures following major operations.

The findings could also be of importance to human patients.

“Anatomically and physiologically, pigs are a lot like us humans. And that makes them good models for human research,” says veterinarian Sine Nygaard Langerhuus of Aarhus University, who in her PhD project has studied the effects of fish oil on post-operation recovery.

Feeding the pigs with fish oil improves their appetite, so they do not lose weight. And that’s important.

Previous omega 3 studies inconclusive

A common risk in major operations is heavy inflammations due to damaged tissue or infections. This can cause vital organs to stop functioning and the patient risks to die.

With its high contents of omega 3 fatty acids, fish oil is thought to soften these inflammations through a series of mechanisms at cellular level.

Previous studies have shown that surgical patients, and to some degree intensive patients too, react positively to a supplement of omega 3 fatty acids from fish oil.

But it’s difficult to get stable results. It is hard to control the differences between the individual patients’ course of disease. And that can result in significant uncertainties when the results are analysed.

Pigs infected with staphylococci

All 84 pigs in the study underwent the same surgical procedure, in which a section of an artery was removed and replaced with an artificial tube, known as a vascular prosthesis.

It is common to implant vascular prostheses in humans who have outpouchings or constrictions on their veins to ensure a regular blood circulation.

These types of operation can often lead to bacterial infections with e.g. staphylococci. To prevent such infections for the pigs, the researchers added staphylococci bacteria to the vascular prostheses before they implanted them.

One in three pigs on fish oil

The pigs were divided into three groups:

- The first group was given fish oil (rich in omega 3 fatty acids)
- The second group was given sunflower oil (rich in omega 6 fatty acids)
- The third group was given animal fat (rich in saturated fats)

The first group fared better after going through an operation. They had a better appetite and generally showed clearer signs of well-being than the pigs that were given sunflower oil.

Previous studies have suggested that pigs that had taken fish oil were better at fighting off inflammatory reactions. It is not clear yet, however, why this is so.

“Pigs are quite tough creatures, so they didn’t become as sick as human intensive care patients,” says Langerhuus. “We used young and lively teenage pigs in our study. That could have affected our results.”

This makes it difficult to say whether the same effect applies to humans. But the findings open up for future research to determine the exact health benefits of fish oil.

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[Effects of dietary n-3 and n-6 fatty acids on clinical outcome in a porcine model on post-operative infection. British Journal of Nutrition. DOI: 10.1017/S0007114511003503](#) [17] [The effect of dietary fatty acids on post-operative inflammatory response in a porcine model. APMIS. DOI: 10.1111/j.1600-0463.2011.02834](#) [18]

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