

# Nutrition News

Department of Human Nutrition

 K-STATE Research and Extension  
Kansas State University

March 2009

## When It Comes to Heart Health, All Fatty Fish Not Created Equal

The American Heart Association (AHA) recommends that we should be “eating fish (particularly fatty fish) at least two times a week.” This is because, in addition to fish being a good source of protein and relatively low in saturated fat, many varieties are high in omega 3 polyunsaturated fatty acids (PUFA) –such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). AHA released a scientific statement in 2002 to the effect that omega 3 fatty acids decrease atherosclerotic plaque, triglycerides and in some cases, heart arrhythmias. The risk of cardiovascular disease seems to be lowered when omega 3 PUFA are ingested in the amounts present in fatty fish such as trout, salmon, sardines, and tuna.

In the July 2008 issue of the *Journal of the American Dietetic Association*, researchers from Wake Forest Center for Botanical Lipids at the Wake Forest

School of Medicine reported they had analyzed the polyunsaturated fats typically present in commonly eaten fish in the US.-farmed and wild. The *wild* fish tended to have high levels of omega 3 PUFA because their diets are based on algae, naturally rich in these fatty acids. They looked at four popular *farmed* fish in detail: Atlantic salmon, trout, tilapia and catfish. The *farmed* Atlantic salmon and trout also had a relatively high amount of omega 3 PUFA. Interestingly, the *farmed* tilapia (and the catfish) had a surprisingly low amount of omega 3 PUFA (n-3) and a high amount of omega 6 PUFA (n-6). Although n-6 and n-3 are both “essential” fatty acids (i.e., must be obtained from our diets), n-6 competes with n-3, and if it is proportionately high relative to n-3, an inflammatory response is possible. The Wake Forest researchers are concerned that the high ratio between the two types of fatty acids found in tilapia may

promote or exacerbate inflammation in certain vulnerable individuals who have an existing inflammatory condition such as cardiovascular disease (CVD) or even a genetic predisposition to one.

It is important to point out that the science is not “cut and dried” on this controversial issue. Some researchers contend that there is no increased risk of CVD from a high ratio of n-6:n-3. They point to the benefit of omega 6 PUFA (often found in vegetable oils like corn, sunflower, and soybean) in lowering LDL cholesterol, and thereby the risk of heart disease. Although the data are not all in, for most people the high ratio may not be problematic, but for a percentage of people at risk of an inflammatory disease, like heart disease, a lower ratio may be a healthier one.

*What is the consumer to do while we wait for consensus in medical science?*

Tilapia is a popular fish in the U.S. for a number of reasons: it is mild flavored and doesn't accumulate mercury (as is the case in some fish) because it is fast-growing, short-lived and easy to raise. Although tilapia is not a rich source of omega 3 PUFA, it is still a good source of protein and is moderately

priced. Consequently, for most people, after weighing the pros and cons, eating an occasional meal of tilapia is still good choice.

Sources: Journal of the American Dietetics Association. *The Content of Favorable and Unfavorable Polyunsaturated Fatty Acids Found in Commonly Eaten Fish*. July 2008. 1178-1185.  
Circulation. AHA Science Advisory: *Omega-6 Fatty Acids and Risk for Cardiovascular Disease*. 2009. 119:902-907.

<b>Omega 3 fatty acid content:</b>	
Farmed Salmon	3g/100 g of fish
Farmed Tilapia	.5g/100g of fish
<b>Ratio of omega 6 fatty acids :omega 3 fatty acids</b>	
Farmed Salmon.....	1:1
Farmed Tilapia .....	11:1

For more information about healthy eating, contact your local extension office. The Food Assistance Program can help people of all ages with low income buy nutritious foods for a better diet. To find out more, call toll-free 1-888-369-4777.

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