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Bjerregaard, Lone; Aardestrup, Inge; Bülow, Rikke; Frøbert, Ole; Dethlefsen, Claus; Rasmussen, Jeppe; Schmidt, Erik

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FISH CONSUMPTION AND SERUM LEVELS OF EICOSAPENTAENOIC AND DOCOSAHEXAENOIC ACID ARE NOT RELATED TO FLOW-MEDIATED VASODILATION

L. J. Bjerregaard, I.V. Aardestrup , R. Bülow, O. Frøbert, C. Dethlefsen, J.G. Rasmussen, E. B. Schmidt.
Dept. of Preventive Cardiology, Center for Cardiovascular Research , Aalborg, Aarhus University Hospital, Denmark.

Introduction and aim

The dietary benefits of fish have attracted considerable scientific interest during recent years.
The aim of the study was to investigate the correlation between flow-mediated vasodilation (FMD), a measure of endothelial function, and fish consumption. Furthermore we studied the content of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in serum phospholipids in a healthy population.

Patients and methods

Fourty healthy volunteers were included in the study:

	Women		Men
	Premenopausal	Postmenopausal	
Subjects (n =)	10	10	20

All subjects	Mean	Range
Age (years)	48	24-66
BMI (kg/m2)	24	19-32

The subjects were examined on two occasions, one month apart (same period of menstrual cycle in premenopausal women) in order to reduce variability. Blood samples were drawn in the morning after 10 hours of fasting. The content of EPA and DHA in serum phospholipids was measured by gas chromatography (Chrompack International). FMD was determined (after 15 min. of resting) with B- mode ultrasound of the right brachial artery after ischaemia for 5 minutes. Brachial artery FMD was calculated as the change in diameter from baseline to 60 secs. after cuffdeflation and expressed as percentage change. The average values of the two measurements were used.

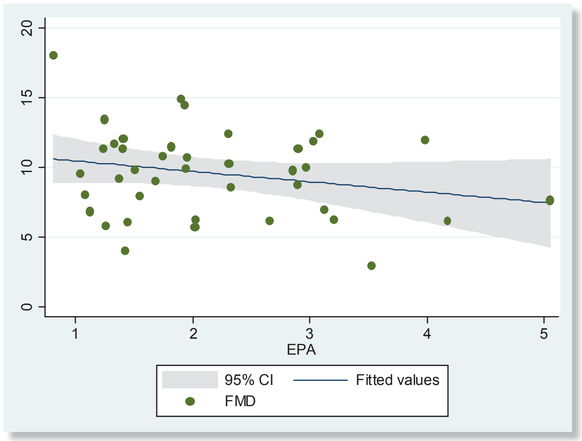
Food Questionnaire

The subjects filled out a Food Frequency Questionnaire regarding their fish intake. Patients, who followed the general Danish recommendations (fish intake at least twice a week), were classified as belonging to the Fish+ group (n=19), while those, who consumed fish less than twice a week, were in the Fish÷ group (n=21).

Results

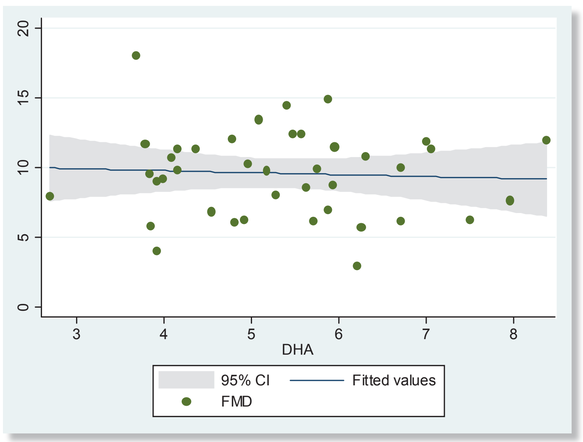
The sample mean of FMD in the population was 9.6%. Pearsons coefficient of correlation between FMD and EPA was -0.23 (95%CI: -0.51;0.09); p=0.15 and -0.06 (95%CI:-0.36;0.26); p=0.72 between FMD and DHA. In the Fish+ group, the sample mean of FMD was 9.1% (± 1.4) and 10.1% (± 1.5) in the Fish÷ group. The difference in sample mean of FMD between the Fish+ group and the Fish÷ group was ÷1.0 (±2.0) ; p=0.33.

FMD vs. EPA



Correlation: -0.23 (p=0.15)

FMD vs. DHA



Correlation: -0.06 (p=0.72)

Conclusion

There was no correlation between fish intake, the content of EPA and DHA in serum phospholipids and FMD. The study, therefore, do not suggest any beneficial effect of fish intake or of EPA and DHA on endothelial function.

AALBORG HOSPITAL
Aarhus University Hospital