Aalborg Universitet



## U-Shaped Association Between Consumption of Marine n-3 Fatty Acids and **Development of Atrial Fibrillation**

a Danish Cohort Study

Rix, Thomas Andersen; Joensen, Albert Marni; Riahi, Sam; Lundbye-Christensen, Søren; Tjønneland, Anne; Schmidt, Erik Berg; Overvad, Kim

Publication date: 2013

Document Version Accepted author manuscript, peer reviewed version

Link to publication from Aalborg University

Citation for published version (APA):

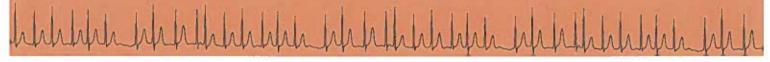
Rix, T. A., Joensen, A. M., Riahi, S., Lundbye-Christensen, S., Tjønneland, A., Schmidt, E. B., & Overvad, K. (2013). U-Shaped Association Between Consumption of Marine n-3 Fatty Acids and Development of Atrial Fibrillation: a Danish Cohort Study. Poster presented at Dansk Cardiologisk Selskabs årsmøde 2013, Nyborg, Denmark.

#### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
? You may not further distribute the material or use it for any profit-making activity or commercial gain
? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.



# U-Shaped Association Between Consumption of Marine n-3 Fatty Acids and Development of Atrial Fibrillation - a Danish Cohort Study

Thomas Andersen Rix<sup>1</sup>, MD; Albert Marni Joensen<sup>1</sup>, MD, PhD; Sam Riahi<sup>1,2</sup>, MD, PhD; Søren Lundbye-Christensen<sup>1</sup>, MSc, PhD; Anne Tjønneland<sup>3</sup>, MD, PhD, DMSc; Erik Berg Schmidt<sup>1</sup>, MD, DMSc; Kim Overvad<sup>1,4</sup> MD, PhD

<sup>1</sup>Department of Cardiology, Aalborg AF Study Group, Center for Cardiovascular Research, Aalborg University Hospital, Denmark <sup>2</sup>Department of Health Science and Technology, Faculty of Medicine, Aalborg University <sup>3</sup>Danish Cancer Society Research Center, Copenhagen, Denmark <sup>4</sup>Section for Epidemiology, Department of Public Health, Aarhus University, Denmark

#### **Objectives**

The aim was to investigate the association between consumption of marine n-3 polyunsaturated fatty acids (PUFA) and development of atrial fibrillation (AF).

#### Background

Previous studies have suggested a lower risk of AF with higher intakes, but results have been inconsistent.

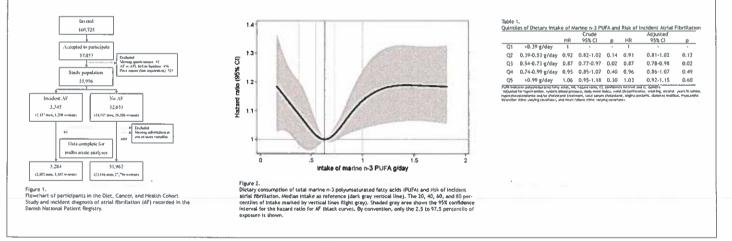
#### Methods

A total of 57,053 Danish participants 50 to 64 years of age were enrolled in the Diet, Cancer, and Health Cohort Study between 1993 and 1997. Dietary intake of fish and marine n-3 PUFA was assessed by a semi-quantitative food frequency questionnaire. Time-to-event data was analysed in a Cox proportional hazards regression model using restricted cubic splines.

### Results

3,345 incident cases of AF occurred over 13.6 years (Figure 1). The association was U-shaped between consumption of marine n-3 PUFA and risk of incident AF, with the lowest risk of AF at moderate intake near the median consumption of 0.63 g/day (Figure 2). When comparing quintiles of marine n-3 PUFA intake, a 13% statistically signif-

icant lower risk of incident AF was seen in the middle quintile (HR 0.87, 95% CI 0.78-0.98) compared with the lowest quintile of intake (Table 1). Intake of total fish, fatty fish, and the individual n-3 PUFA, eicosapentaenoic acid, docosahexaenoic acid, and docosapentaenoic, acid also showed U-shaped associations with incident AF.



# Conclusions

We found a U-shaped association between consumption of marine n-3 PUFA and risk of incident AF, with the lowest risk close to the median intake of total marine n-3 PUFA.

A moderate dietary intake of marine n-3 PUFA may thus be preferable for primary prevention of AF.

Correspondence: Thomas Andersen Rix, e-mail tar@rn.dk www.AalboreAF-StudyGroup.dk

AALBORG UNIVERSITY HOSPITAL

NORTH DENMARK REGION