

ORIGINAL RESEARCH COMMUNICATION

# Long-term fish consumption is associated with protection against arrhythmia in healthy persons in a Mediterranean region—the ATTICA study<sup>1, 2, 3</sup>

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**Background:** Dietary habits have long been associated with many manifestations of cardiovascular disease.

**Objective:** We sought to investigate whether a diet enriched with fish and n–3 fatty acid consumption are associated with changes in the potential duration of the electrical action, as represented by the QT duration on a resting electrocardiogram, in a population-based sample of Greek adults.

**Design:** During 2001 and 2002, we randomly enrolled 1514 men (18–87 y old) and 1528 women (18–89 y old) stratified by age and sex distribution (in the 2001 Greek census) from the Attica area, Greece. We studied several demographic, anthropometric, lifestyle, dietary, and bioclinical factors of the participants. Dietary habits (including fish consumption) were evaluated by using a validated food-frequency questionnaire. All subjects underwent electrocardiography with a 12-lead surface, in which, along with several other indexes, QT duration was measured, and the heart rate–corrected QT (QTc) was calculated (corrected by using Bazett's rate). The tested hypothesis was evaluated through multiple linear regression analysis, after control for physical activity status, sex, age, medication intake, and several other potential confounders.

**Results:** Compared with fish nonconsumers, those who consumed >300 g fish/wk had a mean 13.6% lower QTc ( $P < 0.01$ ). These findings were confirmed after adjustment for age, sex, physical activity status, BMI, smoking habits, intake of nuts, and other confounders. Moreover, compared with fish nonconsumers, those who consumed  $\geq 300$  g fish/wk had a 29.2% lower likelihood of having QTc intervals >0.45 s ( $P = 0.03$ ).

**Conclusions:** Long-term consumption of fish is associated with lower QTc interval in free-eating people without any evidence of cardiovascular disease. Thus, fish intake seems to provide antiarrhythmic protection at a population level.

**Key Words:** Fish consumption • n–3 fatty acids • QTc interval • arrhythmia

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