

Public Health 2020: Moderate egg consumption and all-cause and specific-cause mortality in the epic-Spain study

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Purpose: Dietary guidelines for egg consumption for general population differ among public health agencies. Our aim was to investigate the association between egg intake and both all-cause and specific-cause of mortality in a Mediterranean population. **Methods:** The European Prospective Investigation into Cancer and Nutrition (EPIC)-Spain cohort included 40,621 men and women aged 29-69 years old in the nineties from 5 Spanish regions. After a mean of 18 years of follow-up, 3,561 deaths were recorded, of which 1,694 were from cancer, 761 from CVD, and 870 from other causes. Data on egg consumption was collected using a validated diet history at recruitment. Cox proportional hazards models, adjusted for confounders, were used in the analyses. **Results:** The mean (standard deviation) egg consumption was 22.0 g/day (15.8) and 30.9 g/day (23.1) in women and men, respectively. No association was observed between egg consumption and all-cause mortality for the highest vs the lowest quartile (HR 1.01; 95% CI 0.91-1.11; P trend = 0.96). Likewise, no association was observed with cancer and cardiovascular diseases mortality. However, an inverse association was found between egg consumption and deaths for other causes (HR 0.76; 95% CI 0.63-0.93; P trend = 0.003), particularly for deaths from the nervous system (HR 0.59; 95% CI 0.35-1.00; P trend = 0.036). No interaction was detected with the adherence to Mediterranean diet. **Conclusions:** This study shows no association between moderate egg consumption, up to 1 egg per day, and main causes of mortality in a large free-living Mediterranean population.

Dietary guidelines for egg consumption for general population differ among public health agencies. Our aim was to investigate the association between egg intake and both all-cause and specific-cause of mortality in a Mediterranean population. The European Prospective Investigation into Cancer and Nutrition (EPIC)-Spain cohort included 40,621 men and women aged 29-69 years old in the nineties from 5 Spanish regions. Data on egg consumption was collected using a validated diet history at baseline. Cox proportional hazards models, adjusted for confounders, were used in the analyses. The mean egg consumption was 22.0g/d in women and 30.9g/d and men. After a mean of 18 years of follow-up, 3,561 deaths were recorded, of whom 1,694 were from cancer, 761 from CVD, and 870 from other causes. No association was observed between egg consumption and all-cause mortality for the highest vs the lowest quartile (HR = 1.01; 95% CI 0.91-1.11; P-trend = 0.96). Likewise, no association was observed with cancer and cardiovascular diseases mortality. However, an inverse association was found between egg consumption and

deaths for other causes (HR = 0.76; 95% CI 0.63-0.93; P-trend = 0.003), particularly for deaths from the nervous system (HR = 0.59; 95% CI 0.35-1.00; P-trend = 0.036). In conclusion, this study shows no association between moderate egg consumption, up to 1 egg per day, and main causes of mortality in a large free-living Mediterranean population.

There is still room for further studies analyzing the long-term health impact of specific dietary patterns observable in regions belonging to the Mediterranean area. The aim of the study is to evaluate how much a diet practiced in southern Italy is associated to a risk of mortality. The study population included 2472 participants first investigated in 1985, inquiring about their frequencies of intake of 29 foods using a self-administered questionnaire covering the previous year. The population was followed up for mortality until 31 December 2017. Cox-based risk modeling referred to single foods, food groups, the results of principal component analysis (PCA), and a priori indexes. Single food analysis revealed eggs, fatty meat, and fatty/baked ham to be inversely associated with mortality. Furthermore, one of the 5 PCA derived dietary patterns, the "Farmhouse" pattern, showed a higher hazard ratio (HR), mostly driven by dairy products. In subsequent analyses, the increased risk of mortality for fresh cheese and decreased risk for fatty ham and eggs were confirmed. The a priori diet indexes (Italian Meddiet, Meddietscore, Dietary Approaches to Stop Hypertension (DASH), and Mediterranean-DASH Intervention for Neurodegenerative Delay diet (MIND) indexes) showed borderline inverse relationships. In a Mediterranean population with an overall healthy diet, foods such as eggs and fatty meat, reflecting dietary energy and wealth, played a role in prolonging the life of individuals. Our study confirms that some dairy products might have a detrimental role in mortality in the Mediterranean setting.