To assess the association between egg consumption and demographic characteristics and weight status.

All data were analyzed using SAS version 9.3 (SAS Institute, Cary, NC).

Eggs eaten alone or as a major ingredient represent 1.4% of all foods consumed by women on any given day.

Linear regression was used to determine factors predicting total grams of eggs consumed.

Mexican-American women were more likely to consume eggs than Non-Hispanic White women.

Obese women were more likely to consume eggs than lean women (OR 0.76, 95% CI: 0.68-0.88).

Low consumption of eggs, in general, supports the need for an intervention to increase egg consumption.

Energy-adjusted Dietary Intake by Egg Consumption Category

Summary

Factors that Predict Egg Consumers vs. Non-Consumers. Probability is Modeled with Non-Consumer as the Referent Category.

Factors Predicting the Amount of Eggs Consumed:

Obese women consume more grams of eggs than younger women, obese women consume more grams of eggs than lean women and women consuming more calories consume more eggs.

No other variables examined (e.g., race, income, education, or smoking) predicted the amount of eggs consumed.

Egg Consumption, BMI and Waist Circumference:

Egg consumers and non-consumers did not differ in BMI (29.1 vs. 28.7 kg/m²; p=0.1683) or waist circumference (96.7 vs. 95.7 cm; p=0.43), after controlling for age, race, education, physical activity and smoking status.

Conclusions

Low consumption of eggs, in general, supports the need for an intervention that would guide those at risk for poor diet quality toward choosing a more healthful diet containing eggs.

More research is needed on egg consumption in pregnant women and teenage girls as a potential target for education about eggs.

Funding by the American Egg Board

Characterizing egg consumption is difficult considering the variety of foods containing eggs and the many ways that eggs are consumed. Since eggs are high in protein, nutrient dense, and economical their consumption could be an important contributor to the diets of individuals whose diets are of poor quality. Few studies have been conducted to characterize the U.S. population based on egg consumption.

The specific objectives were:

- To examine the association between egg consumption and demographic characteristics and weight status.
- To examine the association of egg consumption in a national sample and in a low-income sample with diet quality as measured by intakes of selected dietary factors and key nutrients found in eggs including protein, cholesterol, vitamin B12, vitamin D, and choline.

Methods

Identification of Egg Consumers

Diary intake was assessed by 24-hour recall and analysed using the USDA FNDDS version 4.1 and 5. FNDDS food codes were merged with USDA Standard Reference (SR) codes to obtain ingredient level food data to identify mixed foods containing eggs.

Data Source and Sample:

- NHANES—reporting an allergy to eggs, and women who were pregnant or lactating were excluded, resulting in a final analytical dataset of 5,319 women.

Characteristics of Egg Consumers

- Ethnicity: Asians vs. Non-Hispanic White
- Age: 51-70 vs. >70
- Education: Some College / AA Degree vs. College Graduate or above vs. High School Grad/GED
- Race: Mexican American vs. NH-Black vs. NH-White
- Weight Status: Obesity vs. Lean
- PIR: 130% vs. <130%
- Income: College Grad or Above vs. AA Degree vs. Some College / GED
- Total Energy Intake: Non-consumer vs. Consumer

Statistical Analysis

- All data were analyzed using SAS version 9.3 (SAS Institute, Cary, NC).
- Survey procedures were used in the analysis to account for sample weights, unequal selection probability, and cluster design.
- All models were adjusted for age, education level, smoking status (current, former, never-smoked), physical activity (measured in MET units), race and socioeconomic status.
- Weight status was assessed using body mass index (BMI). Logistic regression models were used to determine predictors of egg consumption. Coded as yes/no for any form of eggs. Predictor variables included income, body weight status, race, education level, smoking status, and physical activity level.
- Linear regression was used to determine factors predicting total grams of eggs consumed.
- Survey regression models were used to evaluate differences in caloric intake, macro- and micro-nutrient intake between egg consumers and non-consumers, and to evaluate differences in grams of eggs consumed between lean, overweight, and obese women.

Egg Consumption in Adult Women from the National Health and Nutrition Examination Survey (NHANES, 2007-2010)

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EGG CONSUMPTION IN ADULT WOMEN FROM THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (NHANES, 2007-2010)

Results

Demographic Characteristics of Egg Consumers and Non-Consumers

Factors that Predict Egg Consumers vs. Non-Consumers. Probability is Modeled with Non-Consumer as the Referent Category.

Conclusions

Low consumption of eggs, in general, supports the need for an intervention that would guide those at risk for poor diet quality toward choosing a more healthful diet containing eggs.

More research is needed on egg consumption in pregnant women and teenage girls as a potential target for education about eggs.

Longitudinal data are needed on populations where eggs are consumed frequently to be able to more adequately address associations between egg consumption and health outcomes.