



Omega-3 Fatty Acid Food Frequency Questionnaire Development and Testing

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Outline

- Need for omega-3 Food Frequency Questionnaire (FFQ)
- Tool Design and Characteristics
- Development History
- Pilot Validation
- Future Modifications
- Further Research



Why an omega-3 FFQ ?

- Research articles address fish intake
- Fish intakes are low in Midwest
- Marine and plant food sources provide omega-3's
- 2002 Adequate Intake is established for omega-3 fatty acids



Goals

- To develop a FFQ to accurately estimate total omega-3 fatty acid intake
- To develop a sensitive tool for measuring change due to interventions



Tool Design

- Semi-quantitative (S,M,L portions)
 - USDA Food Guide Pyramid
 - Small= ½ portion
 - Medium= 1 portion
 - Large= 1½ portion
- Eleven food categories
 - Fish, Meat, Eggs, Dairy, Vegetables, Fruit, Nuts/Seeds, Grains, Fats/Oils, Legumes, Herbs/Spices



Tool Design

- Eight Frequencies
 - Once a month
 - Less than once a week
 - 1-2 times a week
 - 3-4 times a week
 - 5-6 times a week
 - Daily
 - More than once a day



FFQ Foods

- USDA Nutrient Data Base
- Food Processor (ESHA)
- Inclusion Criteria
 - ≥ 10 mg omega-3 fatty acid/medium serving



Characteristics Of FFQ

- Complete in 20 minutes
- Eight page instrument
- Data entry into spreadsheet for calculation of intake
- Number of food items adjusted for subject base



Development History

- Goal-Develop an easy to administer FFQ
 - 25 College nutrition class students
 - Tested Reliability for food items
 - Test-retest 4 weeks apart
 - Foods of ≤ 0.50 reliability were removed, excluding beef and chicken
- Pilot Tested with 36 low income consumers



Validation Pilot Study

- Goal-Validate FFQ with food recalls
- Adapted for Cardiac patients
 - N=28, 17 women, 11 men
 - Measured association with three 24-hour recalls
 - Retest-retest FFQ 2 weeks apart



Pilot Study Results

- Pearson correlation 0.42 ($p < 0.05$) between FFQ and food recalls (common correlations 0.40-0.70)
- Alpha coefficient of 0.83 between 1st and 2nd administration of FFQ
- 28 foods contributed 90% of omega-3 intake
- Top 2 foods were plant sources



Future Needs

- ALA, EPA, DHA separate nutrient values
- Decrease number of food items
- Include fortified foods
- Web availability with automatic nutrient calculation for use by practitioner/patient
- Condensed paper version for clinical use



Future Research

- FFQ sensitive enough to measure eating behavior change for monitoring outcomes?
- Adaptations required for diverse audiences
- Continuous change in food supply with omega-3 fatty acid enriched foods



References

- Ritter-Gooder PK, Lewis NM, Heidal K, et al.
JADA 2006;106:1251-1255.
- Waltz-Hill, M. M.S. Thesis UNL;2000