Fat Composition of Vegetable Oil Spreads and Margarines in the USA: A Marketplace Analysis

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Learning Outcome: After this presentation, the attendee will be able to describe how the fat composition of vegetable oil spreads has changed over the last decade and explain why modern trans-fat free vegetable oils spreads are good dietary choices to replace saturated fat in the diet consistent with the recommendations of US Dietary Guidelines.

Replacing saturated fatty acids (SFAs) in the diet with unsaturated fatty acids (UFAs) provided in part from vegetable oil spreads ("spreads") has been shown to have significant public health benefits. However, the composition of spreads has been recently questioned due to their trans fatty acids (TFAs) content. Our objective was to assess the fat composition of US spreads to understand how they have evolved over time. We measured fat composition via capillary gas chromatography in 43 and 46 US spreads sampled respectively in 2011 and 2013. We compared our results to analytical data from 2002. From 2002 to 2013, as a percentage of fat, UFAs increased from 61.2% to 71.1% ($p<0.01$), while TFAs decreased from 19.2% (1.7 g per 14g serving) to 3.6% (0.3 g per 14g serving) ($p<0.001$). At the same time SFAs increased from 19.5% to 25.3% (percentage of fat), as a partial replacement for TFAs. At the end of 2013, 80% of the national volume of branded spreads no longer contained partially hydrogenated vegetable oils (PHVOs) and was free of industrial trans fat. Over the last decade, the fat quality of US spreads improved due to a marked reduction of trans fat and a limited replacement by saturated fat. Most modern spreads no longer contain PHVOs, have a fatty acid composition similar to vegetable oils and can be an important source of unsaturated fat in the diet. These products are recommended as a replacement for saturated fat as part of US dietary guidelines.

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Fat and Cholesterol Values for 'Lean' Beef Cuts

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Learning Outcome: The participant will be able to state the criteria for 'lean' beef and name several cuts of 'lean' beef, for advising clients with healthy dietary patterns.

Background: Healthy eating patterns in the Dietary Guidelines for Americans emphasize nutrient-dense foods, including lean meat. "Lean" criteria are total fat <10 gm, saturated fat <4.5 gm, cholesterol < 95 mg, per 100 gm. The Beef in an Optimal Lean Diet (BOLD) study revealed that eating 3-5 ounces lean beef daily can be part of a heart-healthy diet. Changes in cattle production and trimming procedures have yielded new and leaner cuts. To obtain current beef data for the National Nutrient Database for Standard Reference (SR), USDA's Nutrient Data Laboratory recently completed a comprehensive collaborative 5-year study with beef industry and academia scientists.

Methods: Nationally representative beef samples (n=36/cut) were obtained using statistical sampling plans. Research protocols were developed for preparing raw and cooked samples. Nutrient values were determined using validated laboratory methodology and quality assurance procedures. Nutrient profiles for 42 cuts were released in SR24, SR25, and SR27. Data were analyzed using ANOVA.

Results: Nutrient values for "lean" beef cuts were compared. For example, mean differences per serving (85 gm/3 oz) among five cuts were observed, indicating 4.9-7.9 gm total fat ($p<0.005$), 2.5-3.8 gm saturated fat ($p=0.03$), 69-81 mg cholesterol ($p=0.003$), and 2.3-3.5 gm monounsaturated fat ($p=0.03$). Differences among cuts were insignificant for polyunsaturated fat (0.30-0.43gm) and trans fat (0.29-0.41gm).

Conclusions: Results revealed that 25 recently analyzed beef cuts can be defined as 'lean' compared to six in 1989. Nutrient profiles are available at www.ars.usda.gov/nutrientdata and on retail labels. These data enable nutrition professionals to identify many lean beef choices.

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Do the Labels Tell the Truth about Sodium?

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Learning Outcome: The participants will have a better understanding of sodium label values and their limitations.

Nutrient declarations on commercially processed and restaurant foods items can potentially influence consumer purchase behavior. A cross-sectional study was conducted to determine if sodium values on Nutrition Facts Panel (NFP) or restaurant websites are consistent with those obtained from chemical analysis. Six-hundred and fifty five samples representing 54 commonly consumed foods and brands with the highest market shares were sampled nationwide and analyzed for sodium using Inductively Coupled Plasma method, under the USDA's National Food and Nutrient Analysis Program. Sodium declarations on the NFP or restaurant websites corresponding to the samples were examined. Means and coefficients of variation were determined for the label and analytical values for each of the 54 items, percent differences across food categories or source (store or restaurant) and tested for significance using independent t-test and Mann Whitney tests. Label values were over + 20% different for 15% of the 655 samples. Mean label sodium values were higher than analytical values by over 10% for 21/54 foods, and lower by 10% in only 2/54 foods. The differences were significant for a quarter of the foods ($p<0.05$). Differences were the largest for canned vegetables, vegetable juice and savory snacks and crackers, with label values higher by about 50%, 19% and 16% respectively. No differences were observed for restaurant foods compared to foods obtained from stores ($p=0.3141$). While the majority of the labels provide accurate information regarding sodium to consumers, some caveats exist. Knowledge about these limitations can provide dietitians a more pragmatic perspective.

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Consumption of Frozen Meals as Compared to Quick Service Restaurant Meals Is Associated with Better Nutrient Intakes in Adult Participants of The National Health and Nutrition Examination Survey (2003-2010)

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Learning Outcome: To determine the association of frozen meals as compared to meals from quick service restaurants to nutrient intake in adults.

What We Eat In America (WWEIA)/NHANES (2003-2010) data were used to determine associations between nutrient intake in adult (19+yrs) frozen meal (FM) consumers as compared to consumers of meals from quick service restaurants (QSR). Intake was determined using a 24 hour recall; FM consumers were defined as those who reported consumption of any of the 91 specific frozen meal food codes while QSR meal consumers were those who reported obtaining meals from "restaurant fast food/pizza." ANOVA and covariate adjusted means were determined using appropriate sample weights; significance was $p<0.01$. Compared to QSR consumers (n=6,238), FM consumers (n=287) had lower intakes of energy (2326±20 v 2073±51 kcal/d) and higher intake of nutrients of concern: dietary fiber (18.2±0.5 vs 14.3±0.2 g/d), calcium (1059±43 vs 924±11 mg/d), and potassium (3008±63 vs 2497±20 mg/d); vitamin D intakes while higher were not significantly different (4.8±0.4 vs 3.8±0.1μg/d). FM consumers also had lower intakes of saturated fat (25.7±0.7 vs 28.3±0.2 g/d) and solid fats (37.9±1.4 vs 46.4±0.5 g/d), intakes of added sugars while lower were not significantly different (17.6±0.9 vs 19.9±0.3 tsp/d) and had similar intakes of sodium (3761±97 vs 3568±21mg/d) as compared to QSR consumers. Additionally, FM consumers also had higher intakes of protein (90.0±2.2 vs 81.5±0.5 g/d), vitamin A (742±46 vs 519±7 μg RAE/d), vitamin C (101±8 vs 73±2 mg/d), and magnesium (340±10 vs 269±2 mg/d) as compared to QSR consumers. Frozen meal consumption was associated with lower energy intake and higher nutrient intakes as compared to QSR meal consumption patterns.

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