The Skinny on Trans Fats

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Why are Trans Fats a Problem?

1. Doubles risk of cardio-vascular disease compared to saturated fats
   - Increases LDL-cholesterol
   - Decreases HDL-cholesterol

<table>
<thead>
<tr>
<th>Lipids &amp; CVD Risk</th>
<th>High Risk (mg/dl)</th>
<th>Optimum (mg/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. Chol</td>
<td>240</td>
<td>&lt;180</td>
</tr>
<tr>
<td>LDL-C</td>
<td>&gt;160</td>
<td>&lt;100</td>
</tr>
<tr>
<td>HDL-C</td>
<td>&lt;40 (M) &lt;50 (F)</td>
<td></td>
</tr>
<tr>
<td>TRIG</td>
<td>&gt;400</td>
<td>&lt;150</td>
</tr>
</tbody>
</table>

JAMA 2001;285:2486-2497
Why are Trans Fats a Problem?

2. Causes weight gain even when consuming the same number and type of calories

- Fat weight vs. lean body mass
- Mostly found in the belly (visceral fat)
Why are Trans Fats a Problem?

3. Increases risk of type II diabetes
4. Decreases insulin sensitivity, increases blood glucose levels
Trans Fat Is a Greater Health Risk than Saturated Fat

<table>
<thead>
<tr>
<th>Good (HDL) Cholesterol</th>
<th>Bad (LDL) Cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans fat</td>
<td></td>
</tr>
<tr>
<td>Saturated fat</td>
<td></td>
</tr>
</tbody>
</table>
Where are Trans Fats?

*Naturally occurring:*
– Less than 20% consumed in this formed
– 2-5% of animal fat is trans fat
– Not considered harmful
– Included in FDA definition
Where are Trans Fats?

Manufactured:

- Hydrogenated fats including liquid shortenings, margarine
- Pastries, cookies, crackers, snack foods
- Fried foods (due primarily to liquid shortening)
- Most convenience/packaged foods with added fat
- Bouillon, soups, gravy mix, salad dressing
- Candy

Hydrogenation

Hydrogen + Vegetable Oil = Hydrogenated Vegetable Oil

Partially hydrogenated oils contain trans fat

Cis vs. Trans
# A Comparison

## Per tablespoon

<table>
<thead>
<tr>
<th></th>
<th>Total fat (g)</th>
<th>Sat fat (g)</th>
<th>Trans fat (g)</th>
<th>Chol (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter</td>
<td>10.8</td>
<td>7.2</td>
<td>0.3*</td>
<td>31.1</td>
</tr>
<tr>
<td>Marg (stick)</td>
<td>11</td>
<td>2.1</td>
<td>3.04</td>
<td>0</td>
</tr>
<tr>
<td>Liq marg</td>
<td>0.4</td>
<td>0.1</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>Liq Short</td>
<td>13</td>
<td>2</td>
<td>2.58</td>
<td>0</td>
</tr>
</tbody>
</table>

Why are We Using Partially Hydrogenated Fats?

- Used in food industry since 1911
- 1956 - “grandfathered” onto GRAS list
- Enhances shelf life
- Makes liquid oils into solids
  - Viable replacement for butter during shortages
- Decreases browning during cooking, frying
- Cheaper than butter
How Much Trans Fat is OK?

• Institute of Medicine (IOM) recommends eating “as little as possible” trans fat

• American Heart Association rec’d less than 2.5 gm/day

• 2.5-5% of kcal consumed
Where are Trans Fats in Restaurant Food?

![Bar chart showing the amount of trans fats in different food items. Legend:
- Light blue: checker nuggets
- Light green: apple danish
- Teal: 2 spring rolls
- Orange: fried fish filet
- Gray: slice pizza
- Yellow: French fries (sm)]

C Bell Globemedia Inc. (http://www.ctv.ca/generic/WebSpecials/transfat/index_story_1_a_1.html)
How is Trans Fat Disclosed?

- Trans fat data required on food labels as of Jan, 2006
  - Food manufacturers actively switching to low trans fat alternatives
    - Tropical oils
    - Non-hydrogenated vegetable oil
  - Food labels don’t tell the whole story
    - < 500 mg trans fat is reported as “0”
    - Look for “partially hydrogenated fat” in the ingredient list

Nutrition Facts

- Serving Size 1 cup (228g)
- Servings Per Container 2

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>% Daily Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 260</td>
<td>Calories from Fat 120</td>
</tr>
<tr>
<td>Total Fat 13g</td>
<td>20%</td>
</tr>
<tr>
<td>Saturated Fat 5g</td>
<td>25%</td>
</tr>
<tr>
<td>Trans Fat 2g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 30mg</td>
<td>10%</td>
</tr>
<tr>
<td>Sodium 660mg</td>
<td>28%</td>
</tr>
<tr>
<td>Total Carbohydrate 31g</td>
<td>10%</td>
</tr>
<tr>
<td>Dietary Fiber 0g</td>
<td>0%</td>
</tr>
<tr>
<td>Sugars 5g</td>
<td></td>
</tr>
<tr>
<td>Protein 5g</td>
<td></td>
</tr>
</tbody>
</table>

Vitamin A 4% • Vitamin C 2%
Calcium 15% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

<table>
<thead>
<tr>
<th>Calories: 2,000</th>
<th>Calories: 2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>Less than 65g</td>
</tr>
<tr>
<td>Sat Fat</td>
<td>Less than 20g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 300mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>Less than 2,400mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>Less than 300g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
</tr>
<tr>
<td>Calories per gram:</td>
<td>Carbohydrate 4 • Protein 4</td>
</tr>
</tbody>
</table>
Most Trans Fat We Eat Is Manufactured

79% Artificial
Source: Partially Hydrogenated Vegetable Oil

21% Naturally Occurring
Source: Meat and Dairy Products

Source: FDA Consumer magazine. September-October 2003 Issue. Pub No. FDA04-1329C
Major Food Sources of Artificial Trans Fat for U.S. Adults

- Cakes, Cookies, Crackers, Pies, Bread, etc.: 51%
- Margarine: 22%
- Fried Potatoes: 10%
- Potato Chips, Corn Chips, Popcorn: 6%
- Household Shortening: 5%
- Salad Dressing: 4%
- Breakfast Cereal: 1%
- Candy: 1%

## Replacing Trans Fat Is Feasible

<table>
<thead>
<tr>
<th>Partially hydrogenated vegetable oil</th>
<th>Regular vegetable oils (canola, soy, corn) that have not been hydrogenated, or newly developed trans fat-free fry oils with similar ‘fry life’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable shortening and margarine</td>
<td>Reformulated shortening and margarine with little or no trans fat. Read the label</td>
</tr>
<tr>
<td>Cakes, crackers, pastries, cookies, pies and hamburger buns</td>
<td>Many food brands are now free of trans fat</td>
</tr>
<tr>
<td>Fry oils for French fries, chicken nuggets, fish fillets, and doughnuts</td>
<td>Regular oils or newly developed trans fat-free fry oils with longer ‘fry life’</td>
</tr>
</tbody>
</table>
Availability of Alternatives

- 9 billion pounds utilized in N. America
- 3.27 billion pounds of alternatives now ready
- Fats available at equivalent costs
- “…Adequate supplies of trans fat alternatives currently that could be used in schools.”
  - Email: R.Reeves, President, Institute of Shortening & Edible Oils, Inc.
Communities Taking Action

Action to reduce trans fat in schools & communities

- North Carolina bans trans fats in all public school facilities
- 12 school districts noted by SNA
- 18 states with proposed legislation
Other communities, countries are ahead of the curve

- **Action to reduce trans fat in communities**
  - Tiburon is known as a trans-fat free city
  - Chicago City Council Alderman Burke proposed a mandate for Chicago restaurants to take "artificial trans fats" off their menu of ingredients. Proposed fines range from $200 to $1,000 a day.
  - New York City Dept of Health and Mental Hygiene sent letters to 20,000 restaurateurs and 14,000 food markets and suppliers to voluntarily eliminate partially hydrogenated oils in August 2006
Other Countries

• Actions to decrease use of partially hydrogenated fats

  – Denmark
    • mandates that all oils and fats used in locally made or imported food must contain less than 2% industrially produced trans fats

  – Netherlands, Norway, Finland
    • Established a cooperative effort between government and food industries to substantially reduce use and consumption of trans fats

  – Canada
    • Nov, 2004 - Health Canada formed a task force to develop recommendations and strategies to reduce trans fat as much as possible; An interim report issued August, 2005; legislation will follow
The Transition from Processed Food

Will
Labor
Facilities
Funds for Fresh Nutrition Education
Hope is a fat free & powerful fuel...

thank you!

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