Fats And Oils
Fats and Oils

Lipids are also known as fats and oils.

- Fats are solid at room temperature
- Oils are liquid at room temperature
- Visible fats can be clearly seen in or on food e.g. butter, cream, fat on meat
- Invisible fats and oils on the other hand are not clearly visible as they are combined with the food
Classification of Fats

**ANIMAL**

**Saturated:**
- Suet (adipose tissue – pastries, steamed puddings and mincemeat)
- Dripping (fat melted from beef – roasting, frying)
- Lard (pig fat – pastry making, frying)
- Butter
- Eggs

**Polyunsaturated:**
- Oily fish
- Fish liver oils
## Classification of Fats

### VEGETABLE

**Unsaturated:**

- Vegetable oils (maize, olive, soya beans)
- Margarine
- Nut oils (coconut, almond and walnut)
- Seeds (sesame, sunflower and rapeseed)
Factors affecting choice of Fats and Oils

- **Health:** Choice of fat/oil may depend on saturated /unsaturated fat content e.g. Butter versus Low Fat spread

- **Plasticity:** Ease of spreading and creaming

- **Flavour:** Use in salad dressings e.g. Olive Oil. Butter is thought to have better flavour than margarine in cake making
Nutritional Value

**Protein:** Butter and Margarine contain traces while oils are usually lacking

**Fat:** Butter approx 82%, Oils approx 99.9%. Low fat options approx 40%. Concentrated source of energy (9kcal per 1g of fat)

**Carbohydrate:** Lacking

**Vitamins:** Source of Fat Soluble Vitamins – A, D, E and K

**Minerals:** Traces of calcium in butter and margarine

**Water:** Varies in proportion to fat content
Dietetic Value

Fats and Oils:

- Provide heat and energy
- Protect delicate organs
- Provide insulation
- Delay hunger
- Supply essential fatty acids
- Add flavour to food
Culinary Uses of Fats and Oils

- Improve appearance of sauces
- Prevent sticking in cooking e.g. frying
- Create emulsions e.g. mayonnaise
- Add flavour to food
- Give pastry its crumbly texture (Shortening)
- Act as a preservative e.g. Improves shelf life of bread and cakes
Processing of Vegetable oils

- Plant material is cleaned
- Cleaned material is heated slightly
- Pressing extracts crude oil
- Impurities affect the flavour, colour and clarity of oil
- Crude oil is treated to remove impurities e.g. moisture, resins, gums, free fatty acids
**Margarine**

**Definition:** Water in oil emulsion originally developed as butter substitute.

<table>
<thead>
<tr>
<th><strong>Block</strong></th>
<th><strong>Soft</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Block Margarine" /></td>
<td><img src="image" alt="Soft Margarine" /></td>
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</table>

- Made mainly from vegetable oils but can contain fish and animal oils
- High in saturated fat
- Foil/waxed paper wrapping

**Uses:** Spreading, baking and frying

- Contains vegetable oils, whey/buttermilk and water
- High in saturated fat (but a little less than block margarine)
- Packaged in plastic tubs

**Uses:** Spreading, baking and frying
Manufacture of Margarine

**Oil Extraction:** Oils from various sources are extracted and refined

**Hydrogenation:** Hydrogen is forced through the oil

**Blending:** Different oils are mixed together

**Other ingredients added:** These include water, skimmed milk, salt, flavouring, colours and vitamins

**Emulsification:** Emulsifying agent is added. At this point, the mixture becomes solid

**Packaging:** Weighed, wrapped and labelled
# Dairy Spreads

<table>
<thead>
<tr>
<th>Dairy Spread</th>
<th>Low-fat dairy spreads</th>
<th>Spreadable low-fat butters</th>
<th>Functional Dairy Spreads</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ingredients</strong></td>
<td>Water, vegetable oil, milk proteins, emulsifiers, stabilisers, salt, colourings, Vitamins A,D, E</td>
<td>Water, cream, milk protein, salt, potassium sorbate, beta-carotenes, Vitamins A, D, E</td>
<td>Sunflower oil, vegetable oil, buttermilk, plant stanol ester, water, salt, emulsifiers, stabilizers, carotene, Vitamins A and D</td>
</tr>
<tr>
<td><strong>Nutritional Info</strong></td>
<td>• Trace Protein</td>
<td>• Protein 7%</td>
<td>• Trace Protein</td>
</tr>
<tr>
<td></td>
<td>• Fat (38 – 40%)</td>
<td>• Fat 40%</td>
<td>• No Hydrogenated fatty acids</td>
</tr>
<tr>
<td></td>
<td>• Low in saturates</td>
<td>• Higher in saturated fat</td>
<td>• Virtually no trans fatty acids</td>
</tr>
<tr>
<td></td>
<td>• High in mono-unsaturates</td>
<td></td>
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<td><strong>Examples</strong></td>
<td>Dairygold Light, Avonmore Extra-light</td>
<td>Connaught Gold</td>
<td>Benecol, Flora Pro-Active</td>
</tr>
</tbody>
</table>
Storage of Fats and Oils

**Oils:** Store in a cool, dry dark place

**Butter/Margarine/Dairy Spreads:** Store in the fridge

**Important**

- Keep fats covered to prevent absorption of smells and flavors
- Check best before dates