ELIMINATING THE CONSUMPTION OF TRANS FATS IN SOUTH-EAST ASIA

AN IMPLEMENTATION BRIEF
What are *trans* fats?

*Trans* fats are unsaturated fatty acids having at least one unsaturated, non-conjugated double bond in the *trans*, (rather than the typical *cis*) configuration.\(^1\) They naturally occur through anaerobic fermentation in the gut of ruminant animals. Industrially produced *trans* fats are formed by modification of unsaturated fat during industrial processing methods, mainly through partial hydrogenation in the presence of a metal catalyst and high heat.\(^2\) Partial hydrogenation is the key mechanism where oil is hardened for commercial purposes to change its texture, prevent rancidity and tolerance to repeated high temperatures. The proportion of industrially produced *trans* fats in diets are usually much greater than ruminant *trans* fat.\(^1\)

How do *trans* fats enter the food chain?

Use of partially hydrogenated vegetable oil (PHVO), the commonest source of *trans* fat, is popular in the manufacture of bakery products. They are low cost, and semisolid at room temperature, thus easy to use in baked products. PHVO also reduce rancidity and impart greater stability during high temperature commercial deep-frying.\(^1\) The quantity of *trans* fat formed in commercial baking and deep-fat frying of vegetable oils is usually 0.2 - 1 %,\(^3\) Domestic frying processes have little impact on the dietary intake of *trans* fats.\(^4\)

Consumption of *trans* fats in South-East Asian countries

There was a dearth of country data on *trans* fats intake, with information from only a few small studies in India,\(^5\) \(^6\) \(^7\) Thailand and Indonesia.\(^8\) \(^9\) However, Thailand has recent nationwide data (unpublished observation). An estimation and quantification of global consumption of key dietary fats and oils by country, age, and sex in 1990 and 2010 provides an approximate indication of consumption levels.\(^10\) *Trans* fats may amount to a daily average consumption for adults ≥ 20 years of between 0.5-1.24 % energy/day in most South-
East Asian countries, indicating that trans fat intakes maybe somewhat lower than in many high income countries.¹⁰

![Trans fat intake (% energy) for adults ≥20 years (2010)](image)

Source: BMJ 2014; 348 doi: https://doi.org/10.1136/bmj.g2272

**Why restrict trans fat from diets?**

Consumption of trans fats are associated with an increased risk of cardiovascular disease.¹¹ ¹² The removal of PHVO containing industrially produced trans fats from the food supply is recommended by WHO as a public health intervention (best buy) for reducing the risk of noncommunicable disease.¹³

The FAO WHO Population Nutrient Intake Goals provide the following recommendations regarding trans and saturated.¹⁴

Energy from trans fat should be less than 1% of total energy. (average energy intake of 2000 kcal x 0.01)/9 = 2.2 g/day.

Energy from saturated fat should be less than 10% of total energy (average energy intake of 2000 kcal x 0.1)/9 = 22 g/day.
Policy options for reducing *trans* fats from human diets

Eliminating *trans* fats from the food supply of countries through development of legislation to ban their use in the food chain is mandated in the Global Action Plan for the Prevention and Control of NCDs 2013-2020, endorsed by the Sixty Sixth World Health Assembly (WHA66.10) in 2013 and in its updated Appendix 3. The adoption of national policies that eliminate industrial *trans* fats is also recommended in the Action plan for the prevention and control of noncommunicable diseases in South-East Asia, 2013–2020. The following actions have been practiced by countries to limit *trans* fat intake.

<table>
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<tr>
<th>Legislation</th>
<th>Reformulation</th>
<th>Labelling</th>
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<tr>
<td>• Set legislative limits on <em>trans</em> fat content in consumable fat, including oils and food products.</td>
<td>• Promote and negotiate voluntary reductions in <em>trans</em> fat use by food industry.</td>
<td>• Enact mandatory labelling of <em>trans</em> fat in pre-packaged food labels</td>
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**Effectiveness of policy options**

A review of policies to reduce *trans* fats (mostly from high income countries) indicate that the above policy measures, implemented singly or in combination have been effective in reducing *trans* fat usage and even translated into reduced CVDs in some instances. National and local legislative actions proved to be more effective than labelling policies. National bans virtually eliminated *trans* fats from the food supply and local level bans were very successful in their removal from fried foods. The effects of mandatory *trans* fats labelling of pre-packaged foods and voluntary limits were more variable and depended largely on the food category. The review concluded that a voluntary ban or labelling may not be effective in countries where awareness of *trans* fats is low, and also that the higher cost of products with voluntary *trans* fats limits would deter their consumption by lower socio economic groups thus causing social equity issues.
Implementation of *trans* fats policies in South-East Asia

India has gazetted that *trans* fat in vegetable fats, vanaspati oil, bakery and industrial margarine and bakery shortening should be restricted to 10% (2011) and reduced to 5% in 2016. The Food Safety and Standards Authority of India has also implemented mandatory labeling of *trans* fats and saturated fats on vanaspati packs, edible oils and food products containing vanaspati. *(Gazette Notification No 4/15015/30/2011)*

In Thailand, the Thai Food and Drug Administration have recently proposed a new requirement where partially hydrogenated oils would be banned for foods that are produced or imported for sale in Thailand.  

**Policy options to reduce *trans* fats and their possible effectiveness**

<table>
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<tr>
<th>Policy measure</th>
<th>Targets most foods with industrial <em>trans</em> fats</th>
<th>Consumer reach and equity</th>
<th>Effect on informal sector foods</th>
<th>Cost</th>
<th>Potential for substitution to saturated fats</th>
<th>Monitoring and follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting legislative limits on <em>trans</em>-fat content in consumable oils and foods</td>
<td>Highly effective</td>
<td>Highly effective</td>
<td>Effective</td>
<td>Low at national level</td>
<td>Potential for substitution exists.</td>
<td>Cost and resources lower than for other measures</td>
</tr>
<tr>
<td>Negotiating voluntary reductions in <em>trans</em> fat usage by food industry</td>
<td>Less effective</td>
<td>Not effective</td>
<td>Not effective</td>
<td>High due to need for public education</td>
<td>Potential for substitution exists.</td>
<td>Product and population-intake analyses needed.</td>
</tr>
<tr>
<td>Mandatory labelling of <em>trans</em> fat</td>
<td>Less effective</td>
<td>Not effective</td>
<td>Not effective</td>
<td>High due to need for public education</td>
<td>Potential for substitution and claims exists.</td>
<td>Similar to voluntary reductions</td>
</tr>
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</table>
Considerations for countries planning to implement policies on *trans* fat

Situational analysis

**Data on *trans* fat**

- Generate in-country evidence of *trans* fat content of food fats and oils, including fats used in bakery and other food industries.
- Generate information on *trans* fat content of commonly consumed bakery and fried foods to identify foods high in *trans* fats (pre-packaged and other foods).
- Assess average population intake of *trans* fats through dietary surveys or blood analysis.

**Technical information**

- Consult with food technology experts and industry to
  a) gain understanding of the country’s technological capacity on methods to reduce *trans* fats.  
  b) promote unsaturated fats as the preferred alternative, including n-3 polyunsaturated fats, given their cardiovascular protective effect.
  c) identify technical assistance needed by industry.
- Assess the country capacity to monitor the legislation, including the availability of accredited food testing facilities.

**Existing regulations**

- Examine existing food legislation to see existing regulations on fats and oils.
- Examine current regulations on health claims to assess guidance on *trans* fats.(claims should state both *trans* and saturated fats to prevent misunderstanding by consumers, who may otherwise be misled by *trans* fat free products, which may have a high saturated fat content).
- Current trade policies around imports/export of oil.

**Stakeholder engagement**

**Awareness and capacity**

- Improve awareness and co-ordination among the food safety and commerce sectors, legislators and food industry including restaurant chains, state institutions and other stakeholders.
• Plan to educate consumers regarding the negative health effects of trans fats and the effects of potential replacement oils and their effects.

• Decide on the scope of new restrictions on trans fats (see table below) and timeline.

**Develop and implement regulations**

**Develop regulations**

• Develop regulations based on information gathered during the situational analysis and in alignment with international standards and best practices.

• Establish measures for non-compliance.

• Decide if labelling should also be implemented.

**Monitor compliance**

• Develop or modify available surveillance systems to incorporate verification of implementation of the potential regulation. e.g. require food importers to have all imported oils and fats and foods certified as not containing trans fats over the set threshold.

**Legislative restrictions on trans fats; scope of restriction**

<table>
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<tr>
<th>Option</th>
<th>Country examples</th>
<th>Advantages/ disadvantage</th>
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<tr>
<td><strong>Restrict trans fat in the ingredient</strong></td>
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<tr>
<td>Limit trans fat to a threshold (e.g. no more than 2g per 100g product) for fats and oils supplied to food service establishments and food manufacturers, as well as fats and oils sold in retail outlets.</td>
<td><strong>Singapore</strong> (&lt; 2g trans fat in 100g product)</td>
<td>Simpler monitoring process</td>
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<td></td>
<td><strong>India</strong> (&lt; 5 g trans fat in 100g product)</td>
<td>Shifts the responsibility for compliance up the food chain and reduces the number of actors targeted by the regulation</td>
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<td></td>
<td><strong>Denmark</strong> (Limits the use in fats and oils &gt; 2%, industrially produced trans fats in foods for human consumption – experience suggests this would lead to average level of 1% trans fats in final food)</td>
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**Additional labelling**

Require mandatory labelling of trans-fat levels on packaging of retail fats and oils (Singapore and India).
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<tr>
<th>Rationale: most efficient means of promoting a shift away from <em>trans</em> fats in the food production industry</th>
<th>Switzerland</th>
<th>Difficulties in setting limits, and enforcement: analyzing food products</th>
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</thead>
<tbody>
<tr>
<td>Regulate <em>trans</em> fats in final food product</td>
<td>South Korea</td>
<td>Legal limits set for <em>trans</em> fat in food products</td>
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</tbody>
</table>
References


10. Global, regional, and national consumption levels of dietary fats and oils in 1990 and 2010: a systematic analysis including 266 country-specific nutrition surveys BMJ 2014; 348 doi: https://doi.org/10.1136/bmj.g2272.


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