What is a healthy balance of fats and oils?

AUGUST 2017
for Healthcare Professionals

EXPERT SCIENTIFIC ROUNDTABLE

This roundtable report was created by a multidisciplinary panel of leading academics and nutrition experts to offer practical advice and realistic actions for health professionals. It is based on recent scientific evidence presented at the closed Expert Roundtable, May 2017 that was supported by Unilever Australia and hosted by the Australasian Society of Lifestyle Medicine.

Why is there a need to talk about dietary fats and oils?

What the public hears and sees in the media does not reflect the evidence.
How can health professionals and consumers separate fact from fiction?

What exactly does "limit saturated fats" mean in terms of food choices? How can the average Australian find a healthy balance of fats and oils in their diet?

These questions need practical answers, yet there is currently little practical guidance on the types and amounts of different foods rich in fats and oils that can be consumed for good health.

This expert roundtable was convened to explore the current evidence on the balance of dietary fats for health, and how to translate this knowledge into actions for health professionals and their clients.

Marketing and Media Reports:

"Butter is back"

"Vegetable oil will kill you"

"Cook with bacon fat or coconut oil"

Expert Guidelines:

"Lowering intake of saturated fat and replacing it with unsaturated fats, especially polyunsaturated fats, will lower the incidence of CVD"
– American Heart Association 2017[1]

"Limit intake of foods high in saturated fat"
– Australian Dietary Guidelines 2013[2]

"Exchange saturated fat for polyunsaturated fat"
– World Health Organization 2010[3]

Key Messages

- Dietary Guidelines have shifted away from a "fat is bad; low-fat is good" message and now recognise that foods rich in monounsaturated and polyunsaturated fats have important health benefits, as well as providing essential fatty acids and fat-soluble vitamins.
- A wealth of scientific evidence confirms that replacing saturated fats with unsaturated fats can reduce cardiovascular disease by 10–25% and total mortality by up to 27%.
- Replacing saturated fat with high-quality carbohydrates also confers cardiovascular benefits, though to a lesser extent than replacing saturated fats with unsaturated fats.
- Sterol-enriched margarines are very effective in cholesterol lowering with an average reduction in LDL-cholesterol of about 10% over a 3 week period. Margarines in Australia do not contain trans fat.
- Talk to clients and patients in terms of foods, encouraging them to REPLACE foods high in saturated fats (such as butter, coconut and palm oils, and many biscuits, cakes, pastries and processed meats) with foods high in unsaturated fats (such as nuts, nut pastes, seeds, avocado and foods made with unsaturated oils).

Public perceptions are misguided

The general public have heard for years that they must avoid all fats ("fats are bad"). Now, celebrity and fad diets are encouraging consumption of saturated fats for health.

"Low-fat is still a health claim for many people. There is residual fat-phobia among consumers and health professionals, usually related to fear of weight gain," said Accredited Practising Dietitian Nicole Senior.

According to Nicole Senior and Angela Berrill, National Nutrition Advisor, NZ Heart Foundation, a major problem is that evidence-based messages become distilled into sound bites, meaning the public mostly hears – and believes – overly simplistic notions that don't reflect the evidence.

"An increasing 'fat-is-good' notion is emerging but increasingly for the wrong fats, such as coconut oil, lard and butter, which are now being described as health foods," Nicole Senior said.

Summary points

- Consumers are receiving mixed messages about fats and oils in the diet – including confusing messages from some health professionals.
- Australians are not following dietary guidelines.
- Health professionals need to eliminate the myths surrounding fats and oils and disseminate evidence-based information to the public.

What do we mean by "dietary fat"?

Polyunsaturated fatty acids (PUFAs)
Found in vegetable-based foods such as legumes, nuts and seeds, and in seed-based fats and oils, such as sunflower, canola oil and margarine.

- Includes linoleic acid (omega-6) and alpha-linolenic acid (omega-3), as well as the long chain omega-3 fatty acids from marine sources such as sardines, tuna, salmon and mussels.

Monounsaturated fatty acids (MUFAs)
Found in olive, canola and peanut oils and avocado.

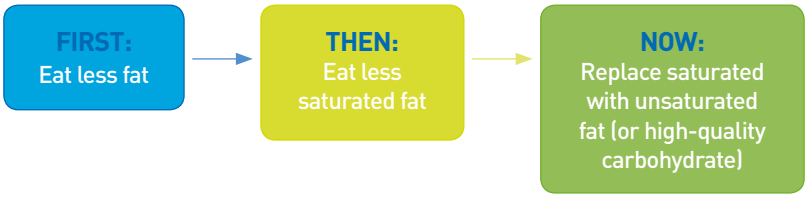
Saturated fatty acids (SFA)
Found in animal-based foods such as red meat and butter, as well as the 'tropical oils' coconut and palm oil and many discretionary foods such as pastries and cakes.

Trans fatty acids
Found naturally in some animal products and some discretionary foods that use manufactured partially hydrogenated vegetable oils.

What do Australian and international dietary guidelines tell us?

Dietary guidelines have evolved over time, as more scientific evidence becomes available, shifting from a message that all fats are bad to a recognition of the marked health benefits provided by unsaturated fats and oils.

Dietary guidelines have evolved over time



Adapted from a presentation by Angela Berrill, National Nutrition Advisor for the NZ Heart Foundation

Australian Dietary Guidelines are consistent with international guidelines by recommending the replacement of saturated fats with unsaturated fats.

Where the Australian Dietary Guidelines differ, though, is another source of confusion. Unlike countries such as the UK, Australian guidelines keep oils and spread choices sitting "on the side", outside the core recommendations for healthy eating.

> *"Incorporating healthy fats and oils into dietary guidelines aids the consumer in understanding that these healthy fats and oils are part of a healthy eating pattern and are very different to food sources that are high in fat and sugar."*
>
> – Dr Welma Stonehouse, Team leader, Nutrition Interventions Team, CSIRO

Are we meeting guidelines recommendations in the real world?

Both Australia and New Zealand have very similar rates of fat consumption, with 16% of fat consumption made up of polyunsaturated fats; saturated fats making up 43% in NZ and 42% in Australia; and monounsaturated fats making up 41% in NZ and 42% in Australia.[1,2]

In terms of total energy, dietary fats make up 31% of total energy intake in Australia, and it's 34% in New Zealand.[4,5]

Angela Berrill said: "This proportion is within the **recommended range of 20–35%**. However, too much of this fat was saturated."

Eight out of ten Australians consume more than **the recommended saturated fat limit of 8–10% of dietary energy.**[4] Meanwhile, the usual intake of linoleic acid is below the recommended range of 4–10%.[4]

> *"We're eating the right amount of fat, but the wrong kinds, and much of it from discretionary foods."*
>
> – Paul Atyeo, Assistant Director, Health Section, Australian Bureau of Statistics

Summary points

- Dietary Guidelines have shifted away from a "fat is bad; low-fat is good" message and now recognise that healthy monounsaturated and polyunsaturated fats have marked health benefits.
- No more than 10% of daily energy should come from saturated fats.
- In general, Australians are eating the right amounts of fats and oils but consuming below recommended amounts of essential fatty acids, found in unsaturated fats, and consuming too much saturated fat.

Dietary fats and the risk of chronic disease: what does the science say?

Robust scientific evidence supports that saturated fats in the diet adversely affect cardiovascular disease risk factors, and mono- and polyunsaturated fats reduce the risk of cardiovascular disease.

These messages – and the science behind them – have not changed; what has changed is the public perception of dietary fats and oils.

> *"The way in which saturated fats affect CV risk factors has not changed over many decades. The advice to reduce saturated fats and replace them with unsaturated fats has underpinned our great success in reducing heart attack rates and stroke."*
>
> – Clinical Associate Professor David Sullivan, Department of Biochemistry, Royal Prince Alfred Hospital, Sydney

Dietary saturated fats and trans fats are key culprits in increasing plasma cholesterol

Many randomised controlled trials and analyses confirm that elevated LDL-Cholesterol (LDL-C) is a causal factor to CVD.[7,8] The INTERHEART study, involving about 30,000 people across 50 countries, showed that an abnormal lipid profile increased the risk of having a heart attack by 49%.[9]

Meta-analyses of prospective cohort studies showed that foods high in saturated fats, such as red meat and processed meats, increased the risks of coronary heart disease (CHD), stroke, or diabetes, while foods high in unsaturated fats, such as fish and nuts, reduced the risk.[10]

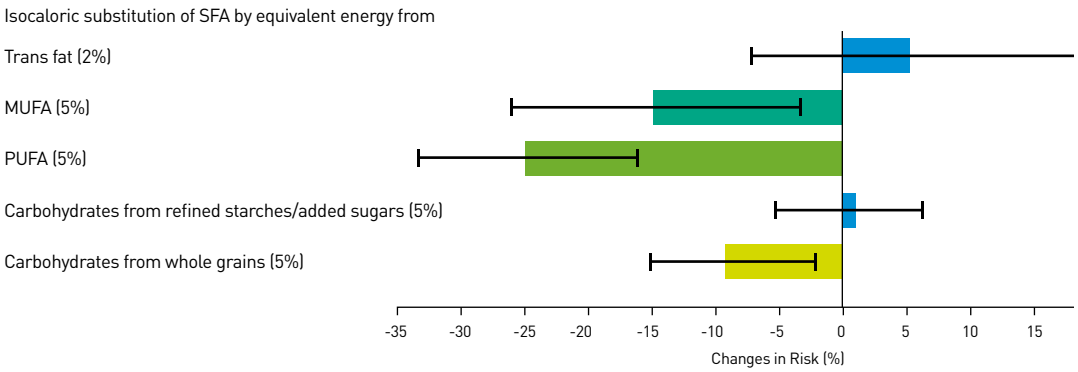
Foods high in saturated fats	Foods high in unsaturated fats
↑ Increased risk of CHD, stroke and diabetes	↓ Reduced risk of CHD, stroke and diabetes

Replacing kilojoules (calories) from saturated fats with unsaturated fats improves risk of CVD and death

A prospective study following two cohorts of over 120,000 people in total for up to 30 years revealed that replacing 5% of energy from saturated fats with equivalent energy from polyunsaturated fat and monounsaturated fat was associated with estimated reductions in the risk of coronary heart disease of 25% and 15% respectively.[11]

> *"The most recent data suggest that saturated fat should be minimised and replaced with unsaturated fat or with high-quality carbohydrate, but not with low-quality carbohydrate. Saturated fat is similar in terms of heart disease [but also diabetes and general health] to low-quality, low-fibre, high-sugar carbohydrate."*
>
> – Professor Peter Clifton

Changes in risk of Coronary Heart Disease when saturated fats are replaced with unsaturated fats or carbohydrates



Adapted from Li, 2015.6 Researchers followed 84,628 women (Nurses' Health Study, 1980 to 2010), and 42,908 men (Health Professionals Follow-up Study, 1986 to 2010) with a food questionnaire every four years. There were 7667 incident cases of CHD. MUFA: monounsaturated fatty acids; PUFA: polyunsaturated fatty acids; SFA: saturated fatty acids.

Reducing intake of saturated fats improves cardiovascular (CVD) risk

A comprehensive Cochrane review of the available data to 2014 confirmed that reducing saturated fat led to a 17% reduction in the risk of cardiovascular disease (including heart disease and strokes). It found that by decreasing saturated fat, serum total cholesterol is reduced, and the risk of CVD events was reduced.[12]

What about dairy?

According to Professor Peter Clifton, the data put dairy in a unique position. "Despite the saturated fat in dairy, it does not appear to be associated with increased heart disease risk because of other components, presumably, in dairy food...The good news is people can still enjoy their cheese," he said.

However, he noted that while dairy foods do no harm, they do not appear to be greatly protective against CVD, unlike unsaturated fats and whole grains.

Simple advice: follow a Mediterranean diet

The PREDIMED study showed that in people at high cardiovascular risk, a Mediterranean diet supplemented with extra-virgin olive oil or nuts reduced the incidence of major cardiovascular events compared to a low-fat diet.[13]

The PREDIMED diet included:[13]

- food mainly from plant sources

- white meat instead of red meat

- about 4 tablespoons of extra virgin olive oil per day

- fish at least 3 times per week

- legumes at least 3 times per week

- 3 or more servings of nuts per week

- wine with meals: 7 glasses per week.

Summary points

- Replacement of saturated fats with unsaturated fats, can reduce CVD by 10–25% and total mortality by up to 27%.
- Replacement of saturated fat with high glycaemic index, low-fibre carbohydrate is of no value.
- A Mediterranean-style diet has been proven to reduce the risk of cardiovascular events.

How to translate science into action

With confusion reigning, how can we translate scientific recommendations into food choices to clarify messages about fat? A food modelling exercise gives a real-world translation of a healthy "balance" of fats and oils.

Dr Janelle Gifford, said: "Clear evidence now exists to support the replacement of dietary saturated fats with unsaturated fats for health benefit[1] and there is now evidence that higher fat diets where the fat is predominantly unsaturated can provide health benefits.[14,15] But we need to make quantified food-based recommendations to support advice on healthy intake of dietary fat to consumers."

To that end, she undertook a modelling exercise with the aim of translating evidence-based fats and oils targets into food choices that can be applied in daily life.

There were three different models, based on energy intake (EI) from dietary fats using an average energy intake of 8700 kJ.

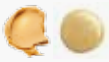
Three models for dietary fats

1. Lower Fat Diet (20% EI target): 7% SFA and 13% UFA
2. Higher Fat Diet (35% EI target): 10% SFA and 25% UFA
3. Very High Fat Diet (45% EI target): 10% SFA and 35% UFA

SFA: saturated fats
UFA: unsaturated fats.
EI: Energy intake

What were the fat and oil food groups?

Two fats and oil groups were developed based on the leading contributors from the 2011-12 National Nutrition and Physical Activity Survey.[4]

Saturated fats (SFA) group		Unsaturated fats (UFA) group	
Butter 	Butter dairy blends 	Nuts 	Seeds 
Palm oil 	Coconut oil 	Avocado 	Mayonnaise 
		Nut and seed spreads 	Polyunsaturated and monounsaturated spreads 

How many serves of fat can be consumed?*

Number of 10g serves of fats per day, per dietary model						
	Adults			Children		
	Lower-fat diet	Higher-fat diet	Very high-fat diet	Lower-fat diet	Higher-fat diet	Very high-fat diet
Saturated fats group	0	1	0	0	0.5	0
Unsaturated fats group	1	5	9	2	6	9.5

* Amount varies depending on height, weight, gender and activity levels.

What does a serve look like?

	Spread	Oil	Food Source
Serve Size	**10g**	**7g**	**10g nuts**
Unsaturated	2 teaspoons margarine  2 teaspoons avocado  2 teaspoons mayonnaise 	2 teaspoons polyunsaturated or monounsaturated oil e.g. olive, canola, sunflower and safflower 	4-8 nuts  1.5 teaspoons peanut butter  2 teaspoons tahini 
Saturated	2 teaspoons butter or dairy blend 	2 teaspoons coconut oil or palm oil 	

NB: This table provides examples only, it is not a complete list of spreads, oils and foods

What are the implications of these serving sizes?

While it's clear that healthy fats can – and should – be included in a healthy diet, it's also clear that energy consumption must also be taken into account.

Dr Gifford's findings confirm that discretionary and "sometimes" foods, including fats and oils that are predominantly saturated fat, run the risk of taking up valuable daily energy intake that could be spent on healthy fat consumption.

Further, some of the higher-fat and very-high fat diets had to have servings of the grain (cereal) food group reduced, and thus the micronutrient content of these diets may need to be monitored.

Summary points

- Relatively sedentary adults can include up to 9 – 9½ x 10 gram serves of unsaturated fats and oils alongside core food groups on a very high fat eating pattern, under the guidance of an Accredited Practicing Dietitian.
- In a higher-fat eating pattern adults can include five 10 gram serves of unsaturated fats and oils.
- In a lower-fat eating pattern adults can include one 10 gram serve of unsaturated fats and oils.
- Translated into foods, a 10 gram serve of unsaturated fats and oils is: 4-8 nuts, 2 teaspoons of olive oil, 2 teaspoons avocado or 2 teaspoons margarine spread.

How to talk about foods, not "fats"

Healthcare professionals should not only talk about macronutrients but translate this into a discussion about food choices.

How to help patients replace saturated fats for unsaturated fats and high-quality carbohydrate

Eat less animal-based saturated fats	Exchange foods high in saturated fat	For foods high in unsaturated fats or high-quality carbohydrate		Eat more healthy, plant-based monounsaturated and polyunsaturated fats or fish, particularly the oily types
↓	Butter in cooking	Unsaturated vegetable oils and oil-based margarine spreads in cooking or on vegetables		↑
	Butter on bread and crackers	Plant-oil based spreads (e.g. margarine, avocado or nut spreads) on toast or crackers		
	Fatty red meat (e.g. sausages, regular mince, chops)	Legumes, fish/seafood e.g. Greek bean casserole or oily fish (tuna, salmon or sardines)		
	Snacks such as cakes, pastries and biscuits	Snacks such as nuts and seeds, a slice of wholegrain toast with margarine spread, or wholegrain crispbread with nut paste or avocado		

Sources: Panelists from the expert roundtable; Eating and Activity Guidelines for New Zealand Adults, 2015; Australian Dietary Guidelines, 2013.

Expert roundtable participants (L-R)

- Dr Welma Stonehouse, Team leader, Nutrition Interventions Team, Health and Biosecurity, CSIRO;
- Professor Garry Egger, Vice President, Australasian Society of Lifestyle Medicine;
- Angela Berrill, National Nutrition Advisor, Heart Foundation New Zealand;
- Dr Janelle Gifford, Senior Lecturer in Nutrition, University of Sydney;
- Nicole Senior, Accredited Practising Dietitian and Nutritionist;
- Paul Atyeo, Assistant Director of the Health Section of the Australian Bureau of Statistics;
- Associate Professor David Sullivan, Clinical Associate Professor at the Department of Biochemistry, Royal Prince Alfred Hospital, Sydney;
- Professor Peter Clifton, Professor of Nutrition at the University of South Australia, and National Health and Medical Research Council (NHMRC) Principal Research Fellow (not in photo)

Report from *"What is the balance of dietary fats and oils for health and wellbeing?"*, an expert roundtable held in Sydney on 4 May 2017, supported by Unilever Australia and hosted by the Australasian Society of Lifestyle Medicine

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