

## SUMMARY FINDINGS OF THE UK SCIENTIFIC COMMITTEE ON NUTRITION (SACN) IN ITS DRAFT REPORT ON FATS AND CARBOHYDRATE

Document source: <https://www.gov.uk/government/consultations/saturated-fats-and-health-draft-sacn-report>

July 2018

**Table 1. Summary table of the evidence on the relationship between saturated fats and cardiovascular outcomes**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
CVD mortality	-	Adequate	-	Adequate	n/a	Insufficient	-	Limited	-	Limited
CVD events	↓	Adequate	↓	Adequate	n/a	Insufficient	-	Limited	-	Limited
CHD mortality	-	Adequate	-	Adequate	n/a	Insufficient	-	Limited	-	Limited
CHD events	↓	Moderate	↓	Limited	n/a	Insufficient	-	Moderate	-	Limited
Strokes	-	Adequate	n/a	Insufficient	n/a	No evidence	-	Limited	-	Limited
Peripheral vascular disease	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
<b>PCS</b>										
CVD mortality	-	Adequate	↓	Limited	n/a	No evidence	n/a	Insufficient	n/a	No evidence
CVD events	n/a	Insufficient	n/a	No evidence	n/a	No evidence	n/a	Insufficient	n/a	No evidence
CHD mortality	↓	Moderate	↓	Adequate	-	Limited	-	Adequate	n/a	No evidence
CHD events	↓	Moderate	↓	Adequate	↑	Limited	↑	Adequate	n/a	No evidence
Strokes	-	Adequate	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Peripheral vascular disease	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑ increased; ↓ decreased; - no effect/association

\*Range of mean intakes of saturated fats (% of total dietary energy) for reported outcomes: CVD mortality (control 12.4- 18.5%; intervention 6.6-11.0%); CVD events (control 12.4- 18.5%; intervention 6.6-11.5%); CHD mortality (control 12.4-18.5%; intervention 8.3-11.0%); CHD events (intervention 12.4-18.5%; control 8.3-11.5%); strokes (intervention 12.4- 18.5%; control 8.3-11.5%).

**Table 2. Summary table of the evidence on the effect/association between saturated fats and blood lipids**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Serum total cholesterol	↓	Adequate	↓	Adequate	↓	Adequate	↓	Adequate	n/a	No evidence
Serum LDL cholesterol	↓	Adequate	↓	Adequate	↓	Adequate	↓	Adequate	n/a	No evidence
Serum HDL cholesterol	↓	Adequate	↓	Moderate	↓	Moderate	↓	Moderate	n/a	No evidence
Serum total/HDL cholesterol ratio	n/a	No evidence	↓	Moderate	↓	Moderate	-	Adequate	n/a	No evidence
Serum lipid triacylglycerol	↓	Adequate	-	Moderate	-	Moderate	n/a	Inconsistent	n/a	No evidence
<b>PCS</b>										
Serum total cholesterol	n/a	Insufficient	n/a	Insufficient	n/a	Insufficient	n/a	Insufficient	n/a	No evidence
Serum LDL cholesterol	n/a	Insufficient	n/a	Insufficient	n/a	Insufficient	n/a	Insufficient	n/a	No evidence
Serum HDL cholesterol	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Serum total/HDL cholesterol ratio	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Serum lipid triacylglycerol	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association

**Table 3. Summary table of the evidence on the effect/association between saturated fats and blood pressure**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Blood pressure	-	Limited	-	Limited	-	Limited	-	Limited	n/a	No evidence
<b>PCS</b>										
Blood pressure	n/a	No evidence	n/a	No evidence	n/a	Insufficient	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association

**Table 4. Summary table of the evidence on the effect/relationship between saturated fats and type 2 diabetes and markers of glycaemic control**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Type 2 diabetes	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	Insufficient	n/a	No evidence
Fasting glucose	n/a	No evidence	↓	Adequate	-	Adequate	-	Adequate	n/a	No evidence
Fasting insulin	n/a	No evidence	-	Adequate	↑	Adequate	↑	Adequate	n/a	No evidence
HbA1c	n/a	No evidence	↓	Adequate	↓	Adequate	-	Adequate	n/a	No evidence
Glucose tolerance	n/a	Insufficient	-	Adequate	-	Adequate	-	Adequate	n/a	No evidence
Insulin resistance HOMA	n/a	No evidence	↓	Adequate	↓	Adequate	-	Adequate	n/a	No evidence
Insulin resistance by infusion	n/a	No evidence	-	Adequate	-	Adequate	-	Adequate	n/a	No evidence
<b>PCS</b>										
Type 2 Diabetes	-	Adequate	n/a	Insufficient	n/a	No evidence	n/a	No evidence	n/a	No evidence
Fasting glucose	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Fasting insulin	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
HbA1c	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Glucose tolerance	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Insulin resistance HOMA	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Insulin resistance by infusion	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association

**Table 5. Summary table of the evidence on the effect/association between saturated fats and anthropometric measurements/gestational weight gain**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Anthropometric measurements	↓	Limited	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Gestational weight gain	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
<b>PCS</b>										
Anthropometric measurements	n/a	Insufficient	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Gestational weight gain	n/a	Insufficient	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association

**Table 6. Summary table of the evidence on the effect/association between saturated fats and cancers**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Colorectal cancer	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Pancreatic cancer	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Lung cancer	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Breast cancer	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Prostate cancer	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
<b>PCS</b>										
Colorectal cancer	-	Adequate	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Pancreatic cancer	-	Adequate	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Lung cancer	-	Adequate	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Breast cancer	-	Adequate	-	Adequate	-	Adequate	-	Adequate	n/a	No evidence
Prostate cancer	-	Adequate	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association

**Table 7. Summary table of the evidence on the effect/association between saturated fats and cognitive outcomes**

Outcome	Saturated fats intake		Saturated fats substitution with PUFA		Saturated fats substitution with MUFA		Saturated fats substitution with carbohydrate		Saturated fats substitution with protein	
	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence	Direction of effect/association	Strength of evidence
<b>RCTs</b>										
Cognitive decline	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Mild cognitive impairment	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Alzheimer's disease	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Dementias	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
<b>PCS</b>										
Cognitive decline	n/a	Inconsistent	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Mild cognitive impairment	-	Limited	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Alzheimer's disease	n/a	Inconsistent	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence
Dementias	n/a	Insufficient	n/a	No evidence	n/a	No evidence	n/a	No evidence	n/a	No evidence

n/a – not enough evidence to draw conclusions

Direction of effect/association for reported outcomes: ↑increased; ↓decreased; - no effect/association