

Red meat and saturated fat

An excessive consumption of fats, in general, and saturated fats, in particular, is known to be a major factor influencing the development of disease such as coronary heart disease and obesity. Different fatty acids (saturated, monounsaturated and polyunsaturated) have different effects on blood cholesterol levels and risk of heart disease, some beneficial and some adverse.

In the UK, total fat consumption, in terms of contribution to energy per day, more or less meets with Government guidelines of 35% of food energy. However, over consumption of saturated fat has been identified as a public health issue as the average intake of saturated fat for both men and women is approximately 13% of energy, which is higher than the recommended target of 11%. The government would like us to reduce our saturated fat intake by approximately 5g per person per day.

Recommendations and intakes of different fatty acids in the UK diet.

Fat	Recommendations (% Food Energy)	Men		Women	
		2000/01	2008/09	2000/01	2008/09
Total fat	35	35.5	35.5	34.7	34.7
Saturates	11	13.3	13.0	13.2	12.6
Monounsaturates	13	12.0	12.8	11.4	12.3
n-6 polyunsaturates	Minimum 1%	5.3	5.2	5.3	5.3
n-3 polyunsaturates	Minimum 0.2%	1.0	1.1	1.0	1.1
Trans fat	<2	1.2	0.8	1.1	0.8

Source: Henderson et al. (2003); SACN 2007a; Bates et al. (2010)

The Fat Content of Red Meat

The total fat content of red meat will depend upon the breed, feed regime, sex and age of animal at slaughter and post-slaughter, the method of butchery and level of trim that is applied to each cut of meat. From the 1950s to the present day, owing to improved

breeding and butchery techniques, the fat content of carcass meat in the UK has been reduced by over 30% for pork, 15% for beef and 10% for lamb¹.

Despite common reference to animal fats as 'saturated', red meat contains both saturated and unsaturated fats. **In the case of lean beef and pork, the unsaturated fat content is more than the saturated fat content.**

The fatty acid profile of meat will also vary depending on the proportions of lean and fat present. Lean meat is relatively higher in polyunsaturated fats and lower in saturated fats, compared with untrimmed meat.

Typical fatty acid composition (g/100g) of different types of red meat (lean only, cooked)

	Beef	Lamb	Pork
Total SFA	3.26	5.36	2.31
Total MUFA	3.41	4.06	2.56
Total PUFA	0.38	0.59	1.15
n-6 PUFA	0.36	0.48	1.02
n-3 PUFA	0.09	0.23	0.12

Source: MAFF (1995)

Originally, all saturated fats were thought to be associated with increased blood cholesterol, but it has become apparent that individual saturated fatty acids differ in their effect. One of the main saturated fatty acids present in red meat is stearic acid and there is considerable evidence that this fatty acid has no effect on cholesterol levels².

A food is defined as 'high' in saturated fat if it contains 5g (or more) saturated fat per 100g. A food is defined as 'low' in saturated fat if it contains 1.5g (or less) saturated fat or less per 100g³. Most lean red meats are, therefore, not high in saturated fat and contain only moderate amounts. In addition, the consumer can further reduce the total fat and saturated fat of meat consumed by choosing healthier preparation and cooking methods.

¹ Higgs, J.D. (2000). "The changing nature of red meat: 20 years of improving nutritional quality." Trends in Food Science & Technology 11(3):85-95

² Daley CA, Abbott A, et al. (2010). "A review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef." Nutrition Journal 9 (10).

³ www.nhs.uk/Livewell/Goodfood

Key Tips

Where possible, select lean red meat

Trim off any excess fat prior to cooking

Grill rather than fry

Avoid adding extra fat and oil

Dry-fry mince and stewing meats and discard any melted fat

Consider portion size. Larger portion sizes will have a higher fat and saturated fat content.

The addition of vegetables, pulses or fruit will help bulk up dishes and reduce the total fat and saturated fat content of a dish per 100g.

Contribution to Guideline Daily Amount (GDA)

The GDA for saturated fat is 20g /day for women and 30g/day for men⁴ (for the purposes of nutritional labelling, an adult GDA of 20g is used). Moderate portions of lean red meat provide relatively small amounts of saturated fat as a proportion of the GDA. For example, a 100g serving of lean roast topside would contribute 2.1g of saturated fat or just over 10% of the GDA.

Saturated fat content, per 100g, lean cooked red meat

Red meat cut	Saturated fat
Lean beef rump steak, grilled	2.5g
Lean beef topside	2.1g
Lean stewing beef	2.3g
Lean lamb loin chops, grilled	4.9g
Lean leg of lamb, roasted	3.8g
Lean stewing lamb	6.5g
Lean diced cubed pork, grilled	1.6g
Lean loin chops, grilled	2.2g
Lean pork leg, roasted	1.9g

Source: McCance & Widdowson 1995

⁴ www.whatsinsideguide.com

Processed Meat

Much of the saturated fat consumed comes from processed food. A wide range of processed meat products including bacon, burgers, pies, sausages and ready meals are consumed in the UK. Some of these are composite foods containing a variety of ingredients; inevitably some of these ingredients, for example pastry, will add to the total saturated fat content consumed.

Meat products are sometimes, but not exclusively, manufactured using the more economic cuts of meat which are often higher in fat content. Many food manufacturers have embarked on major reformulation programmes to reduce the fat, saturated fat and salt content of their products.

When selecting processed meat products, consumers should check nutrition labelling of similar products to select the lower saturated fat option.

Saturated fat content, per 100g, processed meat products

	Saturated Fat	Total Fat
Premium ham	1.7g	5.0g
Back bacon grilled	8.1g	21.6g
Economy burger, grilled	7.3g	19.3g
Reduced fat burger, grilled	4.4g	9.5g
Reduced fat pork sausage, grilled	4.9g	13.8g
Pork sausage grilled	7.6g	22.1g
Pork Pie	9.7g	25.7g
Lamb Samosa, deep fried	4.7	31.4g

Source: McCance & Widdowson 1995

In Conclusion

Red meat contains moderate amounts of saturated fatty acids. One of the main saturated fatty acids present in red meat is stearic acid and there is considerable evidence that this fatty acid has no effect on cholesterol levels⁵.

By choosing lean cuts of red meat and preparing and cooking the meat by the most healthy methods, consumers can ensure that red meat makes a comparatively small contribution to daily saturated fat intake, as part of a healthy balanced diet.

Please visit www.meatandhealth.com for more information.

⁵ Daley CA, Abbott A, et al. (2010). "A review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef." Nutrition Journal 9 (10).