



## Red Meat and Cardiovascular Disease

Cardiovascular disease (CVD) includes all the diseases that affect the heart and circulation such as coronary heart disease (CHD), stroke and heart attack. CVD is the main cause of death worldwide. CHD death rates have been steadily decreasing since the 1980s and in the United Kingdom the rates remain amongst the highest in Europe. Recent estimates showed that CHD was responsible for more than 190,000 deaths (almost a third) in the UK in 2007 (British Heart Foundation).

### Causes of CVD

The causes of CVD are complex but diet and lifestyle (e.g. physical activity and smoking cessation) play a key role in influencing risk factors such as hypertension, obesity, diabetes, high blood cholesterol and high blood triglyceride concentrations (Stanner, S 2005).

Despite the presence of a number of potentially protective nutrients (e.g. selenium, *n*-3 fatty acids, B vitamins) red meat is frequently communicated as being harmful for heart health on the grounds of its fat and saturated fat content. However, the fat content of meat has decreased considerably during recent years owing to changes in animal breeding and feeding and modern butchery techniques to produce leaner cuts of meat. Now, fully trimmed lean raw beef typically contains only 5 per cent fat, fully trimmed lean raw pork only 4 per cent fat and fully trimmed lean raw lamb only 8 per cent fat.<sup>1</sup> In the UK, red and processed meat provides no more than 20 per cent of the total fat intake and 21 per cent of the saturated fat intake.<sup>2</sup>

### What is the evidence?

Red meat has been associated with increased risk of cardiovascular disease (CVD) in some studies.<sup>3,4,5</sup> However, the studies have used a range of methodologies making it difficult to compare findings and outcomes have been inconsistent.

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<sup>1</sup> [www.meatandhealth.com](http://www.meatandhealth.com)

<sup>2</sup> Bates B et al. National Diet and Nutrition Survey. Headline results from year 1 of the Rolling Programme (2008/2009). Available: <http://www.food.gov.uk/science/dietarysurveys/ndnsdocuments/ndns0809year1>

<sup>3</sup> Kelemen L et al. American Journal of Epidemiology 2005;161:239-249.

<sup>4</sup> Kontogianni M et al. European Journal of Clinical Nutrition 2008; 61:171-177

<sup>5</sup> Bernstein A et al. Circulation 2010;122:876-883.

In one study, an association between CVD and red meat was found only in men,<sup>6</sup> in another there was no association when age was controlled for in the study.<sup>7</sup> The majority of studies do not give absolute amounts of red meat intake associated with the findings while others calculate degree of risk based on much higher intakes of red meat than most consumers in the UK would eat.

Much evidence is also gathered from studies looking at dietary patterns<sup>8,9</sup> rather than red meat consumption. A typical Western dietary pattern may contain red meat but be low in fruit and vegetables with high alcohol intake and low levels of physical activity. Furthermore, some studies are now also quite old dating from a time when the fat content of meat was considerably higher than it is today.

Please visit [www.meatandhealth.com](http://www.meatandhealth.com) for more information.

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<sup>6</sup> Fraser G. American Journal of Clinical Nutrition 1999;70:532S-538S

<sup>7</sup> Hu F et al. American Journal of Clinical Nutrition 1999;69:890-897

<sup>8</sup> Hu F et al. American Journal of Clinical Nutrition 2000;72::912-921

<sup>9</sup> Iqbal R et al. Circulation 2008;118:1929-1937.