

**ABSTRACT – MCHWS 2014****Saturated fatty acids, palm oil and cardiovascular health – where do we stand today?**

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**Abstract**

For almost sixty years dietary fat has been the focal point for reducing the risk from coronary heart disease (CHD). With evidence based largely on animal and observational studies documenting that saturated fatty acids (SFA) increase LDL-C (with the latter being associated with increased CHD risk), the notion that SFA increased CHD, became etched in folklore. As a consequence, decreasing SFA to <10% of total calories, became the corner-stone of global dietary recommendations. Ironically, the fact that SFA increased the large buoyant LDL particles (as opposed to small-dense atherogenic LDL particles), or that they increased the cardio-protective HDL-C and in some instances, lowered the atherogenic Lp(a), went largely unnoticed. However a spate of studies starting in 2009 has dramatically challenged our thinking on the “widely accepted” role of SFA. Twenty year follow up data from prospective epidemiologic studies suggest that only two classes of fatty acids affect CHD risk, namely trans monounsaturated fatty acids (resulting principally from the partial hydrogenation of vegetable oils) and polyunsaturated fatty acids (PUFA) – which increase and decrease risk, respectively. These studies suggested that when replacing/removing SFA from the diet, the replacement nutrient may be as important. Thus SFA replacement with PUFA may provide small benefits, but the replacement represents a dramatic shift in dietary regimen. The effects of replacing SFA with MUFA were inconclusive. If SFA are replaced with carbohydrates, then the quality of the carbohydrate (as measured by the glycemic index) is also important. Earlier this year, a highly publicized study found no benefit on CHD even when SFA were replaced by PUFA, and questioned the usefulness of this public health message. The data on SFA has had a profound effect on the perceived role of palm oil as a dietary constituent. As palm oil contains palmitic and stearic acid (45% and 5% of total fatty acids, respectively), its SFA content was always the focal point for its effects on lipoprotein cholesterol. Several studies have shown that when considering the TC/HDL-C ratio, palm oil produced similar effects as various unsaturated oils (soybean, olive, groundnut and canola). A meta-analysis published earlier this year has confirmed these observations – namely that while palm oil per se may increase LDL-C somewhat in certain instances, it also increases HDL-C. As a result the TC/HDL-C ratio is unaffected. This is particularly so when subjects are consuming ~ 30% of calories from total fat. This talk will provide an overview of the latest studies relating to palm oil /SFA nutrition, with a particular focus on their relevance to the Indian scenario where dyslipidemia, characterized by low HDL-C in 72% of the population, is a major health concern.

**Key Words**

Fatty acids; palm oil; cardiovascular health