

## Concurrent Session 5: Coronary Heart Disease

### Diet and lifestyle predict hospital admission for coronary disease in an Aboriginal cohort

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**Background** – Hospital admissions of Aboriginal Australians for coronary disease (CHD) are double those of non-indigenous Australians in men and fourfold in women (1), with greater average cost and length of stay (LOS).

**Objectives** – To examine predictors of hospital admission and LOS for CHD in Aboriginal Australians.

**Design:** In 1988-89, randomly selected Australian Aborigines (256 men, 258 women), aged 15-88 years, completed interviewer-administered questionnaires about diet, exercise, smoking and alcohol drinking. Blood pressure, weight, height and blood lipids were measured. The WA Data Linkage Unit linked participants to hospital records to the end of 2002. Cox regression and negative binomial models were used to model Hospital admissions and LOS for CHD.

**Outcomes** – Among 51 men and 55 women admitted with CHD, greater LOS was predicted by hypertension (hazard ratio (HR) 1.32; 95% CI 1.03, 1.68); diabetes (HR 1.62, 95% CI 1.03, 1.53); smoking (HR 1.90, 95% CI 1.02, 3.53); eating processed meat > 4 times/month (HR 1.81, 95% CI 1.01, 3.24); sweet foods > 6 times/month (HR 1.69, 95% CI 0.94, 2.88); and > 6 eggs/week (HR 1.72, 95% CI 1.03, 2.94). Relative to abstainers, lower alcohol intake (HR 0.54, 95% CI 0.35, 0.83) predicted shorter LOS. Intake of eggs (HR 1.05, 95% CI 1.01, 1.09) predicted shorter intervals between admission; exercise  $\geq$  1/week (HR 0.61, 95% CI 0.36, 1.05); eating bush meats  $\geq$  7 times/month (HR 0.46, 95% CI 0.23, 0.92), and red meat >7 times/week (HR 0.56, 95% CI 0.31, 1.03) predicted longer intervals. Risk of admission was higher in hypertensives (HR 4.07, 95% CI 1.32, 15.52); ex-drinkers (HR 6.60, 95% CI 2.30, 19.00); and those adding salt to prepared food (HR 3.16, 95% CI 1.12, 8.92), and lower with eating bush meats  $\geq$  7 times/month (HR 0.26, 95% CI 0.10, 0.67); and red meat > 7 times/week (HR 0.98, 95% CI 0.97, 0.99).

**Conclusion** – Hospital admissions for CHD in Aboriginal Australians are predicted by hypertension and diabetes and by several aspects of diet (intake of processed meat, red meat, “bush” food, eggs and sweet foods) and lifestyle. Such findings can inform planning of preventive health programs and health services for indigenous Australians.

#### Reference

1. Trewin D, Madden R. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples. Catalogue No.4704.0, Australian Bureau of Statistics, Canberra, 2005.

### The effectiveness of DPA rich seal oil compared with fish oil on blood lipids

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**Background** – Both eicosapentaenoic acid (EPA, 20:5n3) and docosahexaenoic acid (DHA, 22:6n3) have been shown to have numerous health benefits. However, docosapentaenoic acid (DPA, 22:5n3) found particularly in red meat has been less well studied. The richest commercial source of DPA available is seal oil.

**Objective** – To compare the effects of DPA rich seal oil supplementation with fish oil, on measures of platelet activation and other CVD risk markers.

**Design** – A randomised, parallel, placebo controlled, double blind study was conducted. Thirty healthy subjects were randomly allocated to one of three groups receiving: seal oil capsules (350 mg EPA, 450 mg DHA, 250 mg DPA), fish oil capsules (210 mg EPA, 810 mg DHA, 30 mg DPA) or placebo capsules (containing a vegetable oil with no EPA, DHA or DPA) for 14 days. Baseline and 14 day blood samples were tested for platelet activation, platelet aggregation, ATP release and incorporation of omega-3 fatty acids into platelet phospholipids (PL). Full lipid profiles were also performed including total cholesterol, LDL-cholesterol, HDL-cholesterol and TG.

**Outcomes**– Seal oil supplementation significantly increased incorporation of DPA, DHA and EPA (p<0.05) into platelet PL, whereas fish oil increased EPA and DHA only (p<0.05). A significant decrease in plasma TG (1.58 to 1.18 mmol/L, P<0.05) and a significant increase in HDL-cholesterol (1.40 to 1.56 mmol/L, P<0.05) were observed post seal oil supplementation.

**Conclusion** – This study further supports the suggestion that DPA may also have beneficial health effects.

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