cardiovascular events highlight the importance of diagnosing the condition and implementing appropriate preventative therapies.
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Canadian Institutes of Health Research New Emerging Team: Canadian Heart Health Surveys Follow-Up Study

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THE PREVALENCE OF DIABETES AND CARDIOVASCULAR (CVD) RISK FACTORS AMONG ADULTS IN FIRST NATION COMMUNITIES FORECASTS AN INCREASED RISK OF CARDIOVASCULAR DISEASE COMPARED TO OTHER CANADIANS

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BACKGROUND AND OBJECTIVES: There is increasing concern that the high prevalence of diabetes and CVD risk factors among adults in First Nation communities may result in a particularly high incidence of future CVD events. We compared the global CVD risk of adults living in First Nation communities to other Canadians.
STUDY DESIGN: We screened a convenience sample of aboriginal adults living in one of eight First Nation communities in 2004 to estimate the cardiovascular risk of participants. After signing informed consent, participants completed a medical history. CVD risk factors were also measured and the global CVD risk was calculated using Framingham equations. The results were compared to a random sample of adults, matched for gender and age (±1 year), in the Canadian Heart Health Surveys who did not live in First Nation communities.
RESULTS: Among 185 First Nation adults the prevalence of cardiovascular disease was 7% compared to 6.3% among 7,108 other Canadians. Among individuals without cardiovascular disease, the average age was 49 years. Compared to other Canadians, First Nation adults were more likely to have self-reported diabetes ($p<0.0001$), smoke cigarettes ($p<0.0001$), have a higher average body mass index (BMI) ($p<0.0001$), a higher systolic blood pressure ($p=0.009$), a lower diastolic blood pressure ($p=0.01$) and a lower cholesterol/HDL ratio ($p=0.05$).

		Cholesterol/HDL			
	Diabetes	Ratio	BMI	BP	Smoking
First Nations	46%	4.65	32.2	130/77	51%
Other Canadians	5%	4.36	26.4	126/79	27%

Compared to other Canadians, First Nation adults had a significantly higher 10-year risk of coronary disease (10.8% vs 7.5%, $p<0.0001$). Stratifying by gender, women had a higher 10-year risk (9.4% vs 4.9%, $p<0.0001$) as did men (13% vs 11%, $p<0.05$)
CONCLUSIONS: Compared to age and gender matched Canadians, First Nation adults (women in particular) are at substantially increased risk of cardiovascular disease. This is in large part due to the increased presence of major cardiovascular risk factors including diabetes, obesity and cigarette smoking. Lifestyle modification may be particularly important among Canadian First Nation adults.
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SKIN TISSUE CHOLESTEROL AND C-REACTIVE PROTEIN ARE ASSOCIATED WITH METABOLIC SYNDROME IN SUBJECTS WITH CORONARY HEART DISEASE

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PURPOSE: Skin tissue cholesterol (STC) has previously been associated with surrogates for coronary heart disease (CHD) including coronary plaque, coronary calcium and carotid intimal medial thickness. C-reactive protein (CRP) has been associated with CHD and with metabolic syndrome. We evaluated whether STC and CRP have additive value in identifying metabolic syndrome in subjects with CHD.
METHODS: We evaluated 301 consecutive subjects with established CHD as part of a larger observational registry. STC was measured using a rapid, noninvasive assay (Prevu Point-of-Care, McNeil Consumer Health Care, Guelph, Ontario). CRP was measured using CardioPhase hsCRP (DadeBehring, Deerfield, Illinois).
RESULTS: Mean age was 64±11 y, 18% were female, 59% were Caucasian, 32% had diabetes and 89% were on statin therapy. Total cholesterol was 4.4±1.2 mmol/L, LDL-C 2.4±1.0 mmol/L, HDL-C 1.2±0.3 mmol/L, CRP 3.6±5.7 and STC 100.5±18.8 (moderately elev- ated). Subjects in the highest STC tertile were more likely to have hypertension ($p<0.04$), angina ($p<0.002$) and diabetes ($p<0.002$) compared to patients in the lowest tertile. Elevated CRP (highest tertile) was assoc- iated with diabetes ($p<0.04$) and larger waist circumference ($p<0.001$). Subjects in the highest tertile for both STC and CRP tended to be older than subjects in the lowest tertile ($p<0.03$). The prevalence of metabolic syndrome was significantly higher in subjects in the highest tertiles for both STC and CRP compared to those with neither variable elevated (Table 1).

Relative risk of metabolic syndrome by CRP and STC status

CRP, STC	Metabolic syndrome	Odds ratio, 95% CI, p-value
Neither high	44% (58/132)	1.0
Isolated high STC	45% (30/67)	1.0 (0.6–1.9) 0.91*
Isolated high CRP	47% (31/66)	1.1 (0.6–2.0) 0.69*
Both high	72% (26/36)	3.3 (1.5–7.4) 0.004*

**vs neither high*

Neither high STC alone nor high CRP alone were significantly correlated with metabolic syndrome. The association between elevated STC and CRP with metabolic syndrome remained significant after adjustment for age and gender (OR 3.1, CI 1.3–7.0, $p=0.008$).
CONCLUSIONS: Two nontraditional markers of risk, STC and CRP, when used in combination, are associated with an increased prevalence of metabolic syndrome in subjects with CHD compared to either marker alone. These findings suggest a potential role for STC and CRP in further risk stratifying subjects with established CHD. Further studies are needed to confirm these findings and to determine the utility of STC in lower risk populations.
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LIBERALIZED PREPRANDIAL GLUCOSE, MAXIMAL METFORMIN AND SUPERVISED EXERCISE-IMPACT ON WEIGHT, GLYCEMIC CONTROL, FITNESS AND BLOOD PRESSURE

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BACKGROUND: Supervised exercise programs improve glycemic control without significantly augmenting weight loss in type 2 diabetes. Some glucose-lowering medications may impede weight loss. The impact of supervised exercise programs on fitness and blood pressure in this population remains unclear. The objectives of the this study were (i) to examine the impact of liberalized preprandial glucose values on weight change and glycemic control (ii) to examine the effect of supervised exercise on weight, fitness, and blood pressure.
METHODS: A total of 42 type 2 diabetes patients were randomized (i) to strict (7 mmol/L) OR liberalized (10 mol/L) preprandial glucose thresholds for adjustment of medication other than metformin and (ii) to dietary counseling with OR without supervised exercise (2×2 factorial design). Metformin is the only potent glucose-lowering agent not associated with weight gain. The dietary counseling intervention involved 6 individualized sessions with a registered dietitian over 24 week. The exercise program was supervised by an exercise physiologist and consisted of 48 small group aerobic exercise sessions (treadmill, cycling, cross-trainer). Heart rate was maintained at between 65% and 85% of the maximal heart rate achieved during a baseline exercise stress test.
RESULTS: Weight and hemoglobin A1C changes did not differ significantly between threshold-defined groups although 90-day preprandial glucose levels were higher in the liberalized group (8.4 vs 6.9 mmol/L, $p=0.01$). When those enrolled in the supervised exercise program were compared to other participants, mean arterial pressure changes favoured the supervised exercise group (–3.3% vs 1.1%, $p=0.02$). Weight (–1.6%, vs –1.6%, $p=0.03$) and fitness changes (1.5% vs 21.3%, $p=0.03$) were significantly greater only among those who attended ≥75% of exercise classes.