



Effective Public Health Practice Project Summary Statement

December 2005

This is a summary statement written to condense the work of the authors of a systematic review. The reference for the full review is below. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

Reference for Review in APA: Thompson, R.L., Summerbell, C.D., Hooper, L., Higgins, J.P.T., Little, P.S., Talbot, D., Ebrahim, S. (2005). **Dietary advice given by a dietitian versus other health professionals or self-help resources to reduce blood cholesterol (Review).** *The Cochrane Library*, 2, 1-59.

Issue: In Canada, cardiovascular disease accounts for approximately 200 deaths per 100,000 people per year with 78,942 related deaths in 1999 (Filate, Johansen, Kennedy and Tu, 2003; Statistics Canada, 2005). Nutrition therapy is key to managing hypercholesteremia, one of the significant risk factors in cardiovascular disease (College of Dietitians of Ontario and Dietitians of Canada, 2005). Dietitians can cost-effectively develop optimal prescriptions of nutrition therapy in patients with dyslipidemia for significant improvement in blood lipids (College of Dietitians of Ontario and Dietitians of Canada, 2005). There is a need to reduce morbidity and premature mortality from preventable chronic diseases such as heart disease by reducing the dietary fat intake of adults to an average of 30 per cent of calories or less, reducing the proportion who are overweight and increasing the proportion who are at least moderately active (Ministry of Health and Long Term Care, 2003).

Review Content Summary: A systematic review and meta-analysis were conducted to examine the effectiveness of dietary advice given by a dietitian compared with another health professional (physician or nurse), or the use of self-help resources, in reducing blood cholesterol in adults. Studies were carried out in general practices, workplaces and a variety of clinic settings. Outcome data included differences in blood cholesterol; changes in low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL) cholesterol, body mass index (or body weight) and blood pressure at least six weeks from the baseline intervention; and patient satisfaction with the intervention. When data from 12 randomised trials were pooled, dietary advice by dietitians was more effective than advice by others (doctors, nurses, counsellors or self-help resources) at lowering blood cholesterol (in the short to medium term).

Comments on this review's methodology: A comprehensive set of databases and conference proceedings was searched for papers published in any language between 1966 and 2002. Appropriate search terms, eligibility criteria, selection processes, quality assessment, data abstraction procedures and meta-analysis methods were clearly described. Only randomised trials were eligible, but all 12 studies had methodological weaknesses. Results should be

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interpreted with caution because baseline blood cholesterol levels tended to be higher at baseline among the treatment groups (dietitian) compared to control.

Evidence points ARE NOT weighted or ranked according to strength

What's the evidence?	Implications for practice and policy:
<p>> The interventions used in the trials were short to medium in term and are not suitable for primary care practice or population prevention programs.</p>	<p>> For primary prevention and population level practice, food consumption patterns from the Canadian Community Health Survey Cycle 2.2 may provide correlational data on health outcomes such as high blood cholesterol.</p> <p>> There is a need for more high quality nutrition education intervention studies to determine the most effective methods for lowering blood cholesterol levels in a variety of settings (e.g. community-based programs, primary care clinics) over time.</p> <p>> Food and nutrition knowledge such as reading food labels, food purchasing and preparation practices and skills are needed in dietary intervention studies to ensure accuracy in dietary reporting and recording.</p> <p>> Knowledge of relative effectiveness would inform policy decisions on the best way to manage high blood cholesterol in the general population.</p> <p>> Other risk factors (e.g. sex, age, income, ethnicity, language, education level and geographical location) for heart disease, in addition to high blood cholesterol, must be considered. Population level heart health education must address functional as well as health literacy. Heart disease and risk factor awareness needs to be understandable so that those at risk can evaluate and determine their actions.</p>
<p>> Pooled analysis of data from 1689 participants in 12 randomized trials demonstrated that dietary advice by dietitians was more effective than advice by others (doctors, nurses, counsellors or self-help resources) at lowering blood cholesterol in the short to medium term. Blood cholesterol level was 0.25 mmol/L lower on average in the group assigned to a dietitian.</p> <p>> Dietitians were more effective than doctors at lowering blood cholesterol levels (N=664, 4 trials).</p>	<p>> Dietitians are specifically trained to provide high quality and current nutrition advice using a variety of education strategies.</p> <p>> There is a need for the scope of practice of registered dietitians to include the controlled act of prescribing therapeutic diets such as hypercholesterolemia.</p> <p>> If dietitians are the most effective educators, there needs to be increased numbers of dietitians.</p>

<p>> Pooled analysis of data from 973 participants in 7 randomized trials did not detect a difference between dietitians and self-help resources in lowering blood cholesterol levels.</p>	<p>> It could be hypothesized that some well-motivated participants will change their dietary habits with little input from a health professional and that a written resource may be sufficient.</p> <p>> Population based heart health programs need self-help resources to reach a larger sample.</p> <p>> Multiple education strategies should be used with target audience input into development and dissemination. Intervention effectiveness evaluation is necessary.</p> <p>> Client education should include adult and health literacy principles to improve client knowledge, understanding, motivation and compliance to desired dietary practices.</p> <p>> There is a need for greater understanding of the many predisposing, enabling and reinforcing factors (PRECEDE-PROCEED health promotion model) that influence an individual's motivation to change and/or maintain certain health behaviours with and without the input from health professionals.</p>
<p>> There was only a single trial that compared dietitians with nurses and with counsellors as the control; neither detected a significant difference between intervention and control groups.</p>	<p>> If other health providers can be as effective, dietitians need to play a leadership role in ongoing training of nurses and doctors to ensure that their nutrition knowledge is appropriate and up to date.</p>
<p>> In most of the trials the baseline blood cholesterol level was higher for the dietitian group than those receiving advice from a doctor or using self-help resources, allowing larger treatment effects to be observed in the dietitian group.</p> <p>> It was not possible to tell if the differences in blood cholesterol observed resulted from the advice or the amount of contact time with different health professionals.</p>	
<p>> With the small number of studies meeting the selection criteria, there is insufficient evidence to determine effects of dietitian advice for the secondary outcome measures. (LDL cholesterol, HDL cholesterol, blood pressure or body weight). One study, where weight loss was the main objective of the study intervention, found a significantly larger weight loss (average, 6 kg) with dietitians compared to counsellors.</p> <p>> One study with patient satisfaction as a</p>	

<p>measured outcome found dietitian advice preferred to physician advice (e.g. more useful, would recommend to others).</p>	
<p>General Implications: There is a need for good quality RCTs for dietary intervention studies. Further work is needed on effective strategies for nutrition education interventions at the individual, group and population level. This includes modes of delivery including the roles of dietitians in a variety of settings. There are professional and practical implications for dietitians including their scope of practice with proposed revisions to the Ontario Regulated Health Professions Act, 1991 and the prescription of therapeutic diets.</p>	

Cost Benefit or Cost-Effectiveness Information: Not included in the review.

References Used to Outline Issue:

College of Dietitians of Canada, & Dietitians of Canada. (2005). Controlled acts working group report August 2005. Evidence of benefits and risks associated with the prescription of nutrition therapy. Retrieved November 4, 2005 from Web site: <http://www.cdo.on.ca/en/pdf/Publications/Reports/CA%20Report%20RefMgrAug05%20finalref.pdf>.

Filate, W.A., Johansen, H.L., Kennedy, C.C., & Tu, J.V. (2003). Regional variations cardiovascular mortality in Canada. *Canadian Journal of Cardiology*, 19 (11), 1241-1248. Available from Web site: <http://www.ccort.ca/Atlas.asp>.

Ministry of Health and Long Term Care. (2003). Draft mandatory health programs and services guidelines. Available from Web site: <http://www.apheo.ca/indicators/pages/resources/Draft%20Mandatory%20Obj%20%20Indicators.html>

Statistics Canada. (2005). *Health indicators. All circulatory disease deaths, 2000-2002*. Available: http://www.statcan.ca/english/freepub/82-221-XIE/2005001/tables/pdf/1463_01.pdf.

Other References on this Topic:

- Angus, J., Evans, S., Lapum, J., Rukholm, E., St. Onge, R., Nolan, R., & Michel, I. (2005). "Sneaking disease": the body and health knowledge for people at risk for coronary heart disease in Ontario, Canada. *Social Science & Medicine*, 60, 211-2128.
- Canadian Public Health Association. (2005). Understanding the forces that influence our eating habits. What we know and need to know. *Canadian Journal of Public Health*, 96 (S3).
- Chahoud, G., Wady Aude, Y., & Mehta, J.L. (2004). Dietary recommendations in the prevention and treatment of coronary heart disease: Do we have the ideal diet yet? *The American Journal of Cardiology*, 94, 1260-1267.
- Ministry of Health and Long term Care. (2004). Chief medical officer of health report: Healthy weights, healthy lives. Available from Web site: www.health.gov.on.ca.
- Parikh, P., McDaniel, M.C., Ashen, M.D., Miller, J.I., Sorrentino, M., Chan, V., Blumenthal, R.S., & Sperling, L.S. (2005). Diets and cardiovascular disease: An evidence-based assessment. *Journal of the American College of Cardiology*, 45, 9, 1379-1387.
- Raine, K.D. (2004). *Overweight and obesity in Canada: A population health perspective*. Canadian Institute for Health Information. ISBN 1-55392-231-X (PDF).
- Wilson, P.W.F., D'Agostino, R.B., Sullivan, L., Parise, H., & Kannel, W.B. (2002). Overweight and obesity as determinants of cardiovascular risk. The Framingham experience. *Archives of Internal Medicine*, 162, 1867-1872.

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