

HYPERTENSION AND NUTRITION – ROLE OF THE FAMILY PHYSICIAN

How can nutrition help in the management of hypertension?

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Diseases in which nutritional intervention plays a key role in their management are common in family practice. Although several national and international guidelines for the family physician emphasise the importance of non-pharmacological treatments such as smoking cessation, exercise and good nutritional habits, these are in general poorly followed. Most of these recommendations are based on extrapolation from population-based evidence or consensus alone. Social class and socio-economic issues need to be addressed.

A key question for family practice is whether strategies that have been shown to be effective at the population level can be deemed effective at the individual patient level. Small changes in individual behaviour can have significant consequences for a population and lead to measurable effects, but at an individual level this does not necessarily result in a relevant change in health status for the person concerned. This tension between population benefits and individual benefits is particularly striking in the case of nutritional advice, because so much evidence is derived from population-based studies.

Evidence-based nutritional advice is hampered by:

- lack of nutritional intervention studies
- difficulty of translating nutritional interventions into practice

- translation of interventions to the primary care setting
- omission of nutrition and diet as a module in MB ChB curricula throughout South Africa.

There is a lack of randomised, controlled nutritional intervention studies with hard clinical end points conducted in the primary care setting. Compared with research conducted into the efficacy and safety of drugs, which is based on clinical end points, the study of food and food components is much more complicated. Adding or deleting components from a patient's diet can be effective, but this does not always result in a change in eating behaviour.

Nutrition is embedded in culture, not only in the patient's culture but also in that of his or her family, and a distinction must be made between healthy nutrients and a healthy diet before sustained effects on health status can be achieved. The heterogeneity of the population and the different amount and composition of food eaten make objective trials expensive and difficult. In primary care it is necessary that this be achieved for patients and families of all social and cultural backgrounds before it can be pursued as routine care – not just for a happy few with special nutritional interests or specific health problems. Research should also include a description of the individual provider of nutritional advice, e.g. the dietitian or the family doctor.



Although several national and international guidelines for the family physician emphasise the importance of non-pharmacological treatments such as smoking cessation, exercise and good nutritional habits, these are in general poorly followed.

Nutritional management of hypertension has moved beyond simply restricting sodium intake to ensuring that patients consume adequate amounts of the major food groups, particularly those containing calcium, potassium, and magnesium and fibre.

HYPERTENSION

Hypertension is the most common problem with which patients in the age group 50 - 65 years present. More than half of all persons older than 65 years have hypertension. Over the past 30 years improved control of hypertension has contributed to a reduction of nearly 60% in stroke-related deaths and deaths from ischaemic heart disease. Recommendations to identify and treat hypertension are universal.

In the USA the prevalence of hypertension in the black population is about 38% compared with 29% among whites. Hypertension in sub-Saharan Africa, on the other hand, is a widespread problem of immense economic importance because of its high prevalence in urban areas, frequent under-diagnosis, and severity of complications. Two lifestyle changes that are feasible and should help stem the epidemic of hypertension in Africa are a decreased salt intake and a decrease in obesity.

The South African government has come to recognise hypertension as one

of the five major conditions that must be given priority and has adopted new guidelines for the management of hypertension, proposed by the Hypertension Society of Southern Africa. Emphasis has been placed on lifestyle modification through active patient participation as first-line management of hypertension.

NUTRITION

High blood pressure of unknown cause is called primary or essential hypertension. This is the most common type of high blood pressure and responds well to lifestyle changes, such as losing weight, dietary changes, exercise and stress reduction. Non-pharmacological management of essential hypertension can bring blood pressure values into the normal range; however, if lifestyle changes are not maintained hypertension will return. Changes in diet, if sustained, can bring about dramatic changes in blood pressure. Increasing the amount of vegetables and fruit and reducing the amount of fat and cholesterol will not only reduce blood pressure but can contribute to weight loss, which also lowers blood pressure.

The following dietary changes are recommended:

- Eat whole, fresh, unrefined, and unprocessed foods.
- Maintain a low-sodium high-potassium diet. Restricting the intake of sodium should be accompanied by an increased intake of potassium.
- Avoid salt, sugar, dairy products, refined foods, fried foods, junk foods, and caffeine.
- Drink an adequate amount of water daily.

Patients with hypertension can try a new and effective whole-food approach known as the DASH (Dietary Approaches to Stop Hypertension) diet. This diet is high in fruits, vegetables, nuts, whole grains, fish, poultry, and low-fat products, resulting in a diet high in calcium, potassium and magnesium. The DASH diet lowers blood pressure more than sodium restriction alone.

It is important to note that this diet contains very little salt.

ROLE OF THE FAMILY PHYSICIAN

Every family physician should keep up to date with new trends in the management of hypertension. Basic evaluation and management of hypertension have been reviewed recently in the 7th report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC 7). Advances in the management of hypertension have refined our understanding of systolic blood pressure, nutrition, medication selection and hypertension in special populations. It is now recognised that lifestyle modification as well as nutrition are among the cornerstones of the treatment and management of prehypertension.

The management of hypertension has evolved over the past decade. Isolated systolic blood pressure elevation, a common form of uncontrolled hypertension, is recognised as a significant risk factor for vascular complications in patients with hypertension. Nutritional management of hypertension has moved beyond simply restricting sodium intake to ensuring that patients consume adequate amounts of the major food groups, particularly those containing calcium, potassium, magnesium and fibre.

There are instances where family physicians have to give advice on nutrition and where they may be the most trusted source of information for a patient. However, compared with dietitians, family physicians have much less time to advise fully on diet, and should therefore condense information. However, the role of the family physician in the treatment of lifestyle diseases such as hypertension should, where possible, include the following:

- **Use of the computer for guidance on nutrition.** When the patient is in the consulting room,



time can be saved if the doctor can print out well-written, reliable nutritional advice for the particular diagnosis. See http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf for full information on the DASH diet.

- **Nutrition as part of the training programme for family medicine and primary health care.**
- **Advice on nutrition to some patients.** The family physician is generally expected to give nutrition advice for both primary and secondary prevention.
- **Delegating and transferring work.** Other members of the primary health care team such as nurses can help with more detailed dietary advice. If a patient is anxious about dietary prescription or if it must be very precise, the family physician must refer to a dietitian.

- **Good dietary guidelines for patients.** Doctors should possess and use dietary guidelines, which are based on all the evidence, randomised controlled trials and observational epidemiology, and set out the principles of diet for different conditions. The best guidelines have to be relatively brief, evidence based, up-to-date and practical.
- **Obesity.** Family physicians alone cannot treat all overweight and obese people who lack physical exercise. They do, however, have a duty to weigh their patients regularly, inform them of their body mass index (BMI) and speak to them about diet and weight loss where necessary.

For diseases such as coronary heart disease, diabetes, hypertension and obesity dietary change is part of the management. The family physician has to be able to give nutritional advice in all these situations, and some patients expect advice or an opinion from

their doctor on whether their usual diet conforms to current research and public health advice. Increased efforts by family physicians to focus nutrition counselling on high-risk patients may increase its impact.

Further reading

Eaton CB, Goodwin MA, Stange KC. Direct observation of nutrition counselling in community family practice. *Am J Prev Med* 2002; **23**(3): 174-179.

Magill MK, Gunning K, Saffel-Shrier S, *et al.* New developments in the management of hypertension, University of Utah School of Medicine, Salt Lake City, Utah. *Am Fam Physician* 2003; **68**: 853-858, 865-866.

Opie LH, Seedat YK. Hypertension in sub-Saharan African populations. *Circulation* 2005; **112**: 3562-3568.

Trustwell A, Sterwart HGJ, Blom J. Nutrition guidance by family doctors in a changing world: problems, opportunities and future possibilities. Paper presented at the 3rd Heelsum International Workshop, the Netherlands, 10 - 12 December 2001.

Van Binsbergen JJ, Delaney C, Van Weel C. Nutrition in primary care: scope and relevance of output from the Cochrane Collaboration. *Am J Clin Nutr* 2003; **77**(4): 1083-1084.

IN A NUTSHELL

Diseases such as hypertension, where a nutritional intervention plays a key role in management, are common in family practice.

Hypertension is the most common problem for which patients visit family physicians.

Over the past 30 years improved control of hypertension has contributed to a reduction of nearly 60% in stroke-related deaths and deaths from ischaemic heart disease.

Lifestyle modification through active patient participation is the first-line management of hypertension.

Hypertensive people can reduce their blood pressure significantly through nutritional changes.

Patients with hypertension can now try a new and effective whole-food approach known as the DASH (Dietary Approaches to Stop Hypertension) diet.

The family physician is generally expected to give nutritional advice for secondary prevention.

The family physician has to be able to give nutritional advice in all situations, and some patients expect advice or an opinion from their doctor on whether their usual diet conforms to current research and public health advice.

Nutrition training must be included in the training of family physicians.

SINGLE SUTURE

A TASTE FOR FAT

French researchers may have discovered why fatty foods are irresistible. It appears that we may have a taste bud for fats. Philip Besnard and colleagues at the University of Bourgogne, France, found a receptor protein (CD36) on mouse tongues that seems to make lipids tasty to animals. They think that humans may have CD36 receptors and that variations in the sensitivity of these receptors may be linked to eating disorders and obesity. They engineered mice so that they lacked the CD36 receptor and gave them a choice between two feed bottles containing fatty or fat-free feeds. These CD36-free mice showed no preference for the fatty liquid, even after a period of fasting. Normal mice consistently preferred the fatty liquid and drank far more of it. The taste bud also appears to prepare the gut to receive fats. If the receptor is stimulated with lipids, even if they are not swallowed, the mice's guts started to produce bile.

Besnard P, *et al.* *J Clin Invest* 2006; **115**: 3177.