

Healthy lifestyle interventions in general practice

Part 1: An introduction to lifestyle and diseases of lifestyle

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Abstract

Poor lifestyle choices including physical inactivity, adverse nutrition and tobacco use are strongly associated with heart disease, diabetes, respiratory disease and cancer. These four diseases are responsible for over 50% of mortality worldwide. Yet lifestyle intervention is underemphasised in the undergraduate training of doctors and other health professionals. This article reviews the lifestyle factors related to chronic non-communicable disease and suggests small but meaningful interventions for general practitioners to incorporate into daily practice. The upcoming series to be published in Family Practice regarding "lifestyle modification in chronic disease states" is introduced.

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Introduction

Lifestyle is defined as the personal customs or habits of an individual or group of individuals. It alludes to their active adaptation to the social milieu, which develops as a product of need for integration and socialisation. With regard to health, lifestyle refers to dietary habits, physical activity habits, the social use of substances such as alcohol and tobacco and exposure to other risky behaviours.

Chronic diseases of lifestyle are a group of diseases that share risk factors such as unhealthy dietary choices, smoking, lack of physical exercise, sedentary behaviour and life-stress. These result in various disease processes culminating in high morbidity and mortality due to cardiovascular and cerebrovascular disease, diabetes, tobacco- and nutrition induced cancers, chronic bronchitis, emphysema and many others.

The burden of poor lifestyle choices

The public health challenges in this millennium are largely related to lifestyle and have been previously reviewed.^{1,2} The non-communicable or lifestyle related diseases include cardiovascular disease, diabetes, cancers, chronic respiratory disease, mental health problems, musculo-skeletal disorders and others. However, the first four diseases in this list account for over 50% of mortality globally and share a small number of behavioural risk factors. These include excessive dietary calorie intake, a diet high in salt, saturated and trans fatty acids, excessive alcohol intake, physical inactivity and tobacco smoking. Taken together, the non-communicable lifestyle related diseases represent globally the single largest cause of mortality in individuals of working age and their incidences in younger adults are higher in poor countries in the world than in the rich.¹

In South Africa 37% of all deaths are due to non-communicable diseases.³ The burden of disease attributable to the various lifestyle related risk factors in the South African population is shown in Table I. Tobacco use and high blood pressure both accounted for approximately 9% of all deaths in adults in the year 2000. Furthermore excess body weight and alcohol use accounted for 7% of all deaths whilst diabetes, high cholesterol and physical inactivity accounted for 4.3%, 4.6% and 3.3% of deaths respectively.

Table I: Burden of disease attributable to various risk factors in SA population during the 2003 World Health Survey⁴⁻¹¹

Risk factor	% of all deaths in 2000	Total DALYs*
Tobacco use	8-9%	3.7-4.3%
Excess body weight	7%	2.9%
Alcohol use	7.1%	7%
Physical inactivity	3.3%	1.1%
High blood pressure	9%	2.4%
High cholesterol	4.6%	1.4%
Diabetes	4.3%	1.6%

* DALYs = disability adjusted life years

Although the emphasis of lifestyle modification research has been placed on combating cardiac disease, diabetes, cancer and lung disease, there is evidence to show that lifestyle factors are important in the pathogenesis of other disease states including gout,¹² gastro-oesophageal reflux disease,¹³ osteoporosis,¹⁴ metabolic syndrome,¹⁵ polycystic ovary disease,^{16,17} irritable bowel disease,¹⁸ and erectile dysfunction,¹⁹ amongst others.

Addressing the problem

It has been shown that the burden of non-communicable diseases may be prevented, in part, by addressing certain lifestyle related risk factors. Furthermore, lifestyle modification programmes have been shown to be effective in the secondary prevention setting.²⁰⁻²⁵ Amongst other interventions, this would include the adoption of healthy nutrition habits, taking regular physical activity and refraining from smoking. Furthermore, various forms of stress management practices, therapeutic education interventions and limitation of exposure to harmful stimuli e.g. pollutants or cellular phones are powerful forms of healthy lifestyle interventions.²⁶⁻²⁸

Benefits of physical activity interventions in primary disease prevention

Over the past twelve years, it has become apparent that chronic physical activity in the form of exercise training has the ability to prevent or delay the onset of illness and disease (primary prevention).²⁹⁻³¹ Although the actual mechanisms have not been well identified, it appears that physical activity acts both directly on the cardiovascular system, and indirectly by inducing favourable changes in metabolism, body mass and body composition.

Generally, the health benefits of physical activity increase with increasing frequency, duration and intensity of exercise.³⁰ Although there are benefits associated with moderate intensity exercise, there is scientific evidence to indicate that the intensity of exercise is important, with greater reductions in risk if exercise training is conducted at a higher intensity.³² It has also been shown that the effects of exercise training are short-lived, and that a long-term commitment to perform regular exercise training is necessary to reduce the risk of chronic disease.

Exercise participation guidelines for primary disease prevention have recently been updated and are outlined below.²⁹

- To promote and maintain health, all healthy adults aged 18 to 65 years need moderate-intensity aerobic (endurance) physical activity for a minimum of 30 minutes on five days each week or vigorous-intensity aerobic physical activity for a minimum of 20 minutes on three days each week.
- Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation. For example, a person can meet the recommendation by walking briskly for 30 minutes twice during the week and then jogging for 20 minutes on two other days.
- Moderate-intensity aerobic activity, which is generally equivalent to a brisk walk and noticeably accelerates the heart rate, can be accumulated toward the 30-minute minimum by performing bouts each lasting 10 or more minutes. During moderate intensity exercise a person should be able to talk to a companion but might be a little breathless.
- Vigorous-intensity activity is exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate.
- In addition to the above recommendations, every adult should perform activities that maintain or increase muscular strength and endurance a minimum of two days each week. Eight to ten different exercises using the major muscle groups of the legs, trunk, chest and shoulders; one or two sets of 8–12 repetitions each should be performed.
- Because of the dose-response relationship between physical activity and health, persons who wish to further improve their

personal fitness, reduce their risk for chronic diseases and disabilities or prevent unhealthy weight gain may benefit by exceeding the minimum recommended amounts of physical activity.

- Furthermore, there is scientific evidence that regular stretching increases range of motion of the joints and reduces the risk of developing an injury.

Dietary lifestyle interventions in chronic disease

Lifestyle choices with respect to diet are important in both primary and secondary prevention of chronic disease.^{33,34} Whilst a discussion on dietary choices for primary prevention is beyond the scope of this article, dietary therapy for patients with chronic disease should be individualised, with consideration given to the individual's diagnosis, usual food and eating habits, metabolic profile, treatment goals and desired outcomes. As a general practitioner it is important to encourage patients to make healthy food choices, as opposed to just emphasising food restrictions. This includes eating a variety of nutrient-dense foods from all food groups. Emphasise daily fruit and vegetables consumption, inclusion of whole-grain foods in their diet, eating fat-free or low-fat dairy products, as well as lean proteins, whilst limiting trans fats, cholesterol, sugars and salt. Instead of targeting one food as forbidden, practitioners should look at the overall diet and the many different foods that, together, constitute a healthy eating plan as part of a healthier lifestyle. Specific dietary guidelines will be considered under discussion of the individual chronic disease entities.

Smoking Cessation

Smoking remains one of the most important causes of morbidity and mortality worldwide. Individuals who smoke are exposed to not only nicotine, tobacco, tar, carbon monoxide but also to at least 50 other toxic chemicals. Smoking increases the risk of at least 50 medical conditions including dementia and digestive problems.

The general practitioner has a critical role to play in advising and assisting smokers to quit by integrating the various aspects of nicotine dependence. Counselling and pharmacotherapeutic interventions for smoking cessation are among the most cost-effective clinical interventions and will be discussed further in this series of articles.^{35,36}

Stress and stress management

Adverse life-stress exerts independent adverse effects on cardiovascular and other health parameters. Prospective studies consistently indicate that hostility, depression, and anxiety are all related to increased risk of coronary heart disease and cardiovascular death.³⁷ Stress has a profound effect on a number of physiological systems and adversely affects autonomic and hormonal homeostasis, resulting in metabolic abnormalities, inflammation, insulin resistance, and endothelial dysfunction.³⁸ Furthermore, stress is often associated with non-compliance with medications and destructive behaviour patterns including poor dietary choices, smoking, drug addiction and sedentary lifestyle.

Fortunately, stress is a modifiable risk factor and many factors have been shown to be protective. A number of interventions have been formally evaluated for their ability to reduce adverse affects of stress.^{39,40} These include psychosocial support, regular exercise, stress reduction training, biofeedback, sense of humour, optimism, altruism, faith, and pet ownership. The general practitioner should be

familiar with tools and techniques to assist in the identification and management of adverse life stress. These will be discussed further in the upcoming series.

Incorporating lifestyle interventions into general practice

Thus it is clear that healthy lifestyle interventions constitute an important component of best practice medicine in the prevention and treatment of many diseases. Yet, too often, lifestyle modification is mentioned in a single line or paragraph in position statements guiding disease management. Moreover, despite proven efficacy, lifestyle modification is not taught to medical doctors at medical school. Therefore, it is not surprising that general practitioners often feel insufficiently equipped to counsel a patient regarding exercise habits, smoking cessation, stress management strategies and healthy nutritional choices. They are also often not aware of the roles that allied healthcare practitioners can play in assisting lifestyle prescription.

A recent study conducted by the American College of Sports Medicine (ACSM) indicated that nearly two-thirds of patients (65%) would be more interested in exercising to stay healthy if advised by their doctor and given additional resources. Four out of 10 physicians (41%) talk to their patients about the importance of exercise, but don't always offer suggestions on the best ways to be physically active. Patients (25%) look to their doctor first for advice on exercise and physical activity. They turn next to fitness and health web sites (24%). It is therefore important that the general practitioner has thought through an approach to lifestyle modification when confronted by the patient.

Practical ideas to incorporate lifestyle modification into general practice

The following are practical ideas to incorporate lifestyle modification into general practice. All general practitioners are encouraged to talk to their patients about the health benefits of exercise, healthy dietary and other lifestyle choices and to strongly recommend that their patients engage in appropriate exercise, eating habits and stress management if indicated.

- Post exercise/physical activity/healthy nutrition/smoking cessation materials and/or posters throughout your office. Place information in your waiting rooms to reinforce messages about the importance of physical activity, healthy diet, smoking cessation and other lifestyle choices.
- Make a brief exercise and dietary consultation a regular part of your interaction with each patient during most visits.
- Ask patients to keep a basic food and physical activity diary.
- Distribute exercise/physical activity/ healthy eating tips to all patients at the conclusion of each appointment. If you can, write an exercise "prescription" for your patient. If not, consider a referral to an appropriate professional for an exercise prescription.
- Set an example! If you're not physically active and eating healthily, begin your own lifestyle routine and talk to your patients about what you do each day to stay healthy and active.

Exercise and other lifestyle factors in the secondary prevention of chronic disease states

During the course of the next year, the SAFP journal will publish a series of articles focusing on lifestyle modification in various disease states (secondary prevention).

- Lifestyle and cardiovascular disease

- Lifestyle and diabetes
- Lifestyle and respiratory disease
- Lifestyle and cancer
- Lifestyle and the metabolic syndrome

These articles have been written to focus on the lifestyle factors associated with the disease entity and provide the principles for prescribing lifestyle interventions for the particular disease under discussion. Although the emphasis of the lifestyle interventions will be on exercise prescription, dietary and other lifestyle interventions will also be discussed. Wherever possible, practical tips to use in general practice and tools to assist in lifestyle modification will be included. We are confident that the upcoming series of articles on lifestyle and chronic disease will be of practical value for the general practitioner. 🏠

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