

EFFECTS OF DIET AND LIFESTYLE ON BLOOD PRESSURE

High blood pressure (hypertension) is extremely common in our society. As we age, the incidence of hypertension in Australia generally increases, such that whilst over half of our population over the age of 60 has high blood pressure, this increases to an incidence of approximately 90% of our population by age 80-85. Hypertension puts us at risk of significant cardiovascular and kidney disease so it is important that blood pressure is maintained at a measurement of <130/85; or <140/90 for people over 65 who do not have diabetes or kidney disease. Medications are an important and effective treatment, however, there are also dietary and lifestyle factors that should be addressed in order to achieve an optimal blood pressure.

WEIGHT LOSS

There is much evidence that weight loss decreases blood pressure. If overweight, losing body fat can reduce blood pressure in the range of 5-20mmHg per 10kg lost. This single factor can mean the difference between normal blood pressure and hypertension that requires treatment with medication. Aim to achieve and maintain a healthy body weight with a waist circumference of <80cm for females and <94cm for males (<90cm Asian males); or aim to lose at least 5-10% of body weight.

PHYSICAL ACTIVITY

Regular exercise or physical activity reduces blood pressure independent of its weight loss effects. A reduction of 2-4mmHg can be expected by initiating an exercise routine such as a 30 minute brisk walk or cycle most days of the week. We all need to be maintaining at least half an hour of moderate to vigorous physical activity on most, if not all, days of the week to achieve positive health outcomes, including blood pressure control.

DIETARY SODIUM

Consumption of sodium in the form of salt (sodium chloride) in the western diet is considered the single most important cause of age-related hypertension. Cultures with low sodium intakes do not suffer increasing blood pressure with increasing age. Sodium is present in our diet in many forms such as rock salt, sea salt and garlic salt, as well as in flavour enhancers such as monosodium glutamate (MSG). Sodium bicarbonate and baking powder are also high in sodium. When making food choices read the nutrition label on the packaging and aim to choose foods that contain less than 120mg of sodium per 100g; these are considered *low salt* foods. Alternatively choose foods that have *no added salt* or are *salt reduced*.

Most sodium in our diet is hidden in our foods, not added at the table. On average, 80% of the sodium in a typical western diet comes from processed foods, while 12% is found naturally in foods and 8% is added while cooking, or at the table. Australians generally consume sodium at a level that far exceeds the recommended daily intake, so most of us should be aiming to reduce our intake. For blood pressure reduction sodium intake should be limited as much as possible. Major contributors of sodium in our diet are biscuits, margarine, cheese, bread, breakfast cereals, packet soups and meal bases, such as sauces and stocks. Pizza and other processed, packaged and takeaway foods generally contain very high amounts of salt. Low salt breads and cereals are available whilst most processed foods are simply best avoided.

FRUIT AND VEGETABLES

A high intake of fruit and vegetables is directly associated with reductions in blood pressure. Studies showing the greatest beneficial effects on blood pressure were with an intake of at least 9 serves of fruit and vegetables daily, including at least 4 serves of fruit each day. High dietary potassium, which is found naturally in these foods, opposes the effects of dietary sodium and has a beneficial effect on blood pressure. Frozen or canned fruits and vegetables are acceptable alternatives to fresh produce but ensure they do not have added sugar or salt.

DIETARY FAT

Consuming a low fat diet (<30% of energy intake) and in particular keeping saturated fat intake low (<10% of daily energy intake) is recommended for everyone, but is also established as having a beneficial effect on blood pressure. Newer evidence supports even lower fat intakes:- <25% of total energy and <7% saturated fat intake. Food labels show you the percentage of fat and also the saturated fat content of packaged foods. Two to three serves of oily fish (eg salmon, sardines or tuna) per week can be of benefit in hypertension or you may choose to supplement your diet with fish oil capsules (eg 3g daily).

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LOW FAT DAIRY FOODS

Although full cream milk and yoghurt are relatively low fat foods (eg 4% fat), the recommended levels of consumption (2-3 serves per day) and the fact that the major component of the fat in dairy is saturated fat, means we should always aim to consume skim or reduced fat varieties. Three serves of low fat dairy food daily is consistent with lowering of blood pressure. Non-fat or reduced fat milks and yoghurts are recommended for daily consumption, however ice cream and hard cheese should be limited to no more than 2 serves per week. One serve of cheese is equal to 40g (2 slices) whilst a serve of ice cream is 2 small scoops. Studies have shown that it is not simply the calcium or magnesium in these foods, as by themselves these minerals did not have the effect of the whole food on reducing blood pressure.

ALCOHOL CONSUMPTION

Individuals who consume 3 or more alcoholic drinks per day experience hypertension at a level 3 times higher than non-drinkers. Binge drinking is especially linked to a higher incidence of cardiovascular death and stroke. Alcohol directly increases blood pressure and may interfere with the action of hypertensive medications. Alcohol is high in kilojoules and is often a major contributor to being overweight or obese, thus both directly and indirectly contributing to elevated blood pressure. Each standard drink (10g alcohol) increases blood pressure irrespective of the type of alcoholic beverage and although the flavanoid components of red wine are beneficial to health they have not been shown to reduce alcohol related hypertension.

AVOIDANCE OF SMOKING

Smoking directly causes constriction of blood vessels, which directly increases the pressure exerted on your blood vessels when your heart beats; that is; it directly increases your blood pressure. Smoking cessation (or never starting) is of great benefit to sufferers of hypertension

RELAXATION

Acute emotional stress is known to increase blood pressure. Relaxation techniques such as meditation, yoga and tai chi can greatly benefit our overall health and reduce hypertension.

DIETARY RECOMMENDATIONS FOR BLOOD PRESSURE REDUCTION

- **Lower sodium intake:** Make low sodium product choices for breads, cereals and canned foods. Minimise or exclude processed foods from the diet. Gradually reduce the salt in your diet and your taste buds will soon adapt to the delicious natural flavours of higher quality fresh foods.
- **Increase potassium intake through fruit and vegetables:** Aim for 9 serves per day, including at least 4 serves of fruit.
- **Consume three serves of low fat dairy products each day:** Preferably milk or yoghurt with only occasional cheese or ice cream.
- **Reduce saturated fats:** Choose low-fat animal products and avoid fried and take-away foods.
- **Consume whole-grains, fish and nuts regularly:** They contain healthy fats among other benefits.
- **Choose lean meats such as chicken and pork and limit red meat to no more than 2 serves per week:** One serve is equal to 65-100g; eg a small steak or 2 small chops

Making these dietary and lifestyle changes means your blood pressure can be lowered significantly, with many accompanying health benefits for you!

References: Heart Foundation of Australia. www.heartfoundation.org.au; 7th report of the joint national committee on prevention, detection, evaluation and treatment of high blood pressure. Hypertension 2003;42:1206-1252.; National Nutrition Survey ABS catalogue No 4805.0.; Cochrane Review 2000. (2:CD000484).; Jung R. British Medical Bulletin 1997;53:307-21.; Nowson CA, et al. Blood pressure change with weight is affected by diet type. Am J Clin Nutr 2005;81(5):983-9.; Puddey IB, Beilin LJ. Alcohol is bad for blood pressure. Clin Exp Pharmacol Physiol; 2006; Sep 33(9):847-52.; Meneton et al 2005. Links between dietary salt intake, renal salt handling, blood pressure and cardiovascular disease. Physiol Rev;85(2):679-715.; INTERSALT study 1988 BMJ;297: 319-328.