Cardiovascular disease, Type 2 diabetes and hypertension in adults

HEALTH EDUCATOR DESK GUIDE

Evidence document

This document contains the evidence (seen on opposing pages) which supports the recommendations in this generic health educator desk guide for the management of cardiovascular disease and associated conditions in adults, according to the GRADE scheme by WHO. Evidence, references and recommendations will not appear in the version for use by health educators. Recommendations and actions in blue will be adapted by the country working group. It is intended that this document is used in conjunction with the patient education leaflet.

In making our recommendations we have considered both the disease and the context.

The following criteria has been used:

- Balance between desirable and undesirable effects
- Quality of evidence
- Values and preferences
- Cost (resource allocation) (Guyatt *et al.* 2008)

Strength of recommendation	**Rationale**
Strong	The panel is confident that the desirable effects of adherence to the recommendation outweigh the undesirable effects.
Conditional	The panel concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects. However: • the recommendation is only applicable to a specific group, population or setting OR • new evidence may result in changing the balance of risk to benefit OR • the benefits may not warrant the cost or resource requirements in all settings.

(WHO 2010)

Evidence level	Rationale
High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the effect.
Low	Further research is very likely to have an estimate of effect and is likely to change the estimate.
Very low	Any estimate of effect is very uncertain.

(WHO 2010)

Limitations of evidence review:

The recommendations made in this generic health educator desk guide are based on available literature and current guidelines. Whilst every attempt has been made to perform a thorough literature search to identify appropriate and relevant evidence, it is not a fully systematic literature review; therefore it cannot be guaranteed that all available evidence has been considered. However, the recommendations also incorporate internationally approved evidence-based guidelines. These have used equivalent evidence scoring systems, thus it can be assumed that the grading of the recommendations made here is valid.

This guide incorporates suggested behavioural change techniques known to be effective in addressing particular determinants of behaviour. There is limited evidence of the effectiveness of particular techniques for specific CVD risk factors in a LMIC context. Therefore, the inclusion of techniques has been made by consensus agreement using knowledge of behaviour change techniques, potential feasibility in the proposed setting and in reference to published materials.
(Abraham and Michie 2008; Michie *et al.* 2008).

This is a desk guide for use by a health educator in a health care centre. It contains information to facilitate behaviour change of key lifestyle risk factors as part of the management of cardiovascular disease (CVD) in adults in low resource settings. The guide also contains information on treatment support, including adherence to clinic appointments and medication.

This guide has been designed for those patients identified as high risk individuals through assessment by a clinician in a rural health care facility. It should be used for all patients with;

- CVD
- Hypertension
- Diabetes type 2
- Pre-diabetes

These guidelines must be adapted to the local health service context in country by the Ministry of Health and NGO partners through a working group process. This process should acknowledge available resources and staff prior to pilot, evaluation and scale-up in country.

This desk guide is a concise “quick reference” for health educators. The objectives are to effectively facilitate behaviour change, focusing on the key risk factors for CVD, diabetes and hypertension and to discuss adherence strategies with the patient. This guide is to be used in health service settings as part of a package of tools, including the health workers ‘case management desk guide’ for CVD in adults.

This guide provides a systematic approach to the identification and assessment of lifestyle risk factors, assessment of motivation for behaviour change and suggestions on how to support and encourage behaviour change in each individual using recognised techniques. It includes information on adherence strategies to facilitate discussion with the patient in conjunction with the patient education leaflet.

This guide has been produced by Professor John Walley, Drs Rachel Weston and Kirstie Graham of LIHS/Nuffield Centre for International Health and Development, Dr Kirti Kain of LIGHT, University of Leeds, UK and Heather Thomson, NHS, Leeds, UK. It is now undergoing expert review.

Contents

How to use this guide

Following initial assessment, diagnosis and management of the patient by a health worker the individual will be referred to a health educator. It is expected that the health care worker will briefly discuss key messages related to lifestyle change, disease education and adherence to clinic appointments and medication.

The health educator should work through this booklet with the patient and their treatment supporter.

This guide is divided into 2 sections:
Patient adherence
Lifestyle assessment

Both sections should be covered in the discussion between the health educator and patient, along with the treatment supporter. This guide will enable the health educator to deliver key educational messages and develop individual action plans. The education leaflet should be used as a prompt.

At each appointment, the health educator should review progress, encourage all efforts to change behaviour, reemphasise key messages and decide whether other behaviours can also be targeted, giving assistance and guidance in doing so. Individual goals should be reviewed and revised to reflect progress.

It is important to always make a follow-up appointment.

Patient adherence

Using the education leaflet as a prompt:

Explain to the patient the importance of attending clinic appointments and taking prescribed medication.

Sign the treatment contract.

Discuss the importance of a treatment supporter.

Tell the patient that if they miss an appointment a reminder will be sent or an attempt to contact them will be made.

A treatment supporter

Explain to patient why a treatment supporter is important:

- Treatment is life-long, support is essential.
- It can be difficult to remember to take tablets regularly, but it is vital to continue treatment.
- A treatment supporter is someone they can talk to easily and who will encourage them.
- It is their choice who will be their treatment supporter. They will be called if they cannot be contacted or if there is a problem.

Discuss who would be the best treatment supporter; it must be someone concerned, trusted and committed to providing support.

Help the patient choose someone e.g. family member, friend or community volunteer. If patient cannot decide, suggest someone.

Record name, address and mobile phone number of patient and treatment supporter on the patient's treatment card.

Ask the patient to bring treatment supporter with them for all clinic visits, to learn about the illness, treatment and their role.

Advise the treatment supporter to**:**

- Meet with the patient often, try to make this a enjoyable time. If possible, meet at the time the patient takes their tablets to see them taking the tablets as prescribed.
- Look at tablet pack to check the patient is taking tablets correctly.
- Inform health worker if the patient stops taking the tablets.
- Encourage the patient to be active, eat healthily, stop smoking as needed and attend all appointments.

(Kunutsor *et al.* 2011; Qureshi *et al.* 2007; Khan *et al.* 2005)

It is recommended that all patients with CVD and associated conditions identify and involve a treatment supporter of their choice. *(Conditional recommendation, low quality of evidence).*

This recommendation is based on 3 RCTs. One of these is in Uganda and two from Pakistan. The Ugandan and one Pakistan trial were based on TB. The other Pakistan trial was on hypertension. No systematic review and no other studies investigating the effectiveness of treatment supporters in CVD and its associated conditions have been identified. Whilst the paper on hypertension indicates that there may be some degree of effectiveness, the effectiveness of a treatment supporter was not the primary outcome of the trial. Data from the TB disease specific studies suggest that a treatment supporter may be beneficial in low resource settings for chronic diseases, however further research is needed to determine if it remains effective for other chronic conditions, in particular lifelong conditions. There is concern that the undesirable effects of the intervention may outweigh the desirable effects i.e. cost to patient.

Appointment reminders

If an individual fails to attend a review appointment, take action.

- **Phone** patient and encourage them to return.
- **Phone** treatment supporter and ask them to remind patient.
- **Send** reminder letter to patient if you cannot contact them.
- **Ask** someone e.g. CHW to home visit if patient does not return.

(Labhardt *et al.* 2011; Glynn *et al.* 2010; Kunutsor *et al.* 2010; Schedlbauer, Davies and Fahey 2010; Haynes *et al.* 2008; Khan *et al.* 2005)

If patient is not adhering to treatment or attending clinic appointments:

- Do not criticise.
- Discuss any concerns or difficulties.
- Encourage the patient and treatment supporter
- Remind patient of treatment contract and the importance of continued medication.
- Make an appointment for them to see the health worker.

It is recommended that multifaceted interventions are implemented to improve adherence in CVD and associated conditions *(Strong recommendation, high quality of evidence).*

This recommendation is based on 4 Cochrane reviews looking at adherence in Type 2 diabetes, adherence to lip-lowering medication, adherence to medication in long term conditions and adherence strategies in hypertension. The majority of these found that complex multi-faceted interventions had positive outcome on adherence. (Glynn et al. 2010; Schedlbauer, Davies and Fahey 2010; Haynes et al. 2008; Vermeire et al. 2005)

It is recommended that individual patient reminders are given for follow-up appointments/missed appointments to increase patient contact with health care providers *(Strong recommendation, moderate quality of evidence)*.

This recommendation is based on an RCT, a qualitative study, a cross sectional study and a number of disease specific and generic Cochrane Reviews on adherence to medication. Whilst these have identified various methods of reinforcement and patient reminders that can be effective in improving clinic attendance and drug adherence, it is acknowledged that these are often context specific. The methods recommended are those that are most appropriate to a low-resource context. The reviews conclude that any method of increasing patient-provider contact is likely to be beneficial to treatment adherence. In implementing the recommendation, it is imperative to take into account patient preferences and cost.

Lifestyle assessment

Ask the patient whether they are aware of any link between their current condition and their lifestyle (i.e. what they eat/drink).

Inform the patient that changing their lifestyle will improve their health and disease prognosis.

Tell the patient that there are 4 main behaviours that could be addressed:
- Physical activity
- Healthy eating
- Reducing alcohol intake
- Stopping smoking

Discuss the patient's current status or ask if not known:
- Does the patient do regular physical activity?
- Is the patient drinking above the advised limit?
- Does the patient eat heathily?
- Does the patient smoke, have they ever smoked?

Ask the patient to choose 1 behaviour that they could change.

If the patient is not willing to change any behaviour:
- **Ask** the patient what they think would happen if they don't change their behaviour.
- **Make sure** the patient has an education leaflet.
- **Ask** patient to return for follow-up appointment.
  If still not motivated to change at next appointment, **repeat** education information and invite them to return if they decide to change.

If the patient identifies a behaviour to change:

- **Ask** the patient how they feel about this behaviour. Is changing the behaviour important for the patient?

If changing behaviour is not a priority for patient:

- **Discuss** the key messages for this behaviour.
- **Make sure** the patient has an education leaflet.
- **Ask** the patient to return for follow up appointment.

If changing behaviour is a priority for the patient:

- **Ask** if the patient feels they are able to change the behaviour they have identified?

For all patients:

- **Make a plan** (see appropriate lifestyle page)
- **Ask** the patient to involve their treatment supporter.
- **Complete** their treatment card.
- **Ask** patient to return for follow-up appointment.
- **Encourage** all efforts and success.

If patient has previously tried or is lacking confidence in how to change their behaviour, discuss potential barriers, encourage all efforts and make a plan for change (see appropriate lifestyle change for info).

Healthy eating

Using the education leaflet as a prompt:

Key messages

- Changing your diet can improve your health and wellbeing.
- Eating unhealthy food can cause heart disease and strokes.

Help the patient make a plan;

- Identify barriers to improving their diet and plan ways to overcome them.
- Identify a specific, realistic goal and discuss a plan to achieve this.
- Encourage them to monitor their progress i.e. food diary.
- Ask the patient to remind themselves of all the reasons why they want to eat healthily.

Advise:

Eat locally available healthy food and less refined food.
Eat 3 regularly spaced meals throughout the day.
Drink water in place of tea and sugary drinks (NICE 2011).

Fats

Reduce total daily fat and saturated fat intake i.e. animal fat, ghee (WHO 2007)

- Use vegetable oil for cooking <1 tablespoon/day
- Grill or boil food; avoid fried food.
- Eat fish and chicken rather than red meat, remove visible fat.

Salt

Add less salt when cooking (WHO 2007).

- Avoid ready made or street food, as is unhealthy with a lot of fat and salt, home cooked is better (NICE 2006)

Fruit and Vegetables

- Eat at least **5** fruit or vegetables every day (WHO 2007).

It is recommended that where caffeine intake is excessive, it should be reduced *(based on current guidelines).*
This recommendation is as per current NICE guidelines (2011). It was not feasible or worthwhile to revisit the evidence and therefore it has not been possible to produce a GRADE profile.

It is recommended that all individuals should reduce total daily fat and saturated fat, eliminating trans fatty acids and where possible, dietary fat should be poly/monounsaturated.*(Strong recommendation, high quality of evidence)*
This recommendation is based on WHO guidelines for the prevention of cardiovascular disease (2007). The evidence of the relationship between dietary fat intake and cardiovascular diseases has been widely described. As reflected in the recommendation, guidance differs depending on the type of fat. It is important that these differences are recognised and adhered to in combination.

It is recommended that all individuals should reduce their salt intake, where possible to <5g/day. *(Strong recommendation, high quality of evidence)*
This recommendation stems from WHO (2007) guidance and corresponding discussion of evidence in addition to NICE (2011) guidelines. In implementing this recommendation in country adaptation is advised.

It is recommended that all individuals should eat at least 400g a day of fruit and vegetables, which equivalent to 5 portions. *(Strong recommendation, moderate quality of evidence)*
This recommendation is supported by national guidance in the UK and internationally by WHO (2007). Although the evidence is not definitive as to the extent to which this is beneficial, the desirable effects of adhering to this recommendation are very likely to outweigh the undesirable effects and thus this recommendation has been graded 'strong'.

Physical activity

Using the education leaflet as a prompt:

Encourage existing activity and advise 30 mins/day of physical activity, which makes them feel out of breath (WHO 2007).

Key messages:

- Increasing physical activity will help to keep your heart healthy.
- A lack of physical activity will increase your chance of having a stroke, heart attack and dying prematurely.

Help the patient make a plan**:**

- Identify barriers to increasing physical activity and plan ways to overcome them.
- Identify a specific, realistic goal and discuss a plan achieve this.
- Encourage them to monitor their progress i.e. exercise diary.
- Ask the patient to remind themselves of all the reasons they want to increase their physical activity.

Advise:

Daily physical activity for at least 30 mins, that will make them out of breath i.e.

- Manual work e.g. farming
- Fast walking
- Cycling
- Use stairs rather than the lift
- Sports

Consider activities that the patient enjoys and how these can be incorporated into their daily routine.

It is recommended that all individuals are strongly encouraged to take at least 30 minutes of moderate physical activity per day. *(Strong recommendation, high quality of evidence)*

This recommendation is based on conclusions made in the 'Prevention of Cardiovascular Risk' guidelines by WHO (2007). The WHO cites several reviews that support the effectiveness of interventions to promote physical activity to prevent cardiovascular disease. Whilst increased physical activity has been shown to be effective, interventions in low resource settings are less well described. During the adaptation process for the desk guide, context specific examples for activities must be incorporated to ensure it remains cost-effective and appropriate.

Reducing alcohol intake

Using the education leaflet as a prompt:

Advise individuals to drink less than 1.5 pints of beer, 1 large glass of wine, 75ml of spirits per day (3 units) (WHO 2007).

Key messages:

- Long term alcohol intake will cause heart disease, stroke and liver disease (WHO 2007).
- If patient has diabetes, alcohol can make them very ill with low blood sugar (especially if on insulin or sulphonylurea tablets)

Help the patient to make a plan:

- Identify barriers to reducing alcohol intake and plan ways to overcome them.
- Identify a specific, realistic goal and discuss a plan to achieve this.
- Encourage them to monitor their progress i.e. alcohol diary.
- Ask the patient to remind themselves of all the reasons they want to reduce their alcohol intake.

It is recommended that all individuals who drink more than 3 units of alcohol per day should be advised to reduce consumption. *(Conditional recommendation, moderate quality of evidence)*

This recommendation is based on guidance produced by WHO (2007). Whilst there is limited evidence that a certain level of alcohol intake may be beneficial in preventing cardiovascular disease, the overall recommendation is to reduce intake. This recommendation is therefore likely to be altered by the presence of further research.

Stopping smoking

Using the education leaflet as a prompt:

Advise all smokers to stop smoking.

Advise individuals who use other forms of tobacco to quit (WHO 2007).

Key messages:

- Giving up smoking is the most important thing you can do to protect your heart and health.
- If you continue to smoke, you are more likely to have heart attacks, strokes, cancer, kidney disease, disease of the blood vessels and impotence (men).

Help the patient make a plan to quit:

- Set quit date.
- Ask the patient to monitor smoking for a week before the quit date to become aware of their triggers (times, places, activities, people) to smoke.
- Ask patient to inform family and friends, ask for their support.
- Advise patient to remove cigarettes/tobacco/objects that remind them of smoking.
- Explain that the patient may experience withdrawal signs i.e. tiredness, sleeplessness and becoming irritable - this is normal and will become easier after a few days and better the longer they do not smoke.
- Advise the patient to not smoke even one cigarette and to record their progress.
- Ask the patient to remind themselves of all the reasons they want to be a non smoker.
- Reinforce success.

If patient is not successful, begin the process again, with more frequent follow up and seek more support from family and friends. Consider **referral to hospital** for smoking cessation support.

It is recommended that all non-smokers should be encouraged not to start smoking *(based on current guidelines)*.
This recommendation is as per WHO guidance (2007). Given the high quality of evidence supporting smoking cessation, this recommendation is well-founded. However, it was not possible to produce a GRADE profile as it is not directly and explicitly supported by evidence. In addition, it was not feasible or necessary to revisit the evidence. WHO (2007) note that there is some research providing evidence of the detrimental effects caused by even "very low consumption".

It is recommended that all smokers should be strongly recommended to quit smoking by a health professional and supported to do so *(Strong recommendation, high quality of evidence)*
This recommendation is based on the discussion of evidence and subsequent guidance as presented by WHO (2007). It is clear from the evidence that the benefits of smoking cessation undoubtedly outweigh the risks. Furthermore, further research is unlikely to change confidence in the estimate of effect. The most effective methods to support individuals are less well defined.

It is recommended that those who use other forms of tobacco are encouraged to stop *(Strong recommendation, moderate quality of evidence)*.
This recommendation arises from the discussion of evidence by WHO (2007). It is graded 'conditional' as the desirable effects of adherence to this recommendation are likely to outweigh the undesirable effects; however, this is supported by less evidence than for tobacco consumption through cigarette smoking. Further evidence is therefore likely to have an important impact on the extent to which this recommendation is beneficial.

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APPENDIX

Education leaflet

If you have hypertension, diabetes and cardiovascular disease improving your health is still important.

Hypertension is when your blood is at a higher pressure than normal.

You cannot give hypertension to someone else.

It is a lifelong condition that can be controlled with medication and lifestyle changes.

If it is not controlled, it can cause stroke, heart attack, kidney failure and death.

Type 2 Diabetes is when the body cannot use the food you eat, especially sugar.

You cannot give diabetes to someone else.

It is a lifelong condition that can be controlled with medication and lifestyle changes.

If it is not controlled, it can cause blindness, kidney failure, heart disease, disease of your blood vessels, poor erections and leg ulcers.

High blood sugars in pregnancy can damage your unborn baby.

Patients with diabetes can develop hypertension and the other way round, especially if overweight.

Attending the clinic and taking medication

It is important that you attend your appointments at the health clinic to see the doctor and the health educator.

Take a friend or family member (treatment supporter) with you to all your appointments.

It is important that you take your medication as given by the doctor, even if you feel well.

Do not miss doses of your tablets.

If you miss a dose do not take a double dose.

Do not share your tablets with other people.

If you think you are experiencing side effects, contact the health clinic.

If you have any questions about how to improve the way you live or the illnesses in this leaflet, please contact your local health facility.

Address:

Telephone no.:

Doctor/Health educator:

Date of preparation: Jan 2012

How to live a healthy life

A healthy diet, increased physical activity, not smoking and less alcohol are essential to improve your health and to prevent diseases like hypertension and diabetes

There are many ways that you can improve your health.

Stopping smoking

Giving up smoking is the most important thing you can do to protect your heart and health.

If you smoke, you are more likely to have heart attacks, strokes, kidney disease, peripheral vascular disease and poor erections.

Other forms of tobacco are also bad for your health.

Smoking in the home can be harmful to your family.

If you want to quit smoking, it is important that you have support from your doctor and family.

Eating healthy food

Improving your diet can improve your health.

Eating unhealthy food can cause heart disease and strokes.

Try to:

- Eat locally available healthy food.
- Eat 3 regularly spaced meals per day.
- Drink water instead of fizzy or sugary drinks.
- Eat less fat i.e. ghee.
- Use vegetable oil for cooking: 1 tablespoon/day.
- Grill or boil food; avoid fried food.
- Eat fish and chicken rather than red meat, remove visible fat.
- Eat at least 5 fruit or vegetables every day.
- Add less salt when cooking.
- Avoid ready made or street food, home cooked is better.

Being active

Increasing physical activity will help keep your heart healthy.

A lack of physical activity increases your chance of having a stroke, heart attack and dying.

Try to do 30 mins/day of activity that makes you out of breath:

- Manual work e.g. farming
- Fast walking
- Cycling
- Use stairs rather than the lift
- Sports

Reducing alcohol intake

Reducing the amount of alcohol you drink will reduce the chance of developing heart disease.

Long term alcohol intake will cause heart disease, stroke and liver disease.

It is important to try to drink less than 3 units each day (1.5 pints of beer, 1 large glass of wine, 75ml of spirits).

If you have diabetes, alcohol can make you very ill with low blood sugar (especially if you are on insulin or sulphonylurea tablets).

If you want to change any of the behaviours discussed then please talk to your doctor.

CVD/Hypertension/Diabetes Treatment card

CVD/Hypertension/Diabetes TREATMENT CARD			
NAME:	**SEX:**	**DOB:**	**Date first visit:**
Village:	**Unique number:**		**Treatment Supporter:**
Ward:	**Phone:**		**Relationship:**
District:	**Nearest health facility:**		**Telephone:**
Treatment contract: *I understand that I have ……* *I agree to attend all appointments, take my medications, be active, eat healthily and stop smoking.*			
Patient's signature:	Health worker's signature:		Date:

Date	**SYMPTOMS** Complications	**Waist:** <102cm (M) <88cm (W)	**Blood Pressure** <130/80 mmHg	**Urine Dipstix** (proteins/ketones/glucose)	**Random blood Glucose** <11mmol/l	**Fasting blood Glucose** <6mmol/l	**Additional tests** (i.e. $HbA1_c$, chol, creatinine)	**Disease education given?**	**Brief lifestyle advice given?**	**Education leaflet given?**	**Referred to health educator?**	**TREATMENT** New drugs started, drugs stopped, side effects, advice	**Date of next appointment**	**LIFESTYLE ADVICE** Lifestyle to be addressed. Notes on progress.