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## **World Stroke Day**

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This document has been prepared by Cochrane Cameroon to provide **non professionals** with evidence on stroke prevention and management. Enjoy your read!

World Stroke Day, which will be celebrated on October 29 2024, aims to raise public awareness of stroke prevention, treatment and rehabilitation worldwide. This year, statistics estimate that over 12 million people will suffer their first stroke, resulting in approximately 6.5 million deaths. Today, more than 100 million people suffer the consequences of a stroke.

In low- and middle-income countries, the increase in stroke cases is more rapid, due to greater difficulties in medical care and rehabilitation. Approximately 0.66% of global GDP represents the global cost of stroke, which may reach \$1,000 billion in the US before 2030.

### **THE SITUATION REGARDING STROKES (CEREBRAL VASCULAR ACCIDENTS) IN CAMEROON**

In Cameroon, stroke is a major cause of illness and death, mainly due to the high rate of high blood pressure and diabetes in the population. This issue is being addressed by the Ministry of Public Health (MoH), which is doing its utmost to raise awareness and build skills in stroke treatment.

The MoH is implementing Universal Health Coverage (UHC) to optimize access to care, particularly for chronic diseases such as stroke. This initiative aims to reduce the financial burden on patients and improve access to healthcare services, especially in rural areas.

Information campaigns are run to help recognize the early symptoms of stroke and encourage early intervention, crucial to minimizing the consequences. In addition, MoH works with various partners in the health sector to strengthen the skills of institutions in the diagnosis and management of stroke.

For more information on MoH's stroke policies and actions, please consult the ministry's official website or its press releases.

## KEY MESSAGES - SUMMARY OF SYSTEMATIC REVIEWS

### 1. Can text message reminders help people with heart disease take their medications regularly?

At least 523 million people suffer from heart disease worldwide. Medicines are often prescribed to treat the condition. However, the majority of people do not take the medications they need to keep them from having more heart problems. One possible method to improve medication-taking behaviours is by using text message-based reminders. Mobile phone text messaging may help people with heart disease take their medications by sending health information and text reminders to these people. However, it is still unclear whether text messaging can help people with heart disease take their medications regularly.

The researchers analyzed 18 studies involving 8,136 participants suffering from various heart diseases. The studies compared patients receiving text messages with those who did not, in middle- and high-income countries. They lasted from 1 to 12 months, and used a variety of methods for sending text messages and their content.

- 10 out of 18 studies showed an improvement in compliance with text messages, while 8 showed no difference or a reduction in compliance.
- The effects of text messages on cardiovascular mortality and other cardiac events remain uncertain.
- The heterogeneity of methods and results makes it impossible to draw firm conclusions.

We are very uncertain from the current evidence whether using text messaging can improve adherence to treatment in people with cardiovascular disease (CVD), or its effects on fatal and non-fatal cardiovascular events, blood pressure, cholesterol, and heart rate. Additional, well-designed studies are needed to assess the long-term effects of text messaging, especially in low-income countries.

The quality of studies and research methods is low, some studies did not include all the criteria sought, and there is great variability in the results.

The evidence is up to date to August 2023.

**Citation:** Redfern J, Tu Q, Hyun K, Hollings MA, Hafiz N, Zwack C, Free C, Perel P, Chow CK. Mobile phone text messaging for medication adherence in secondary prevention of cardiovascular disease. Cochrane Database of Systematic Reviews 2024, Issue 3. Art. No.: CD011851. DOI: 10.1002/14651858.CD011851.pub3.

### 2. Low levels of sugar to prevent cardiovascular disease

Cardiovascular disease (CVD) is a group of disorders affecting the heart and blood vessels and the number one cause of death worldwide. It is important to detect modifiable risk factors and find strategies to prevent CVD. There are several established modifiable risk factors for developing CVD, one of them being eating an unhealthy diet rich in sugar. Sugar can be divided in two categories; sugars naturally

occurring in food and sugars that are *added* to food. A high level of added sugar intake is suggested to cause weight gain and affect blood lipids, increasing the risk of CVD. This review assessed different levels of added sugars in the diet and the effect on cardiovascular events (e.g. heart attack or stroke), death, and CVD risk factors in healthy adults.

The review was based on 21 randomized controlled trials including 1110 healthy adult participants (with no history of CVD or diabetes). The trials compared the impact of different levels of added sugar in the diet on factors such as blood pressure, blood lipids and blood sugar levels.

#### **Main results:**

- None of the included studies directly assessed cardiovascular events (such as heart attacks or strokes) or deaths due to cardiovascular disease.
- The results showed that a low intake of added sugars led to a slight reduction in systolic and diastolic blood pressure, as well as an improvement in blood lipid levels (reduction in total cholesterol and triglycerides).
- However, there was no significant effect on blood sugar levels.

The studies were too limited in duration and scale to measure significant long-term effects on CVD or mortality.

Evidence is of low quality (small sample sizes, short duration of studies, variability in methods, lack of studies on cardiovascular events), suggesting that reducing consumption of added sugars may indirectly reduce the risk of CVD. However, further, higher-quality, long-term studies are needed to assess the effects of sugar consumption on CVD and mortality.

Although current evidence suggests that reducing added sugars may slightly improve some CVD risk factors (such as blood pressure and blood lipid levels), these effects remain modest and limited by the quality of available studies. Longer-term, higher-quality studies with larger numbers of participants are therefore needed to fully assess the effects of added sugars on CVD risk, cardiovascular events and mortality.

The evidence included in this review is up to date to July 2021

**Citation:** Bergwall S, Johansson A, Sonestedt E, Acosta S. High versus low-added sugar consumption for the primary prevention of cardiovascular disease. *Cochrane Database of Systematic Reviews* 2022, Issue 1. Art. No.: CD013320. DOI: 10.1002/14651858.CD013320.pub2.

### **3. Blood pressure targets in people with cardiovascular disease**

#### **What is high blood pressure?**

Hypertension (high blood pressure) is a that increases the risk of health problems such as heart attack, stroke, or kidney disease.

#### **How is high blood pressure treated?**

Many people with heart or vascular problems also have high blood pressure. Some clinical guidelines recommend a lower blood pressure goal (135/85 mmHg or lower) for people with high blood pressure and previous heart or vascular problems than for

with those without (140 mmHg to 160 mmHg or less systolic (pressure when heart pumps blood around the body) and 90 mmHg to 100 mmHg diastolic or less (pressure when heart rests between beats) are standard blood pressure goals). It is unclear whether lower goals lead to overall health benefits.

### **What did we want to find out?**

We wanted to find out if lower blood pressure goals are better than standard blood pressure goals for people with high blood pressure who also have heart or vascular problems.

### **What was done ?**

The researchers looked for studies comparing lower blood pressure targets with standard targets. These studies had to include at least 50 people per group, last at least six months and examine outcomes on death or cardiovascular events (heart attack, stroke, heart failure).

### **What was discovered?**

- In this update, seven studies involving 9,595 participants were included in the review.
- The results show little or no difference in the total number of deaths (from all causes or cardiac causes) between the two groups (low and standard targets).
- There was also little or no difference in the number of heart or vascular problems, or serious adverse effects between the two groups, but the data are uncertain.
- More participants in the lower-target pressure group dropped out of the trials because of drug side effects.

The available data do not support the idea that lower target blood pressure values (below standards) bring additional benefits in people with hypertension and heart or vascular disease. Further clinical trials are needed to explore this question.

Results are limited by uncertainties and incomplete information. Drug-related adverse events were more frequent in the group with lower blood pressure targets, and no overall health benefit was demonstrated for these patients.

### **How up to date is this evidence?**

This is the third update of a review first published in 2017. The evidence is up to date to January 2022.

**Citation:** Saiz LC, Gorricho J, Garjón J, Celaya MC, Erviti J, Leache L. Blood pressure targets for the treatment of people with hypertension and cardiovascular disease. Cochrane Database of Systematic Reviews 2022, Issue 11. Art. No.: CD010315. DOI: 10.1002/14651858.CD010315.pub5.

#### **4. Does stopping smoking make people with heart disease less likely to have another heart attack?**

Smoking significantly increases the risk of heart attack, but there is less information on reducing the risk of recurrence after a first cardiac event. This review aims to determine whether quitting smoking after a first heart attack reduces the risk of further cardiovascular events.

##### **Why was this review done?**

The aim was to determine whether stopping smoking after a heart attack or other cardiac event can reduce the chances of having further heart attacks, stroke or other heart disease. If stopping smoking does prevent further illness this could motivate more people to quit smoking and encourage doctors and nurses to provide more active support to help people to stop.

**What was done:** There was a search for studies that lasted at least 6 months, and that included people diagnosed with heart disease who were smoking when the study started. Studies also had to measure whether people did or did not stop smoking and whether or not they had another event linked to their heart or blood vessels, such as another heart attack or a stroke.

##### **What was found**

- We found 68 studies with 80,702 people. We looked at the combined results of 60 studies that measured events linked to heart disease and of 8 studies that measured people's quality of life.
- Compared with people who continued to smoke, people who stopped smoking were a third less likely to die from heart disease or stroke (evidence from 17,982 people in 18 studies) and a third less likely to have another heart attack or stroke (evidence from 20,290 people in 15 studies).
- The level of confidence in these results was moderate for the reduced risk of death, but lower for other cardiovascular events. However, even with higher-quality studies, smoking cessation continued to show a reduced risk of death and recurrence.

##### **Quality of life**

- People who stopped smoking after being diagnosed with heart disease saw an improvement in their quality of life compared to those who continued to smoke.
- People with heart disease who stop smoking probably reduce their risk of future heart attacks or other cardiovascular events, such as stroke.
- Smoking cessation does not appear to have a negative impact on the quality of life of people with heart disease. Stopping smoking after a first heart attack or other cardiac event probably reduces the risk of further heart attacks or strokes, and improves quality of life without adversely affecting it.

**Citation** Wu AD, Lindson N, Hartmann-Boyce J, Wahedi A, Hajizadeh A, Theodoulou A, Thomas ET, Lee C, Aveyard P. Smoking cessation for secondary prevention of cardiovascular disease. Cochrane Database of Systematic Reviews 2022, Issue 8. Art. No.: CD014936. DOI: 10.1002/14651858.CD014936.pub2.

## **5. Interventions for reducing sedentary behavior in people with stroke**

Sedentary behavior refers to time spent sitting or lying down, often in front of a screen, rather than staying active. After a stroke, it's common for patients to spend a lot of time inactive, both in hospital and at home. This sedentary lifestyle is associated with increased risk of heart attack, stroke and mortality. Reducing this sedentary time could not only reduce these risks, but also improve the mobility and well-being of post-stroke patients.

This review examines the evidence on the impact of treatments to reduce sedentary behavior in people who have suffered a stroke.

After an extensive search, ten randomized controlled trials were included, involving 753 participants at different stages of care. The majority of participants were able to walk and stand. Interventions ranged from six weeks to 18 months and included elements of increased physical activity, whether through exercise, education programs, or smartphone apps. One study was specifically aimed at interrupting long periods of sitting. However, due to the way they were conducted and reported, all studies had a high or uncertain risk of bias.

### **Main results**

Current data show that interventions to reduce sedentary behavior have no significant impact on mortality, cardiovascular events, falls or other adverse events, nor on time spent sitting. Despite this, it could be beneficial for people with stroke to reduce their sitting time, as long as this is done safely.

Evaluation using GRADE methodology indicates a low level of confidence in the effects of the interventions on mortality, cardiovascular events and falls, and a moderate level for other adverse events. On the other hand, the level of confidence concerning the effects on sedentary behaviour is very low. Interest in reducing post-stroke sedentary behaviour is recent, and few studies have been carried out over sufficiently long periods to show lasting effects on sedentary behaviour or disease risk.

In conclusion, although the evidence is limited and sometimes of low quality, it may be beneficial for stroke patients to try to reduce their sedentary behavior, provided this is done safely.

**Citation:** Saunders DH, Mead GE, Fitzsimons C, Kelly P, van Wijck F, Verschuren O, Backx K, English C. Interventions for reducing sedentary behaviour in people with stroke. Cochrane Database of Systematic Reviews 2021, Issue 6. Art. No.: CD012996. DOI: 10.1002/14651858.CD012996.pub2.

## **6. Does limiting the times you eat (intermittent fasting) help prevent cardiovascular disease?**

Cardiovascular disease (CVD) is the leading cause of death worldwide. Smoking, diabetes and being overweight are risk factors for CVD, which means that they increase your chances of developing the disease. CVD can often be prevented by a healthy lifestyle, such as keeping to a healthy weight or losing weight if you need to.

Intermittent fasting, a diet that limits periods of food consumption, has become popular and is the subject of this review.

This review aims to determine whether intermittent fasting can reduce or prevent CVD. Researchers examined studies comparing intermittent fasting to usual eating (eating ad libitum) or calorie-restricted diets. They assessed the impact of intermittent fasting on mortality, cardiovascular mortality, and the risk of stroke, heart attack or heart failure, as well as on body weight and blood sugar levels. The research included evidence published up to 12 December 2019.

Twenty-six relevant studies were found; we then used the results from 18 of the studies to compare the different diets. The studies varied in terms of participants, duration (from four weeks to six months) and funding.

### **The results shown**

- Mortality and cardiovascular events: No significant data were found on mortality, cardiovascular mortality or risk of stroke, heart attack or heart failure.
- Weight loss: Intermittent fasting participants could lose more weight than those on a usual diet after three months, but not compared with calorie-restricted diets.
- Blood glucose: Intermittent fasting had no significant effect on blood glucose levels compared with other diets.
- Adverse effects: Four studies reported minor adverse effects, such as headaches. One study reported a slight improvement in participants' physical well-being.

Confidence in these results is low due to limitations in study design and reporting. Results may change with new data.

### **Conclusion**

We are uncertain about the effects of intermittent fasting on clinical events such as mortality, myocardial infarction and heart failure due to lack of data for these outcomes. The individual meta-analyses show that intermittent fasting may be effective in reducing weight when compared to ad libitum feeding and may be as effective as continuous energy restriction. Further research is needed to understand which patient groups would and would not benefit from intermittent fasting as well as the effect on longer-term outcomes such as all-cause mortality and myocardial infarction.

**Citation:** Allaf M, Elghazaly H, Mohamed OG, Fareen MF, Zaman S, Salmasi A-M, Tsilidis K, Dehghan A. Intermittent fasting for the prevention of cardiovascular disease. Cochrane Database of Systematic Reviews 2021, Issue 1. Art. No.: CD013496. DOI: 10.1002/14651858.CD013496.pub2.

## **7. Does using low-sodium salt substitutes (LSSS) instead of regular salt reduce blood pressure and heart disease risks, and is it safe?**

Low-sodium salt substitutes are products containing less sodium than regular salt. The amount of sodium in low-sodium salt substitutes is reduced by replacing some of the sodium with potassium or other minerals. LSSS could help reduce the risks associated with the use of ordinary salt, since eating a lot of sodium and not enough



potassium contributes to high blood pressure. This could also help reduce the risks associated with excessive sodium consumption, which is a major factor in high blood pressure.

**Objectives of the research:** The review sought to determine the effects of LSSS on blood pressure, cardiac events (such as stroke and acute coronary syndromes) and safety for different populations, including adults, children and pregnant women.

### **What was done?**

The analysis covered 26 trials involving around 34,961 adults and 92 children. No trials were found for pregnant women. The majority of participants suffered from high blood pressure, and many trials were conducted in low- and middle-income countries.

### **Main results**

- **Blood pressure:** The use of low-sodium salt substitutes appears to slightly reduce both systolic and diastolic blood pressure.
- **Cardiac events:** These substitutes may also reduce the risk of non-fatal strokes, non-fatal acute coronary syndromes and heart disease-related deaths.
- **Potassium levels:** They may slightly increase potassium levels in the blood, which can be problematic for some people.
- **Effects on cardiovascular health:** Replacing ordinary salt with low-sodium salt substitutes in adults is likely to slightly reduce blood pressure. It could also reduce the risk of non-fatal cardiac events, such as stroke and acute coronary syndromes, as well as the risk of death from heart disease.
- **Impact on potassium:** The use of these substitutes may lead to a slight increase in potassium levels in the blood, which may pose risks for people who cannot effectively manage their potassium levels, particularly those with kidney problems.
- **Uncertainties concerning children:** The effects of these substitutes on children's blood pressure and overall safety are not well established.
- **Specific risks:** People at risk of hyperkalemia, such as those with kidney disease or taking certain medications, should be cautious about using low-sodium substitutes.

**Limitations of the evidence:** Researchers are moderately confident in the results, due to concerns about study design and the ability to apply the results to the general population. The effects and safety of low-sodium substitutes in children, pregnant women and people at risk of hyperkalemia remain uncertain.

### **How up to date is this evidence?**

The evidence is up-to-date to August 2021. Further research could change these conclusions.

**Citation:** Brand A, Visser ME, Schoonees A, Naude CE. Replacing salt with low-sodium salt substitutes (LSSS) for cardiovascular health in adults, children and pregnant women. Cochrane Database of Systematic Reviews 2022, Issue 8. Art. No.: CD015207. DOI: 10.1002/14651858.CD015207.

## **Others sources**

<https://www.minsante.cm/site/?q=fr/content/phase-i-universal-health-coverage-north-west-region-has-been-launched-grand-style&page=1>

<https://www.world-stroke.org/world-stroke-day-campaign/about-stroke/impact-of-stroke>

<https://www.world-stroke.org/news-and-blog/news/world-stroke-day-2024>

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