

Diabetes journals



Life's Simple 7 = less diabetes + strong heart + strong brain + strong kidneys + less depression + longer life

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The Life's Simple 7 (LS7) programme aims to improve the health of Americans generally and American Indians specifically. It consists of four health behaviours (physically active lifestyle [ideal target, 10 000 steps per day], healthy diet, healthy BMI, no smoking) and three targets in terms of risk to future health (lower blood pressure [ideal, <120 mmHg systolic; intermediate, 120–139 mmHg systolic], normal fasting glucose [ideal, <5.6 mmol/L; intermediate, 5.6–6.9 mmol/L or treated to <5.6 mmol/L] and low total cholesterol [ideal, <5.18 mmol/L; intermediate, 5.18–6.12 mmol/L or treated to <5.18 mmol/L]).

The American Indian population has undergone a catastrophic social transformation and has a considerably higher risk of poverty, poor diet, physical inactivity, obesity and smoking. All of these lead to premature diabetes, cardiovascular disease (CVD) and reduced life span.

Previous reports have shown a reduction in CVD, renal disease, depression and reduced mortality in people who achieve the LS7 recommendations (Folson et al, 2011; Kronish et al, 2012; Kulshreshtha et al, 2013; Muntner et al, 2013).

In their article, summarised alongside, Fretts et al report on the outcomes of 1639 people without diabetes who were followed up for an average of 5 years. The participants were categorised into low risk (those achieving four or more of the ideal or intermediate LS7 targets), medium risk (those achieving two to three) and high risk (those achieving one or none). Interestingly, not a single participant achieved the ideal healthy diet target (≥ 4.5 cups of fruits/vegetables per day, two or more fish servings per week, three or more servings of whole grains per day, <1500 mg of sodium per day, <32 oz [<450 calories] of sugar-sweetened drinks per week).

Twenty-five per cent of those at high risk developed diabetes, compared to only 13% of

those at medium risk and 4% of those at low risk. Among participants who achieved one or none of the four health behaviours, the prevalence of diabetes was 14%, compared to 7% for those who achieved two or more. For those who achieved one or none of the three health targets, the prevalence of diabetes was 21.8%, compared with 7.7% for those who achieved two or more.

The study provides compelling evidence for a community-based approach to diabetes prevention based on a programme that is similar to that advised by NICE for the prevention of diabetes (NICE, 2012). The data show that there is the potential to reduce new cases of diabetes by 60% if two or three of the lifestyle and health factors are achieved, and almost 90% (89%) of cases may be prevented by achieving four or more. The data correspond well with the 58% risk reduction for diabetes that was reported in the Finnish and American Diabetes Prevention Studies (Knowler et al, 2002; Lindström et al, 2003). As would probably be expected, obesity and reduced physical activity were the most important factors.

This is a landmark study since it provides the first evidence of a community-based, multifactorial approach to lifestyle and clinical health factors that achieves significant health benefits with respect to reducing large burdens of ill-health – CVD, depression, renal disease and diabetes. We need to implement the approach via the highest echelons and the very grass roots of our healthcare system. ■

Folson AR et al (2011) *J Am Coll Cardiol* **57**: 1690–6

Knowler WC et al (2002) *N Engl J Med* **346**: 393–403

Kronish IM et al (2012) *PLoS One* **7**: e52771

Kulshreshtha A et al (2013) *Stroke* **44**: 1909–14

Lindström J et al (2003) *Diabetes Care* **26**: 3230–6

Muntner P et al (2013) *J Am Soc Nephrol* **24**: 1159–65

NICE (2012) *Public health guidance 38: Preventing type 2 diabetes: risk identification and interventions for individuals at high risk*. NICE, London

Diabetes Care

The effect of the Life's Simple 7 programme on diabetes incidence in American Indians

Readability ✓✓✓✓

Applicability to practice ✓✓✓✓

WOW! Factor ✓✓✓✓

1 The Life's Simple 7 (LS7) programme consists of four health behaviours (physical activity, healthy diet, healthy BMI and no smoking) and three health targets in terms of risk to future health (low blood pressure, normal fasting glucose and low total cholesterol).

2 The authors enrolled 1639 American Indian people without diabetes (age 18–74 years) and determined how many of the LS7 targets they achieved, and assessed how this affected the incidence of diabetes.

3 The participants were categorised into low risk (those achieving four or more ideal or intermediate LS7 targets), medium risk (those achieving two or three) and high risk (those achieving only one or none).

4 Over a mean follow-up of 5 years, 210 participants developed diabetes; however, the odds ratios (ORs) were lower in the intermediate-risk (OR, 0.40; 95% confidence interval [CI], 0.29–0.56) and low-risk groups (OR, 0.11; 95% CI, 0.05–0.21) compared to the high-risk group.

5 Achieving just two or three of the LS7 goals results in a lower risk of developing diabetes in American Indians.

6 As the risk factors for diabetes are similar across ethnic groups, the authors state that these results could be generalised to other ethnic groups with similar diabetes risk profiles.

Fretts AM, Howard BV, McKnight B et al (2014) Life's Simple 7 and incidence of diabetes among American Indians: the Strong Heart Family Study. *Diabetes Care* **37**: 2240–5

J Diabetes Complications

Joint effects of exercise, medical treatment and glycaemic control on mortality risk in T2D

Readability ✓✓✓✓
 Applicability to practice ✓✓✓
 WOW! Factor ✓✓✓✓

1 There is mixed evidence regarding the effect that achieving glycaemic control has on mortality risk in people with T2D, and whether antihyperglycaemic medication lowers mortality risk to that of people without the condition.

2 The authors sought to determine the joint associations of physical activity, pharmacological treatment and control of HbA_{1c} with mortality risk in people with T2D.

3 Physical activity was defined as participating in any form of moderate or vigorous exercise once or more per week.

4 A total of 12 060 participants were evaluated over a mean follow-up of 9 years, during which there were 3306 deaths (27.4%).

5 Compared to physically active, treated, controlled participants, those with uncontrolled HbA_{1c} were at greater risk of death, regardless of activity or treatment, as were those who achieved glycaemic control but were inactive. However, untreated participants who were active and achieved HbA_{1c} control had no significant increase in risk.

6 Regarding cardiovascular disease (CVD)-related mortality, physically inactive participants were at greater risk, regardless of whether they received treatment or achieved glycaemic control.

7 Physically active, treated participants who achieved HbA_{1c} control had similar all-cause and CVD mortality risks to the general population.

Brown RE, Riddell MC, Macpherson AK et al (2014) All-cause and cardiovascular mortality risk in U.S. adults with and without type 2 diabetes: influence of physical activity, pharmacological treatment and glycaemic control. *J Diabetes Complications* **28**: 311–5

Diabetes Res Clin Pract

HbA_{1c} independently predicts heart failure in people with T2D

Readability ✓✓✓✓
 Applicability to practice ✓✓✓✓
 WOW! Factor ✓✓✓✓

1 The authors determined the association between HbA_{1c} and hospitalisation for heart failure (HF) whilst controlling for other risk factors for HF, including hypertension, coronary heart disease and cardiac function.

2 Of 608 participants with T2D (mean HbA_{1c}, 76 mmol/mol [9.1%]), 92 (15.1%) were hospitalised for HF over a median follow-up of 6 years.

3 In the Cox regression model, baseline HbA_{1c} remained an independent risk factor for hospitalisation due to HF after adjustment for age, gender, blood pressure, renal function and cardiac function at baseline.

4 After these adjustments, for each 1% (11 mmol/mol) increase in HbA_{1c}, the hazard ratio for HF was 1.23 (95% confidence interval, 1.10–1.70).

5 Preventive measures for HF should be taken in people with poorly controlled blood glucose, even in the absence of overt signs of HF.

Kishimoto I, Makino H, Ohata Y et al (2014) Hemoglobin A1c predicts heart failure hospitalization independent of baseline cardiac function or B-type natriuretic peptide level. *Diabetes Res Clin Pract* **104**: 257–65

Diabet Med

Statin prescription in people with newly diagnosed diabetes

Readability ✓✓✓✓
 Applicability to practice ✓✓✓✓
 WOW! Factor ✓✓✓

1 The Joint British Societies recommend that all people with diabetes receive statins to lower the risk of cardiovascular disease.

2 The study aim was to determine statin prescribing patterns in people with a new diagnosis of diabetes in Scotland.

3 Complete data were available for 12 758 people, of whom only 68% were prescribed statins in the subsequent 2 years.

4 Unsurprisingly, statins were more likely to be prescribed to people with cholesterol levels ≥ 5 mmol/L, and to those aged 55–64 years, those who were overweight or obese, and former or current smokers.

5 The authors conclude that almost one-third of people with newly diagnosed diabetes in Scotland are missing an opportunity to reduce cardiovascular risk.

Jones NR, Fischbacher CM, Guthrie B et al (2014) Factors associated with statin treatment for the primary prevention of cardiovascular disease in people within 2 years following diagnosis of diabetes in Scotland, 2006–2008. *Diabet Med* **31**: 640–6

“The authors conclude that almost one-third of people with newly diagnosed diabetes in Scotland are missing an opportunity to reduce cardiovascular risk.”

Diabetes Care

Moderate alcohol use reduces cardiovascular risk

Readability ✓✓✓✓
 Applicability to practice ✓✓✓
 WOW! Factor ✓✓✓

1 The authors recruited 11 140 people with T2D (mean age, 65.8 years) to determine the effects of alcohol consumption on cardiovascular events and all-cause mortality.

2 Over a median follow-up of 5 years, there were 1147 major cardiovascular events and 1031 deaths.

3 Compared with complete abstainers, people who drank moderately (≤ 21 unit/week for men, ≤ 14 unit/week for women) had a reduced risk of cardiovascular events (hazard ratio [HR], 0.83) and death (HR, 0.87).

4 The protective effect was increased for people who drank mostly wine.

5 These results mirror findings in the general population. Moderate drinking need not be discouraged.

Blomster JI, Zoungas S, Chalmers J et al (2014) The relationship between alcohol consumption and vascular complications and mortality in individuals with type 2 diabetes. *Diabetes Care* **37**: 1353–9