

Statins patient decision aid

What this decision aid is for

This decision aid is intended to assist health professionals in consultations with patients in whom treatment with a statin is being considered, for primary or secondary prevention of cardiovascular (CV) events. It relates to patients considering whether or not to take a statin at standard doses (simvastatin 40 mg, pravastatin 40 mg or atorvastatin 10 mg, or a lower dose if appropriate because of interactions or intolerability of higher doses). Leaflets for patients explaining CV disease can be found on the CKS website (www.cks.library.nhs.uk).

How much does taking a statin reduce the chance of CV events?

A meta-analysis of six large trials of statins at standard doses in patients with and without established CV disease found that statin treatment reduced the **relative** risk of CV events by around a quarter [actual results, 27%, 95% CI 14%–37%¹ (see technical note below)]. The actual (**absolute**) benefit depends on the person's baseline risk of having a CV event. For patients without established CV disease, this can usually be estimated using a suitable tool. In patients who have established CV disease, estimating baseline risk is more difficult and is more a matter of clinical judgment.

The diagrams on the next pages relate to different levels of risk: use the diagram most appropriate to the patient's estimated risk, irrespective of whether the statin is being considered for primary or secondary prevention.

Side effects of statins²

The most **well-established side effects** of statins are their effects on muscle and on liver enzymes. Although widely believed, there is no clear evidence from randomised clinical trials that statins cause myalgia (muscle pain, tenderness or weakness without creatine kinase levels >10 times the upper limit of normal [ULN]). However, many statin studies included a run-in period therefore people who were very sensitive to statin side effects may not have been included in the trial follow-up.² The risk of myopathy (muscle symptoms with creatine kinase levels >10 times ULN) is very low at standard doses (typically <1 in 10 000 patient-years) and the risk of rhabdomyolysis is about one-third of that. The risk increases with higher doses, in patients with certain risk factors such as renal impairment, and when statins are used in combination with drugs such as fibrates.²

Statins currently in use can increase liver enzymes (especially transaminases) but do not seem to be hepatotoxic. NICE advises that baseline liver enzymes should be measured before starting a statin.² Transaminases should be measured within 3 months of starting treatment and at 12 months, but not again unless clinically indicated. Patients who have transaminases that are raised but are <3 times ULN should not be routinely excluded from statin therapy.²

Less well-known side effects of statins as a class include depression, sleep disturbances, memory loss and sexual dysfunction. Statins may also very rarely be associated with interstitial lung disease. The incidence of peripheral neuropathy during statin therapy is similar to that of myopathy.²

Any suspected adverse drug reactions with statin treatment should be reported through the [yellow card scheme](#).

Technical note

The relative risk reduction quoted is for the composite outcome of death from coronary heart disease (CHD), non-fatal myocardial infarction (MI), fatal or non-fatal stroke or coronary revascularisation. This is similar to, but not the same as, the CV risk estimated by risk calculators recommended by NICE, which estimate the risk of death from CHD, non-fatal CHD including MI, angina and acute coronary syndrome, fatal and non-fatal stroke. However, since risk prediction based on estimation tools is not an exact science; there is uncertainty with regard to the precise magnitude of the relative risk reduction; and the decision aid is intended as a guide only, we have assumed a 27% relative risk reduction in CV events.

Source of Cates plots

The images have been produced using Dr Chris Cates's software VisualRx 2.0. More information can be obtained from the website (www.nntonline.net).

References

1. National Collaborating Centre of Primary Care and the Royal College of Physicians. Lipid Modification. Cardiovascular risk assessment: the modification of blood lipids for the primary and secondary prevention of cardiovascular disease. Full Guideline. May 2008 p145
2. National Prescribing Centre. Lipid modification treatment. MeReC Bulletin 2008;19 (3)

People at lower risk of CV events (10% over 10 years)

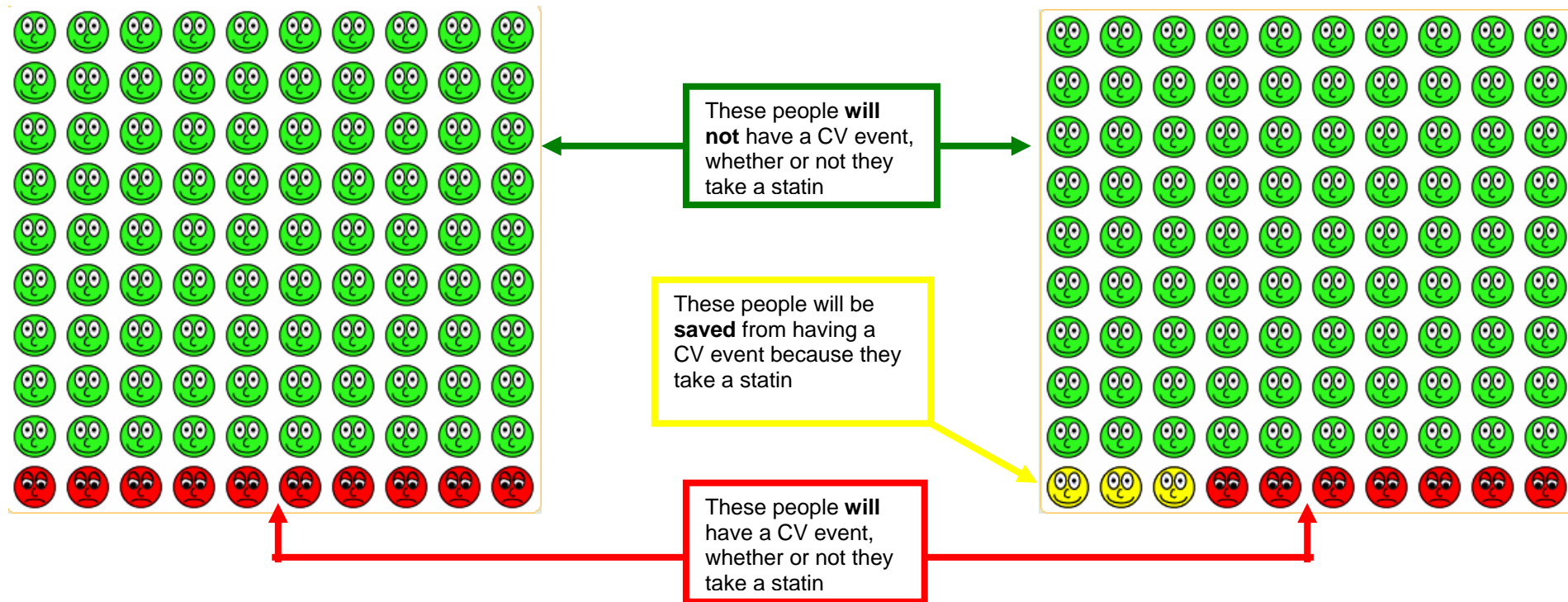
Imagine 100 people at this level of risk. In the next 10 years, about 10 (10%) of them will have a CV event.

However, if those same 100 people each take a statin for 10 years:

- About three people will be 'saved' from having a CV event by taking a statin (the **yellow** faces below).
- About 90 people will not have a CV event – but would not have done even if they had not taken a statin (the **green** faces below).
- About seven people will still have a CV event (the **red** faces below), even though they take a statin.

But remember

- It is impossible to know for sure what will happen to each individual person.
- All 100 people will have to take the statin for 10 years.



People at moderate risk of CV events (20% over 10 years)

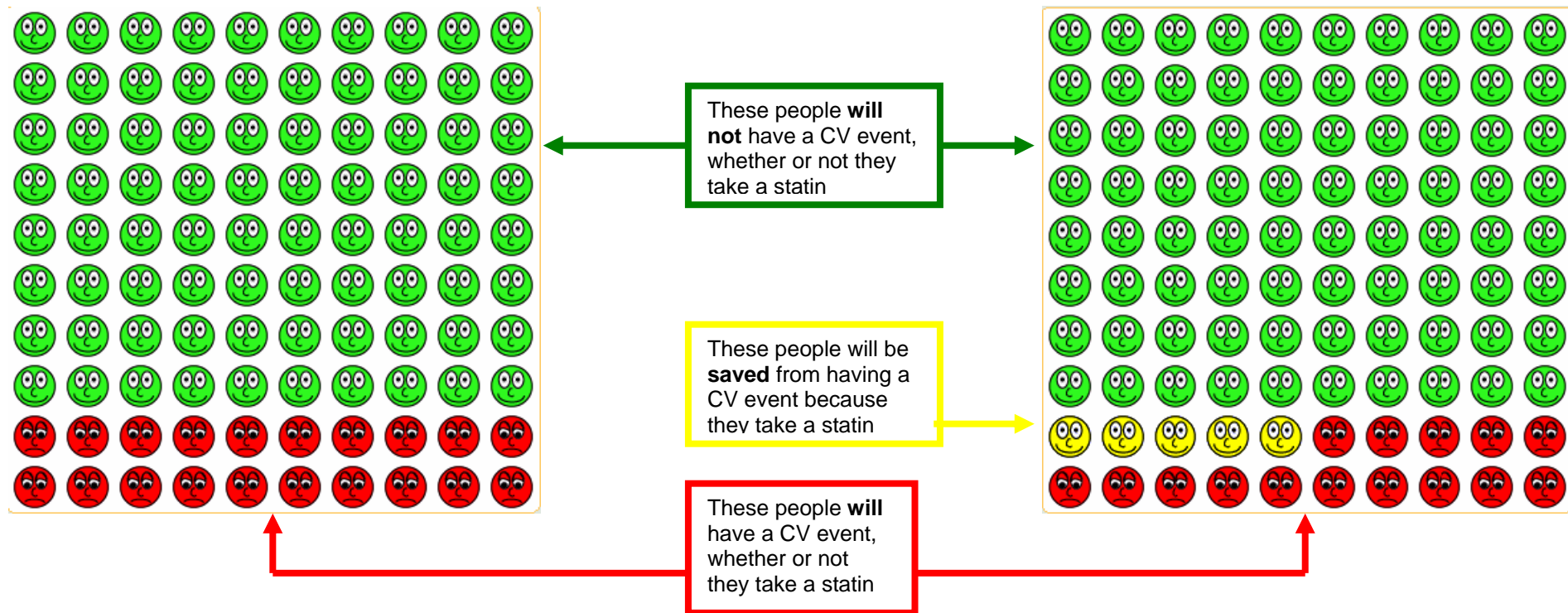
Imagine 100 people at this level of risk. In the next 10 years, about 20 (20%) of them will have a CV event.

However, if those same 100 people each take a statin for 10 years:

- About 5 people will be 'saved' from having a CV event by taking a statin (the **yellow** faces below).
- About 80 people will not have a CV event—but would not have done even if they had not taken a statin (the **green** faces below).
- About 15 people will still have a CV event (the **red** faces below), even though they take a statin.

But remember

- It is impossible to know for sure what will happen to each individual person.
- All 100 people will have to take the statin for 10 years.



People at moderate to high risk of CV events (40% over 10 years)

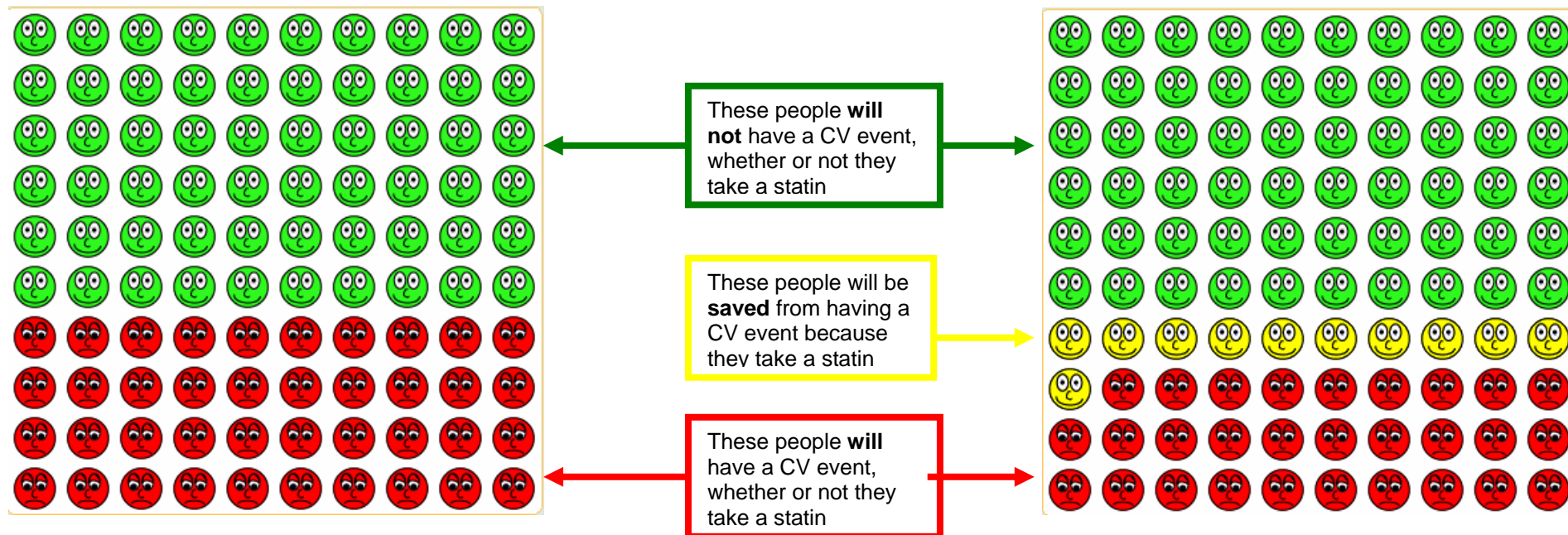
Imagine 100 people at this level of risk. In the next 10 years, about 40 (40%) of them will have a CV event.

However, if those same 100 people each take a statin for 10 years:

- About 11 people will be 'saved' from having a CV event by taking a statin (the **yellow** faces below).
- About 60 people will not have a CV event—but would not have done even if they had not taken a statin (the **green** faces below).
- About 29 people will still have a CV event (the **red** faces below), even though they take a statin.

But remember

- It is impossible to know for sure what will happen to each individual person.
- All 100 people will have to take the statin for 10 years.



People at higher risk of CV events (50% over 10 years)

Imagine 100 people at this level of risk. In the next 10 years, about 50 (50%) of them will have a CV event.

However, if those same 100 people each take a statin for 10 years:

- About 14 people will be 'saved' from having a CV event by taking a statin (the **yellow** faces below).
- About 50 people will not have a CV event – but would not have done even if they had not taken a statin (the **green** faces below).
- About 36 people will still have a CV event (the **red** faces below), even though they take a statin.

But remember

- It is impossible to know for sure what will happen to each individual person.
- All 100 people will have to take the statin for 10 years.

