

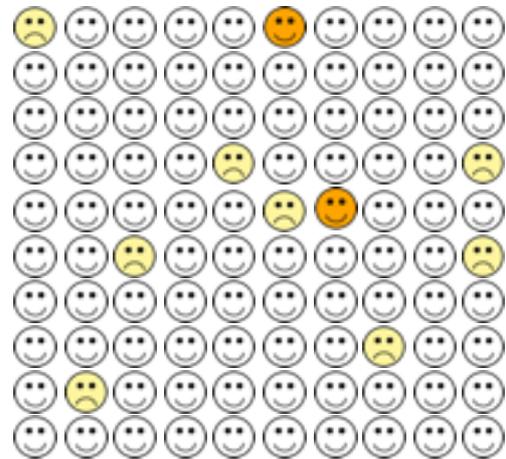
Evaluating Risk: Are bacon sandwiches bad for you?



Statins: How useful are they?

- 10 in 100 people will experience a heart attack or a stroke in a 10-year period, if they don't take any medication to prevent it.
- This is reduced to 8 in 100 if all 100 take statins as prescribed.

Can you see how this information is displayed in the grid on the right?



- The white smileys are people who are OK.
- The pale unhappy smileys are the 10 who experienced a heart attack or a stroke.
- BUT two of them are now darker happy smileys - because they are the 2 for whom the medication made a difference.

Of course, they wouldn't actually know that the statins had made a difference, since they wouldn't have known they were going to have a heart attack or a stroke.

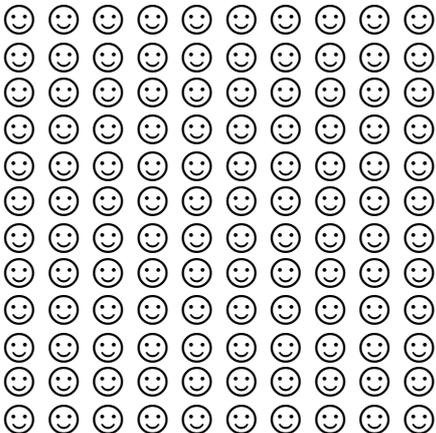
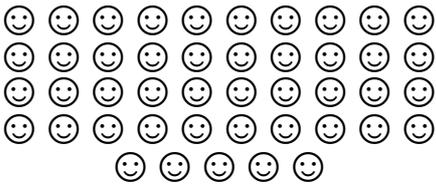
For each of the grids below:

- Calculate how many people might be expected to suffer a heart attack or stroke if they **don't** take statins (1st column).
- Using a light colour, shade smiley faces to show these people.
- Calculate how many people might be expected to suffer a heart attack or stroke if they **do** all take statins (2nd column).
- Using a darker colour, shade out light coloured smiley faces to show those who would be OK because of the statins.

Not all your answers will be whole numbers. Where necessary shade part of a smiley to represent the decimal fraction.

Expected number of cases without statins	Expected number of cases with statins	

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Expected number of cases without statins	Expected number of cases with statins	
		
		

Now answer these questions:

Without statins, absolute risk = %

With statins, absolute risk = %

Difference in risk if statins are taken = %

Relative risk = $\frac{\textit{difference}}{\textit{absolute risk with statins}} \times 100$ % = %

How many people would need to be treated with statins to prevent one heart attack or stroke?

(Hint: how many heart attacks ought to be prevented if 100 people took statins?)

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Cross out the incorrect options in these sentences:

1. 10 out of 100 people will experience a heart attack or stroke in 10 years if they **do / do not** take statins.
2. 92 out of 100 people will avoid a heart attack or stroke in 10 years if they **do / do not** take statins.
3. Your chance of **experiencing / avoiding** a heart attack or stroke in 10 years if you don't take statins is 90%.
4. In order to save one person from experiencing a heart attack or stroke in 10 years, we would need to treat **50 / 100** people with statins.
5. Statins reduce your absolute risk of avoiding a heart attack or stroke in 10 years **to / by** 2%.
6. If 100 people do not take statins, on average **10 / 8** of them will have a heart attack or stroke in a 10-year period.
7. If 500 people do take statins, on average **40 / 80** of them will have a heart attack or stroke in a 10-year period.
8. With statins, 20% **fewer / more** possible outcomes for you will include experiencing a heart attack or stroke in 10 years.