

Communicating risks and evidence in a public health emergency

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“to inform and not persuade”

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Inform

vs

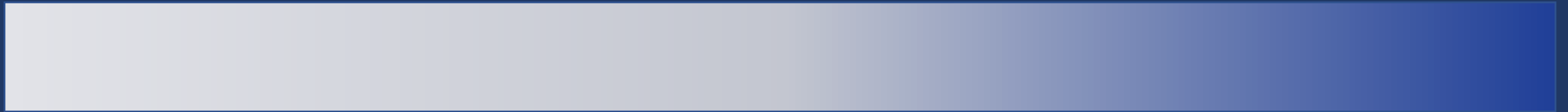
Persuade



Inform

vs

Persuade



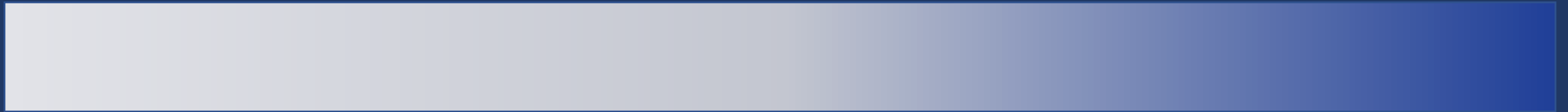
Informed consent in medicine
Forensic evidence in court

Marketing
PR

Inform

vs

Persuade



Informed consent

Marketing

Public health?

Inform

vs

Persuade

Understand

vs

Believe

Better informed

vs

Changed behaviour

Information

vs

A message

Be trustworthy

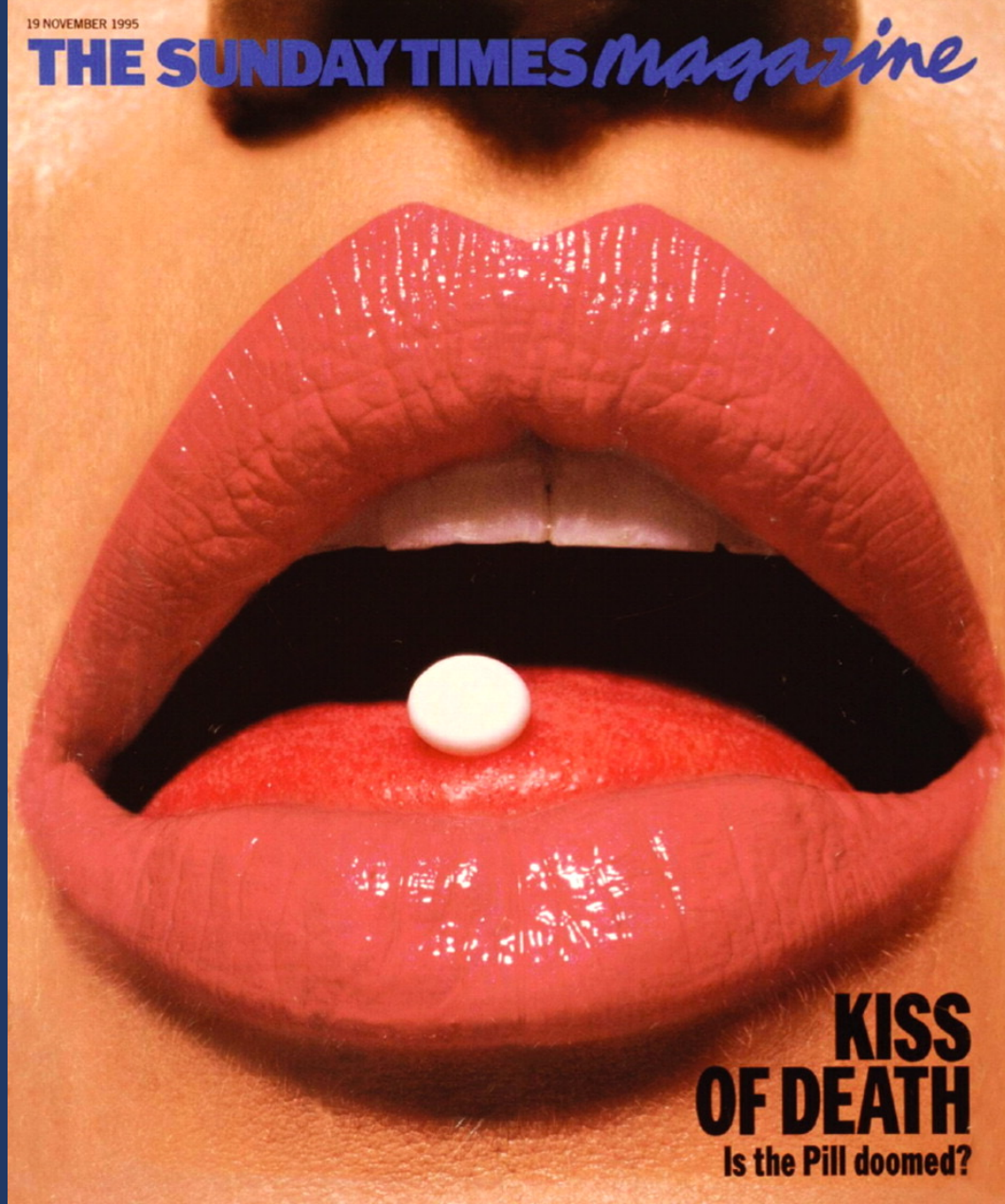
vs

Be trusted



The principles of good communication of numbers...





The 3rd generation oral contraceptive pill 'doubles' the rate of potentially fatal venous thrombosis

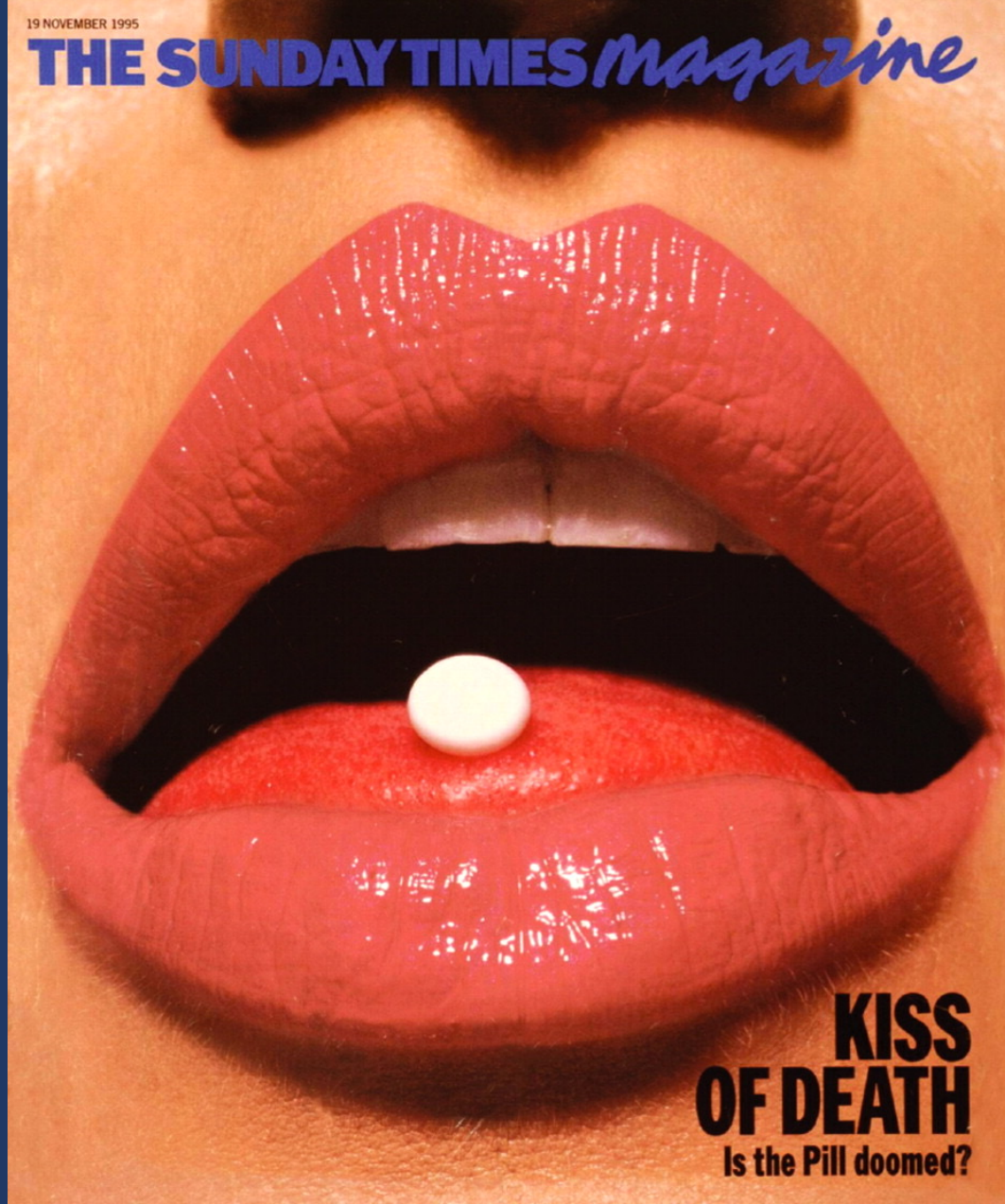
UK Committee on Safety of Medicines
1995



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RISK LITERACY



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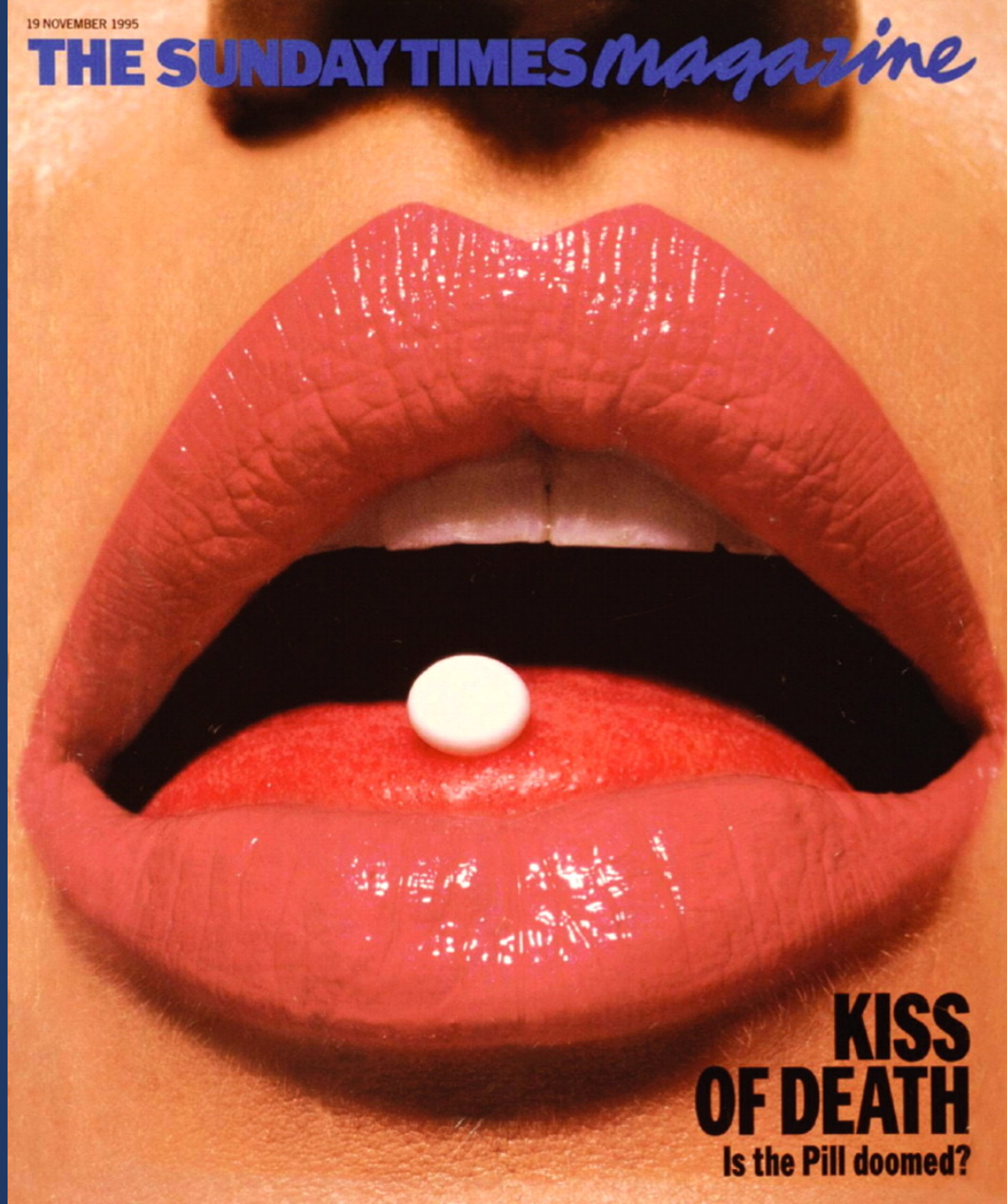
10,000 extra abortions
30,000 extra conceptions



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The 3rd generation oral contraceptive pill 'doubles' the rate of potentially fatal venous thrombosis

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10,000 extra abortions
30,000 extra conceptions

Absolute risks (actual likelihood):
1 in 7000 per year for 2nd generation pill
2 in 7000 per year for 3rd generation pill

(Barnett & Breakwell, 2003)



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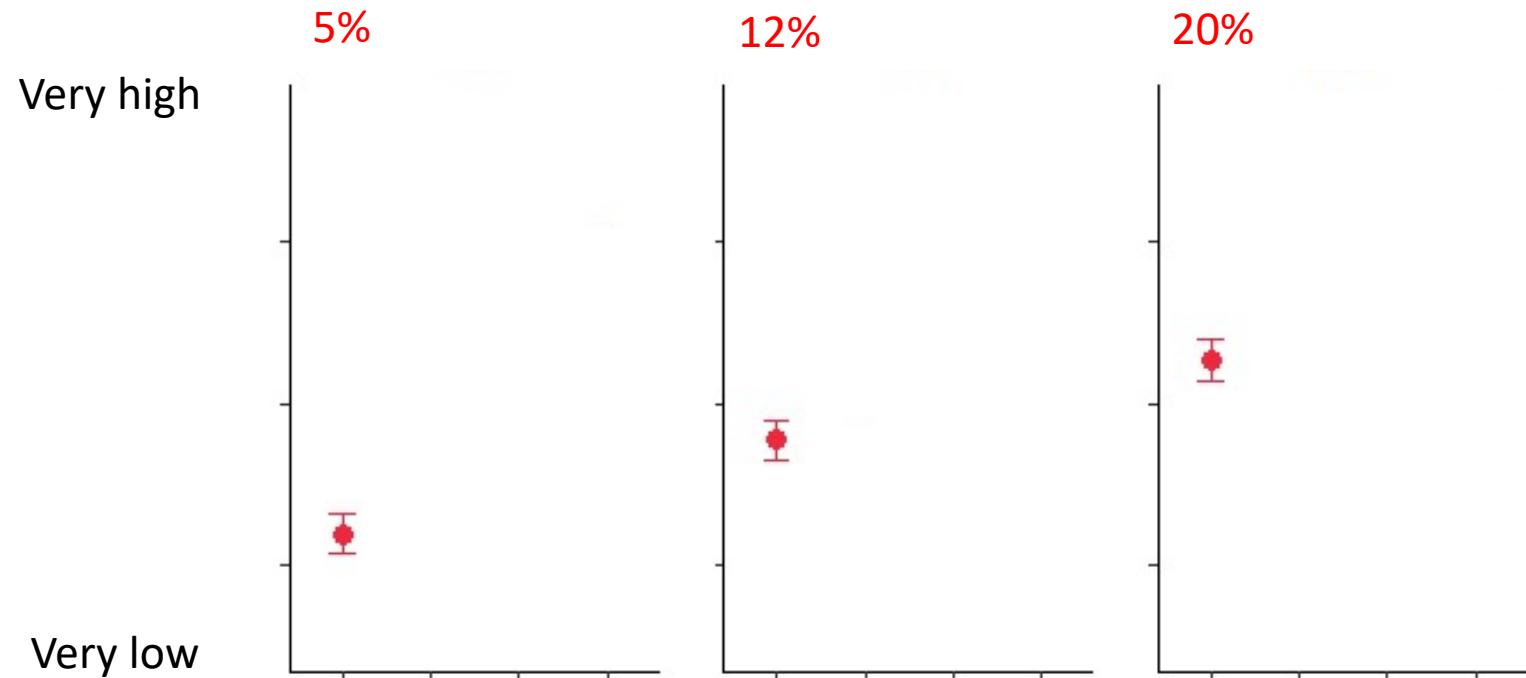


It's not just what you say, it's the way that you say it...



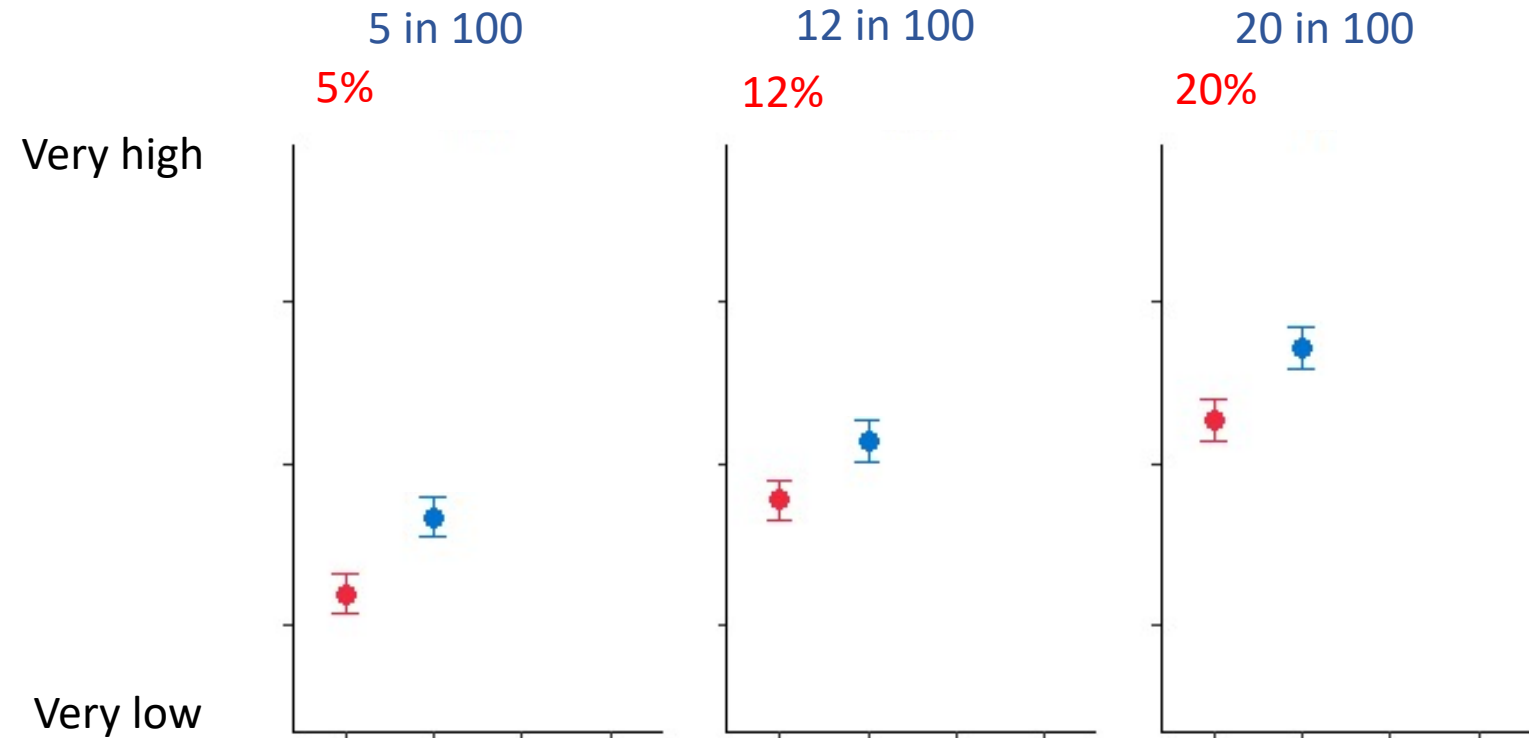
Even the format of the number makes a difference...

How risky does this chance of dying of COVID-19 feel...



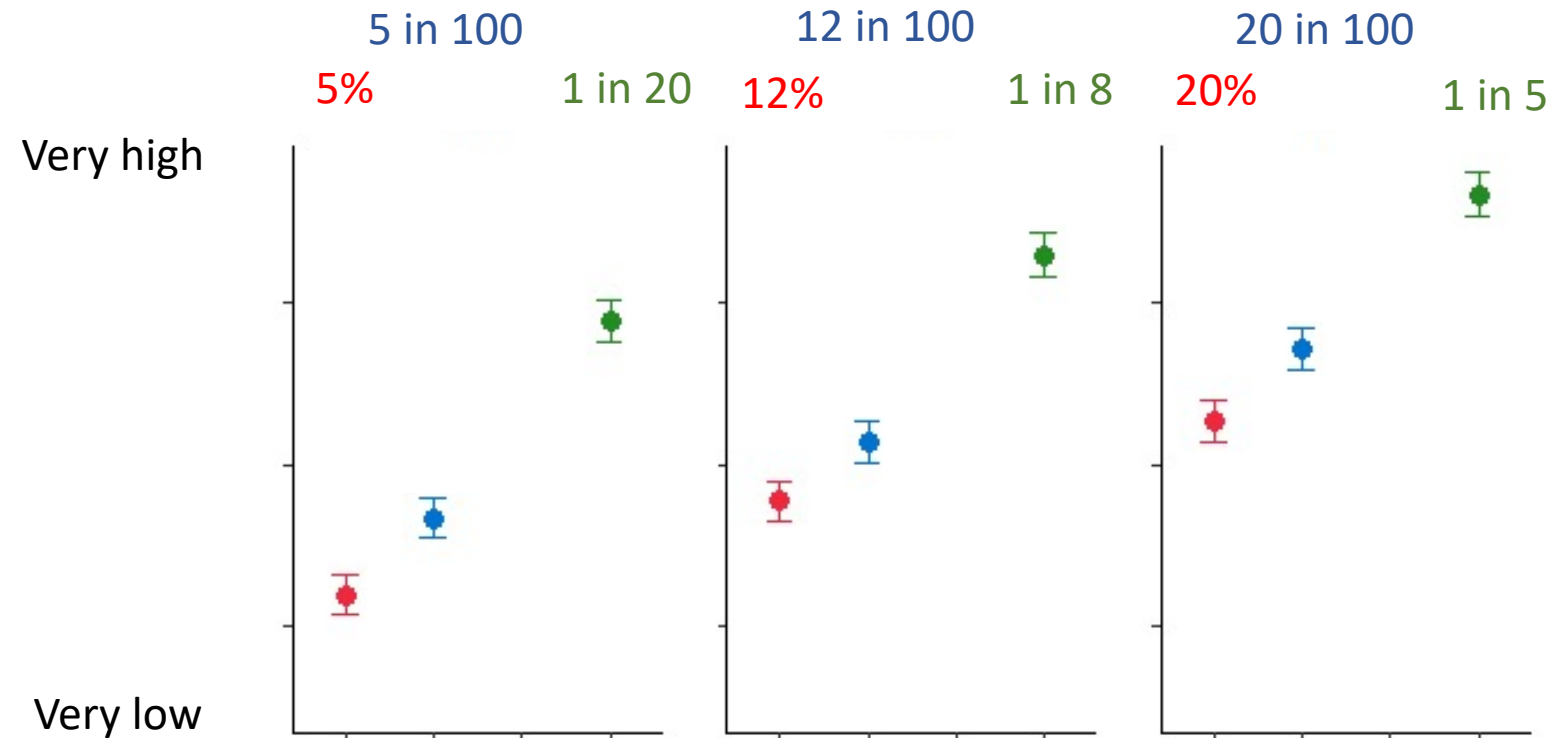
Even the format of the number makes a difference...

How risky does this chance of dying of COVID-19 feel...



Even the format of the number makes a difference...

How risky does this chance of dying of COVID-19 feel...



Which scenario do you prefer?

The UK is preparing for the outbreak of 'flu that is expected to kill 6000 children. Two companies are offering you vaccines, with different claims. Which would you choose?

- A. 2000 children will be saved.
- B. There is a $1/3$ probability that 6000 children will be saved, and a $2/3$ probability that none will be saved.



Which scenario do you prefer?

A month later you need to order more vaccine stock. The companies now have different vaccines available. Which do you choose?

- A. 4000 children will die.
- B. There is a $\frac{1}{3}$ probability that no children will die, and a $\frac{2}{3}$ probability that 6000 children will die.



Framing affects decisions

Scenario 1 (Gain Frame)

- 2000 children will be saved.
- There is a $1/3$ probability that 6000 children will be saved, and a $2/3$ probability that none will be saved.

Scenario 2 (Loss Frame)

- 4000 children will die.
- There is a $1/3$ probability that no children will die, and a $2/3$ probability that 6000 children will die.



Can we use words instead of numbers?



Can we use words instead of numbers?

What do you think is the risk of you getting the following side-effects from your statin?

- Constipation (*'common'*): ?
- Pancreatitis (*'rare'*): ?



Can we use words instead of numbers?

What do you think is the risk of you getting the following side-effects from your statin?

- Constipation (*'common'*): 34% (mean estimate)
- Pancreatitis (*'rare'*): 18% (mean estimate)

Knapp et al, *Qual Saf Health Care* 2004;13:176–180



Can we use words instead of numbers?

What do you think is the risk of you getting the following side-effects from your statin?

		Actual risk
• Constipation ('common'):	34%	2.5%
• Pancreatitis ('rare'):	18%	0.04%

Knapp et al, *Qual Saf Health Care* 2004;13:176–180



Over to Dr Gabe Recchia....



John Krebs' checklist

1. What you know
2. What you don't know
3. What you are doing to find out
4. What we can all can do in the meantime to be on the safe side
5. That advice will change (*and when/how you will update it*)



In summary, to give people information on which to base decisions:

- 1) Listen to your audience: what information do they need, what decision are they making?
- 2) Provide appropriate context and balance – don't ignore inconvenient evidence or cherry-pick.
- 3) Be balanced in the way you present evidence as much as in the information itself – be aware of the effects of different formats, framings etc.
- 4) Be upfront about your uncertainties, and how you are resolving them.
- 5) Communicate the quality of your evidence
- 6) Pre-empt misunderstandings or misinformation.



Measure of change

 Select one of these measures from the paper:

- ☐ Relative risk ?
- ☐ Absolute risk ?
- ☒ Hazard ratio ? ?
- ☐ % change ?
- ☐ Odds ratio ?

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Results summary

RESEARCH PAPER

Diet and colorectal cancer in UK
Biobank: a prospective study

DOI

10.3866/PKU.WHXB201112303

STUDY GROUP

Men

CONDITION

Bowel cancer

INTERVENTION

Eating bacon every day

GENERAL RISK

6%

<https://realrisk.wintoncentre.uk>

Results



General risk

6 men in every 100 will normally get bowel cancer
(2m in the UK)



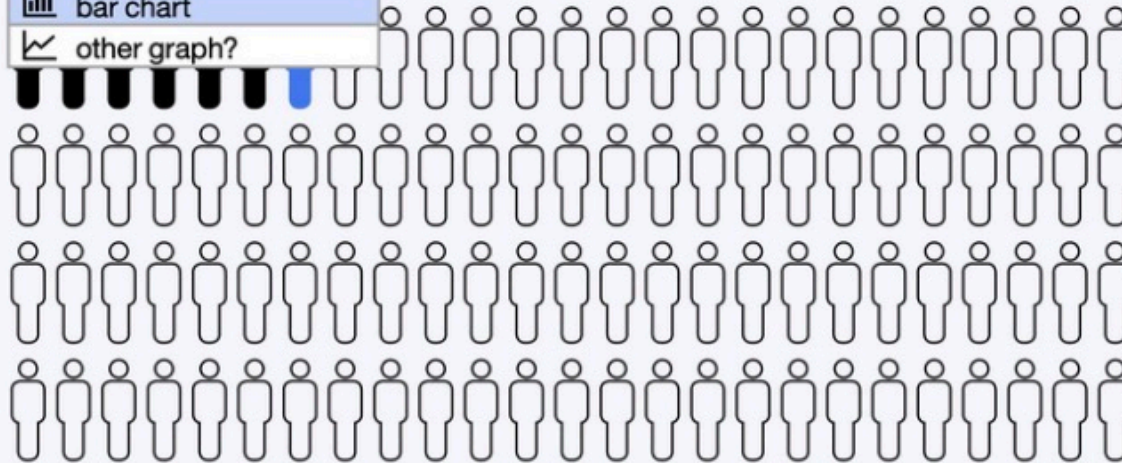
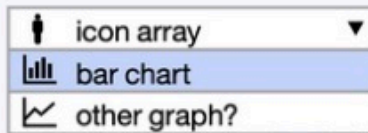
Eating bacon every day risk

7 men in every 100 will get bowel cancer (2.3m in the UK)



Population impact

Eating bacon every day increases the number of men in the
UK
who get bowel cancer by 300,000

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GENERAL RISK

6%

MEASURE OF CHANGE

Hazard ratio 1.17

POPULATION

30,000,000 in the UK



See original
research paper

<https://realrisk.wintoncentre.uk>