

## Making sense of the evidence - a workshop for consumers

Amanda Burls  
Juan Cabello  
Jose Emparanza  
Gill Gyte



## Introductions



## Why is evidence important?



### In a traffic accident which would you prefer?

A. A team trained and equipped for advanced trauma life support to stabilise you in the field?

or

B. A team trained and equipped only for basic life support to take you as quickly as possible to the nearest A&E?

“Stay and Play”



“Scoop and Run”

Stay and Play  
or  
Scoop and Run?

¿Quedar y Jugar  
o  
Recoger y Correr?








End



## Systematic review of ATLS vs BLS

- Liberman *et al* J Trauma 2000 49(4):584-599
- 15 research papers reported mortality
- Direction of research reported findings by quality of study:-
 

Quality	ATLS	BLS
Fair	1	5
Good	1	1
Excellent	1	6
- Meta-analysis
  - Relative Risk: 2.92
  - Relative Risk adjusted for quality: 2.59

## Why is evidence is important?

- Doing things that have not been tested can cause harm even if our intentions are good!









*give yourself some tummy loving care with Activia and Martine McCutcheon*

Activia helps reduce digestive discomfort, based on studies with 2 pints consumed daily. Enjoy as part of a healthy diet and lifestyle.







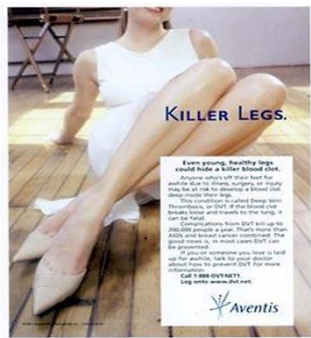


Making Connections












**KILLER LEGS.**

*“Even young healthy legs could hide a killer blood clot...”*

Call 1 888 626 4671  
Long center www.aventis.com









## How should I put my baby to sleep?

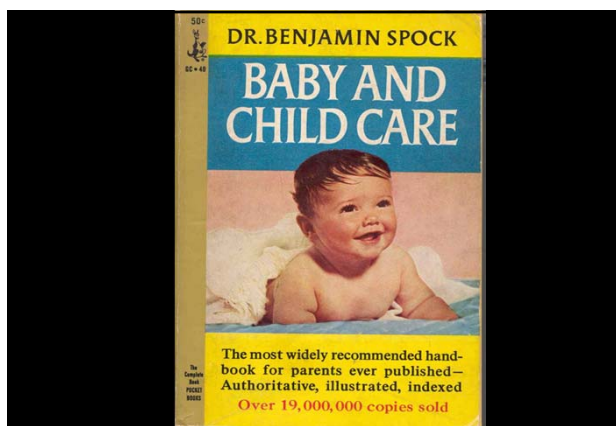
1. On back
2. On side
3. On front

**What would you advise?**





*International Journal of Epidemiology*  
2005

**Infant sleeping position and the sudden infant death syndrome: systematic review of observational studies and historical review of recommendations from 1940 to 2002**

Ruth Gilbert,<sup>1\*</sup> Georgia Salanti,<sup>2</sup> Melissa Harden<sup>1</sup> and Sarah See<sup>1,3</sup>

### Conclusion

"Advice to put infants to sleep on the front for nearly a half century was contrary to evidence available from 1970 that this was likely to be harmful. Systematic review of preventable risk factors for SIDS from 1970 would have led to earlier recognition of the risks of sleeping on the front and might have prevented over **10,000** infant deaths in the UK and at least **50,000** in Europe, the USA, and Australasia."

### Why is evidence is important?

- Doing things that have not been tested can cause harm even if our intentions are good!

Imagine that your mother has Fin recently been diagnosed with breast cancer

A. Should she simply have the tumour removed – a **lumpectomy**?

B. Should she have the surrounding tissues removed as well in case it has spread – a **radical mastectomy**?

Discuss with in small groups

### Radical mastectomy

*"It is a scandal that the medical profession systematically mutilated thousands of women without the slightest evidence that this was likely to do more good than harm"*

Iain Chalmers

## Why is evidence is important?

- Doing things that have not been tested can cause harm even if our intentions are good!



"Mind you only one out of every ten doctors recommends it!"



## What makes good evidence about the effectiveness of treatments?



## Do friendly bacteria help IBS?

home | Activia explained | products | you and your tummy | get involved

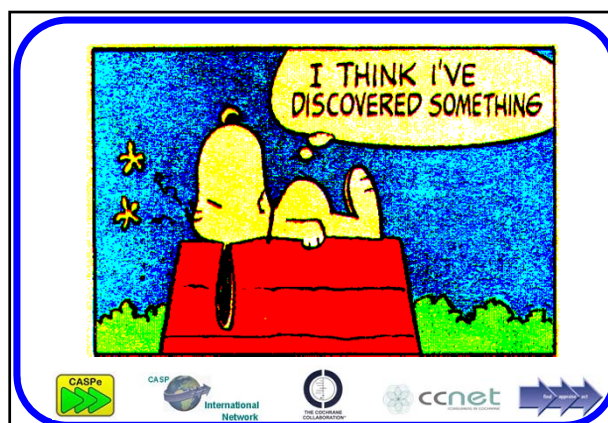
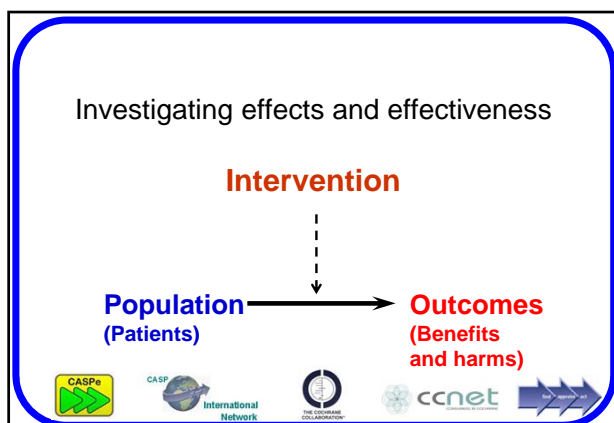
ACTIVIA

Tummy Loving Care

give yourself some tummy loving care with Activia and Martine McCutcheon

Activia helps reduce digestive discomfort, based on studies with 2 pots consumed daily. Enjoy as part of a healthy diet and lifestyle.





*‘The art of medicine consists in amusing the patient while nature cures the disease.’*

Voltaire

Logos: CASPe, CASP International Network, THE COCHRANE COLLABORATION, ccnet

How could you design a study to minimise the chance of being fooled into thinking an intervention is effective (or harmful), when the changes observed would simply have happened any way?

**End**

Logos: CASPe, CASP International Network, THE COCHRANE COLLABORATION, ccnet

Answer

- Compare what happens to people given the intervention to what happens to people that didn't have the intervention
- This is known as a

**Control Group**

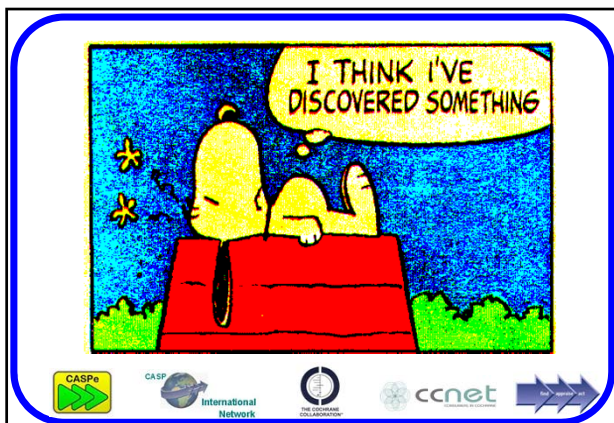
Logos: CASPe, CASP International Network, THE COCHRANE COLLABORATION, ccnet

“Well it can't do any harm...”

- Trial of probiotics in patients with acute pancreatitis
- Stopped
- Infectious complications occurred in 30% patients in the probiotics group and 28% in the placebo group
- 16% patients in the probiotics group died, compared with 6% in the placebo group
- Nine patients in the probiotics group developed bowel ischaemia (eight with fatal outcome), compared with none in the placebo group.


Logos: CASPe, CASP International Network, THE COCHRANE COLLABORATION, ccnet





### Is the “effect” due to pre-existing differences between the groups?

- Differences?
  - Severity of illness
  - Where they live
  - Genetics
  - Social class
  - Volunteers
  - Sex
  - Age
  - Past treatments



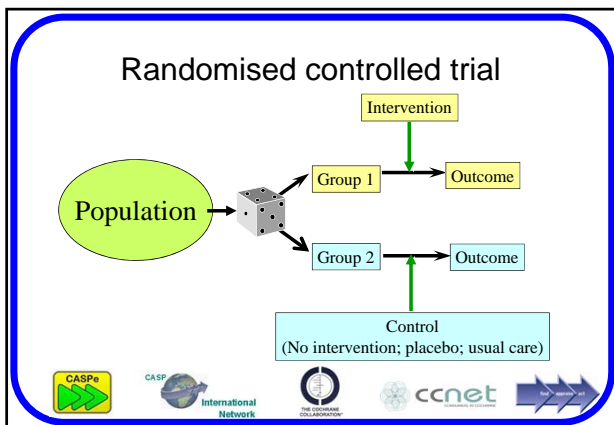
### How can we get comparable groups?

• Sex	• 2 groups
• Severity of illness	• Mild, average, severe (6)
• Age	• <18, 18-40, 40-70, >70 (24)
• Social class	• 5 social classes (>100)
• Past treatments	• Smoker? (>300)
• Genetics	• (?Unknown)



### How can we get comparable groups?





## Allocation concealment

- The researcher or health care provider entering a participant into a trial cannot tell which treatment they will get
- Sequentially numbered opaque sealed envelopes
- Centralised randomisation

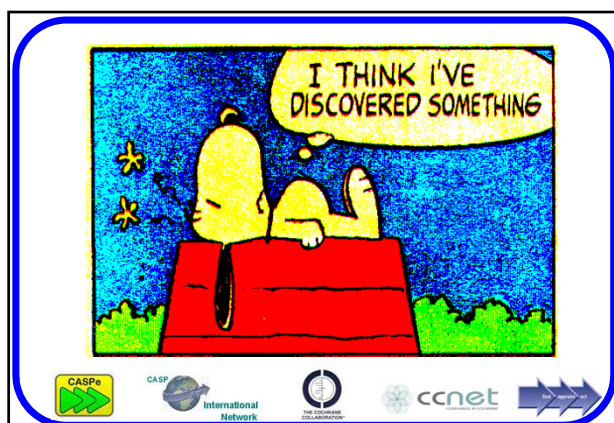


Check the baseline characteristics of the groups – imbalances can occur by chance



Probiotic  
yoghurt trial

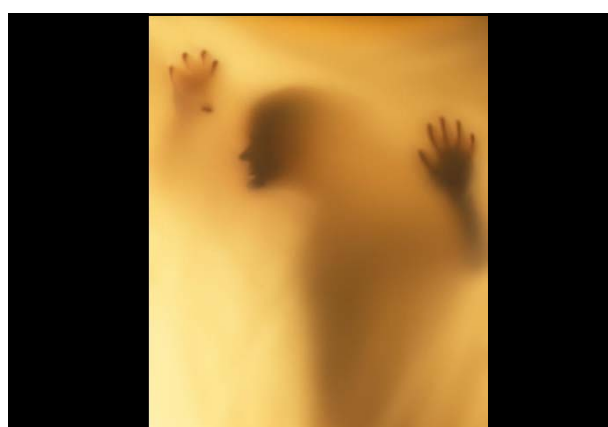
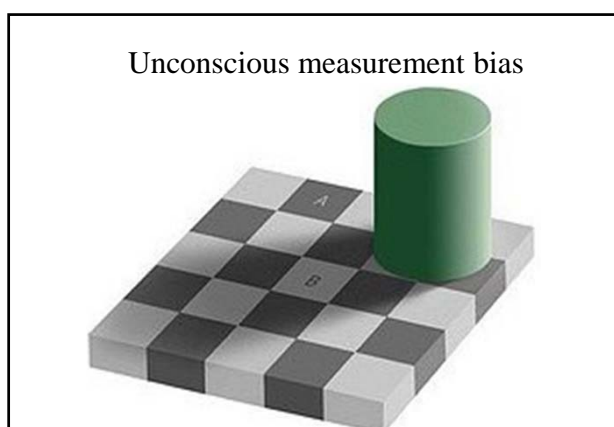




### Groups otherwise treated equally

Additional interventions are provided preferentially to one group

A photograph of a classical marble statue depicting a group of people, possibly a medical or scientific scene, with one person in the center being attended to. At the bottom, there are logos for CASPe, CASP International Network, THE COCHRANE COLLABORATION, and ccnet.



### How can we make groups remain comparable?

- Blinding (patient, researcher, health professionals)
- Reduce losses to follow up
- Assess differential drop out (attrition bias)
- Are those who drop out similar to other participants?

At the bottom, there are logos for CASPe, CASP International Network, THE COCHRANE COLLABORATION, and ccnet.

### When things go wrong

"There could be no worse experimental animals on earth than human beings: they go on vacations, they take things they are not supposed to take, they live incredibly complicated lives and, sometimes, they do not take their medicine."

Efron B F: Limburg Compliance Symposium. Statistics in medicine 1988; 17:249-250

At the bottom, there are logos for CASPe, CASP International Network, THE COCHRANE COLLABORATION, and ccnet.