
Evidence Based Medicine

Prof P Rheeder
Clinical Epidemiology

Module 3: Applying EBM to therapy

This Thing Works Great ! (Your Patient Says)

Weight loss pills The ultimate weight loss site - Microsoft Internet Explorer

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WELCOME TO OUR STORE!
WEIGHT LOSS PILLS

In the last decade, obesity has become a major health problem, affecting not only our health but our self esteem as well. We will help you to be more confident and have a healthier life. We have the solution !

- Feel confident in your body again
- More energy - sparkling confidence
- Weight reduction - a better shaped body

OVERWEIGHT AND OBESITY

Besides being overweight or obese, there are additional risk factors to consider.

- high blood pressure
- premature heart disease
- physical inactivity

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WEIGHT LOSS TIPS

The first steps to weight loss pills success.
You can say that you don't have enough time to go to the gym then this is the only solution.
Just try to lose weight and you'll feel much better, sleep better have more energy, you'll be more beautiful than ever!
We've give you enough reasons to start to fast weight loss.

RECOMMENDED PRODUCTS

Hoodia Gordonii + Highly recommend

Price: \$49.95 Buy now! Visit their site

Proshape RX Complete System

Price: \$68.95 Buy now! Visit their site

WEIGHT LOSS TODAY!

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FAST WEIGHT LOSS

WEIGH LOSS TIPS

ORDER NO

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Highly recommend

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- ▶ The Proshape rx System is a Doctor endorsed and Herbalist endorsed weight loss system
- ▶ Weight reduction, more energy, more muscles

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details

DR. JUMA CAN TREAT, SOLVE MANY
PROBLEMS SUCH AS:

- | | |
|------------------------------------|--|
| → Bewitched Ppl. | - MISFORTUNES. |
| → Swollen body | - DEMAND DEBTS |
| → Lost Lover | - REMOVE MISUNDERSTANDING
WITH ANYBODY. |
| → INSANITY | - COURT CASES. |
| → DIARRHOEA | - CASINO SPECIALIST. |
| → MADNESS | - BAD LUCK |
| → TO MAKE MENS PENNIS
STANDING | - CUSTOMER ATTRACTION. |
| → WOMAN WITH PREGNACY
PROBLEMS. | - ETC..... |
| → VOMITING ALL THE TIME | |

-
- How do I decide whether some therapy works or not ?
 - How do I know what they claim is true ?
-

HAVIDOL[®]

(avafynetyne HCl)
20mg tablets and suppositories

WHEN MORE IS NOT ENOUGH

HAVIDOL IS THE FIRST AND ONLY TREATMENT FOR DYSPHORIC SOCIAL
ATTENTION CONSUMPTION DEFICIT ANXIETY DISORDER (DSACDAD)

Use the ZING SELF ASSESSMENT TOOL



Take the Quiz

New!
HAVIDOL
gift ideas
in the shop

IMPORTANT SAFETY INFORMATION

Problems can be avoided if you take HAVIDOL only when you are able to immediately benefit from its effects.
To fully benefit from HAVIDOL patients are encouraged to engage in activities requiring exceptional mental,



Did you know...?



WHEN MORE IS NOT ENOUGH



ZING SELF ASSESSMENT TOOL

Read each sentence carefully. For each statement, select the response that best corresponds to how often you have felt that way in the last 2 weeks. Print out this test and discuss your answers with your physician on your next visit.

Remember, only a health care professional can actually diagnose DSACDAD. But only *you* can take this test.

Multitasking makes me feel powerful

☐ Not often ☐ Sometimes ☐ Often ☐ All the time

I feel empty after a full day of shopping

☐ Not often ☐ Sometimes ☐ Often ☐ All the time

I am impatient if I feel I am not my best

☐ Not often ☐ Sometimes ☐ Often ☐ All the time

I don't feel as young as I used to be

☐ Not often ☐ Sometimes ☐ Often ☐ All the time

I constantly feel I need to improve myself

☐ Not often ☐ Sometimes ☐ Often ☐ All the time

I care more about others than myself

HAVIDOL IS THE FIRST AND ONLY TREATMENT FOR DYSPHORIC SOCIAL ATTENTION CONSUMPTION DEFICIT ANXIETY DISORDER (DSACDAD)

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IMPORTANT SAFETY INFORMATION

Problems can be avoided if you take HAVIDOL only when you are able to immediately benefit from its effects. To fully benefit from HAVIDOL patients are encouraged to engage in activities requiring exceptional mental, motor, and consumptive coordination. HAVIDOL is not for you if you have abruptly stopped using alcohol or sedatives. Havidol should be taken indefinitely. Side effects may include mood changes, muscle strain, extraordinary thinking, dermal gloss, impulsivity induced consumption, excessive salivation, hair growth, markedly delayed sexual climax, inter-species communication, taste perversion, terminal smile, and oral inflammation. Very rarely users may experience a need to change physicians.

Talk to your doctor about HAVIDOL



Did you know...?

More than 50% of the population over 18* suffer from some degree of DSACDAD.

* not approved in patients under 18

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Evaluating a paper on therapy

- Is the study valid?
 - What are the results? Are they statistically AND clinically significant? Are they precise? If the study is negative was the sample size large enough?
 - Can I apply these results to my setting ?
-

Content

- 1. Validity of a study on therapy
 - 2. Interpreting the results of a study on therapy
 - a) statistical significance
 - b) clinical significance
 - c) precision
 - 3. Applying the results in practice
-

■ VALIDITY

1. Is the study valid ? What is Validity?

- Does the result represent the truth?
 - Is the study free of bias ?
 - Bias is another word for “systematic error”
 - When reading research you have to exclude 2 (maybe more!) forms of error
 - Random error (chance, P values)
 - Systematic error (bias)
-

Validity guides for an article on therapy.

- **Primary Guides:**

- 1. Was the assignment of patients to treatments **randomized and randomization concealed**?
 - 2. Were all patients who entered the trial properly accounted for and attributed at its conclusion?
 - 3. Was **follow up** complete?
 - 4. Were patients analyzed in the groups to which they were randomized? (**intention to treat analysis**)
-

Are the results of the study valid?

- **Secondary Guides:**
 - 1. Were patients, health workers, and study personnel "**blind**" to treatment?
 - 2. Were the groups **similar** at the start of the trial?
 - 3. Aside from the experimental intervention, were the groups **treated equally**?
 - 4. Is **sample size** determined a priori (type 2 error avoided) and numbers reached ?
-

■ RESULTS

2. Interpreting the results from a therapeutic study

- What is risk?
 - What is the risk of having a stroke
 - Comparing 2 interventions over 5yrs
 - Incidence₁ = 10/100 Risk = ? Over 5 yrs
 - Incidence₂ = 5/100 Risk = ? Over 5 yrs
 - Relative risk treatment 2 vs 1 = ?
 - Relative risk reduction = ?
-

Risk

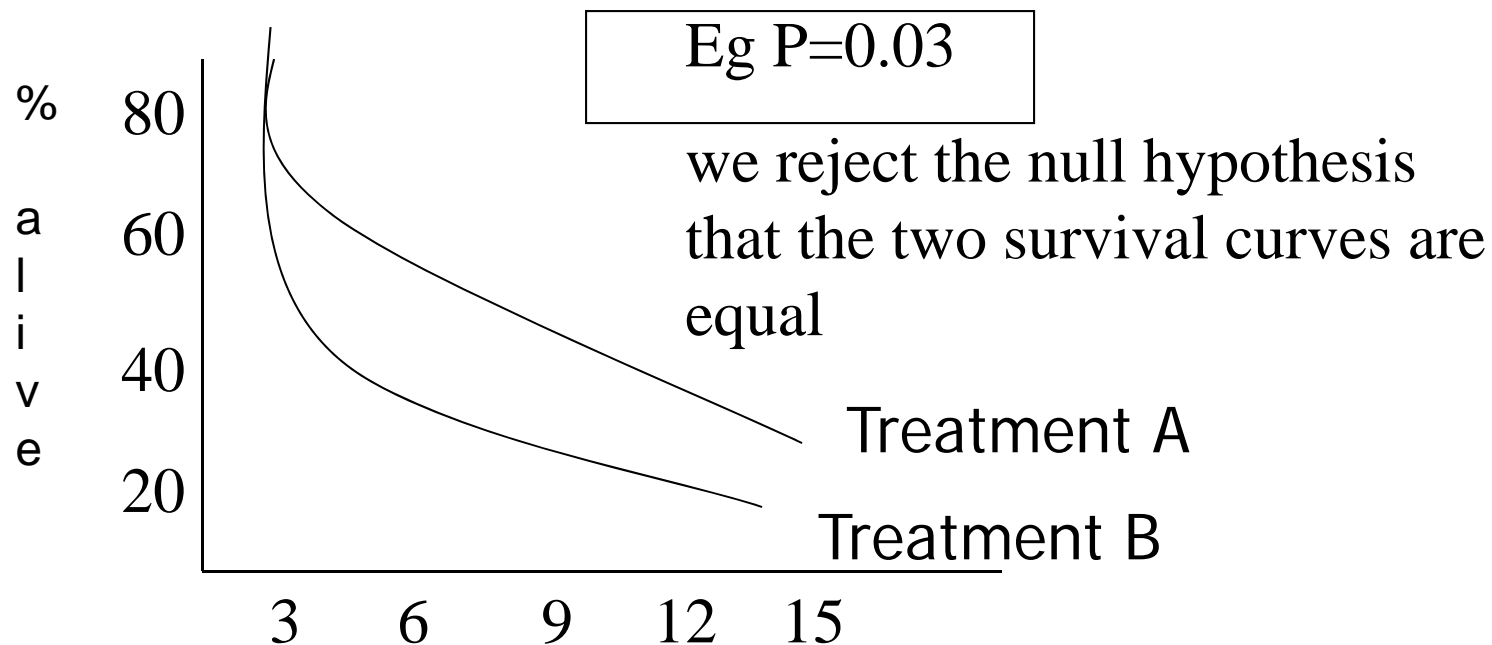
- So important concepts to understand
 - Absolute Risk
 - Absolute Risk reduction and NNT
 - Relative risk reduction
 - Relative risk (or Odds Ratio)
-

Risk

- Example
 - Risk1= 10% Risk2=5%
 - RRR=50% (>25% usually clinically significant)
 - Absolute risk reduction= 5%
 - NNT
 - numbers needed to treat= $100/ARR$
 - Eg = $100/5 = 20$
 - Need to treat 20 patients for X years to prevent one event
-

Survival analysis

- To compare Survival curves one uses the logrank test



a) Now what is statistically significant?

- P value
 - $P < 0.05$ statistically significant
 - Rules out chance as an explanation of the research findings
 - If 95% CI of a RR or OR contains 1 it cannot be statistically significant
 - Confidence intervals better than just P
-

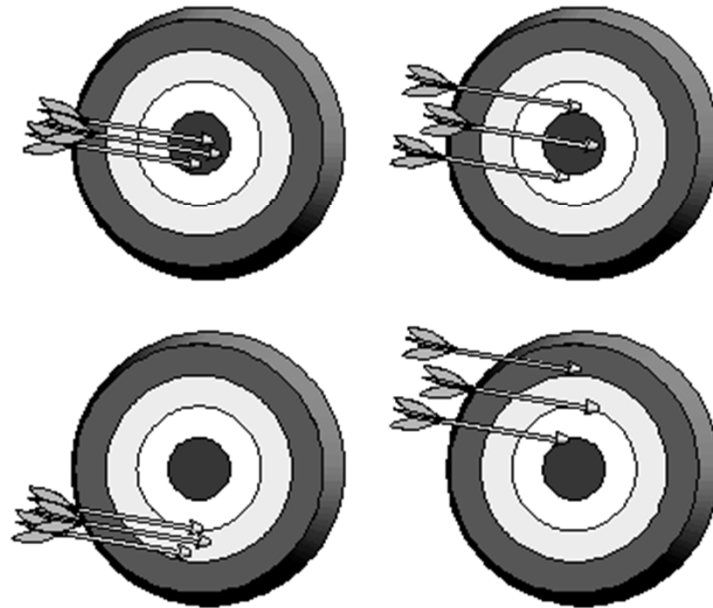
b) Now what is clinically significant?

- RRR of 25% or more
 - But mostly we use the absolute risk reduction and the NNT to decide
 - No clear NNT cut-off, depends on the condition and the costs of the drug etc
-

c) Now what is precise ?

- Precision means repeatability

Precision vs. Accuracy



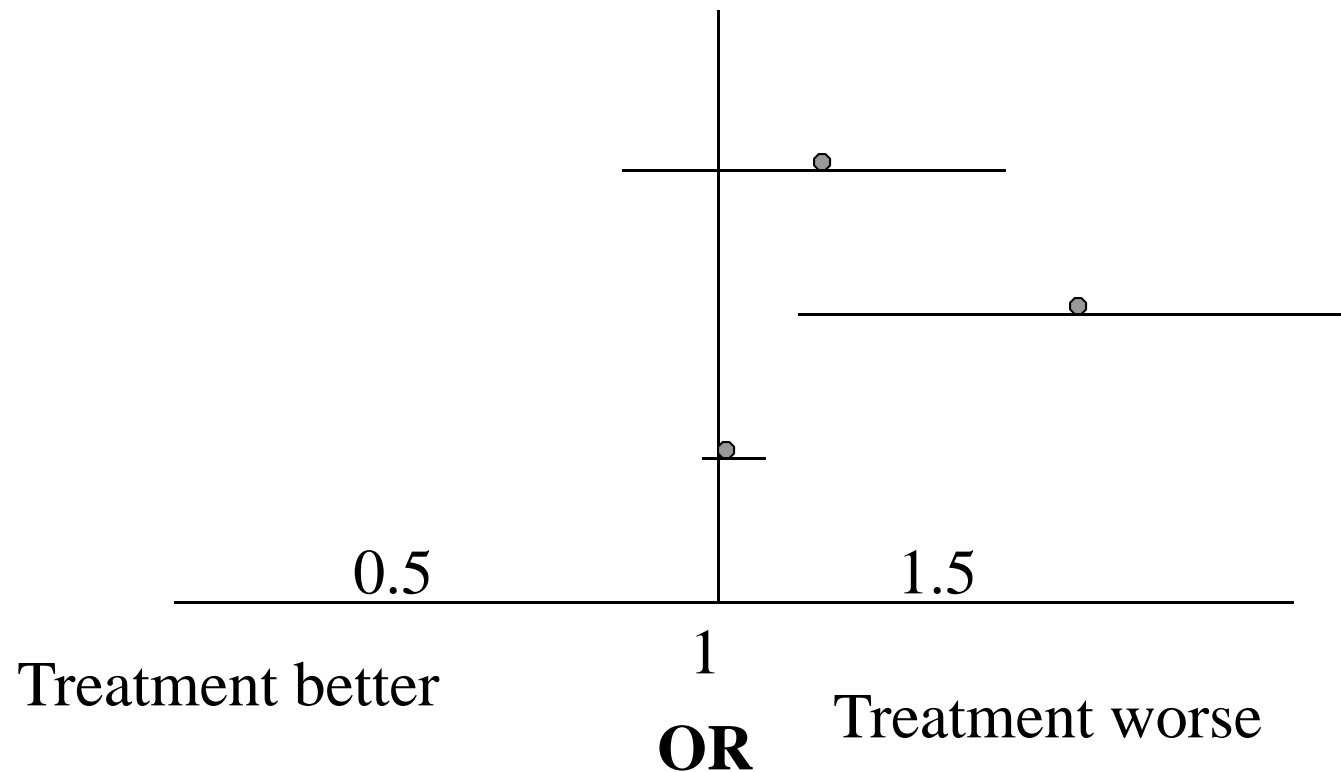
Precision

- Confidence intervals tell us about precision
 - Remember our study is only in a sample
 - We would like to know the value in a population (eg population of people with HT treated with drug X, what's the benefit?)
 - Confidence intervals tell us how confident we can be where the population value will be
-

Precision

- A 95 % Confidence interval gives the range of which I can be 95% confident in which the population value will lie eg RR or OR
 - Eg 95% CI Odds ratio 0.7-0.9
 - If study is repeated 100 times, 95 times the OR would be in the interval 0.7 to 0.9
 - I am 95% confident that the reduction in risk in the population being treated will be between 10 and 30%
-

Expressing Uncertainty in meta-analysis



■ Application

Can I apply these results in my practice ?

- All relevant end-points assessed ?
 - Are my patient(s) similar?
 - Is their risk similar or larger?
 - Do I need special expertise or resources?
 - Would benefit exceed possible harm ?
 - What will my patient(s) prefer?
 - What are the cost implications ?
-