

# **The Newcastle-Ottawa Scale (NOS) for Assessing the Quality of Nonrandomized Studies in Meta- Analysis**

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# Development: Grouping Items

- **Cohort studies**
  - Selection of cohorts
  - Comparability of cohorts
  - Assessment of outcome
  
- **Case-Control studies**
  - Selection of case and controls
  - Comparability of cases and controls
  - Ascertainment of exposure

# Newcastle-Ottawa Quality Assessment Scale: Case-Control Studies

- Selection (4)
- Comparability (1)
- Exposure (3)
  - A study can be awarded a maximum of one star for each numbered item within the Selection and Exposure categories. A maximum of two stars can be given for Comparability

## Valutazione di qualità di uno studio caso-controllo

- 1) study base:
  - è chiaramente definita?
- 2) selezione dei casi
  - i casi provengono dalla study base?
  - i criteri diagnostici sono validi?
- 3) selezione dei controlli
  - provengono dalla study base?
  - il campionamento è accurato?
- 4) accuratezza nella identificazione dei confondenti
  - vi sono confondenti non considerati?
- 5) validità nella misura dei confondenti
  - i confondenti sono misurati con adeguata validità?
- 6) la misura dell'esposizione è valida?
  - accurata, precisa?
  - c'è sospetto di misclassificazione?
- 7) il confondimento è stato controllato adeguatamente?

# Selection

1. Is the case definition adequate?
  - a) yes, with independent validation ♦
  - b) yes, eg record linkage or based on self reports
  - c) no description
2. Representativeness of the cases
  - a) consecutive or obviously representative
  - b) potential for selection biases or not stated
3. Selection of Controls
  - a) community controls ♦
  - b) hospital controls
  - c) no description
4. Definition of Controls
  - a) no history of disease (endpoint) ♦
  - b) no description of source

e.g. ICD codes in database  
or self-report with no  
reference to primary record  
or no description

>1 person/record/time/process  
to extract information, or  
reference to primary record  
source such as x-rays or  
medical/hospital records

# Comparability

## 1. Comparability of cases and controls on the basis of the design or analysis

a) study controls for \_\_\_\_\_ (select the most important factor) ♦

b) study controls for any additional factor (This criteria could be modified to indicate specific control for a second important factor.) ♦

# Exposure

## 1. Ascertainment of exposure

- a) secure record (eg surgical records) ♦
- b) structured interview where blind to case/control status ♦
- c) interview not blinded to case/control status
- d) written self report or medical record only
- e) no description

## 2. Same method of ascertainment for cases and controls

- a) yes ♦
- b) no

## 3. Non-Response Rate

- a) same rate for both groups ♦
- b) non respondents described
- c) rate different and no designation

# Newcastle-Ottawa Quality Assessment Scale: Cohort Studies

- Selection (4)
- Comparability (1)
- Outcome (3)
  - A study can be awarded a maximum of one star for each numbered item within the Selection and outcome categories. A maximum of two stars can be given for Comparability



## Elementi da isolare nel disegno dello studio

- 1) popolazione base:
  - criteri di selezione ; generalizzabilità
- 2) popolazione in studio:
  - fattori di selezione
- 3) gruppi in studio:
  - metodi di selezione: random/non random
- 4) popolazione effettivamente esposta agli interventi:
  - intention to treat
- 5) popolazione su cui sono stati misurati gli outcome:
  - persi al f-u

# Selection

## 1. Representativeness of the exposed cohort

- a) truly representative of the average \_\_\_\_\_ (describe) in the community ♦
- b) somewhat representative of the average \_\_\_\_\_ in the community ♦
- c) selected group of users eg nurses, volunteers
- d) no description of the derivation of the cohort

## 2. Selection of the non exposed cohort

- a) drawn from the same community as the exposed
- b) drawn from a different source
- c) no description of the derivation of the non exposed

## 3. Ascertainment of exposure to implants

- a) secure record (eg surgical records) ♦
- b) structured interview ♦
- c) written self report
- d) no description

## 4. Demonstration that outcome of interest was not present at start of study

- a) yes ♦
- b) no

In the case of mortality studies, outcome of interest is still the presence of a disease/ incident, rather than death; that is a statement of no history of disease or incident earns a star

# Comparability

## 1. Comparability of cohorts on the basis of the design or analysis

a) study controls for \_\_\_\_\_ (select the most important factor) ♦

b) study controls for any additional factor (This criteria could be modified to indicate specific control for a second important factor.) ♦

# Outcome

## 1. Assessment of outcome

- a) independent blind assessment ♦
- b) record linkage ♦
- c) self report
- d) no description

## 2. Was follow up long enough for outcomes to occur

- a) yes (select an adequate follow up period for outcome of interest) ♦
- b) no

## 3. Adequacy of follow up of cohorts

- a) complete follow up - all subjects accounted for ♦
- b) subjects lost to follow up unlikely to introduce bias - small number lost - > \_\_\_ % (select an adequate %) follow up, or description of those lost) ♦
- c) follow up rate < \_\_\_% (select an adequate %) and no description of those lost
- d) no statement