

# Functional MRI in Clinical Research and Practice

Participant Screening, Characterization and Selection



# Participant Screening, Characterization and Selection

- Random samples and samples of convenience
- Inclusion criteria
- Exclusion criteria - medical issues, smoking, drug use
- Psychometric testing
- Psychiatric testing
- The uses of covariates

# Random samples and samples of convenience

Random samples

Example:

randomly selected participants

Samples of convenience

Examples:

patients from a clinic

members of a class

retrospective case review

# Random samples and samples of convenience

Random samples

Disadvantages:

logistically difficult

Samples of convenience

Disadvantages:

self selection bias

unknown covariates

# Inclusion criteria

- Diagnosis
- Age
- Sex
- Socioeconomic status
- Educational level
- Manual preference
  - Edinburgh Handedness Inventory

# Exclusion criteria

- Medical history
  - Psychiatric
  - Neurologic
  - Cardiac
  - Metabolic
- Psychoactive substance use
  - Prescription
  - Illegal
  - Over the counter
    - Caffeine and nicotine are psychoactive drugs!

# Psychometric tests

- General intelligence assessment
  - WAIS
  - Raven's Progressive Matrices
- Reading skills
- Mathematical skills
- Sensorimotor skill
  - Purdue Pegboard
  - Annett Peg Moving Task

# Psychometric test types

- Clinical administered
- Investigator administered
- Self administered
- Computer administered



# Psychiatric testing

- Expert clinical assessment
- Structured Clinical Interview for DSM-IV
  - [http://en.wikipedia.org/wiki/Structured\\_Clinical\\_Interview\\_for\\_DSM-IV](http://en.wikipedia.org/wiki/Structured_Clinical_Interview_for_DSM-IV)
- Specialized instruments
- Examples:
  - Beck Depression Inventory
  - Hamilton Rating Scale for Depression
    - [http://en.wikipedia.org/wiki/Hamilton\\_Rating\\_Scale\\_for\\_Depression](http://en.wikipedia.org/wiki/Hamilton_Rating_Scale_for_Depression)

- **Uses of covariates**

- Nuisance variables
- Effects of interest

## **Covariate types**

- Trait specific
- State specific

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