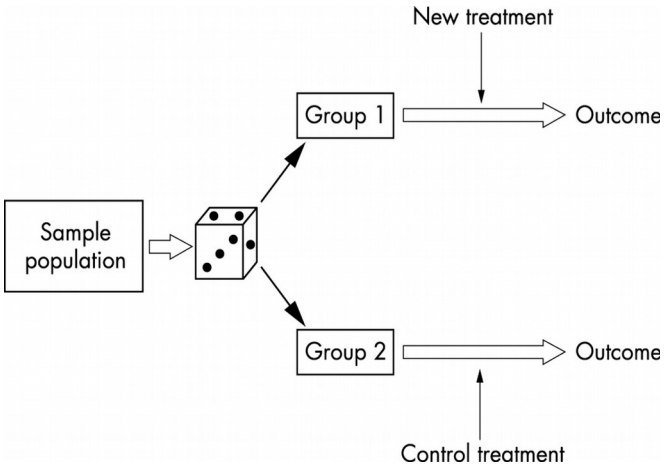
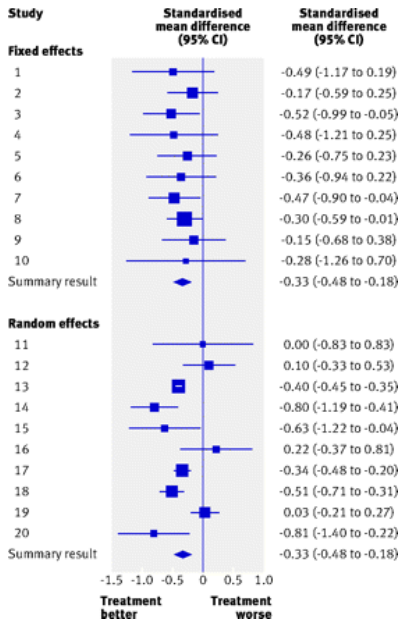
1. Randomized Controlled Trial (RCT)

- Independent variable is controlled
- Dependent variables are equal in the experimental and control groups through randomization
- Blinded and double blinded
- Crossover5
- $p < 0.05$, means statistical significance, with alpha < 5%
- N reflects power with beta > 20%
- Binary, use R2
- Continuous data, use co-variate analysis
- Kaplan-Meier curve
- Cox proportional hazard
- Normal distribution curves
- Bayesian method using Markov chain Monte Carlo



2. Meta-analysis

- Multiple studies are combined, which often have varied study designs
- Weighted averages
- Pooled data
- Combined statistical power is greater than that of any one study
- Data depicted on Forrest Plots, with a line indicating 0 with data falling to the right or left of this line indicating benefit or no benefit. CI are depicted as bars that may or may not cross the vertical bar and a box or diamond depicted the relative weight of the data.



3. Systematic Review

- Literature review, often collating thousands of studies on a given topic
- Cochran Review, done by experts in their field and often governed by medical institutions
- Often the basis of the practice of evidence-based medicine, ie, there is not a RCT on every topic of interest, so a topic is reviewed by experts who read the literature and practice in their field of interest to bring experience and practical knowledge to bear.

4. Expert Recommendations and Guidelines

- Advisory Committee on Immunization Practices (ACIP): Human Papillomavirus testing in teenagers and young adults.
- American Association of Clinical Endocrinologists (AACE): Diabetes management
- American College of Cardiology (ACC) and American Heart Association (AHA): Blood Pressure treatment, Statin drugs in primary prevention of Coronary Artery Disease

- American College of Obstetrics and Gynecology (ACOG): Mammograms and PAP smears
- Global Initiative for Asthma (GINA): Asthma
- Global Initiative for Chronic Obstructive Lung Disease: COPD
- United States Task Force: Immunizations

5. Observational Studies

Independent variable is not under control

a) Case-control
   i. Case-control: measure OR
   ii. Prospective Cohort: measure OR, RR
   iii. Retrospective Cohort: measure OR, RR
b) Cross-sectional: measure OR, RR, AR
c) Longitudinal
   i. Retrospective
   ii. Prospective