## Hierarchy of Research Design

I: Properly conducted randomized, controlled trial  
II-1: Well-designed controlled trial without randomization  
II-2: Well-designed cohort or case–control analytic study  
II-3: Multiple time series with or without the intervention; dramatic results from uncontrolled experiments  
III: Opinions of respected authorities, based on clinical experience; descriptive studies or case reports; reports of expert committees

### Design-Specific Criteria

**Systematic reviews**
- Comprehensiveness of sources considered/search strategy used  
- Standard appraisal of included studies  
- Validity of conclusions  
- Recency and relevance are especially important for systematic reviews

**Case–control studies**
- Accurate ascertainment of case-patients  
- Nonbiased selection of case-patients/controls with exclusion criteria applied equally to both groups  
- Response rate  
- Diagnostic testing procedures applied equally to each group  
- Measurement of exposure accurate and applied equally to each group  
- Appropriate attention to potential confounding variables

**Randomized, controlled trials and cohort studies**
- Initial assembly of comparable groups  
- For randomized, controlled trials: adequate randomization, including first concealment and whether potential confounders were distributed equally among groups  
- For cohort studies: consideration of potential confounders with either restriction or measurement for adjustment in the analysis; consideration of inception cohorts  
- Maintenance of comparable groups (includes attrition, crossovers, adherence, contamination)  
- Important differential loss to follow-up or overall high loss to follow-up  
- Measurements: equal, reliable, and valid (includes masking of outcome assessment)  
- Clear definition of the interventions  
- All important outcomes considered

**Diagnostic accuracy studies**
- Screening test relevant, available for primary care, adequately described  
- Study uses a credible reference standard, performed regardless of test results  
- Reference standard interpreted independently of screening test  
- Handles indeterminate result in a reasonable manner  
- Spectrum of patients included in study  
- Sample size  
- Administration of reliable screening test

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* Obtained from reference 67.