**Common Study Designs**

**Meta Analysis** – a type of systematic review that combines the results using accepted statistical methodology as if they were from one large study.

**Systematic Review** – focuses on a specific clinical question and includes an extensive/explicit review of the literature to identify studies with sound methodology. Data extracted from the selected studies are combined (if possible), compared, and assessed. Conclusions are made based on results and/or the presence or absence of supporting evidence.

**Randomized Controlled Trial (RCT)** – a prospective, analytical, experimental study using primary data generated in the clinical environment. Individuals similar at the beginning are randomly allocated to two or more treatment groups and the outcomes the groups are compared after sufficient follow-up time.

A study that shows the efficacy of a diagnostic test is a **prospective, blind comparison to a gold standard**. This is a controlled trial that looks at individual with varying degrees of an illness and applies two diagnostic tests to each individual: the test under investigation and the “gold standard” test.

**Cohort (Prospective, Incidence, Longitudinal, Follow-up) Study** – a prospective, analytical, observational study of a population (or cohort) who had, have or will have a specific exposure or treatment of interest. This outcome of this cohort is compared to the general population or another group that has not been effected by the exposure or treatment of interest. Cohort studies are susceptible to bias because the two groups may differ in ways beyond the variable in the study.

**Case-Control Study** – a retrospective, analytical, observational study often based on secondary data in which individuals with a condition or outcome are compared with individuals who do not, but have the same risk factor. Often using medical records or patient recall, researches look back in time to identify possible exposures. y useful for rare conditions or for risk factors with long induction. However, due to the potential for many forms of bias in this study type, case control studies provide relatively weak empirical evidence even when properly executed.

**Case Series or Case Report** – anecdotal evidence. A description of a single case (or several cases), typically describing the manifestations, clinical course, and prognosis of that case. Due to the wide range of natural biologic variability in these aspects, a single case report provides little empirical evidence to the clinician. They do describe how others diagnosed and treated the condition and what the clinical outcome was.

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**Common EBM Question Types:**

**Therapy** – selecting treatments to offer individuals that do more good than harm and that are worth the efforts and costs of using them.

**Prevention** – reducing the chance of disease by identifying and modifying risk factors and diagnosing disease early by screening.

**Diagnostic** – selecting and interpreting diagnostic tests, in order to confirm or exclude a diagnosis, based on the tests’ precision, accuracy, safety, expense, etc.

**Harm/etiology** – identifying causes and risk factors for disease.

**Prognosis** – estimating an individual’s likely clinical course over time and anticipating potential complications.

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**Suggested Single Study Designs:**

**Therapy** → Randomized Controlled Trials

**Prevention** → Randomized Controlled Trials

**Diagnostic** → Prospective, blind comparison to a gold standard.

**Harm/etiology** → Cohort study

**Prognosis** → Cohort study (Follow-up)

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**Please note:** Meta analyses and systematic reviews normally provide the best evidence for all question types, since they take into account a collection of studies on a specific topic.