Levels of Evidence for Primary Research Question

[This chart was adapted from material published by the Centre for Evidence-Based Medicine, Oxford, UK. For more information, please see www.cebm.net.]

| Types of Studies | Levels of Evidence
|------------------|---------------------|
| **Therapeutic Studies—Investigating the Results of Treatment** | Level I: High quality randomized trial with statistically significant difference or no statistically significant difference but narrow confidence intervals. Systematic review of Level I RCTs (and study results were homogenous).
| **Prognostic Studies—Investigating the Effect of a Patient Characteristic on the Outcome of Disease** | Level II: Lesser quality RCT (e.g., < 80% followup, no blinding, or improper randomization). Prospective comparative study. Systematic review of Level II studies or Level I studies with inconsistent results.
| **Diagnostic Studies—Investigating a Diagnostic Test** | Level III: Case control study. Retrospective study. Untreated controls from an RCT. Lesser quality prospective study (e.g., patients enrolled at different points in their disease or < 80% followup). Systematic review of Level II studies.
| **Economic and Decision Analyses—Developing an Economic or Decision Model** | Level IV: Case series. Case-control study. Poor reference standard.
| **V** Expert opinion | Expert opinion | Expert opinion | Expert opinion |

- **I** High quality randomized trial with statistically significant difference or no statistically significant difference but narrow confidence intervals. Systematic review of Level I RCTs (and study results were homogenous).
- **II** Lesser quality RCT (e.g., < 80% followup, no blinding, or improper randomization). Prospective comparative study. Systematic review of Level II studies or Level I studies with inconsistent results.
- **III** Case control study. Retrospective comparative study. Systematic review of Level III studies.
- **IV** Case series.
- **V** Expert opinion.

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A complete assessment of quality of individual studies requires critical appraisal of all aspects of the study design.

A combination of results from two or more prior studies.

Studies provided consistent results.

Study was started before the first patient enrolled.

Patients treated one way (e.g., cemented hip arthroplasty) compared with a group of patients treated in another way (e.g., uncemented hip arthroplasty) at the same institution.

The study was started after the first patient enrolled.

Patients identified for the study based on their outcome, called “cases” (e.g., failed total arthroplasty), are compared with patients who did not have outcome, called “controls” (e.g., successful total hip arthroplasty).

Patients treated one way with no comparison group of patients treated in another way.