Top Things to Know
Methodological Standards for Meta-Analyses and Qualitative Systematic Reviews of Cardiac Prevention and Treatment Studies

1. More than 10,000 meta-analyses and qualitative systematic reviews are published annually, roughly double the number published annually just five years ago.

2. A PubMed search for the terms “meta-analysis” and “cardiovascular” resulted in 53 publications for the year 2000, 413 for 2010, and more than 1100 publications in 2014.

3. This AHA statement serves different purposes for different audiences:
   - **Researchers**: provide guidance to researchers who wish to carry out meta-analyses, especially in the fields of cardiovascular disease prevention and treatment
   - **Readers**: inform users and consumers of meta-analyses who wish to assess methodological quality and not just the completeness of reporting
   - **Editors**: Journal editors are a key audience since they must decide whether to publish a particular meta-analysis.

4. In addition to encouraging potential authors to consider their research question and whether there is a need to answer the question with a meta-analysis, potential authors are encouraged to register their protocol.

5. The methods used in 82 recent high-quality meta-analyses in cardiovascular sciences were surveyed for this scientific statement.

6. The Statement systematically addresses nine important questions:
   - i. What are effective methods for searching for studies to include in a meta-analysis?
   - ii. How should studies be selected for inclusion?
   - iii. What are acceptable methods for data extraction and standardization from individual studies?
   - iv. How should quality of individual studies be assessed?
   - v. How should heterogeneity be quantified and handled?
   - vi. What are acceptable methods for pooling results across studies and how do these methods vary according to study design and the frequency of outcomes?
   - vii. What are acceptable methods for identifying publication bias?
   - viii. What are acceptable methods and guiding principles for carrying out sensitivity and subgroup analyses?
   - ix. What are emerging meta-analytical methods for studies addressing cardiovascular prevention and treatments?

7. Examples of Forest Plots, Meta-Regression; and Funnel Plots guide readers in assessing heterogeneity and publication bias.

8. The Evidence-Based Medicine (EBM) movement promotes a systematic approach to assessing quality of evidence, research design, and other characteristics of individual publications. High-quality meta-analyses can inform EBM approaches.