

AAOS Clinical Practice Guideline Development

Why do a Systematic Review for AAOS Guidelines?

The AAOS seeks to be the definitive source for musculoskeletal information and education. This includes education of the fellowship, the public, and policy makers. The AAOS should be the primary resource for those seeking information on orthopaedic evidence-based clinical practice guidelines. Consequently, great care is taken to ensure that the AAOS' guidelines are unbiased, transparent, and reproducible. To accomplish this, the AAOS prepares its guidelines using the processes of a systematic review.

How does the AAOS Combat Bias in its Guidelines?

All of the AAOS' guidelines are prepared using systematic, well-defined processes that makes it possible for readers to scrutinize every aspect of the decision-making that went into an AAOS clinical practice guideline. In preparing its guidelines, the AAOS is asking its readers "Can you see what data we used?", "Are you satisfied that our selection of data was unbiased?", and "Can you reach the same conclusions from the data we used?" The answers to all three questions should be "Yes", not only for the AAOS' guidelines, but also for any "good" guideline. If the answers to any of these questions is "No" the guideline is suspect.

The systematic steps the AAOS' uses to prepare its guidelines and, hence, the steps that the AAOS uses to ensure that the answers to all three preceding questions are "Yes" include:

1. Developing specific, focused, evidence-based recommendations that specify [What] should be done in [whom], [when], [where] and [how often]. These recommendations are developed before any literature searches are conducted. Doing so ensures that the scope of a guideline cannot be changed if someone does not like the results of the data analysis.
2. In the AAOS' guidelines, studies are included and excluded according to predefined criteria. These criteria are always specified *a priori* (i.e., before any studies are searched for or evaluated), and comprise a guideline's "rules of evidence.". These criteria ensure that a guideline does not address only articles that support a particular point of view. To assist in this, searches for literature are as comprehensive as practicable. Finally, these criteria are published in each guideline so that readers can assure themselves that they are objective.
3. A comprehensive literature search of the literature is performed for each guideline. This search includes a minimum of two large databases (e.g. Embase and PubMed) and hand searches of relevant article bibliographies. Searching only PubMed is not sufficient to identify all relevant articles. Locating *all* relevant literature distinguishes the AAOS' systematic guideline reviews from traditional reviews that only identify studies that support a particular position. The search terms and strategies are included in the guideline so that the search can be easily replicated.

4. A comprehensive list of all excluded articles is provided in each guideline with reasons listed for exclusion. This allows readers to audit the reason(s) for excluding each article, and is an important way of providing evidence that shows that article selection was not biased.
5. A comprehensive list of all included articles is provided in each guideline. Consequently, readers can see *all* of the evidence considered and again use this information to satisfy themselves that articles were not selected because they represented a particular point of view.
6. An unbiased data set is constructed. Data from each included article are tabled (no selection of only certain data from each article) and all relevant data are presented in evidence tables to document the information associated with an article. Consequently, readers of the guideline can scrutinize not only the articles that were included, but also the data in those articles. Most articles report several outcomes and several statistical tests. The AAOS ensures that all relevant data from every article are included, and does not “pick and choose” data from any article. This is yet another way of combating bias. Finally, article author’s conclusions are not considered because an article’s authors can be biased.

Providing extensive documentation is another hallmark of evidence-based medicine. This documentation (steps 2-6) makes transparent all aspects of how a guideline was prepared. Evidence tables provide the main audit trail that identifies what data was found, analyzed and how it was used.

7. Each AAOS guideline includes a methods section, and this section documents how literature was identified and appraised. Statistical methods used to quantitatively analyze the data are described in the methods section of each guideline.
8. Each AAOS guideline evaluates the quality of every study it includes. The results of high quality studies are more trustworthy than the results of low quality studies, and the AAOS accounts for this when making its recommendations.

Other AAOS “Safeguards”

1. Nomination of topics for guideline development follows established and transparent processes. Establishing such processes assures members that topics were chosen fairly and that they were addressed equitably. These processes also assist in topic prioritization and work scheduling.
2. AAOS guidelines are constructed without industry sponsors.