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Evidence Gathering and Recommendation Building Procedures for Position Statements:

New Methodology

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Online First

Writing National Athletic Training Association Position Statements: New Methodology for Systematic Evidence Gathering and Recommendation Building

Abstract

Position statements are utilized by healthcare organizations to summarize evidence and clearly articulate consensus on best practices. The procedures for developing position statements by the National Athletic Trainers' Association and the NATA Research and Education Foundation have been updated to enhance transparency, reduce bias, and better incorporate the available research to support clinical care recommendations. The paper details the processes of topic selection, author group formation, evidence gathering, and recommendation building, emphasizing the systematic approach and the inclusion of diverse expertise. These changes ensure that future position statements, starting from June 2024, will be more rigorously developed and serve as a reliable resource for athletic trainers, other healthcare providers, and important stakeholders in various settings.

Key Words: athletic training, consensus, evidence synthesis

Key Points

1. Position Statements written by diverse author groups provide evidence-supported information for clinicians with a focused scope
2. Evidence utilized for position statements will be gathered and reported with a systematic process to reduce bias and improve repeatability

- 22 **3.** Recommendations are developed with the modified Delphi method and consensus
23 processes transparently reported

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Background

Evidence based practice incorporates research, patient goals, and clinical experience to optimize patient care.¹ Summarizing evidence and developing recommendations for clinical practice provides useful information for clinicians to use in their daily practice. Healthcare organizations across multiple disciplines produce various consensus statements to share clinical recommendations.² Position statements are one the most common as they clearly articulate the organization's stance on a clinical topic and condense large amounts of evidence into practical recommendations. The structure of position statements includes recommendations focused on different elements of patient care (i.e. prevention, treatment), methodology on how the recommendations were developed, and review of the pertinent evidence used to support recommendations.²

The National Athletic Trainers' Association (NATA) and NATA Research and Education Foundation (NATA Foundation) first introduced position statements in 2000 with the "National Athletic Trainers' Association Position Statement: Fluid Replacement". Position statements are scientifically based, peer reviewed research written by a team of authors who are experts in the relevant field.³ These documents are tailored specifically for the athletic training profession and formally endorsed by the NATA and NATA Foundation. The NATA Foundation's Pronouncements Committee, comprised of athletic trainers, oversees the topic selection process and helps shepherd position statements from inception to publication.

The topics and formatting of position statements have evolved over the last two decades to keep up with an ever-changing profession and guidelines for consensus processes. Instead of being only injury/condition specific, many of our position statements are moving

towards also being domain specific such as the ACL position statement focused on prevention efforts.⁴ Future position statements may be setting or population specific as our profession expands into more clinical avenues. This aligns with position statement by the American Academy of Nutrition and Dietetics and the National Strength and Conditioning Association.^{5,6}

In general, position statements include a brief introduction section explaining the document's rationale, the recommendations for clinical care, and an evidence review and synthesis section explaining the evidence supporting the recommendations. The need to update the position statement development process has become paramount as our profession continues to evolve and for recommendations to become comparable to peer organizations. Furthermore, the processes and expectations of position statements, consensus documents, and clinical practice guidelines have become more rigorous, with increased requirements for transparency. For example, the American College of Sports Medicine and American Physical Therapy Association use a systematic review process in gathering evidence and publish ancillary materials to provide clarity of its development.^{7,8}

The purpose of this paper is to inform the readership of the new position statement procedures. The goals of the new procedures are to minimize bias, systematically include the most relevant research, refine the focus of content, and improve transparency of methods and reporting. The new procedures support readership understanding and allow for succinct methods sections in future position statements. This methodology paper represents the full breadth of procedures that will be used in future statements, which have been approved by the NATA and the NATA Foundation. Position statements published in the years 2024-26 have employed various aspects of these changes due to the multiple year planning and

implementation process of both the position statements and these guidelines. All position statements starting the writing process after June 2024 will be published adhering to these methods.

New and Existing Position Statement Topic Development

The Pronouncements Committee welcomes new position statement topics submitted by athletic trainers or other invested stakeholders via a form on the committee website. New topics must be appropriate to one or more of the domains of athletic training and be supported by empirical data-driven research. To be considered, there has to be a strong rationale for a clinical and professional need as well as the identification of how a position statement on the topic will contribute to patient-centered care. Not all topics submitted are accepted due to not meeting any of the above criteria or the inability to identify a position on a particular topic.² In these cases, the topic is given to NATA staff liaison for the Board to consider whether it should be used as another type of official statement.

Existing position statement topics are updated to make sure the content is current and the most comprehensive evidence is presented to the athletic training community. Position statements are reviewed by the Pronouncements Committee at regular intervals based on committee-specific procedures. If minimal new evidence is found, the statement is returned to the review queue for a time frame (i.e. 1 year) decided by the committee. However, if new literature indicates a modification or addition to best practices may be needed, the Pronouncements Committee will initiate a further review by a content expert. The content expert will help the committee determine if the new evidence would change the current

recommendations, supporting the need for an update. Importantly, not all current position statements will be updated. Some original statements are very large topics and would not be feasible within these new procedures. Scrutiny of new and current topics is an important charge of the Pronouncements Committee so as to assist athletic trainers in keeping their practices current, specific to their setting, and evidence-based.⁹ Once the topic is identified and approved for further steps, the Pronouncements Committee initiates the call for authors.

Author Group Formation

Applications for the author group are submitted through the NATA Foundation Pronouncements Committee landing page. The NATA Foundation shares a public call for author group applications through various outlets (e.g., social media, NATA website) when a new position statement author group is being formed. Members of the Pronouncements Committee also share the call for author group applications with experts in the field to help ensure a robust applicant pool. The call includes a short description of the general topic, potential scope, and basic expectations of the authorship team. Interested individuals may indicate their interest in serving as the lead author at the time of application, which has different required application requirements than the application to serve on the author group (Table 1). The Pronouncements Committee reviews all materials for those interested in lead author, using the aforementioned criteria, in order to make a selection. The lead author must be an athletic trainer (AT) unless special circumstances are presented to the Pronouncements Committee. The Pronouncements Committee reviews all materials and scores each lead author applicant, using predetermined rubric based on the aforementioned criteria, in order to make selections with minimized bias. A

conflict-of-interest policy is followed to manage relationships between members and applicants. Individuals not chosen for lead author remain in the author group applicant pool.

Author group members can be athletic trainers, athletic therapists, researchers, physicians, and other pertinent healthcare providers within the topic area. Similar to the lead author selection process, the Pronouncements Committee uses a predetermined rubric based on the aforementioned criteria to guide author group selection. In addition to the qualifications above, the Pronouncements Committee considers diversity in background as a priority when selecting author group members. This includes position type (researcher, clinician), gender identity, race/ethnicity, career status, and clinical setting if self-identified during the application process (optional fields in the application form). The Pronouncements Committee also prioritizes that each author has a unique area of expertise or focus to create a strong author group for each position statement. Four to eight authors are used to create the author group, but less or more can be considered for special reasons or to fill content-expertise gaps.

Since the Pronouncements Committee recognizes it is unable to fully understand the nuances of each content area within athletic training, the lead author is asked if a significant content gap exists within the author group. If so, the Pronouncements Committee determines if the content area can be filled by an individual still remaining in the applicant pool. If not, the lead author and Pronouncements Committee recruit individuals who can fill the specific content area to apply to the author group, using the same procedures previously described.

Scope

The initial scope of the position statement is determined by the topic submission application and the Pronouncements Committee. A statement of scope is used in the open call for author applications. Once the author group is chosen, authors collectively draft foreground or background questions to begin defining the more focused scope of the position statement. Foreground questions seek specific information to guide clinical decisions and are generally structured around key elements such as population/patient/problem, intervention, comparison, outcome, and time (i.e., PICOT questions). Background questions are often more general about conditions, tests or treatments (e.g., focused sub headers). The questions and subheaders serve as an outline for the position statement.

The scope of the position statement is further refined with dialogues between the Pronouncements Committee and the author group regarding the position statement outline. Keeping the scope of the position statements focused enables statements to be more easily applied to clinical practice, written in a timely manner, and manageable for updates when new evidence is published. Position statement scope is determined on a topic-by-topic basis. Position statements that include all areas (prevention, recognition, treatment/management) for a topic may be warranted (e.g., asthma, lightning, diabetes). However, as bodies of evidence grow at different rates, splitting these areas (e.g., prevention, assessment, rehabilitation) across multiple position statements may be necessary (e.g., concussion, ankle sprains, or anterior cruciate ligament injuries). If the manuscript is an update of a currently existing position statement, the same procedures described above are followed. In some cases, the process may require the original position statement to split into more focused position statements.

Resource Support

All author groups are mandated to use a 1) bibliographic software, 2) evidence review management software, 3) librarian, 4) survey platform, and 5) research assistant. The author group has the autonomy to choose the person or software they believe works best for their position statement. The resource choices are submitted, vetted, and approved by a Pronouncements Committee representative prior to the initiation of the writing process.

The purpose of mandating a bibliographic software system for the writing of the position statement is to ensure the accuracy of citations is maintained throughout the writing process and the final publication. The entire evidence appraisal process is documented via the evidence review management software, which generates ancillary materials for the position statement documenting each round of review. This provides a new level of transparency regarding the inclusion and exclusion of evidence in position statements. The evidence review management software determined by the author group must be accessible across authors to screen each potential source for relevance and create an audit trail of the screening process. Collaboration of a professional librarian decreases unintentional bias in evidence collection, assists in strengthening search strategies, and decreases the time burden of author groups. The librarian is responsible for developing search terms and gathering evidence for each subheader within the position statement using the search strategy developed in collaboration with the author group.

The research assistant will use the survey platform to conduct the modified Delphi process. The research assistant, an individual who is not part of the author group, decreases unintentional author pressure in recommendation building, ensures edits and feedback from all

178 authors are utilized during the process, and decreases time burden of author groups. This also
179 ensures anonymity in the voting of the author group while finalizing the recommendations.

181 **Search Strategy**

182 Using the approved outline with focused subsections, the author group with
183 consultation from the librarian lists search terms and drafts a search strategy for each
184 subsection. The search strategy comprises the inclusion criteria, exclusion criteria, databases,
185 language and publication date boundaries (if relevant) and establishes a comprehensive
186 approach to ensure all clinical evidence is included. The librarian collaborates with the author
187 group to confirm the search strategy adequately captures the evidence needed to address the
188 foreground or background question and then administers and manages the search. The final
189 search strategy is published with the position statement as an ancillary material.

191 **Evidence Gathering**

192 The librarian is responsible for gathering evidence based on the search strategy. They
193 upload results into the evidence review management software, including titles and abstracts.
194 The evidence review management software removes duplicate evidence. The author group
195 divides into sub-groups to vote, using the software, on whether each identified publication is
196 relevant to the position statement and fits the search strategy. In round 1, screenings are based
197 on title and abstract only. In round 2, the full text is screened for inclusion. Each round of
198 screening requires a minimum of 2 authors to independently evaluate the publication. If there
199 is a conflict (e.g., 1 yes and 1 no vote) or if an author feels that the publication needs to be

discussed (e.g., a “maybe” vote), a third author votes followed by discussion until consensus is met. If authors indicate evidence should not be included, it is tagged with a reason (e.g., irrelevant population). The software output from round 1 and 2 will be retained by the lead author and Pronouncements Committee for future queries. A finalized list of evidence for each subsection is the primary outcome of round 2. All evidence used to support the recommendations should also be cited within the *evidence review and synthesis* section.

Once the evidence review and synthesis section has been drafted, a post hoc search of evidence (with the aid of the librarian) is completed (search strategy and by hand) to ensure the most up to date evidence is included in the statement. Even though gathered by subsection, the evidence is published as one reference list at the end of the position statement.

Evaluation of Evidence

Once the research articles for a subsection are determined, a subset of the author group will rate each article with a level of evidence (LOE) number.^{1,10} The LOE ratings are determined by both study design and the validity of an individual research study. The LOE ratings range from 1 (i.e., good quality patient-oriented evidence) to 3 (i.e., other evidence), as operationally defined by SORT.^{1,11} During the evidence review process, authors individually rate each article. If the article is rated the same LOE number by two authors, consensus has been reached. If there is a conflict in LOE ratings (i.e., authors individually rated the article differently) or if an author feels that the publication needs to be discussed, a third author independently rates the article, followed by discussion until consensus is met. The LOE for each piece of evidence is

included within the reference list of the position statement.

Evidence Review & Synthesis Section

Upon identification of all relevant evidence, the author group begins writing the *Evidence Review and Synthesis* section of the position statement. Small groups of authors write each subsection and report to the full author group on how the task was accomplished. The goal of the first synthesis of evidence is to provide a basis to create recommendations. The *Evidence Review and Synthesis* section provides context and rationale to the recommendations provided in the same named subsection. The use of all evidence captured by the search is included when writing this section to minimize bias and provide a balanced view of the evidence on the subsection topic. If contrasting evidence gathered during the search strategy exists, it should be presented transparently in this section. However, this is not an exhaustive review of individual pieces of evidence; therefore, the authors should typically focus on publications with higher LOE ratings or practical relevance.

Recommendation Building

A subset of authors draft the preliminary recommendations based on the evidence gathered and evaluated. Recommendations can be written in support of a strategy or against it.¹¹ Recommendations are concise and contain action-oriented wording. Author groups are strongly encouraged to ensure the feasibility of implementation for each recommendation, paying close attention to minimizing compound recommendations (i.e., recommendations that require 2+ different components). Recommendations should be capable of spanning multiple

clinical settings unless the position statement is written for a specific setting (e.g., the National Athletic Trainers' Association Position Statement: Emergency Action Plan Development and Implementation in Sport).¹²

The modified Delphi Method,¹³ a framework for establishing consensus through the unbiased aggregation of expert opinion on a topic, is used to develop consensus among the authors. The same process will be used even if an original position statement exists, and the author group is updating the manuscript. The compiled evidence aids in the initial draft of a recommendation before it moves forward in the modified Delphi procedure.

Aid from a research assistant outside of the author group, uploads recommendations, monitor author responses, and facilitates the process from start to finish to ensure anonymity. All author group members receive an anonymous online questionnaire containing the draft of recommendations. Members are asked to rate their level of agreement if they perceive each recommendation to be valid, feasible and clear.

The operational definitions of valid, feasible, and clear are:

- Validity: the recommendation can be sustained based on current data, theory, literature, or other scientific evidence
- Feasibility: it is realistic to expect individuals or organizations to implement the recommendation, considering varying resources and competing demands of different organizations.
- Clarity: the recommendation is clear and easily understood.

Ratings are on a scale of 0-5, where a score of "5" indicating higher level of agreement, and a score of "0" indicating a low level of agreement. Authors can provide comments to support

their score or suggest edits for each recommendation in an open comment box. A compilation of scores from each author is used to calculate the mean scores for each construct (i.e., validity, feasibility and clarity) and each recommendation. Any recommendation with a score in which all three components (validity, feasibility, clarity) are >80% can be retained in the final version. The process can be repeated up to three times for any recommendation with <80% agreement for any of the components (validity, feasibility, clarity), with a meeting occurring after each round of scores for discussion on the recommendation. Scores from each round are published as ancillary material in the journal. If an author dissents to a recommendation, the rationale will be described in the final manuscript with the author's name and a brief description as to why they dissent to the recommendation.

If the author group determines that the literature search may have missed some potential recommendations after the first round of voting, the consensus-building process can lead to additional consensus-derived recommendations. Authors may propose new recommendations in the questionnaire. These recommendations undertake a separate consensus-building process to decide if these recommendations should be included or revised.

Once recommendations are finalized, the relevant references are inserted using the bibliographic software immediately following at least one, if not all, of the sentences. All recommendations are immediately followed by the words "Strength of Recommendation", a colon, and a recommendation based off of the SORT Strength of Recommendation scale.¹ The recommendation, ranging from A to C, are justified by the articles' individual levels of evidence ratings and are referenced as a "group" or "body" of evidence for the particular recommendation. The recommendation must be clearly sourced in the recommendations and

fully transparent from the reference section. Review of LOE and strength of recommendation ratings for accuracy occur during the multiple stages of Pronouncements Committee review.

Conclusions

The new position statement process is systematic in its approach of gathering and evaluating evidence. The use of a librarian and research assistant, both third-party to the author group, reduces unintentional bias. The inclusion of clinicians in addition to a robust research team allows for the increased likelihood that the recommendations are implemented by the practicing athletic trainer. The procedures ensure all relevant, quality evidence is included in the manuscript, both in the evidence review and synthesis and recommendation sections. NATA position statements continue a long-standing tradition of focused recommendations and this document will contribute to enhanced transparency of author selection and consensus-making. Ancillary materials provide an additional layer of transparency to the position statements. Position statements will continue to be a primary, trusted information source for athletic trainers and the sports medicine community.

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Table 1. Application requirements for lead author and author group.

Application Materials	
Researcher	Clinician
<ul style="list-style-type: none"> • Biosketch <ul style="list-style-type: none"> ○ Personal Statement including expertise in research manuscript development, topic area and consensus building ○ Contribution to science tailored to the topic 	<ul style="list-style-type: none"> • Resume • Cover letter <ul style="list-style-type: none"> ○ clinical expertise in area ○ experience with evaluating evidence
Author Group Criteria	
<ul style="list-style-type: none"> • Substantial research and writing experience in the content area of the position statement • Demonstrated capability in critically appraising research • Exposure or experience to scoping/systematic reviews 	<ul style="list-style-type: none"> • Experience writing and/or presenting research • Experience evaluating evidence • Substantial experience in a clinical setting • Experience clinically managing the topic
Lead Author-Specific	
<ul style="list-style-type: none"> • Proficiency in group and individual leadership with the ability to meet deadlines • Strong experience with scoping/systematic reviews 	

**Formation of the group will consider other factors including type of clinical practice, years of experience, diversity