The American Chiropractic Board of Sports Physicians Position Statement on Pre-Participation Examinations: An Expert Consensus

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Abstract

Objective: The purpose of this paper is to present a position statement of best practices for the provision of a safe and high-quality pre-participation examination (PPE) and to provide recommendations on education requirements for doctors of chiropractic providing the PPE.

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Methods: In 2014, the American Chiropractic Board of Sports Physicians (ACBSP) Board of Directors identified a need to review and update the ACBSP position statements and practice guidelines in order to be current with evolving best practices. Twelve ACBSP certificants, 10 Diplomates of the ACBSP, and 2 Certified Chiropractic Sports Physicians, met in April 2015 to author a pre-participation position statement using an expert consensus process. Panel members excluded anyone with commercial conflicts of interest and included individuals with expertise in clinical sports medicine and the performance of PPEs. A literature review was performed and circulated in advance for use by the panel in addressing the topic. The position statement was written through a consensus process and accepted by the ACBSP Board of Directors in May of 2015.

Results: The ACBSP Position Statement on Pre-participation Examinations identifies the qualifications and best practices for doctors of chiropractic to perform a PPE.

Conclusion: This position statement states that doctors of chiropractic with post graduate education and current Diplomates of the ACBSP or Certified Chiropractic Sports Physicians certification have the prerequisite education and qualifying skills to perform PPEs.

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Introduction

As sport participation increases, so does the incidence of sport-related morbidity.¹ One proposed method for reducing sport-related health problems is the use of the pre-participation examination (PPE).² Over 7 million young athletes participate in high school level sport annually.³ There are concerns that the burden of performing PPEs for this growing population may overextend the health care system and that health care providers do not uniformly follow current best practices when performing them.⁴

Pre-participation examinations are conducted to protect the health and welfare of individuals who participate in sport. Although there is a lack of consensus on screening strategies, the goals of the PPE are generally consistent which includes establishing safe participation for the athletes, and identification of risk factors and health problems that could lead to future incidents.⁵ The critical end point of the PPE is the clearance decision, but providers must also determine necessity of follow-up examination.

The American Chiropractic Board of Sports Physicians (ACBSP) recognizes that no health care provider has specialization in all aspects of medical practice and advocates co-management with physicians who specialize in the involved organ system for any case in which there is clinical concern that sport participation may be restricted or contraindicated. At present, there is no current, evidence-based position statement for doctors of chiropractic on preparticipation examinations for sport. Therefore, the ACBSP resolved to develop a position statement on this topic.

The purpose of this paper is to describe the PPE healthcare provide qualifications, examination performance and management issues specific to the following areas:

1. Qualifications of doctors of chiropractic to perform a PPE.
2. Identification of PPE performance standards.
3. Best practices to obtain and synthesize the athlete health history and physical examination to formulate a clearance to participate in sport decision.

Another purpose of this position statement is to describe the roles and standards for qualified health care providers, including doctors of chiropractic, when performing the PPE.

Methods

In 2014, the Board of Directors identified a need to review and update the ACBSP position statements and practice guidelines in order to maintain consistency with evolving best practices. The ACBSP Board of Directors appointed a position paper committee of 5 ACBSP certificants. The purpose of the ACBSP Position Paper Committee was to review current ACBSP position papers to provide recommendations for consideration of revision or re-approval. The topic of the pre-participation evaluation was chosen for update by expert consensus due to timeliness and a recent increase in sporting organizations and state

legislative body discussions regarding doctors of chiropractic and the PPE.

A writing committee was formed by the ACBSP Board of Directors and was tasked with creation of an updated position stand on the PPE. Members of the ACBSP were invited to participate based on their known experience and excellence in clinical practice, research, academic or medical-legal contributions to the chiropractic profession. Invitations were given to select active ACBSP certificants with intent to create diversity in the writing group in terms of the college or university they graduated from, geographic location of practice, years in practice, sports medicine clinical experience, sex, and level of post graduate sports certification. All members were ACBSP certificants, including 10 Diplomates of the ACBSP (DACBSP) and 2 Certified Chiropractic Sports Physicians (CCSPs) (Fig 1). The committee was asked to review research and prepare discussion topics in advance of participating in a consensus meeting at the ACBSP Sports Sciences Symposium held on April 2015. (See Fig 2.)

A literature review was prepared and circulated in advance for use by the panel in addressing the questions. The search terms “pre-participation examination” and “pre-participation evaluation” were used to identify position statements from sports medicine organizations on the performance of the PPE. Additional documents on critical aspects of the PPE were also chosen by the committee for consideration during the writing process. The goal of the committee meeting was not to perform a formal systematic review or meta-analysis, but rather to provide comparison expert consensus documents for consideration to define current best practices. A PubMed search for relevant documents was performed with the search terms: “physical examination”, “physical evaluation”, “risk factors”, and “practice guidelines.” Documents were chosen by the committee as relevant references for the position statement and are included in the reference list. The consensus writing committee was asked to review manuscripts in advance of the meeting to determine their scientific value and relevance to the performance of the PPE.

The lead author and second author developed a preliminary document based upon the above literature. The proposed draft position statement was reviewed by the committee at the April 2015 meeting. The writing committee discussed each paragraph, proposed modifications, and agreed on final wording of the manuscript by unanimous agreement to finalize the consensus. The final document was distributed electronically reviewed a second time by each member after the close of the meeting, and approval was provided by email communication by each committee member. The document was submitted to the ACBSP Board of Directors for approval and was accepted in May of 2015.

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Fig 1. ACBSP PPE Writing Committee.

Chiropractic PPE Qualifications

The ACBSP's position on PPE is the following:

1. Doctors of chiropractic with post graduate education and current ACBSP (DACBSP or CCSP) certification are qualified to perform PPEs and make clearance decisions in any patient population.^{6,7}
2. Doctors of chiropractic without sports medicine certification may evaluate, diagnose, and manage a broad range of

General Physical Examination
A targeted physical examination is required, as outlined in the 2010 PPE Preparticipation Physical Evaluation monograph. ⁹
<p>The screening examination should include:</p> <ol style="list-style-type: none"> Vital signs^a General inspection (skin, appearance, posture) Eyes,^b ears, nose, throat Cardiovascular and pulmonary screening^c Abdominal examination Neurologic examination Genitourinary (as clinically indicated) Musculoskeletal examination (static and functional evaluation) General medical examination^e
<p>a= Pulse, blood pressure, respiration rate, temperature, height, weight</p> <p>b = Visual acuity, visual acuity should be tested with a Snellen chart. Athletes with best corrected visual acuity of less than 20/40 in one eye should be considered functionally one eyed.²³</p> <p>c = The cardiovascular examination should follow the American Heart Association guidelines.¹⁶ Cardiac auscultation is a core component of the cardiovascular examination and is required to identify abnormal heart sounds. All abnormalities detected via auscultation should be evaluated by a cardiologist since cardiologists are the only medical specialists found to identify accurately the majority of abnormal heart sounds.²⁴</p> <p>d = Musculoskeletal pathology is a common cause of denied clearance for participation. Special attention to areas of prior injury or surgery should be given during the musculoskeletal examination.²⁵ The musculoskeletal examination should include screening for connective tissue disease, such as Marfan syndrome.⁹</p> <p>e = A focused examination should be performed for any area of complaint, dependent upon athlete presentation.²⁶</p>

Fig 2. Recommended general physical examination.^{9,16,21–26}

conditions, which may qualify them to perform PPEs based upon their individual clinical expertise, education, clinical acumen, and additional training related to the PPE.⁸ The Council on Chiropractic Education's standards for accreditation require extensive physical examination, history taking, cardiology, and pharmacology education.⁸

- The skills needed to appropriately perform a PPE can be supported by additional education.
- All health care providers who perform PPEs have an obligation to maintain current knowledge regarding PPE best practices.

PPE Performance Standards

The ACBSP's position on PPE is the following:

Methodology

- PPEs may be performed by a single health care provider or by multiple health care providers as a station-based examination.

- If a station-based PPE format is used, the most experienced clinician with licensure to render a diagnosis should be responsible for reviewing the history, performing the cardiopulmonary examination, and rendering the final clearance decision.

History

- Standardized history forms, such as described in the current edition of the PPE Pre-Participation Physical Evaluation monograph or International Olympic Committee Periodic Health Evaluation form, should be used.^{9,10} Utilization of standardized protocols reduces risk of medical error.¹¹
- A comprehensive personal and family history is the cornerstone of the PPE. The history is a more sensitive tool than the physical examination for

detecting conditions that could prohibit or alter sport participation.^{12,13} For youth athlete populations, an adult who is well informed regarding the examinee's health history must assist in collecting the historical data. The lead clinician should review the history before the examination is administered.

3. Specific attention should be given to cardiovascular-related findings, neurological injuries, and other causes for restriction or disqualification that might predispose an athlete to injury or illness. A reference list of medical conditions that affect sport participation serves as a useful reference for the health care provider performing the PPE.¹⁴
4. The personal history must be screened to identify congenital or acquired heart disease, history of hypertension or hypotension, murmurs, or family history of cardiovascular disease. Symptoms of chest discomfort, shortness of breath, palpitations, and syncope or near-syncope are critically important to identify. A family history of hypertrophic cardiomyopathy, Marfan syndrome, or sudden cardiac death in relatives younger than 50 years are all significant findings.
5. The ACBSP endorses the American Heart Association's Pre-participation Cardiovascular Screening of Young Competitive Athletes.¹⁵ These recommendations should be implemented on all PPEs.¹⁶ A positive response to any screening question should be confirmed, and further evaluation performed as indicated. Additional evaluation should be performed by an appropriate specialist, such as pediatric cardiologist in the child or adolescent.
6. Identification of current or previous concussion and other head traumas is required. The number of injuries and their temporal relationship, as well as time to recovery, is a key element regarding head injury history and clearance for sport participation.^{17–19}
7. Baseline concussion testing is a recommended component of the PPE. The Sports Concussion Assessment Tool–3rd edition is a recommended tool. Additional testing may also be used.^{20,21}
8. Risk factors for relative energy deficiency in sport and its clinical sequelae may be identified in the medical history.²²

General Physical Examination

The description of the general physical examination is depicted in Fig 1.

Clearance for Sport Participation

The decision to clear an athlete for sport participation is multifactorial:

1. Co-management with a specialist in the organ system in question is recommended for cases in which there is clinical concern that sport participation may be contraindicated.
2. Classification of sport type based on contact and cardiac demand should be considered when making clearance decisions.¹⁴
3. Athletes presenting with underlying disabilities may be cleared for sport; however, additional evaluation may be required for clearance to participate.

Discussion

This position paper provides an evidence-based overview for the performance of a pre-participation examination (PPE) and clarifies ACBSP's stance that doctors of chiropractic with DACBSP or CCSP certifications are qualified to perform PPEs and make clearance decisions.

Chiropractic is the third largest health care profession in the United States and chiropractic education leads to a Doctor of Chiropractic (DC) degree.^{27,28} The World Health Organization requires DC programs to engage students in no less than 4200 contact hours, which includes a minimum of 1000 hours supervised clinical training.²⁹ Within the United States, the Council on Chiropractic Education (CCE) is the agency recognized by the US Department of Education to accredit all educational programs leading to a DC degree.³⁰ The purpose of the CCE is to ensure the quality of chiropractic education and to promote academic excellence. The CCE has established student competencies, which require all accredited DC programs to train students to perform a standard clinical assessment to establish a patient's health status.³⁰

Doctors of chiropractic are licensed and regulated in all 50 states. In order to achieve state licensure a DC student must pass a series of written and practical board examinations, which are prepared and administered by the National Board of Chiropractic Examiners.³¹ It is worth noting that a component of the National Board of Chiropractic Examiner examination process evaluates DC students' ability to perform a physical examination, determine the need for special studies (eg, diagnostic imaging or laboratory studies),

formulate an accurate diagnosis, and create a rational management strategy.³²

Each of the 50 United States has its own licensing board that sets specific criteria for chiropractic licensure.³³ Each state determines its chiropractic scope of practice laws. This ability for each state to create its own scope of practice allows for considerable variation in DC licensure throughout the United States, and this variation was outlined in a recent survey.²⁸ While this survey highlighted specific differences in various procedures DCs may perform, it is important to emphasize that DCs are licensed to perform neurological examinations and orthopedic examinations in each state.

Like other health care professions, DCs are required to stay current with continuing education and programs exist that are specific to sports medicine. The ACBSP is a governing and credentialing body that oversees the creation and performance of examinations within domain of sports medicine. The ACBSP provides two separate certifications; the DACBSP and the CCSP.⁶ A licensed DC may elect to take the CCSP or DACBSP certification exams after completion of an approved post-graduate specializing in sports medicine.

Limitations

This position statement was formed by expert consensus, and therefore is vulnerable to all flaws associated with expert consensus. A systematic review was not performed. The literature review is limited by the variable methodological quality of the included studies. Publication bias cannot be excluded.

Conclusion

The pre-participation examination is an important component of health care for the athletic population. Doctors of chiropractic with post graduate education and current ACBSP (DACBSP or CCSP) certification are qualified to perform PPEs. All health care providers should use evidence based practices such as described in this document when performing pre-participation examinations.

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