

**California State Athletic Commission
Department of Consumer Affairs**

INITIAL STATEMENT OF REASONS

HEARING DATE: A hearing has not been scheduled.

SUBJECT MATTER OF PROPOSED REGULATIONS:

Examination of Boxer Applicants and Neurological Assessment

SECTIONS AFFECTED: Amend Title 4 California Code of Regulations as follows:

- Amend Section 280 (Physical Examinations and Safety)

PROBLEM STATEMENT, ANTICIPATED BENEFITS, PURPOSE, AND NECESSITY

To comply with this section, it is important to note that a boxer must be evaluated by at least two (2) to three (3) specialized physicians, which include a neurologist or neurosurgeon required in subsection (c)(1), a licensed ophthalmologist required in subsection (c)(5), and potentially a primary care physician or sports medicine physician to perform the physical examination required in subsection (c)(4), if the required physical cannot be administered by one of the physicians required in subsections (c)(1) or (c)(5). It should also be noted that the physicians, specialties and tests listed in subsection (c) have been added to clarify the medical specialties and examinations required under subsections (a) or (b) of this section.

1. Add Section 280 (c).

Problem Statement: Per Business and Professions Code (BCP) Section 18711, on or after January 1, 2008, licensed professional athletes must complete a medical examination process, to be determined by the commission through regulations, as a condition of initial licensure and license renewal. The examinations prescribed by the commission in regulation may be the same examinations required under current law, or any others found to be medically necessary. The medical examinations are designed to detect physical conditions that could place an athlete or contestant at risk for serious injury or permanent or temporary impairment of any bodily function. The proposed action will implement Section 18711 by establishing a medical examination process in regulation. The proposed examinations are the same as those required under current law, and include a neurological examination, a Magnetic Resonance Imaging (MRI) scan, an electrocardiogram (EKG), a physical examination, an eye examination, and blood tests for the Human Immunodeficiency Virus (HIV) Antibody, Hepatitis B Surface Antigen, and Hepatitis C Virus.

Anticipated Benefits: The proposed action will benefit athletes by ensuring they are thoroughly medically evaluated prior to licensure.

The specific purpose and necessity for each examination is as follows:

Purpose: A **neurological examination** must be performed by a licensed physician that specializes in neurology or neurosurgery. This examination is valid for 12 months.

Necessity: This examination is already required annually under current law, and the Legislature already determined the medical necessity and usefulness of such exams to detect physical conditions that could place an athlete or contestant at risk for serious injury or permanent or temporary impairment of a bodily function. (Bus. & Prof. Code, § 18711, subd. (a)(1)(A)(i).) It is necessary to have a physician that specialized in neurology or neurosurgery perform this examination as they are best equipped to diagnose and treat disorders that affect the brain, spinal cord and nerves. This examination is crucial to detect neurological abnormalities and is required every 12 months or sooner if needed by the commission. The commission proposes that these tests remain valid for 12-months, because 12 months is a reasonable time period to continue relying on the validity of an exam, while also ensuring that neurological changes are properly examined and considered.

Purpose: The examination process also requires athletes to submit to a **Magnetic Resonance Imaging (MRI) scan** that uses standard brain protocol, including Gradient Echo Imaging (GRE) or Susceptibility Weighted Imaging (SWI). The scan must be interpreted by a licensed neurologist, neurosurgeon, or neuroradiologist every 36 months.

Necessity: Current law already requires a brain imaging scan, and the Legislature already determined the medical necessity and usefulness of such exams to detect physical conditions that could place an athlete or contestant at risk for serious injury or permanent or temporary impairment of a bodily function. (Bus. & Prof. Code, § 18711, subd. (a)(1)(A)(i).) The MRI scan has superior sensitivity to computed tomography (CT) for identification of hemorrhagic axonal injury, small contusions, and small extra-axial collections.

(SWI) or Gradient Echo Imaging (GRE) is necessary for proper evaluation of athletes because it is very sensitive for the detection of blood products and, in particular, micro bleeds.¹

The scan is valid for 36 months and must be interpreted by a neurological specialist, because clinical practitioners with training and expertise in neurology, neurosurgery, and/or neuroradiology are generally most familiar with and skilled in evaluation and clinical interpretation of brain imaging. The commission proposes that these tests remain valid for 36 months because this period is a reasonable amount of time to continue relying on the validity of the exam, while

¹ Huang, Y.L., et al., *Susceptibility-weighted MRI in mild traumatic brain injury*. Neurology, 2015. **84**(6): p. 580-5.

also ensuring that changes in health conditions are properly examined and considered.

Purpose: Athletes must also submit to an **electrocardiogram (EKG)** performed by a licensed physician. This medical test is only required once, unless another examination is recommended by the licensed examining physician, or the commission, for cause, orders another examination.

Necessity: The EKG is a diagnostic test of electrical activity in the heart. Current law already requires an EKG for applicants, and the Legislature already determined the medical necessity and usefulness of such exams to detect physical conditions that could place an athlete or contestant at risk for serious injury or permanent or temporary impairment of a bodily function. (Bus. & Prof. Code, § 18711, subd. (a)(1)(A)(i).) An initial test establishes the presence or absence of a potentially dangerous abnormality (ex. hypertrophic cardiomyopathy) that might warrant further evaluation or result in prohibition from licensed participation due to concerns for sudden cardiac death.²

One EKG also establishes a “baseline” with which comparisons can be made at a later date (at the recommendation of the examining physician or upon order of the commission).

There is little value in routine screening in individuals without symptoms and the possibility of “false positives” may lead to unnecessary testing that also carries risk.³ If, however, the commission has cause to believe that an applicant may be at risk for serious injury or impairment of a bodily function, which could be revealed by another EKG test, it may order another test. This is necessary to ensure that applicants showing signs of possible injury or impairment are tested prior to licensure.

Purpose: The medical process also requires a **physical examination** performed by a licensed physician, which is valid for 12 months.

Necessity: A physical examination is already required prior to licensure or renewal, under subsection (a) of Section 280, and BPC Section 18711, subdivision (a)(1)(A)(iv), indicating that the Legislature has already found this to be a medically useful test prior to licensure or renewal. Physical examinations are also required immediately before each event. (Bus. & Prof. Code, § 18706.) Indeed, pre-participation physical examinations provide for assessment and detection of underlying medical problems that may limit competition or place an individual at increased risk as a result of participation. In addition, an evaluation for any physical deficiencies involving musculoskeletal or neurological dysfunction as a result of injury (or otherwise) placing the athlete at increased

² Wellens, H.J. and A.P. Gorgels, *How important is the electrocardiogram in protecting and guiding the athlete?* *Circulation*, 2011. **124**(6): p. 669-71.

³ Moyer, V.A. and U.S.P.S.T. Force, *Screening for coronary heart disease with electrocardiography: U.S. Preventive Services Task Force recommendation statement.* *Ann Intern Med*, 2012. **157**(7): p. 512-8.

risk can be made.

The overwhelming majority of organized youth, high school, collegiate, and professional sports organizations and/or governing bodies require a Pre-Participation Examination (PPE) prior to each season and/or at the time of any graduation to the next level of participation. In the absence of a traditional calendar-based “season” to inform on the timing of PPE, a yearly examination is required (every 12 months), because the commission believes that 12 months is a reasonable period within which to test for any changes in physical condition since the last examination.

Purpose: An eye examination must be performed by a licensed ophthalmologist and must meet the requirements set forth in Section 282. This examination is valid for 12 months.

Necessity: The commission already requires an eye examination as part of the application process, in order to meet its obligations under Section 282 to determine whether an athlete can safely engage in competition. The purpose of adding this again here is for clarity of having all medical requirements in one section.

Additionally, a higher bar is required for recognizing trauma, its implications and the remedies needed for visual rehabilitation. Ophthalmologists are more highly trained in disease and pathology recognition than Optometrists, and specifically trained to manage and treat trauma, diseases and their complications, including surgery, if required. Only someone with this level of training and experience should be given the responsibility of assuring the health of professional athletes’ eyes.

The examination is only valid for 12 months, because this is a reasonable period within which to test for any changes in condition since the last examination.

Purpose: The proposed medical process also requires athletes to complete the following blood tests, which must be taken within 30 days of the date of application, and are valid for 6 months:

- (A) Human Immunodeficiency Virus (HIV) Antibody
- (B) Hepatitis B Surface Antigen (HBsAg)
- (C) Hepatitis C Virus (HCV)

Necessity: Current law already requires applicants to submit to blood testing within 30 days of an application and limits the tests’ validity to six months. (Bus. & Prof. Code, § 18712, subd. (a).) The commission included the testing requirement here to implement Section 18711 and consolidate applicant medical requirements in one section. Additionally, combat sports frequently result in mutual exposure to blood during competition, and as such, blood borne pathogens such as Hepatitis B, Hepatitis C, and HIV, which are spread through sexual contact, exposure to blood and blood products, and contamination of

open wounds or mucous membranes by infected blood, may be transmitted during an event.^{4 5}

Transmission risk varies based on the “infectiveness” of the viral organism. No specific data is available relating to combat sports, but data from accidental needle stick exposure to blood borne pathogens indicates Hepatitis B is more easily transmitted than Hepatitis C, and both are more easily transmitted than HIV. There are reported cases of HIV and Hepatitis transmission from bloody fights⁶ and combat sports, respectively.⁷

2. Add Section 280 (d).

Purpose: This subsection would require that the laboratories administering blood tests hold a certificate under the Clinical Laboratory Improvement Act. It would also require that the results of the tests be presented to the commission on laboratory letterhead.

Necessity: Current law already requires the laboratories that perform blood tests to hold a certificate under the Clinical Laboratory Improvement Act. (Bus. & Prof. Code, § 18712, subd. (a).) The commission included this provision here to consolidate applicant medical requirements in one section. The proposed regulation would also require that the laboratory results be presented on the laboratory’s letterhead, because this ensures that the results are valid, and prepared by a properly-certified laboratory.

Anticipated Benefits: The proposed action benefits athletes by ensuring valid results from a trusted source. Laboratories administering blood tests that have the required certificate would be considered safe places to have blood drawn, both in terms of athlete safety and by ensuring good draws which limit the possibility of having to re-draw unnecessarily.

3. Add Subsection 280 (e).

Purpose: Adding subsection (e) will allow an examining physician to recommend or require any additional tests or evaluations that the physicians deems medically necessary, as specified in BPC Sec. 18711.

Necessity: BPC sec. 18711 calls for a physician to administer a battery of specific testes to determine the physical fitness of a fighter who seeks licensure in California. The section also calls for any additional testing, which subsection (e) authorizes by stating “[t]he examining physician may recommend or require any additional tests or evaluations he or she deems necessary....” This language allows the examining

⁴ Kordi, R. and W.A. Wallace, *Blood borne infections in sport: risks of transmission, methods of prevention, and recommendations for hepatitis B vaccination*. Br J Sports Med, 2004. **38**(6): p. 678-84; discussion 678-84.

⁵ King, O.S., *Infectious disease and boxing*. Clin Sports Med, 2009. **28**(4): p. 545-60, vi.

⁶ O’Farrell, N., S.J. Tovey, and P. Morgan-Capner, *Transmission of HIV-1 infection after a fight*. Lancet, 1992. **339**(8787): p. 246.

⁷ Kashiwagi, S., et al., *An outbreak of hepatitis B in members of a high school sumo wrestling club*. JAMA, 1982. **248**(2): p. 213-4.

physician to investigate any physical/medical/cognitive condition of a fighter that they might suspect would harm the fighter, were the fighter be allowed to compete in a combative event, by ordering any additional testing to be performed on the fighter prior to licensure or for re-licensure.

Anticipated Benefits: The proposed action benefits athletes by ensuring the physical fitness of the fighter is properly investigated prior to allowing that fighter to compete. Without allowing this additional testing, the examining physician may not be able to fully diagnose the fighter and follow up on any suspected physical, mental, cognitive or other conditions that a fighter might have that would be harmful to the fighter were they to be licensed and compete in an event without the testing.

4. Add Subsection 280 (f).

Purpose: Adding subsection (f) will allow the commission to recommend or require any additional neurological diagnostic tests or evaluations to provide concussion management and may use these diagnostics to determine the appropriate time for a fighter to return to competition or retirement from competition in combat sports.

Necessity: Based upon the prevalence of concussive injuries in the combat sports regulated by the commission, a battery of specific tests to determine the physical fitness of a fighter, who seeks licensure in California, has been deemed necessary by the commission to protect fighters from further concussive injuries. This subsection calls for any additional testing, that the commission may deem necessary, by specifically authorizing additional neurological testing to provide concussion management prior to allowing a fighter to return to combat or from retirement from competition in combat sports. This is necessary to ensure that the mental health and neurological functioning of the fighter is properly investigated prior to allowing that fighter to compete.

Anticipated Benefits: The proposed action will benefit athletes by helping ensure that the mental health and neurological functioning of the fighter is properly investigated prior to allowing that fighter to compete. Without this additional testing, the commission may not be able to fully diagnose the full health of a fighter and follow up on any suspected mental or other cognitive conditions that a fighter might have that would be harmful to the fighter were they to be licensed/relicensed and compete in an event.

5. Add Subsections 280 (g) and (h).

Purpose: Adding subsections (g) and (h) will allow the commission to obtain and accept another states' prior EKG or brain imaging tests or evaluations, and other testing obtained by a fighter within 12 months prior to seeking licensure, respectively, to allow a fighter to compete without being retested in California.

Necessity: These subsections allow a fighter, who has been tested in another state or within the past year, to avoid additional/unnecessary testing by waiving additional testing requirements required in subsection (c).

Anticipated Benefits: The proposed action benefits athletes by allowing the reviewing physician to obtain and review prior testing to avoid subjecting an athlete to tests that they have taken within the past year or in another state. This waiver allows the athlete to avoid any potential harmful effects of testing that could be encountered were they forced to obtain new tests that they had recently completed. It also allows the reviewing physician the latitude to review and accept the results of the prior test, with the option to order any additional testing under subsections 280 (e) and/or (f) as necessary.

6. Add Section 280 (i).

Problem Statement: The subsection is added to read: “In accordance with section 18711 of the Business and Professions Code, the commission shall collect one quarter of one percent of gross ticket sales, from each licensed promoter of professional matches, per event sanctioned by the commission. If the State Athletic Commission Neurological Examination Account balance falls below one hundred thousand dollars (\$100,000), the amount of the assessment shall be re-examined by the commission. The amount collected shall be deposited in and credited to the State Athletic Commission Neurological Examination Account and shall be used to pay for the costs of examinations required by section 18711.”

The intent of BPC Section 18711 is to provide the most up-to-date and thorough neurological and medical examinations of combatant sports athletes licensed in California. Pursuant to BPC Section 18711, the commission shall require, as a condition of licensure and as a part of the application process, applicants to be examined by a licensed physician and surgeon who specializes in neurology and neurosurgery, or to comply with a medical examination process established in regulation. The law requires athletes to receive medical examinations in order to detect physical conditions that could place them at risk for serious injury. The Legislature established the Neurological Examination Account on January 1, 1986 with the intended purpose of paying for these examinations.

According to the Bureau of State Audits, however, the commission has not effectively managed this account. The 2012-117 State Auditor report stated the commission has not used the neurological account to pay for any neurological examinations since at least 1998. The commission did not properly administer the Neurological Examination Account due to a lack of regulations. This proposal would provide the necessary regulations to properly administer the account in accordance with the law, and secure a reliable funding source to pay for applicant examinations.

As stated in the Bureau of State Audit Report (BSA) 2012-117:

The commission has also failed to adequately administer its Neurological Examination Account (neurological account), which the Legislature established in 1986 to pay for neurological examinations that might detect physical conditions that could place athletes at risk for serious or permanent injury. Although the fund balance in the neurological account reached \$712,000 as of June 30, 2012, the commission has not used the account to pay for examinations since at least 1998, stating that it could not do so because of the excessive cost of the examinations. Instead, it has used the neurological account only to pay for state operations, such as a portion of the salary and benefits of the staff person who is responsible for verifying the accuracy of the neurological assessment calculation. The commission is considering requesting legislation that would change its responsibilities related to paying for these examinations. However, until the Legislature makes such a change, the commission is failing to use the funds to fulfill the intent of the law.

Purpose: The specific purpose of this amendment to Section 280 is to establish the necessary and specific regulations required by Section 18711, and establish an assessment fee to carry out the legislative intent of BPC Section 18711. This regulatory proposal establishes a neurological assessment fee of one quarter of one percent of gross ticket sales paid by promoters on a per event basis. According to a recent analysis conducted by commission staff, a one quarter of one percent fee from ticket sales per event would be sufficient to adequately fund the Neurological Examination Account and pay for professional athlete examinations, as required by BPC 18711. In addition, this regulatory proposal would limit the expenditures from the Neurological Examination Account to pay for the costs of neurological examinations required by BPC Section 18711 or for any other purpose related to the neurological health of combat sports athletes and authorized by the State Athletic Commission Act.

Necessity: In order to implement the Legislative intent of BPC Section 18711 and ensure the account has the funding necessary to pay for required examinations, this regulatory proposal will set the neurological assessment fee at one quarter of one percent of gross ticket sales per event, and will require the commission to re-examine the amount of the assessment when the Neurological Examination Account balance falls below \$100,000. The threshold of \$100,000 is proposed because it will allow the commission to cover the costs of neurological examinations for approximately one year, which is also the maximum timeframe to promulgate regulations to amend the assessment amount.

This rate of the assessment is based on estimated costs of approximately \$67,000 per year to pay for athlete neurological testing. The commission estimates the annual revenue the Neurological Examination Account would receive is \$33,287 based on an approximate number of gross ticket sales of all events held in 2016. The commission estimates annual expenditures of \$67,000 based on an existing contract in place for neurological testing at \$23,000, Inspector costs associated with administering the neurological testing at \$39,000 and Inspector travel costs at \$5,000, totaling \$67,000 annually.

The commission assumes 140 events each year based on historical information. As a result, if the neurological assessment was one quarter of one percent, the Neurological Examination Account balance would slowly decrease over the next 5 years to approximately \$140,000 by FY 25/26. Because the Neurological Examination Account currently has a significant fund balance of approximately \$580,000, the commission believes it should charge an assessment that will begin to draw down the fund balance slowly and prudently over time. The commission will re-evaluate the fee amount and adjust if necessary to ensure the lowest possible burden on promoters, while ensuring a stable funding source for the Neurological Examination Account.

Anticipated Benefits: The proposed action will ensure the continued funding over time for neurological assessments, which benefits athletes. It will maintain the lowest burden on ticket surcharges, which benefit ticket sellers and, ultimately, attendees who would pay this surcharge as part of their ticket price.

UNDERLYING DATA:

1. Huang, Y.L., et al., Susceptibility-weighted MRI in mild traumatic brain injury. *Neurology*, 2015. 84(6): p. 580-5.
2. Wellens, H.J. and A.P. Gorgels, How important is the electrocardiogram in protecting and guiding the athlete? *Circulation*, 2011. 124(6): p. 669-71.
3. Moyer, V.A. and U.S.P.S.T. Force, Screening for coronary heart disease with electrocardiography: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*, 2012. 157(7): p. 512-8.
4. Kordi, R. and W.A. Wallace, Blood borne infections in sport: risks of transmission, methods of prevention, and recommendations for hepatitis B vaccination. *Br J Sports Med*, 2004. 38(6): p. 678-84; discussion 678-84.
5. King, O.S., Infectious disease and boxing. *Clin Sports Med*, 2009. 28(4): p. 545-60, vi.
6. O'Farrell, N., S.J. Tovey, and P. Morgan-Capner, Transmission of HIV-1 infection after a fight. *Lancet*, 1992. 339(8787): p. 246.
7. Kashiwagi, S., et al., An outbreak of hepatitis B in members of a high school sumo wrestling club. *JAMA*, 1982. 248(2): p. 213-4.
8. Data prepared by CSAC detailing projections for the Neurological Examination Account (excel spreadsheet & table).
9. Neurological Fund Agenda Item from February 6th, 2012, CSAC Commission Meeting, Agenda Item 12(a-c).
10. CSAC Report to the Legislature concerning the State Athletic Commission Neurological Examination Account dated July 20, 2012.
11. Bureau of State Audits Report 2012-117.
12. Approval of proposed changes to Section 280 from August 15, 2017, CSAC Meeting Minutes, Agenda Item 10.
13. Approval of proposed changes to Examination of Boxer Applicants regulation language, CSAC Meeting Minutes from February 19, 2019, Agenda Item 7.

ECONOMIC IMPACT ANALYSIS/ASSESSMENT

The commission does not expect a significant economic impact to promoters as they were already paying more to the Neurological Examination Account. This will reduce costs to licensed promoters. Based on these facts, and as discussed below under Business Impact, the commission has made an initial determination that this will not have a significant adverse economic impact on businesses.

This regulatory proposal will have the following effects:

- It will benefit the health and welfare of California residents by ensuring that all licensed combatants are provided the most up-to-date and thorough neurologic care.
- It will not create or eliminate jobs within the State of California because the commission is only covering the costs associated with medical diagnostic testing.
- It will not create new business or eliminate existing businesses within the State of California because this proposal would require the same medical documentation as a condition of licensure as is currently required.
- It will not affect the expansion of businesses currently doing business within the State of California because this proposal would require the same medical documentation as a condition of licensure as is currently required.
- This regulatory proposal does not affect worker safety because this proposal is not relative to worker safety.
- This regulatory proposal does not affect the state's environment because this proposal is not relevant to the state's environment.

BUSINESS IMPACT

This proposal would assess one quarter of one percent of the total gross revenue per event held in California. Under this proposal, promoters will pay on average \$250 per event to the Neurological Account. There are approximately 140 events held in the state annually, which would result in a total economic impact of \$35,000 per year.

SPECIFIC TECHNOLOGIES OR EQUIPMENT

The regulatory proposal does not require the use of any new specific technologies or equipment.

CONSIDERATION OF ALTERNATIVES

No reasonable alternative to the regulation would be either more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed regulation or would be more cost effective to affected private persons and equally effective in implementing the statutory requirement or other provision of law.

The commission considered collecting different assessment amounts, but rejected these alternatives because they would have resulted in the commission collecting more than necessary to reasonably draw down and maintain the Neurological Account.