



# MEDICAL STANDARDS FOR PROFESSIONAL BOXERS

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## INTRODUCTION

The New York State Athletic Commission (“SAC” or “Commission”) has created this document as a general guide to the public to explain and clarify the many medical policies which have been adopted to protect the safety and wellbeing of professional boxers within the State. It contains both specific and general policies concerning health and safety as well as some procedures relevant to the administration of the Commission’s duties. It is not intended to, does not, and may not be relied upon to create any rights, substantive or procedural, enforceable at law by any party in any matter civil or criminal. Nor are any limitations hereby placed on otherwise lawful litigative prerogatives of the Department of State or the Commission.

## BACKGROUND

The Commission is vested with the sole direction, management, control and jurisdiction over all boxing and sparring matches or exhibitions to be conducted, held or given within the state of New York. Within the Commission there is established the Medical Advisory Board (“MAB”) which exists to prepare and submit to the Commission for approval regulations and standards for the physical examination of professional boxers. The MAB consists of nine members, appointed by the governor. Each member of the MAB is duly licensed to practice medicine in the state of New York, and has practiced medicine for at least 5 years. In addition to the MAB, the Commission has appointed a Medical Director who assists in implementing the recommendations of the MAB and advises the Commission on important matters relating to health and safety. As established by the Commission, the Medical Director must be a NYS licensed physician for at least 5 years and board certified in neurology, neurosurgery or a closely related specialty.

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## BANNED SUBSTANCES:

All boxers appearing in New York are required to undergo mandatory drug testing for both illicit and unlawful substances. In addition to substances which are prohibited by the New York Health Laws and Penal Laws the following substances are prohibited:

### I. Non-Performance Enhancing Substances

- Amphetamines (amphetamine and methamphetamine)
- Barbiturates
- Benzodiazepines
- Cocaine metabolites
- Marijuana metabolites
- Methadone
- Methaqualone
- Opiates (codeine and morphine)
- Phencyclidine
- Propoxyphene

### II. Performance Enhancing Substances

- 1-Testosterone &/or Metabolite/ 1-Androstendiol/ 1-Androstendione
- Bolasterone Metabolite
- Boldenone/ Boldione/ Quinbolone Metabolite
- Calusterone Metabolite
- Clenbuterol
- Clostebol Metabolite
- Danazol/ Ethisterone &/or Metabolite
- Dehydrochloromethyltestosterone (DHCMT) Metabolite
- Dihydrotestosterone/ Drostandiol &/or Metabolite
- Desoxymethyltestosterone Metabolite
- Drostanolone &/or Metabolite
- Estra-4,9-dien-3,17-dione Metabolite
- Fluoxymesterone Metabolite
- Formebolone Metabolite
- Furazabol Metabolite
- 4-Hydroxytestosterone/ Formestane Metabolite
- 6a-Methylandrostandione Metabolite
- Mestanolone Metabolite
- Mesterolone &/or Metabolite
- Methandrostenolone (Methandienone, Dianabol) Metabolite
- Methandriol &/or Metabolite
- Methasterone Metabolite
- Methenolone &/or Metabolite
- Methylnortestosterone Metabolite
- Methyltestosterone Metabolite
- Methyl-1-testosterone &/or Metabolite
- Mibolerone &/or Metabolite
- Nandrolone/ 19-Norandrostandione/ 19-Norandrostandiol Metabolite

- Norclostebol Metabolite
- Norethandrolone/ Ethylestrenol Metabolite
- Oxabolone Metabolite
- Oxandrolone &/or Metabolite
- Oxymesterone
- Oxymetholone Metabolite
- Prostanazol Metabolite
- Stanozolol Metabolite,
- Stenbolone &/or Metabolite
- Testolactone Metabolite
- Testosterone/ Androstendione/ Androstendiol/ DHEA (T/E Ratio >6)
- Trenbolone Metabolite
- Masking Agents:
- Probenecid
- Epi-testosterone (> 200 ng/mL)

The use of illicit substances and Performance Enhancing Drugs (PED) presents a grave and growing threat to the integrity of athletic competition within the sport of boxing. The use of illicit substances and PEDs in professional boxing is strictly prohibited by the New York State Athletic Commission. To deter and combat illicit substance and PED use in professional boxing, the Commission shall seek administrative license revocation, medical suspension, purse forfeiture, and additional fines in any instance in which a professional boxer engages in doping and/or illicit drug use.

The New York State Athletic Commission does not recognize a therapeutic use exemption for testosterone replacement therapy.

**BLOOD TESTING:**

For the safety of all competitors appearing in New York, the Commission requires boxer to undergo various tests to determine the presence of certain communicable diseases other conditions which are contraindicated for boxing.



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The following tests must be completed before being eligible to box in New York:

- Hepatitis B (must be done within a year of boxing in New York);
- Hepatitis C (must be done within a year of boxing in New York);
- HIV (must be done within a year of boxing in New York);
- CBC, PTT and PT/INR (must be completed once prior to licensing);
- Pregnancy test (\*female boxers only – must be done within 30 days of boxing in New York).

To ensure sufficient time is available to review a boxer’s blood results, the Commission requires all blood work be submitted at least 5 days before a scheduled bout.



**BRACES:**

Braces are not permitted for in-use competition due to the risk of injury caused by incidental contact. Boxers must be medically cleared to compete without such braces.

Boxers are however permitted to wear a knee sleeve during a bout under the following conditions: (1) the boxer receives no competitive advantage from wearing the sleeve; (2) the knee sleeve does not pose any danger to the boxer’s opponent; and (3) the boxer—without the knee sleeve—is found medically fit to compete by the physician appointed by the Commission to examine the boxer prior to the scheduled bout.

In order for the Commission to properly evaluate a knee sleeve that a boxer wishes to wear during a bout, the boxer or boxer's representative must present such knee sleeve to the Commission in a timely manner.

### BREAST IMPLANTS:

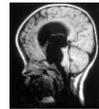
Due to the concern over rupture, boxers who have breast implants are not eligible to box in New York. Boxers who have had breast reduction surgeries are eligible to box.

### COSTS AND FEES FOR TESTING:

One of the primary functions of the Commission is ensure the health and safety of those who box professionally within the State. To ensure that financial circumstances do not pose an impediment to getting appropriate testing State Law requires that certain costs and fees for medical testing be paid by the Commission. As a general rule, the Commission will assume the costs for certain tests required for licensure if they are performed by a Commission approved doctor and/or facility. For more information regarding specific tests and/or approved facilities please contact the Commission at (212) 417-5700.

### CYSTS:

The clinical literature suggests that large middle cranial fossa arachnoid cysts are associated with an increased risk of intracranial hemorrhage. Evidence regarding increased risks associated with other arachnoid cysts (i.e. small anterior or middle cranial fossa cysts or posterior fossa cysts of any size) is unknown. It is proposed that boxers with large middle cranial fossa cysts (as determined clinically) will not be allowed to box in New York State. Determination of medical licensure in boxers with other types of arachnoid cysts will be assessed on a case by case basis taking in consideration location, size, mass effect, prior hemorrhage and relative compression of adjacent structures.



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### EKGs:



An EKG or electrocardiogram is a test that checks for problems with the electrical activity of your heart. It is conducted by placing electrical leads on various parts of the patient's body while a machine records and measures the heartbeats. Once the test is finished the results are printed on a special chart which records the information in sharp spikes which are reviewed by medical professionals. Since EKGs provide valuable information about a boxer's heart health the Commission requires all boxers to have a 12-Lead EKG at least once within 12 months of boxing in New York. To ensure sufficient time is available to review a boxer's EKG results, the Commission requires all EKG results to be submitted at least 3 days before a scheduled bout.

### EXAMINATIONS GENERALLY:

All professional boxers fighting in New York must satisfy various tests which indicate



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- Blood Testing;
- Urine Testing;
- EKGs;
- Eye Examinations;
- MRIs;
- Neurological and neuropsychological examinations;

- Physical examinations.

Boxer physical examinations are generally performed at the weigh-in for each professional event. The first time a boxer fights in New York, during each calendar year, the boxer will undergo a comprehensive full physical examination, conducted by a Commission appointed doctor. For each subsequent fight in New York the boxer will be required to pass a less intrusive examination, again performed by a Commission appointed doctor at the weigh-in.

After the weigh-in, a boxer will also be examined by a ring-side physician immediately before the bout to ensure that there are no changes to the fighter’s health. A similar examination will also occur following each bout or if needed during the bout itself. A boxer may be denied a license/permit and/or suspended as a result of any abnormal findings during any such examinations.

EYES:

All boxers fighting in New York must demonstrate sufficient eye health. Having healthy eyes is necessary as otherwise a boxer might not be able to adequately defend him/herself in the ring. To prevent against unnecessary injuries the MAB and the Commission require dilated eye examinations performed by an ophthalmologist (must be done within a year of boxing in New York). To ensure sufficient time is available to review a boxer’s eye examination results, the Commission requires all eye results to be submitted at least 3 days before a scheduled bout.

In addition to requiring dilated examinations the MAB and the Commission have established the following policies regarding eye health:



- Boxers who have had surgeries which alter the structural integrity of the globe are contraindicated for boxing and will not be permitted to box. Such surgeries include, but are not limited to: cataract surgery, implantation of intraocular artificial lenses devices, Lasik surgery where a lens flap is created;
- Boxers who have had radial keratotomy are not permitted to box;
- Boxers must not present with “Major Ocular Pathologies” such as:
  - Anterior Chamber Angle Abnormalities;
  - Glaucoma or Suspicion of Glaucoma;
  - Lens Abnormalities;
  - Peripheral Retinal Abnormalities;
  - Macular Abnormalities;
  - Diplopia or Extraocular Muscle Palsy;
  - Active Inflammation.
- Boxers must have uncorrected visual acuity of 20/200 or better in each eye;
- Boxers must have corrected visual acuity of 20/40 or better in each eye.

FLUIDS AT RINGSIDE:

It is a well known fact that boxing is a physically demanding sport which requires athletes to perform at extremely high levels. To combat dehydration while competing, a very serious concern for boxers, the MAB and the Commission recognize that a boxer should have access to fluids at ringside. As not all fluids combat dehydration, the MAB and the Commission limit fluids at ringside only to bottled water. Water must be in a sealed bottle and remained unopened until ringside.

### GONAD PROTECTION:

Gonads are the primary reproductive organs in both male and female boxers. Because these sensitive areas can sustain serious blunt trauma during the course of a bout, the MAB and the Commission require all boxers to wear appropriate gonad protection while boxing.

### HEAD INJURIES:

One of the most traumatic injuries a boxer can sustain in the ring is a head injury. To prevent serious injuries to boxers, the MAB and the Commission have established the following testing protocols and procedures for boxers fighting in New York:



- Boxers in high risk categories may be required to undergo additional advanced neuro-imaging;
- Boxers who have sustained serious traumatic brain injuries are not eligible to compete;
- Boxers fighting in New York must take an acceptable MRI scan demonstrating the absence of a head injury;
- Any boxer rendered unconscious or suffering head trauma as determined by the attending physician shall be immediately examined by the attending commission physician and shall be required to undergo neurological and neuropsychological examinations by a neurologist including but not limited to a computed tomography or medically equivalent procedure.

### HEARING IMPAIRED BOXERS:

During a boxing event there are often numerous instances wherein an auditory signal critical to the proper control of a bout. These include, but may not be limited to: signaling a round is nearing the end, when a round or bout has concluded and when the referee or another Commission official is providing instructions. For these reasons, partially hearing impaired boxers may compete on an individual basis subject to appropriate audiological testing; boxers who are totally impaired are not permitted to compete.



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### HIGH RISK BOXERS:

As boxing is such a physically demanding sport the MAB and the Commission have established heightened screenings for certain boxers who fall into high risk categories. Such boxers include:

- Boxers who have had extended periods of inactivity;
- Boxers who are over the age of 40;
- Boxers who have had 6 consecutive losses;
- Boxers who have lost his/her last 3 bouts by TKO or KO.

Boxers who fall into any of the above categories may be required to submit to additional testing based on their individual test results as determined by the Commission.

## MEDICAL SUSPENSIONS AND PROHIBITIONS:

From time to time it is necessary for the Commission to issue medical suspensions so that boxers remain healthy and can compete in the future. While many suspensions occur at a fight based on individual circumstances there are certain cases wherein a suspension is mandatory. While not exhaustive, the following suspensions will be issued by the Commission as is needed and as appropriate:



- Presence of a banned substance (see, banned substance and urine testing sections of this Manual);
- KO – Mandatory minimum of 90 days;
- TKO with evidence of head trauma – Mandatory minimum of 45 days;
- Any boxer who has lost 3 consecutive fights by KO or TKO – suspension to remain in effect until medically cleared by the Commission;
- Any boxer who has lost 6 consecutive fights in any manner – suspension to remain in effect until medically cleared by the Commission.

In addition to suspensions, there are also certain restrictions on boxers which prevent them from boxing in New York. These additional restrictions include:

- Excessive weight loss – Boxers are not permitted to lose more than 1% of their body weight within 24 hours of a bout;
- Excessive rounds – Boxers are generally not permitted to box within 7 days of their last professional bout without approval by the Commission and consultation with at least 1 member of the MAB.

## MRIs:

All boxers fighting in New York must take an approved MRI exam within 3 years of any bout. Unless otherwise required by the Commission, the following MRI exams are acceptable:



### **Type of Acceptable MRI Scan:**

- 1.5 Tesla magnet (Minimum)

### **Accepted MRI Sequence(s):**

- T1 weighted images;
- T2 weighted images;
- FLAIR;
- Diffusion weighted image (DWI);
- Gradient echo (GRE) / Susceptibility weighted imaging (SWI).

To ensure sufficient time is available to review a boxer's MRI results, the Commission requires all MRI results to be submitted at least 3 days before a scheduled bout.

## NEPHRECTOMIES:

A nephrectomy is the surgical procedure of removing a kidney or section of a kidney. Boxers who have had nephrectomies may be permitted to box on an individual basis subject to additional testing and clearance from the boxer's nephrologist.

### NEUROLOGICAL DISORDERS:

Neurologic diseases are disorders of the brain, spinal cord and nerves throughout your body. According to the US National Library of Medicine and the National Institutes of Health there are over 600 different diagnosable neurological disorders. Because these disorders can affect a boxer's ability in the ring the MAB and the Commission have determined that boxers with certain chronic neurological diseases are ineligible to compete. Determination of medical licensure in boxers with neurological disorders will be assessed on a case by case basis.

### RINGSIDE PHYSICIANS:



For every boxing event within the State, the Commission appoints a sufficient number of ringside physicians based, in part, on the number of matches during an event. All ringside doctors are approved by the MAB and their qualifications are reviewed annually. In addition, all ringside physicians are required to attend training seminars as specified and approved by the Commission after consultation with the MAB.

During a match the ringside physician has the authority to terminate any boxing match or exhibition if in the opinion of such physician any contestant has received severe punishment or is in danger of serious physical injury. In the event of any serious physical injury, the physician shall immediately render any emergency treatment necessary, recommend further treatment or hospitalization if required, and fully report the entire matter to the Commission within twenty-four hours and if necessary, subsequently thereafter. The physician may also require that the injured boxer and his manager remain in the ring or on the premises or report to a hospital after the contest for such period of time as such physician deems advisable.

### URINE TESTING:

All boxers fighting in the State undergo mandatory urine testing for examination of prohibited substances. The urine testing is performed by the Commission at the boxing event under the supervision of an appointed inspector. Boxers are not permitted to glove up until the required urine collection is completed. A boxer who violates the Commission's policy on banned substances may be subject to fines, suspensions, revocation of a license/permit, forfeiture of his/her purse and may have the result of a contest changed to a "no-contest."

### VASCULAR MALFORMATIONS:

Vascular malformations are developmental abnormalities in the body's vascular system. These malformations can fall into several different types of sub-categories. While these malformations are relatively common some may cause hemorrhages, seizures and/or headaches. In addition, certain formations may increase the risk of inter-cranial hemorrhage following trauma. The MAB and the Commission have therefore determined that boxers with vascular malformations on their MRI scans are not eligible to box.

### VENOUS ANOMALIES:

Venous anomalies affect the normal variant of venous drainage in the body. Venous anomalies do not always affect the structural integrity of blood vessels. The MAB and the Commission have therefore determined that boxers with venous anomalies may be permitted on a case by case basis after reviewing the boxer's entire medical file.

### WEIGHT LOSS:



While many boxers lose weight to “pass the scale,” too much weight loss can be detrimental to a boxer's health. By rule, boxers are not permitted to lose more than 1% of their body weight within 24 hours of a bout.