

2021 NSA MEDICATION GUIDELINES

1. Salix® (furosemide), pursuant to NSA supervised administration, is the only medication that can be administered to a horse within 24 hours of its race.
2. The administration of any adjunct medication within 24 hours of a horse's race is strictly forbidden.
3. There is a new medication category called **Controlled Therapeutic Substances**. This category contains a list of 30 therapeutic medications that have been recognized as necessary in the routine treatment of illness or injury in the horse. Withdrawal time guidance and uniform laboratory detection thresholds for these medications are being provided as a safe harbor for horsemen. You are strongly encouraged to restrict your use of medications to those on the Controlled Therapeutic Substances list, which will be amended from time-to-time. The current Controlled Therapeutic Substances list, together with recommended withdrawal times, dosage and testing detection thresholds is as follows:

ACEPROMAZINE

Withdrawal time: 48 hours

Threshold: 10 ng/ml HEPS in urine

Dosage: Single IV dose of acepromazine at 0.05 mg/kg

ALBUTEROL

Withdrawal time: 72 hours

Threshold: 1 ng/ml in urine

Dosage: Intra-nasal dose at 720 mcg (Note: Administration of albuterol other than via intra-nasal routes is not recommended. Use of therapeutic doses of oral albuterol even outside of the recommended withdrawal guidelines carries a substantial risk of exceeding the regulatory threshold.)

BETAMETHASONE

Withdrawal time: 14 days

Threshold: 10 pg/mL of plasma or serum

Dosage: IA administration of 9 mg of Betamethasone Sodium Phosphate and Betamethasone Acetate Injectable Suspension, USP (American Regent product #0517-0720-01) in one articular space

BUTORPHANOL

Withdrawal time: 48 hours

Threshold: 300 ng/mL of total butorphanol in urine or 2 ng/mL of free butorphanol in plasma or serum

Dosage: Single IV dose of butorphanol as Torbugesic® (butorphanol tartrate) at 0.1 mg/kg

CETIRIZINE

Withdrawal time: 48 hours

Threshold: 6 ng/ml of plasma or serum

Dosage: 0.4 mg/kg twice daily for 5 doses.

Note: Do not administer ivermectin within 48 hours of a race if the horse has been administered cetirizine.

CIMETIDINE

Withdrawal time: 24 hours

Threshold: 400 ng/mL of plasma or serum

Dosage: 20 mg/kg twice daily for 7 doses.

CLENBUTEROL

Withdrawal time: 14 Days

Threshold: 140 pg/mL of urine or LOD in plasma or serum

Dosage: Oral administration of clenbuterol as Ventipulmin® syrup (Boehringer-Ingelheim Vetmedica Inc., NADA 140-973) at 0.8 mcg/kg twice a day

DANTROLENE

Withdrawal time: 48 hours

Threshold: 100 pg/mL 5-hydroxydantrolene in plasma or serum

Dosage: Oral administration of 500 mg of dantrolene as paste (compounding pharmacy) or capsule formulation (Proctor and Gamble)

DETOMIDINE

Withdrawal time: 48 hours

Threshold: 2 nanograms per milliliter of carboxydetomidine in urine; 1 nanogram per milliliter of detomidine in plasma

Dosage: Single intravenous dose of 5 milligrams

DEXAMETHASONE

Withdrawal time: 72 hours

Threshold: 5 pg/mL of plasma or serum

Dosage: IM and IV administration of dexamethasone sodium phosphate or oral administration of dexamethasone at 0.05 mg/kg regardless of route

DICLOFENAC

Withdrawal time: 48 hours

Threshold: 5 ng/mL of plasma or serum

Dosage: Five inch ribbon topical application of 1% diclofenac liposomal cream formulation. (Surpass Topical Anti-Inflammatory Cream, IDEXX Pharmaceuticals)

Horsemen are urged to avoid combining the non-steroidal anti-inflammatory drugs Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin®). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty.

DMSO

Withdrawal time: 48 hours

Threshold: 10 mcg/mL of plasma or serum Dosage: Topical - 2 ounces topically administered

FIROCOXIB

Withdrawal time: 14 days

Threshold: 20 ng/mL of plasma or serum

Dosage: Oral administration of firocoxib as EQUIOXX oral paste at a daily dose of 0.1 mg/kg for four days Horsemen are urged to avoid combining the non-steroidal anti-inflammatory drugs Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin®). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty.

FLUNIXIN

Withdrawal time: 48 hours

Threshold: 5 ng/mL of plasma or serum

Dosage: Single IV dose of flunixin as Banamine® (flunixin meglumine) at 1.1 mg/kg

Horsemen are urged to avoid combining the non-steroidal anti-inflammatory drugs Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin®). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty.

FUROSEMIDE

Withdrawal time: 4 hours

Threshold: 100 ng/mL in blood and urine specific gravity < 1.010

Dosage: Single IV dose of furosemide up to 500 mg

GLYCOPYRROLATE

Withdrawal time: 48 hours

Threshold: 3 pg/mL plasma or serum

Dosage: Single IV dose of 1 mg of glycopyrrolate as Glycopyrrolate Injection, USP (American Regent product # 0517-4601-25)

GUAIFENESIN

Withdrawal time: 48 hours

Threshold: 12 ng/mL of plasma or serum

Dosage: 2 grams twice daily for 5 doses

ISOFLUPREDONE

Withdrawal time: 14 days

Threshold: 100pg/mL of plasma or serum

Dosage: 10 mg total dose subcutaneous or 20 mg total does in one articular space

KETOPROFEN

Withdrawal time: 48 hours

Threshold: 2 nanograms per milliliter in plasma or serum

Dosage: Single IV dose of ketoprofen as Ketofen® at 2.2 mg/kg

Horsemen are urged to avoid combining the non-steroidal anti-inflammatory drugs Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin®). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty.

LIDOCAINE

Withdrawal time: 72 hours

Threshold: 20 pg/mL of total 3-OH lidocaine in plasma or serum

Dosage: 200 mg of lidocaine as its hydrochloride salt administered subcutaneously

MEPIVACAINE

Withdrawal time: 72 hours

Threshold: 10 ng/mL total hydroxymepivacaine in urine or above LOD of mepivacaine in plasma or serum

Dosage: Single 0.07 mg/kg subcutaneously in the distal limb

METHOCARBAMOL

Withdrawal time: 48 hours

Threshold: 1 ng/mL of plasma or serum

Dosage: Single IV dose of 15 mg/kg methocarbamol as Robaxin® or 5 grams orally

METHYLPREDNISOLONE

Threshold: 100pg/mL in plasma or serum

Dosage: Total dose of Methylprednisolone acetate suspension in one articular space. The recommended withdrawal for methylprednisolone acetate is a minimum of 21 days at a 100 mg dose. **However, it is recommended that 1) Depo-Medrol should not be administered to any horse a trainer wishes to race and 2) a trainer who chooses to race a horse that has been treated with Depo-Medrol despite this warning should at his/her expense, get the horse tested prior to entry to ensure that the horse will test below the testing threshold of 100 pg/ml plasma. The testing threshold of 100 pg/ml plasma will be enforced.**

OMEPRAZOLE

Withdrawal time: 24 hours

Threshold: 10 ng/mL in serum or plasma

Dosage: Single 2 gram oral dose of omeprazole as Gastroguard® for up to 4 days

PHENYLBUTAZONE

Withdrawal time: 48 hours

Threshold: 0.3 mcg/mL of plasma or serum

Dosage: Single IV dose of phenylbutazone at 4.0 mg/kg (Note: This withdrawal guideline is based upon the historic prohibition on administration within 24 hours of racing. Please note that intravenous administration at a dose of 4 mg/kg at 24 before racing may result in some phenylbutazone concentrations that are above the regulatory threshold.)

Horsemen are urged to avoid combining the non-steroidal anti-inflammatory drugs Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin®). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty.

PREDNISOLONE

Withdrawal time: 48 hours

Threshold: 1 ng/mL serum or plasma

Dosage: 1 mg/kg orally

PROCAINE PENICILLIN

(administration must be reported to Stewards and horse must be submitted to 6-hour pre-race surveillance)

Withdrawal time: May not be administered following entry into a race

Threshold: 25 ng/mL plasma or serum

Dosage: Intramuscular at 17 milligrams per kilogram

RANITIDINE

Withdrawal time: 24 hours

Threshold: 40 ng/mL of plasma or serum

Dosage: 8 mg/kg twice daily for 7 doses

TRIAMCINOLONE ACETONIDE

Withdrawal time: 14 days

Threshold: 100 pg/mL of plasma or serum

Dosage: Total dose of 9mg in one articular space

XYLAZINE

Withdrawal time: 48 hours

Threshold: 200 pg/mL of plasma or serum

Dosage: 200 milligrams intravenously

4. Although five nonsteroidal anti-inflammatory drugs (NSAIDs) are contained on the Controlled Therapeutic Substances list - diclofenac, firocoxib, flunixin, ketoprofen, phenylbutazone - they should not be used in combination and only one of these NSAIDs may be present in a post-race sample.

5. It is recognized that there are medications that may be used in the treatment of illness or injury in the horse that are not on the Controlled Therapeutic Substances List and for which no treatment guidance or uniform testing levels are provided. **Horsemen and veterinarians are strongly cautioned to withdraw a horse from racing for a sufficient period of time after the administration of a medication not on the Controlled Therapeutic Substances list to ensure against a positive drug test.** Substances that do not affect the organ systems of a horse such as antibiotics, antimicrobials, vaccines, etc. (except for procaine penicillin and levamisole) are not prohibited and are not the subject of testing.

6. Clenbuterol may not be administered to a horse within 14 days of its next race.

7. No intra-articular corticosteroid may be administered to a horse within 7 days of its next race. Administration of a total dose of 100 mg methylprednisolone acetate (Depo Medrol®) in one articular space will take approximately 21 days for the drug to fall below the testing detection level in plasma. For this and other reasons, **we strongly caution against the use of Depo Medrol® in the racing horse for at least 21 days prior to its race.**

A horse that has received an intra-articular injection is ineligible to race for a period of 14 days from the date of the injection.

The injection must be immediately reported to the nsa's medical director on a form prescribed by the equine medical director. For purposes of this rule, the first day is the date of the injection. The horse is eligible to race on the 15th day.

8. A new penalty system designed to identify and penalize those who incur multiple medication violations will be implemented. Each medication violation will incur points. Medication violations in the Controlled Therapeutic Substances category will be identified as Controlled Therapeutic violations and not "positive tests" and these violations will have a lesser point value. Violations for drugs and medications not on the Controlled Therapeutic Substances list will incur double points. Trainers risk additional mandatory suspensions if they reach the points thresholds established under the model rule for multiple medication infractions.

Horsemen are strongly urged to take notice of the following medication alerts:

ENDOGENOUS SUBSTANCES

Endogenous substances are substances that naturally occur in the horse. It is possible, however, to elevate the the normal physiological concentration of the substance in the horse via administration. There are various reasons why this is done, but none are considered appropriate. Indeed, the primary purpose is to affect the performance of the horse. The improper administration of some endogenous substances can threaten the health and welfare of the horse. The following endogenous substances are subject to regulatory control.

COBALT

A blood specimen from a horse found to contain cobalt in excess of 25 nanograms per milliliter of blood plasma or serum shall be considered a positive finding. The Stewards and Judges shall be instructed to apply this regulation in the following manner:

1) A horse which tests for cobalt between 25 nanograms per milliliter of blood plasma or serum and 50 nanograms per milliliter of blood plasma or serum shall be placed on the vets list and not be permitted to start in a race until the horse tests for cobalt below 25 nanograms per milliliter of bloodplasmaor serum. All costs associated with any retesting shall be paid for by the owner of the horse.

2) A horse whose cobalt level exceeds 50 nanograms per milliliter of blood plasma or serum shall be disqualified, the trainer of the horse shall be suspended and/or fined at the discretion of the Stewards or Judges and assessed points under the multiple medication violation point system. As previously stated the horse shall be placed on the vets list and not permitted to start in a race until the horse tests for cobalt below 25 nanograms per milliliter of blood plasma or serum. All costs associated with retesting the horse shall be paid for by the owner of the horse.

Cobalt is considered a Class 3 substance under the ARCI Uniform Classification of Foreign Substances. Its Penalty Class is Class B.

GABA

GABA (gamma aminobutyric acid), a naturally occurring amino acid in the horse, has been identified as being administered, purportedly to calm a horse so that it remains calm through the paddock and into the post-parade on race day. Often, GABA is administered as a part of a substance called "Carolina Gold". It is believed that this substance is often given at or around Lasix time. Improper administration of GABA can

threaten the health and welfare of the horse. Accordingly, the administration of exogenous GABA to a horse is prohibited.

The GABA testing threshold in the horse may not exceed 110 nanograms per milliliter in plasma/blood. GABA is considered a Class 3 substance under the ARCI Uniform Classification of Foreign Substances. Its Penalty Class is Class B.

TCO2

The use of agents that elevate the horse's TCO2 or base excess level above those existing naturally in the untreated horse at normal physiological concentrations is prohibited. The following levels also apply to blood-gas analysis:

The regulatory threshold for TCO2 is 37.0 millimoles per liter of plasma/serum or a base excess level of 10.0 millimoles, and;

The decision level to be used for the regulation of TCO2 is 37.0 millimoles per liter of plasma/serum plus the measurement uncertainty of the laboratory analyzing the sample, or a base excess level of 10.4 millimoles per liter of plasma/serum.

NSAID STACKING. The presence of two or more non-steroidal anti-inflammatory drugs - Flunixin (Banamine®), Ketoprofen (Ketofen®), Diclofenac (Surpass®), Firocoxib (Equioxx®) and Phenylbutazone (Butazolidin® - in blood and/or urine constitutes a NSAID stacking violation.). Only one NSAID can be present in a post-race test sample below established thresholds. If more than one NSAID is detected in a post-race sample above the established thresholds, it is considered stacking and is a medication violation subject to penalty. Horsemen are cautioned to use only one NSAID during the week the horse is entered to race. If an additional NSAID is to be used, it should be not be used within 7 days of the race and should not be used in combination with another NSAID.

The primary thresholds for the five NSAIDs are:

Diclofenac – 5 nanograms per milliliter in plasma;

Firocoxib – 20 nanograms” per milliliter in plasma;

Flunixin – 5 nanograms per milliliter in plasma;

Ketoprofen – 2 nanograms per milliliter in plasma; and

Phenylbutazone – 0.3 micrograms per milliliter in plasma.

There are no secondary thresholds

NSAID stacking violations are considered to be Penaty Class B violations.

PLEASE NOTE – All horses used in the administration studies exceeded 1,000 lbs. When dosing a horse smaller than 1,000 lbs., trainers and veterinarians may need to consider decreasing the total dose or increasing the time of dosing prior to racing.

THIRD PARTY LASIX ADMINISTRATION PROCEDURES

The administration of Salix® (furosemide), to a horse on race-day will be by a NSA designated veterinarian and according to the following rules and procedures:

1. The only medication allowed to be administered to a horse within 24 hours of its race is Salix® (furosemide).
2. The administration of any adjunct medication within 24 hours of the horse's race is strictly forbidden.
3. The primary change from the current practice in the administration of Salix® to a horse is that a NSA designated veterinarian will be administering Salix®.
4. All horses shall be administered Salix® on the grounds of the race meet in their assigned stall.
5. All horses declaring the use of Salix® must be on the grounds of the race meet at least 4 hours prior to post time for their race.
6. Trainers or their representative not requesting the use of Salix® shall declare their horse off of Salix® at the time of entry.
7. Trainers or their representative are responsible to contact and inform the NSA designated veterinarian at the race meet the dosage of Salix® their horse is to receive.
8. The NSA designated veterinarian will prepare a list of all horses scheduled to receive Salix®, their dosage and their location at the race meet.

9. The veterinarian designated to administer Salix® will identify the horse by its tattoo number, record the dosage and time of administration for each horse treated and make a written report to the Stewards.
10. Trainers are responsible for having their representative present and available when the NSA designated veterinarian arrives to treat their horse.
11. If the veterinarian designated to administer Salix® cannot locate a horse for treatment or the trainers representative, the veterinarian will contact the stewards and relay the information.
12. Consistent with current practice, it is recommended that a horse receive Salix® 4 hours prior to its race, at a dosage between 2 cc's and 10 cc's. **Salix® will be administered IV only.**
13. Under no circumstance will Salix® be permitted to be administered to a horse within 3 hours of its race.
14. Consistent with current practice, a horse that is entered on Salix® and does not receive Salix® will not be permitted to run, **unless it is determined by the Stewards that there were extenuating circumstances that led to the inability to administer the medication in a timely manner, and the trainer of the horse chooses to run the horse without Salix®. Under these conditions, the trainer assumes all risk as it relates to the health and condition of the horse during or immediately following the race.**

VACCINATION RECOMMENDATIONS

It is recommended that all horses racing under Rules be vaccinated for equine influenza and equine rhinopneumonitis (herpes) – no less than 7 days before a race and not more than 90 days before a race.