**ARCI Controlled Therapeutic Medication Schedule for Horses - Version 4.2.1**

**Revised – December, 2020**

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Acepromazine** | 10 nanograms per  milliliter as 2-(1- hydroxyethyl) promazine sulfoxide (HEPS) in urine | 48 hours | Single intravenous dose of acepromazine at 0.05 milligrams per kilogram | University of California at Davis project | Applicable analyte is metabolite HEPS |
| **Albuterol** | 1 nanogram per milliliter of urine1 | 72 hours | 720 micrograms total dose intra-nasal only2. Based upon dosing up to 4 times per day | European Horseracing Scientific Liaison Committee Data | See Endnote |
| **Betamethasone Harness Racing Only.** | 10 picograms per milliliter of plasma or serum  **SEE NOTE BELOW** | 7 days | Intra-articular administration of 9 milligrams of Betamethasone Sodium Phosphate and Betamethasone Acetate Injectable Suspension, USP (American Regent product #0517-0720-01)3 | RMTC study | Intra-articular dosing only - applicable analyte is betamethasone in plasma or serum |
| **Butorphanol** | 300 nanograms per milliliter of total butorphanol in urine or 2 nanograms of free butorphanol per milliliter per milliliter of plasma or serum | 48 hours | Single intravenous dose of butorphanol as Torbugesic® (butorphanol tartrate) at 0.1 milligrams per kilogram | *Journal of Veterinary Pharmacology and Therapeutics* doi: 10.1111/j.1365-  2885.2012.01385.x | Applicable analytes are total butorphanol (drug and conjugates) in urine and butorphanol in plasma (the drug itself, not any conjugate) |

1 For Quarter Horses: Level of Detection in any permitted biological sample.

2 Administration of albuterol by any means other than intra-nasally has a high likelihood in resulting in a positive finding. This specifically includes oral administration. Trainers and veterinarians are cautioned against using oral albuterol.

3 Intramuscular administration of betamethasone acetate will result in plasma or serum concentrations that will exceed the Regulatory Threshold for weeks or even months, making the horse ineligible to race for an extended period.

# ARCI Controlled Therapeutic Medications Schedule Ver. 4.2.1, December 2020

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Cetirizine** | 6 nanograms per milliliter of plasma or serum | 48 hours | 0.4 milligrams per kilogram twice daily for 5 doses | Kentucky Equine Drug Research Council/University of California at Davis study | Do not administer ivermectin within 48 hours of a race if the horse has been administered cetirizine. |
| **Cimetidine** | 400 nanograms per milliliter of plasma or serum | 24 hours | 20 milligrams per kilogram twice daily for 7 doses | Kentucky Equine Drug Research Council/University of California at Davis study |  |
| **Clenbuterol**  **(Prohibited in Quarter Horse and Thoroughbred Race Horses)** | 140 picograms per milliliter of urine  or Level of Detection in plasma or serum4 | Flat Racing  -28 days  Harness  14 days5 | Oral administration of clenbuterol as Ventipulmin® syrup (Boehringer-Ingelheim Vetmedica Inc., NADA 140- 973) at 0.8 mcg/kg twice a day | University of California at Davis;  Boehringer-Ingelheim Vetmedica, Inc. | Applicable analyte is clenbuterol |
| **Dantrolene** | 100 picograms per milliliter of  5-hydroxydantrolene in plasma or serum | 48 hours | Oral administration of 500 milligrams of dantrolene as paste (compounding pharmacy) or capsule formulation (Proctor and Gamble) | *Journal of Veterinary Pharmacology and Therapeutics* 34, 238–  246 |  |
| **Detomidine** | 2 nanograms per milliliter of carboxydetomidine in urine or 1 nanogram per milliter of detomidine in blood. | 48 hours | 5 mg IV (once) | *KY EDRC, UC*  *Davis/UF Study.* | Dormosedan ™ used in study. |

4 For Quarter Horses or Thoroughbreds: Level of Detection in any permitted biological sample.

5 Clenbuterol is a prohibited substance in Quarter Horses and other breeds racing with Quarter Horses; there is no applicable withdrawal guideline for such horses.

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Dexamethasone Harness Racing Only.** | 5 picograms per milliliter of plasma or serum  **SEE NOTE BELOW** | 72 hours | Intramuscular and intravenous administration of dexamethasone sodium phosphate or oral administration of dexamethasone at 0.05milligrams per kilogram regardless of route | RMTC study | Applicable analyte is dexamethasone in plasma or serum |
| **Dimethyl sulfoxide (DMSO)** | 10 micrograms per milliliter of plasma or serum | 48 hours | Intravenous | ARCI model rule | Applicable analyte is DMSO in plasma or serum |
| **Furosemide** | 100 nanogram per milliliter of plasma or serum | 4 hours | Single Intravenous dose of furosemide up to 500 milligram6 | ARCI model rule | Must also have urine specific gravity <  1.010 for a violation. |
| **Glycopyrrolate** | 3 picograms per milliliter plasma or serum | 48 hours | Single intravenous dose of 1 milligram of glycopyrrolate as Glycopyrrolate Injection, USP (American Regent product # 0517-4601-25) | RMTC study; *Journal of Veterinary Pharmacology and Therapeutics* doi: 10.1111/j.1365-  2885.2011.01272.x | Applicable analyte is glycopyrrolate in plasma or serum |

6 ARCI-0110929(F)(2)(d) and ARCI-025-020(F)(2)(d) state that the dose of Furosemide “shall not exceed 500 milligrams nor be less than 150 milligrams.”

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Guaifenesin** | 12 nanograms per milliliter of plasma or serum | 48 hours | 2 grams twice daily for 5 doses | Kentucky Equine Drug Research Council/University of California at Davis study |  |
| **Isoflupredone Harness Racing Only.** | 100 picograms per milliliter of plasma or serum  **SEE NOTE BELOW** | 7 days | 10 milligrams total dose subcutaneous or 20 milligrams total dose in one articular space | RMTC Study |  |
| **Lidocaine** | 20 picograms per milliliter of total 30H- lidocaine in plasma or serum | 72 hours | 200 milligrams of lidocaine as its hydrochloride salt administered subcutaneously | European Horseracing Scientific Liaison Committee data; Iowa State University study. | Applies to total major hydroxylated metabolite (i.e., includes conjugates) |
| **Mepivacaine** | 10 nanograms total hydroxymepivacaine per milliliter of urine or above Level of Detection of mepivacaine in plasma or serum | 72 hours | Single 0.07 milligrams per kilogram subcutaneous dose of mepivacaine | European Horseracing Scientific Liaison Committee data |  |
| **Methocarbamol** | 1 nanogram per milliliter of plasma or serum | 48 hours | Single intravenous dose of 15 milligrams per kilogram methocarbamol as Robaxin® or 5 grams orally | *Journal of Veterinary Pharmacology and Therapeutics* doi: 10.1111/jvp.12068 | Applicable analyte is methocarbamol in plasma or serum |

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Methylprednisolone** | 100 picograms per milliliter of plasma or serum | See Dosing Specifications | Total dose of methylprednisolone acetate suspension in one articular space7. The recommended withdrawal for methylprednisolone acetate is a minimum of 21 days at a 100 milligram dose | *Journal of Veterinary Pharmacology and Therapeutics*  volume 37, Issue 2,  pages 125–132, April  2014 | Applicable analyte is methylprednisolone |
| **Omeprazole** | omeprazole sulfide - 10 nanograms per milliliter of plasma or serum | 24 hours | Orally (2.2 grams) once daily for 4 doses | Kentucky Equine Drug Research Council/University of California at Davis study | GastroGuard™ used in the study |
| **Prednisolone**  **Harness Racing Only.** | 1 nanogram per milliliter of plasma or serum  **SEE NOTE BELOW** | 48 hours | 1 milligram per kilogram orally |  | Applicable analyte is prednisolone in plasma or serum |
| **Procaine penicillin** *(administration must be reported to Commission)* | 25 nanograms per milliliter of plasma or serum | Following entry to race | Intramuscular | RMTC – reference notes online | Mandatory surveillance of horse at owner’s expense 6 hours before racing |

7 Intramuscular administration of methylprednisolone acetate will result in plasma or serum concentrations that will exceed the Regulatory Threshold for weeks or even months, making the horse ineligible to race for an extended period. Please see Dosing Specifications for recommended withdrawal time.

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| **Controlled Therapeutic Medication** | **Threshold** | **Withdrawal Guideline** | **Dosing Specifications** | **Reference Notes** | **Note** |
| **Ranitidine** | 40 nanograms per milliliter of plasma or serum | 24 hours | 8 milligrams per kilogram twice daily for 7 doses | Kentucky Equine Drug Research Council/University of California at Davis study |  |
| **Triamcinolone acetonide**  **Harness Racing Only** | 100 picograms per milliliter of plasma or serum  **SEE NOTE BELOW** | 7 days | Total dose of 9 milligram in one articular space8 | *Equine Veterinary Journal,* 10.1111/evj.12059 (2013) | Applicable analyte is triamcinolone acetonide in plasma or serum |
| **Xylazine** | 200 picograms per milliliter of plasma or  serum | 48 hours | 200 milligrams intravenously | University of California at Davis study | Applicable analyte is xylazine. |

NOTE: The thresholds and withdrawal guidance for corticosteroids other than methylprednisolone do not apply to flat and jump racing which have a mandatory stand down period of 14 days following intra-articular injections and a prohibition on stacking pursuant to ARCI 011-020(F).

8 Intramuscular administration of triamcinolone acetonide will result in plasma or serum concentrations that will exceed the Regulatory Threshold for weeks or even months, making the horse ineligible to race for an extended period.

**Non-Steroidal Anti-Inflammatory Drug (NSAID) Rules for Horses††**

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| **Controlled Therapeutic Medication** | **Threshold (Primary)** | **Restricted Administration Time** | **Dosing Specifications** | **Reference Notes** |
| **Flunixin** | 5.0 nanogram per milliliter of plasma or  serum | 48 hours | Single intravenous dose of flunixin as Banamine® (flunixin meglumine) at  1.1 milligram per kilogram | University of California at Davis/RMTC study |
| **Ketoprofen** | 2.0 nanograms per milliliter of plasma or  serum | 48 hours | Single intravenous dose of ketoprofen as  Ketofen® at 2.2 milligrams per kilogram | HFL Sport Sciences/ Kentucky Equine Drug and Research Council/RMTC study/University of California Davis/RMTC. |
| **Phenylbutazone** | 0.3 micrograms per milliliter of plasma or  serum | 48 hours | Single intravenous dose of phenylbutazone at  4.0 milligrams per kilogram | University of California Davis/RMTC study. |

†† Samples collected may contain one of the NSAIDs in this chart at a concentration up to the Primary Threshold. The detection of one or more additional NSAIDs in blood and/or urine constitutes a stacking violation in addition to the violation associated with the detection of each additional NSAID.

**Recent Document Revisions**

**Date**

**Version**

**Substance**

**Notes.**

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| 19-Dec | 4.2 | Betamethasone, Dexamethasone,  Isoflupredone, Prednisolone, Triamcinolone acetonide. | Threshold and withdrawal guidance eliminated for flat and jump races; thresholds and withdrawl times apply only to harness racing. Fourteen day (14) stand down on interarticular injections referenced in Note. |  |
| 19-Dec | 4.2 | Phenylbutazone | Threshold lowered to 0.3 micrograms per milliliter plasma/serum; 48-hour restricted administration time; Elimination of secondary threshold; Footnote on stacking modified. |  |
| 19-Dec | 4.2 | Ketoprofen | 48-hour restricted administration time; Elimination of secondary threshold; Footnote on stacking modified. |  |
| 19-Dec | 4.2 | Flunixen | Threshold lowered to 5.0 ng/ml; 48-hour restricted administration time; Elimination of secondary threshold; Footnote on stacking modified. |  |
| 19-Dec | 4.2 | Diclofenac and Firocoxib | Eliminated from CTS schedule; Policy reverts to level of detection if found. |  |
| 19-Jan | 4.1 | Albuterol | Added footnote establishing Albuterol as a prohibited substance in Quarter Horses with no applicable withdrawal guideline for Quarter Horses or breeds racing with Quarter Horses. |  |
| 17-Apr | 4 | Clenbuterol | Added footnotes establishing Clenbuterol as a prohibited substance in Quarter Horses with no applicable withdrawal guideline for Quarter Horses or breeds racing with Quarter Horses. |  |
| 17-Apr | 4 | Whole document | Re-numbered footnotes throughout document to make them continuous |  |
| 16-Dec | 3.2 | Omeprazole | Clarified threshold for omeprazole sulfide. |  |
| 16-Sep | 3.1 | Detomidine | Amended threshold and dosing specifications. |
| 16-Mar | 3 | Omeprazole | Amended threshold and dosing specifications |
| 16-Mar | 3 | Xylazine | Amended threshold and dosing specifications |
| 16-Mar | 3 | Guaifenesin | Added as New Substance to Controlled Therapeutic Medication Schedule |
| 16-Mar | 3 | Cetirizine | Added as New Substance to Controlled Therapeutic Medication Schedule |
| 16-Mar | 3 | Ranitidine | Added as New Substance to Controlled Therapeutic Medication Schedule |
| 16-Mar | 3 | Cimetidine | Added as New Substance to Controlled Therapeutic Medication Schedule |
| 15-Apr | 2.02 | Methylprednisolone | Directed readers to use Dosing Specification column for recommended withdrawal guideline. |
| 15-Apr | 2.02 | Furosemide | Added clarifying language to Furosemide reflecting ARCI-011- 020(F)(2)(d) and ARCI-025- 020(F)(2)(d) minimum and maximum thresholds |
| 15-Apr | 2.02 | Added “For Horses” to Title | Added the words “for Horses” to document title |

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| 14-Apr | 2.01 | Methocarbamol | Corrected dosage from 0.15 milligrams per kilogram to 15 milligrams per kilogram |  |  |
| 14-Apr | 2 | Dimethyl sulfoxide (DMSO) | Removed “oral” from dosing specifications |  |
| 14-Apr | 2 | Xylazine | Changed Note section from “Applies to xylazine and xylazine metabolite” to “Applies to analyte  xylazine” |  |
| Apr-14 | 2 | Isoflupredone | Added Isoflupredone as New Substance to Controlled Therapeutic Medication Schedule |  | |
| Apr-14 | 2 | Albuterol | Added Albuterol as New Substance to Controlled Therapeutic Medication Schedule |
| Apr-14 | 2 | Flunixin, Ketoprofen, Phenylbutazone | Added Secondary Anti-Stacking Threshold |
| Apr-14 | 2 | Flunixin, Ketoprofen, Phenylbutazone | Created separate section for Non-Steroidal Anti-Inflammatory Drugs at end of Controlled Therapeutic Medication Schedule, Relocated Flunixin, Ketoprofen, and Phenylbutazone to new section |
| Apr-14 | 2 | <All Substances> | Changed Table Header from “No Pre-Race Treatment Within” to “Withdrawal Guideline” |
| Apr-13 | 1 | <All Substances> | Original Controlled Therapeutic Medication Schedule Adopted by ARCI Board of Directors |