

## **List over prohibited substances and withdrawal times in Scandinavia, valid from January 1<sup>st</sup> 2018.**

This list has been developed in collaboration with the other Scandinavian countries through NEMAC (Nordic Equine Medication and Anti-doping Committee).

The List of prohibited substances and withdrawal times consists of two parts: the A-list, listing substances and treatment methods that are absolutely prohibited for horses, and the B-list, listing substances that are prohibited in competition; the withdrawal times for these substances as well as treatment methods with withdrawal times.

The list may be reviewed several times per year. This list is valid, starting from January 1<sup>st</sup>, 2018, and is enforced until a new list takes effect. A valid list of withdrawal times can be found at any time on each of the Scandinavian countries official websites:

- The Norwegian Trotting Association (DNT) [www.travsport.no](http://www.travsport.no)
- Swedish Trotting Association (ST) [www.travsport.se](http://www.travsport.se)
- The Danish Trotting Association (DTC) [www.trav.dk](http://www.trav.dk)

### **General information:**

#### **Medical records**

The trainer is responsible for ensuring that any treatment that requires a withdrawal time is listed in the horse's medical record. The start and end dates of the treatment, the name of the treatment/medication/active substance, amount given, method of administration, withdrawal time as well as the name of the veterinarian or other person responsible for the treatment must all be listed in the medical record in accordance with DNT's Doping Regulations 2018 § 4. Passport and medical record must be available for presentation with the horse at all times. Omitting, incompletely or improperly listing treatments in the medical record constitutes a breach of the Doping Regulations.

#### **Medication control**

According to the Nordic countries' rules and regulations, any horse registered for race can be brought in for a medication control both before the start of the race, or up to three (3) hours after the race was finished. Blood samples, urine samples and/or hair samples can be taken. One of the stable/trainers crew (aged 16 or older) must supervise the horse during the medication control. Please bring your horse's passport and medical record to the medication control. The horse is allowed to drink fresh water during the medication control, but no other supplements can be given until the medication control is finished.

#### **Contamination by pharmaceutical products**

Generally, great care must be taken to ensure that horses that are under medical treatment are kept in a stall of their own and are fed any medicated feed from labeled buckets or containers.

Horses undergoing drug treatment may excrete medication through urine and faeces and potentially transfer residues of the drugs to other horses through feed stuff, shavings or straw. Persons handling the horses must ensure that any medication for personal use is kept away from the horses at all times. No person may urinate in the horse's immediate environment (such as the stall, box or horse trailer) as medication excreted in urine from humans may transfer to the horse through contaminated feed or bedding.

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## **A. LIST OF PROHIBITED SUBSTANCES**

### **1. Prohibited substances**

**The following substances are prohibited in connection with competition:**

- Substances that may affect or have an effect, or both, on the following organ systems:
  - The nervous system
  - The cardiovascular system
  - The respiratory system
  - The digestive system
  - The urinary system
  - The reproductive system
  - The muscular and skeletal systems
  - Blood and blood forming organs
  - The immune system
  - The endocrine system

- Endogenous hormones or similar synthetic substances
- Substances with a masking effect
- Substances which directly or indirectly manipulate the expression of genes

Either a finding of the substance itself, the finding of a metabolite of the substance, or the finding of a prodrug of the substance indicates the finding of such substances.

Administration of or exposure to such substances may constitute a positive finding of the substance.

### **2. Genetic and cellular manipulation**

Modification of the genome of a horse at any point in the horse's life will result in a lifetime disqualification from competing.

Gene therapy or cellular manipulation applied to a race horse must not:

- Positively or negatively affect the horse's performance capacity
- Negatively affect the horse's welfare

### **3. Prohibited methods**

Prohibited methods include, but are not limited to:

- Racing a pregnant mare after day 120 of pregnancy
- Neurectomy (surgical and/or chemical)
- Cryotherapy before racing

- Withholding drinking water before racing
- Manipulation of blood and blood components, including administration or retransfer of homologous or heterologous blood or products of red blood cells to the circulatory system, except where such treatment is necessary to save the horse's life.
- Artificially increasing oxygen uptake and/or oxygen transport in the tissue, including but not limited to the use of modified hemoglobin products
- Any kind of intravascular artificial manipulation of blood or blood components

#### **4. Absolutely prohibited substances and methods of treatment**

The following substances, including other substances with a similar chemical structure or similar biological effect, and their releasing factors, are prohibited to use, store, manufacture, import, export, sell, distribute, acquire, send or transfer at any time:

**4.1. Non-approved substances.** Substances which are not listed in any of the classes below, and which have not been approved by any national or international medicines agency, may not be administered to a race horse.

#### **4.2. Anabolic substances**

- a) Anabolic androgenic steroids
- b) Other anabolic substances, including but not limited to selective androgen receptor modulators (SARMs)
- c) Beta-2 agonists, except in cases where such substance is prescribed by a veterinary physician for use in bronchodilator treatment, and used in dosages approved for such treatment by the medicines agency.

#### **4.3. Peptide hormones, growth factors, and similar substances**

- a) Erythropoietin stimulating agents, including but not limited to erythropoietin (EPO), epoetin alfa, epoetin beta, darbepoetin alfa, methoxy polyethylene glycol-epoetin beta, peginesatide, hypoxia-inducible factor (HIF-1) stabilizers (e.g., cobalt) and activators (e.g., xenon, argon).
- b) Growth hormones or growth hormone inducing factors, insulin-like growth factor (IGF-1), fibroblast growth factor (FGF), hepatocyte growth factor (HGF), mechanogrowth factor (MGF), platelet derived growth factor (PDGF) and other growth factors.
- c) Synthetic proteins and peptides and synthetic analogues of endogenous proteins and peptides that are not approved for use in human or veterinary medicine.

#### **4.4. Hormones and metabolic modulators**

- a) Aromatase inhibitors
- b) Selective estrogen receptor modulators (SERMs) and other anti-estrogen substances

- c) Substances which may modify myostatin function, including but not limited to myostatin inhibitors.
- d) Insulin
- e) Peroxisome proliferator-activated receptor gamma agonists, including but not limited to GW 1516
- f) AMPK activators, including but not limited to AICAR (5-aminoimidazole-4-carboxamide-1- $\beta$ -D-ribofuranoside)

#### **4.5. Other treatments and substances that are completely forbidden**

- Cobratoxin and other toxins with similar structure and effect
- Capsaicin
- Pitcher plant extracts (Sarapin, Saralgyl)
- Polyacrylamide hydrogel
- Cedar oil
- Treatment with substances containing eg. arsenic, lead, mercury, croton oil or cedar oil. In addition, other products, preparations and substances applied in the purpose to affect circulation in the skin and underlying tissues are prohibited if this causes discomfort, pain or skin damage in the horse.
- Use of radioactive implants
- GnRH vaccine (Equity, Improvac)
- hCG (Human chorionic gonadotropin) use in stallions
- Pergolide (Prascend)
- ozone
- Supplying unnaturally high doses of naturally occurring substances (e.g. cobalt and nickel)
- Alkalinizing substances (e.g. bicarbonate and citrates) are prohibited the last 24 hours before a race
- Treatment with bisphosphonates in horses younger than 4 years, or bisphosphonates administered in other ways than the drug is approved/registered for. The use of bisphosphonates without a marketing authorization for horses is also prohibited. This includes all amino-bisphosphonates (e.g. zoledronate, alendronate, pamidronate).

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## **B. LIST OF WITHDRAWAL TIMES**

The withdrawal times listed here should be considered minimum requirements and are counted as lasting from 1) termination of administration of medication or substance, or 2) termination of other treatment, until 12:00 (noon) on race day (Norway). The times listed below are valid unless a specific withdrawal time is given for the particular substance. When a substance or drug is detected in biological material from the horse, it is considered prohibited even if the substance or drug was administered before the times listed here.

a) No withdrawal time

- Topical application on skin of substances which only have a protective, disinfecting, softening, absorbing, astringent, drying or keratolytic effect
- Cooling off the horse with cold water
- Use of saline- and/or lubricating laxatives (e.g. Glauber's salt). Insertion of nasoesophageal/nasogastric tube is prohibited on raceday at racetrack
- Any disinfectants, e.g. chloramine, chlorhexidine, cetylpyridinium chloride

## b) Prohibited on the day of the race

Norway: The day of the race is defined as starting at midnight, 00:00, and ends when the horse has finished its race/races.

Sweden: Prohibited on raceday at the racetrack.

- Nasal strips
- Acupressure
- Inhalation therapy
- Insertion of nasoesophageal/nasogastric tube
- Rectal fluid therapy
- Cooling by means other than cold water, mud or topical preparations/liniments which do not have a withdrawal time
- Use of electric massagers and other electrical devices

c) 96 hours minimum

- Injection or infusion, regardless of preparation
- Substances which have an effect on the nervous system
- Substances which have an effect on the muscular and skeletal systems
- Substances which have a muscle relaxant effect
- Antimicrobial and antifungal drugs (with the exception of procaine benzylpenicillin which has a withdrawal time of 14 days)
- Pharmacy manufactured medication
- Medication for human use, for which no withdrawal time is specified
- Veterinary medication not indicated for use in horses
- Herbal medication (for oral administration)
- Homeopathic medication

d) 7 days minimum

- Expectorant medication, e.g. bromhexine, dembrexine (Sputolysin), acetylcysteine (Equimucin)

e) 14 days minimum

- Injections in the joints or bursae, joint/synovial puncture
- Glucocorticoids (cortisone) with a short-term effect and rapid excretion. In the case of injections in the joints, tendon sheaths or bursae the withdrawal time is 28 days
- Bronchodilator medication for inhalation (e.g. salbutamol, salmeterol, beclomethasone, budesonide)

- Anti-inflammatory medication (e.g. DMSO, NSAIDs)
- f) 28 days minimum
- Any glucocorticoids (cortisone) with the exception of those mentioned in section d) above.  
Glucocorticoids such as triamcinolone acetonide, betamethasone phosphate/betamethasone acetate and methylprednisolone acetate are authorized for marketing for human use, but not for equine use. Therefore, there rests a greater responsibility upon the veterinary physician when prescribing these medications for use in horses.  
The recommended withdrawal times after injection of such medication in joints, bursae or tendon sheaths are based on dosages empirically established as common in clinical practice, injected in one or two joints. However, if higher doses are used or more than two joints/bursae/tendon sheaths are treated with injections, the withdrawal times should be extended significantly beyond the 28 days. In such cases, an appropriately long withdrawal time must be determined by the veterinary physician's professional judgment. Methylprednisolone acetate has a particularly long-lasting effect and is very slowly eliminated. It is therefore not recommended for use in racing horses. Triamcinolone acetonide and other depot formulations may have a very long elimination time even after intramuscular injection.
- g) 60 days minimum  
Bisphosphonates (Tildren® and Osphos®) is not allowed to use in horses younger than 4 years of age. Veterinary examination and evaluation is required before bisphosphonates are administered. The products has to be administered on the indications and with the routes of administration approved by the manufacturer and the drug authorities. This implies that eg. Intra- articular injections are prohibited. Bisphosphonates without a marketing authorization for horses, including all amino-bisphosphonates, are also prohibited.
- h) One year
- Long acting hormone therapy to delay oestrus (e.g., Progesterone)

## **Withdrawal times for drugs authorized for marketing for equine use in Scandinavian countries**

The withdrawal times for drugs listed in the Danish, Norwegian or Swedish Pharmaceutical Product Compendium for veterinary medicine are valid only when adhering to the manufacturer's recommendation regarding dosage, dosage intervals, administration method and duration of treatment. In the case of deviations from those, prolonging the withdrawal times may be necessary.

Name of active substance and withdrawal time for drugs authorized for marketing for equine use:

Active substance	Min. WT time	Important info	
Acepromazine	7 days	Only permitted for use in mares	
Acetylcysteine	7 days		
Adrenaline	96 hours		
Altrenogest	14 days		
Bencylpenicillin	96 hours		
Benzylpenicillin procaine	14 days		
Benzylpenicillin procaine + dihydrostreptomycin	14 days		
Benzylpenicillin procaine + dihydrostreptomycin + sulfadimidine	14 days		
Buprenorphine	6 days		
Buserelin acetate	96 hours		
Butorphanol	6 days		
Butylscopolamine	96 hours		
Cimetidine	96 hours		
Clenbuterol	28 days		Not recommended in racing horses
Clodronate	28 days		
Cloprostenol	96 hours		
Cromoglycate	14 days		
Dantrolene sulphate	14 days		
Detomidine	96 hours		
Dexamethasone	28 days		
Dexamethasone sodium phosphate	14 days		
Dihydrostreptomycin	96 hours		
Dinoprost	96 hours		
Enrofloxacin	96 hours		
Febantel	96 hours		
Fenbendazole	96 hours		
Firocoxib	30 days		
Flunixin	14 days		
Gentamicin	96 hours		
Heparin	96 hours		
Hydroxietyl salicylate	96 hours		
Isoflurane	96 hours		
Ivermectin	96 hours		
Ivermectin and praziquantel	96 hours		
Ketamine	96 hours		
Ketanserin	0 hours		
Ketoprofen	14 days		
Levomenthol	96 hours		
Lidocaine	96 hours		
Lidocaine + adrenaline	96 hours		
Luprostiol	96 hours		

Meloxicam	14 days	
Metamizole/Dipyrone	7 days	14 d. in Sweden (National legislation)
Moxidectin	96 hours	
Moxidectin/praziquantel	96 hours	
Omeprazole	96 hours	
Oxytetracycline	96 hours	
Oxytetracycline + Polymyxin B	96 hours	
Oxytocin	96 hours	
Pergolide mesylate	Prohibited	Not permitted in racing horses
Phenylbutazone	14 days	
Polysulfated glycosaminoglycan	14 days	
Praziquantel	96 hours	
Prednisolone	14 days	
Procaine	96 hours	14 d. in Sweden (National legislation)
Pyrantel pamoate	96 hours	
Ranitidine	96 hours	
R-cloprostenol	96 hours	
Romifidine	5 days	
Scopolamine	96 hours	
Sodium hyaluronate	14 days	
Sucralfate	96 hours	
Sulfadiazine	96 hours	
Sulfadoxine	96 hours	
Suxibuzone	14 days	
Tetanus vaccine	96 hours	
Tiludronic acid	60 days	Intra articular injection prohibited. Not permitted to use in horses under the age of 4 years
Trimethoprim	96 hours	
Trimethoprim + sulfadiazine	96 hours	
Trimethoprim/sulfadoxine	96 hours	
Vaccinations against horse flu, tetanus, herpes, rabies and ringworm	96 hours	
Vedaprofen	14 days	
Vitamin A, D2 og E (for injection)	96 hours	
Vitamin B (for injection)	96 hours	
Vitamin E (for injection)	96 hours	
Xylazine	96 hours	

## Withdrawal times for medication administered through an inhaler

The use of inhalation apparatus is not permitted on race day.

Bronchodilator medication given through an inhaler (e.g. salbutamol, salmeterol, beclomethasone, budesonide)	14 days
Saline	Not permitted on race day
Other medication for use by inhalation	Depending on the withdrawal time of the drug

## Withdrawal times for treatment methods:

Acupuncture:	96 hours
Chiropractor treatment:	96 hours
Laser treatment:	96 hours
LED light treatment:	96 hours
Naprapathy treatment:	96 hours
Osteopathy treatment:	96 hours
Ultrasound treatment:	96 hours
Transcutaneous nerve stimulation (TNS):	96 hours
Shock wave or pulsed wave therapy:	10 days NOTE: Treatment must only be administered by an authorized veterinary surgeon
Intrauterine implants for delaying oestrus ("marbles"):	0 hours

## Withdrawal times for products for external use, feed and supplements

Preparations which only have a protective, disinfectant, softening, absorbing, adstringent, drying or keratolytic effect, used topically on the skin, have no withdrawal time. Ointments or liniments containing antibacterial or antifungal substances have a general withdrawal time of 96 hours, with the exception of preparations containing procaine benzylpenicillin, NSAIDs, or glucocorticoids, which have a withdrawal time of 14 days.

### a) Withdrawal time 96 hours:

Substances classified as human medicines or herbal medicines, e.g.:

- Benzocaine
- Glucosamine
- Harpagophytum procumbens (Devil's claw) (NOTE: There is a withdrawal time of 14 days for this supplement in Sweden due to National legislation)
- Heparin
- Caffeine (including Guarana products) (NOTE: There is a withdrawal time of 14 days for caffeine in Sweden due to National legislation)
- Levomenthol, menthol

- Salicylic acid, diethylamine- hydroxyethyl- and methyl salicylate

b) Withdrawal time 48 hours:

Herbal medicines, e.g.:

- Aesculus hippocastanum (horse chestnut)
- Agnus castus (monk's pepper)
- Echinacea purpurea (purple coneflower)
- Hypericum perforatum L. (St John's wort)
- Symphytum officinale L. (common comfrey)
- Valeriana officinalis (valerian)

c) No withdrawal time:

Other substances and natural remedies with some documented effect

- Alpha casozepine
- Allium sativum (garlic)
- Aloe vera (genuine aloe vera) (NOTE: There is a 96-hour withdrawal time for Aloe vera in Sweden due to National legislation)
- Arnica montana
- Avocado and Soybean unsaponifiable extracts (ASU)
- Boswellia sp.
- Bee glue (Propolis)
- Calendula sp. (marigold)
- Chondroitin sulfate
- Curcuma longa (curcumin, turmeric)
- Di-/trimethylglycine (D-/TMG)
- Eucalyptus
- Gamma oryzanol, rice bran oil
- Ginkgo biloba
- Ginseng
- Green-lipped mussel extract (GLE)
- Hamamelis (witch-hazel)
- Hyaluronic acid (orally)
- Camphor
- Creatine
- L-carnitine
- Melaleuca alternifolia (tea tree oil)
- MSM, methylsulfonylmethane
- Neem oil
- Octacosanol
- Rosa sp. (rosehip powder)
- Schisandra chinensis
- Tryptophan
- Yucca, Yucca schidigera
- Zingiber officinale (ginger)

## Threshold values for certain endogenous and/or naturally occurring substances

<b>Arsenic</b>	- 0,3 µg total arsenic per ml in urine
<b>Boldenone</b>	- 0,015 µg free and conjugated boldenone per ml i urine from male horses (other than geldings)
<b>Dimethyl sulphoxide (DMSO)</b>	- 15,0 µg Dimethyl sulphoxide per ml in urine - <1,0 µg Dimethyl sulfoxide per ml in plasma
<b>Carbon dioxide (total CO<sub>2</sub>)</b>	- 36 mmol/l plasma
<b>Cobalt</b>	- 0,1 µg (=100 ng) total cobalt per ml in urine - 0,0025 µg (=25 ng) per ml in plasma
<b>Cortisol (hydrocortisone)</b>	- 1,0 µg hydrocortisone per ml urine
<b>Methoxytyramine</b>	- 4 µg free and conjugated 3-metoxytyramine per ml in urine
<b>Nandrolon (nor-testosterone)</b>	- Estranediol, mengden av fritt og konjugert 5-alfa-estrane-3β, 17-alfa-diol i relasjon til mengden av fritt og konjugert 5(10)-estrene-3β, 17-alfa-diol i urin fra hingst <1
<b>Salicylic acid</b>	- 750 µg salicylic acid per ml in urine - 6,5 µg salicylic acid per ml in plasma
<b>Theobromine</b>	- 2,0 µg theobromine per ml in urine - 0,3 µg theobromine per ml in plasma
<b>Testosterone</b>	- 0,02 µg free and conjugated testosterone per ml in urin from geldings - 0,055 µg free and conjugated testosterone per ml in urine from fillies and mares (unless in foal) - 100 pg free testosterone per ml in plasma from geldings

## List of substances with adopted screening limits

Substances that have established screening limits are listed below. Substances for which there are screening limits in both urine and plasma are marked with an asterisk \*. The actual screening limits are not public according to decisions made in the European Horserace Scientific Liaison Committee (EHSLC) and the Nordic Equine Medication and Anti-doping Committee (NEMAC).

- Acepromazine\*
- Altrenogest\*
- Atropine
- Betamethasone
- Bromhexine/ambroxol
- Bufotenine
- Butorphanol\*
- Butylscopolamine (N-butylscopolamine) \*
- Carprofen\*
- Clenbuterol
- Dantrolene

- Dembrexine\*
- Detomidine (3'-hydroxydetomidine) \*
- Dexamethasone
- Diclofenac\*
- Dimethyltryptamine (DMT)
- Dipyrone (as 4-MAA) (=metamizole) \*
- Eltenac
- Etamiphylline
- Phenylbutazone\*
- Firocoxib\*
- Flunixin\*
- Furosemide\*
- Guaifenesin
- Hordenine
- Hydroklortiazid\*
- Ibuprofen
- Ipratropium
- Camphor
- Ketoprofen
- Cocaine
- Caffeine
- Lidocaine (3-hydroxy lidocaine) \*
- Meclofenamic acid\*
- Meloxicam\*
- Menthol
- Mepivacaine
- Morphine (morphine glucuronide)
- Naproxen
- Nimesulide
- Omeprazole\*
- Oxazepam
- Prednisolone
- Procaine \*
- Romifidine\*
- Salbutamol
- Scopolamine
- Teophylline
- Tiludronic acid
- Triamcinolone acetonide
- Trimethoprim\*
- Vedaprofen\*
- Xylazine (metabolite/s)

- NOTE: If two or more similar substances are found in a sample, the screening limits will not apply (due to the so-called “cocktail rule”). This is to ascertain that multiple similar medications are not used in combination in smaller doses to avoid exceeding the screening limits. The screening limits do not apply for out-of-competition testing.

Exceptions to the “cocktail rule” are findings of the following combinations:

- Detomidine, romifidine or xylazine in combination with butorphanol
- Atropine and scopolamine
- Butylscopolamine and dipyrone/metamizole

### ***International collaboration***

*DTC, DNT and ST are members of the Nordic Equine Medication and Anti-doping Committee (NEMAC) and joint members European Horserace Scientific Liaison Committee (EHSLC).*

*NEMAC is responsible for developing lists of withdrawal times valid for the Nordic countries. Make sure you always use the latest version of this document – you will find it on DNT’s official homepage [www.travsport.no/hestevelferd](http://www.travsport.no/hestevelferd).*

*Withdrawal times listed on ST’s official website, [www.travsport.se](http://www.travsport.se), are also valid in Norway. Please note that the changes in withdrawal times for Aloe Vera, Harpagophytum procumbens (Devil’s claw), and caffeine have still not been introduced in Sweden due to National legislation/regulations from the Swedish Board of Agriculture (Jordbruksverket). Therefore, the original withdrawal times of 96 hours (for Aloe Vera) and 14 days (for Devil’s claw and caffeine), respectively, are still to be used for any races in Sweden until further notice. See also [www.trav.dk](http://www.trav.dk) [www.travsport.no](http://www.travsport.no) and <http://www.travsport.se> for more information.*