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# FEDERATION INTERNATIONALE DE GYMNASTIQUE



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**INFORMATION MÉDICALE**

**MEDICAL INFORMATION**



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**LUTTE ANTI-DOPAGE  
SUBSTANCES PROHIBÉES  
LES DIURÉTIQUES - “LE FUROSÉMIDE”**

**FIGHT AGAINST DOPING  
PROHIBITED SUBSTANCES  
DIURETICS - “FUROSEMIDE”**

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## **FIGHT AGAINST DOPING – PROHIBITED SUBSTANCES**

### **DIURETICS**

### **“FUROSEMIDE”**

#### **Preamble**

Drug testing is an essential part of the fight against doping, whether in or out of competition.

Testing includes collecting blood or urine samples, following established procedures, and analysing the samples in the World Anti-doping Agency (WADA) approved laboratories which are equipped with the latest technology.

Laboratory analysts look for the presence of one or more prohibited substances, which are either strictly full time or only in competition prohibited. WADA updates the list annually in consultation with the Olympic movement and National Anti-Doping Agencies (NADOs).

When a prohibited substance is discovered, it is named as an “abnormal” test result.

“Abnormal” results may become “positive” once certain points have been verified, requiring sometimes weeks of biological monitoring. The positive result may be confirmed or invalidated by the analysis of the B sample. A verification that a Therapeutic Use Exemption (TUE) related to the substance has been accepted may validate the presence of the substance. Any breach in the chain of custody is also verified.

In positive cases, an essential question surfaces: Did the athlete deliberately use the product for performance enhancing purposes, meaning did he/she intend to cheat? It is generally impossible to answer this question through analysis alone; except in certain cases in which it is possible to determine whether a substance is of an exogenous (eg. oral or intramuscular administration) or endogenous (self-produced) origin.

The new 2009 WADA Code, together with the new FIG Regulations, are relatively flexible and provide for mitigating or aggravating circumstances, but for exceptional cases in which no direct intent to cheat has been proven.

It is not an easy task, and cheaters seem to be skilled at manipulating disciplinary authorities.

Let it be said that negligence and a poor understanding of the rules are grounds for sanction.

**LET'S KEEP IN MIND THAT ACCORDING TO THE WADA CODE, whether an athlete is a minor or not, he or she is responsible for any substance found in his or her organism.**

It is important to remain vigilant at all times and stay on the look for seemingly insignificant substances such as vitamin or mineral complexes, nutritional supplements and the like, which sometimes contain banned substances without clear indication on the label. Athletes should be careful when taking substances suggested by friends or those commonly used in family circles.

Advice from others can be a dangerous thing, despite possible good intent. The slightest doubt should be taken seriously and drive to the immediate consultation of a competent person.

The situation is a difficult one even for the most honest and scrupulous athletes. They should have the possibility to rely on competent individuals, who hold a deep respect for a solid ethical code in sports.

A perfect illustration of this is the use of Furosemide, a prohibited substance both in and out of competition. It has been the most frequently used substance in gymnastics for years, seen primarily in young female gymnasts in all disciplines.

In cases involving the use of Furosemide, disciplinary authorities are confronted with one major question: "Did the gymnast intend to cheat? Did the gymnast follow (poor) advice offered by friends and family in an attempt to lose weight?" Conducting an investigation to determine between negligence and cheating is not an easy thing to do.

It is however an extremely important issue as sanctions can be severe, ranging from medal withdrawal to relegation and suspension.

### **Furosemide (and other diuretics)**

Furosemide is listed as diuretic (category 5) used as a masking agent and prohibited by both WADA and FIG, for both in and out of competition. Diuretics are not considered as doping agents on their own, but their use, which causes extensive dilution of the urine, is able to mask the use of other banned products, making it extremely difficult to detect them, including anabolic steroids.

Broadly speaking, the detection of a diuretic such as furosemide in the urine may be the result of:

#### **I) LOGICAL AND NECESSARY THERAPEUTIC USE OF A DIURETIC**

The **indications** surrounding the medical prescription of a diuretic are limited nearly exclusively to the following pathologies:

- Cardiac or vascular oedema of renal or hepatic origin.
- Arterial hypertension in cases of isolated renal failure of arterial origin, with or without the use of antihypertensive agents.

A gymnast using a diuretic must be strictly monitored by a medical professional. Substances falling under this category can give rise to serious disorders:

- Hydroelectrolytic disorders, the elimination of sodium, magnesium, potassium, chlorine and calcium, with a decrease in the volume of circulating blood; heightened glycaemia.
- Allergic reactions.
- Gastrointestinal disorders.
- Serious disorders linked to the association of Furosemide with different medications, such as antibiotics, antidepressants, anti-inflammatory and corticoid drugs, that make it sometimes hard to tolerate.

Diuretics are medically prescribed for the treatment of serious and specific pathologies; they can cause severe side effects.

#### Concerning **SPORT PRACTICE**:

- If the case requires treatment for cardio-renal or hepatic oedema, competitive sport practise or even training is limitedly compatible with the gravity of the illness.
- If the case requires treatment for arterial hypertension, where no associated complications are present and in specified cases, sport practise may be admitted with the intake of the substance. This is more related to athletes of 40 years and older, who are rarely in gymnastics. In any case, an authorisation (standard TUE) must be obtained to use this substance, taking into consideration the fact that this product can often be substituted with a number of other non-prohibited antihypertensive agents.

#### **II) ILLOGICAL AND INDIRECT USE OF A DIURETICS:**

We are referring to inappropriate and dangerous medical practise.

This is unfortunately the most common use of diuretics; gymnasts trying to lose weight through water elimination, primarily in the thighs and buttocks. Common among young women, they pass on the practise to their own children and young gymnasts.

Not only is this prohibited by the FIG/WADA anti-doping rules, but an inappropriate use of a diuretic can result in severe sanctions, bring about serious physical disorders and interfere with the quality of sport practise.

### III) USE OF A DIURETIC TO MASK A PROHIBITED DOPING SUBSTANCE

The following diuretics apply (list 2012):

ACETAZOLAMIDE

AMILORIDE

BUMETANIDE

CANRENONE

CHLORTHALIDONE

ETACRYNIC ACID

FUROSEMIDE

INDAPAMIDE

METOLAZONE

SPIRONOLACTONE

THIAZIDES (example – CHLOROTHIAZIDE)

TRIAMTERENE

And other substances with similar chemical structures or biological effects.

When considering the intake of these drugs, gymnasts need to seriously weight the consequences, such as the impact on their health or the sanctions that may be applied, such as:

– Disqualification of obtained results (article 9 of the WADA Code) and forfeiture of any benefits (medal, prizes, points, ranking, etc.).

– Ineligibility for a first violation = 2 years (article 10.2 of the WADA Code).

Where a Gymnast or other Person can establish how a Specified Substance entered his or her body or came into his or her Possession and that such Specified Substance was not intended to enhance the Gymnast's sport performance or mask the Use of a performance-enhancing substance, the period of Ineligibility could be reduced to the following:

First violation: At a minimum, a reprimand and no period of Ineligibility from future Events, and at a maximum, two (2) years of Ineligibility.

To justify any elimination or reduction, the Gymnast or other Person must produce corroborating evidence in addition to his or her word which establishes to the comfortable satisfaction of the hearing panel the absence of intent to enhance sport performance or mask the Use of a performance-enhancing substance. The Gymnast's or other Person's degree of fault shall be the criterion considered in assessing any reduction of the period of Ineligibility.

If a Gymnast or other Person establishes in an individual case that he or she bears No Significant Fault or Negligence, then the otherwise applicable period of Ineligibility may be reduced, but the reduced period of Ineligibility may not be less than one-half of the period of Ineligibility otherwise applicable.

**SECOND OFFENCES are generally heavily sanctioned.**

#### CONCLUSION

Even if, through years of experience with our gymnasts we firmly believe that in the majority of positive cases with Furosemide, offending gymnasts are simply trying to lose a few pounds prior to a competition, albeit unwisely, we need to remember how

difficult it is for disciplinary authorities to gather the evidence needed to uncover the truth and prove good faith where due.

The use of diuretics, particularly stronger agents such as Furosemide and Chlorothiazide, is problematic for any authority like FIG or WADA to make fair decisions. And in order for the rules to be efficient, they must be stringent. Negligence, incompetence or good intent are neither absolute nor are they decisive arguments for avoiding all or part of a sanction.

THE ONLY ABSOLUTE AND UNQUESTIONABLE PIECE OF ADVICE that we can honestly give our gymnasts is to NEVER USE DIURETICS THAT ARE PROHIBITED BY FIG AND/OR WADA, particularly to lose weight.

There are many other ways to lose weight; gymnasts can contact competent individuals who will respond to their questions (depending on the circumstances: team doctors, National Federations, National Olympic Committees, NADOs, FIG, WADA, etc.).

**Useful websites:**

**FIG**

<http://www.fig-gymnastics.com>

**List of National Anti-doping Organisations:**

<http://www.wada-ama.org/fr/dynamic.ch2?pageCategory.id=245>

**WADA**

<http://www.wada-ama.org>



FUROSEMIDE is the name of a generic product; the list, under, presents the commercial name used in different countries. It's given as a non exhaustive indication.

*Le FUROSEMIDE est un produit générique.*

*Cette liste présente la plupart des noms commerciaux utilisés dans différents pays.*

*Elle est donnée à titre indicatif et non exhaustif.*

**Other names:** Frusemide; Furosemid; Furosemida; Furosémide; Furosemidi; Furosemidum; Furoszemid; Furozemidas; LB-502.

Фуросемида

**Clinical profile:** Furosemide is a potent loop diuretic. It is used in the treatment of oedema associated with heart failure and with renal and hepatic disorders, in the management of oliguria due to renal failure or insufficiency, and in the treatment of hypertension.

**WADA Status:** Banned in and out of competition

**WADA Class:** Diuretics and Other Masking Agents

Includes diuretics or substances with a similar chemical structure or similar biological effect(s).

### Preparations

**Single ingredient:** **Arg.:** Errolon; Fabofurox; Furagrand; Furital; Furix; Fursemida; Furtenk; Kollkin; Lasix; Nuriban; Retep; **Austral.:** Frusehexal; Frusid; Lasix; Uremide; Urex; **Austria:** Fural; Furohexal; Furon; Furostad; Lasix; **Belg.:** Docfurose; Furotop; Lasix; **Braz.:** Diuremida; Diuret; Diurit; Diurix; Fluxil; Furesin; Furosan; Furosecord; Furosem; Furosen; Furosetron; Furosix; Furozix; Fursemida; Lasix; Neosemid; Normotensor; Urasix; **Canad.:** Lasix; Novo-Semide; **Chile:** Asax; **Cz.:** Dryptal; Furanthril; Furon; Furorese; Lasix; **Denm.:** Diural; Furese; Furix; Lasix; **Fin.:** Furesis; Furomin; Lasix; Vesix; **Fr.:** Lasilix; **Ger.:** Diurapid; Furanthril; Furo-Puren; Furo; Furobeta; Furogamma; Furomed; Furorese; Furosal; Fusid; Jufurix; Lasix; **Gr.:** Hydroflux; Lasix; Semid; **Hong Kong:** CP-Furo; Lasix; Naqua; Urex; **Hung.:** Furon; **India:** Diucontin-K; Frusemix; Frusenex; Frusix; Lasix; **Indon.:** Cetasix; Classic; Diurefo; Edemin; Farsix; Furiosix; Impugan; Lasix; Uresix; **Irl.:** Fruside; Lasix; **Israel:** Fusid; Miphar; **Ital.:** Lasix; **Malaysia:** Dirine; Furmide; Lasix; Rasitol; **Mex.:** Butosali; Diurmessel; Edenol; Furosan; Henexal; Lasix; Osemin; Selectofur; Zafimida; **Neth.:** Lasiletten; Lasix; **Norw.:** Diural; Furix; Lasix; **NZ:** Diurin; Frusid; Lasix; **Philipp.:** Diuril; Diuspec; Edemann; Fremid; Fretic; Frusema; Furoscan; Fusimex; Lasix; Pharmix; Rofunil; **Port.:** Aquedux; Lasix; Naqua; **Rus.:** Lasix (Лазикс); **S.Afr.:** Aquarid; Beurises; Lasix; Puresis; Uretic; **Singapore:** Dirine; Furmide; Lasix; **Spain:** Seguril; **Swed.:** Furix; Impugan; Lasix; **Switz.:** Furodrix; Fursol; Lasix; Oedemex; **Thai.:** Dirine; Furetic; Furide; Furine; Fuseride; H-Mide; Lasiven; Lasix; **Turk.:** Desal; Furomid; Lasix; Lizik; Urex; **UAE:** Salurin; **UK:** Froop; Frusid; Frusol; Lasix; Rusyde; **USA:** Lasix; **Venez.:** Biosemida; Edemid; Inclens; Lasix; Lifurox; Salca; Terysol.

**Multi-ingredient:** **Arg.:** Aldactone-D; Diflux; Errolon A; Lasilacton; Lasiride; Nuriban A; **Austria:** Furo-Aldopur; Furo-Spirobene; Furolacton; Hydrotrix; Lasilacton; Lasitace; Spirono comp; **Belg.:** Frusamil; **Braz.:** Diurana; Diurisa; Hidrion; Lasilactona; **Chile:** Furdiuren; Hidrium; Hidropid; **Cz.:** Spiro Compositum; **Denm.:** Frusamil; **Fin.:** Furesis comp; **Fr.:** Aldalix; Logirene; **Ger.:** Betasemid; Diaphal; Furo-Aldopur; Furorese Comp; Hydrotrix; Osyrol Lasix; Spiro comp; Spiro-D; **Gr.:** Frumil; **India:** Frumil; Lasilactone; Spiromide; **Irl.:** Diumide-K Continus; Fru-Co; Frumil; **Ital.:** Fluss 40; Lasitone; Spirofur; **Mex.:** Lasilacton; **NZ:** Frumil; **Philipp.:** Diumide-K; **Spain:** Salidur; **Switz.:** Furocombin; Furospir; Lasilactone; **UK:** Aridil; Fru-Co; Frumil; Frusene; Komil; Lasikal; Lasilactone; **Venez.:** Furdiuren.