

Evaluation of Acth, Steroids, Barbiturates, Benzodiazepines, Beta Blockers, Caffeine, Cannabis and Cocaine Dopings in Sportsmen

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Abstract: The aim of this study is to investigate the indications and the contraindications some doping substances in the sportsmen. The research has aimed at bringing up the usage to doping in view of morality and the negative effects. The failure of the researches in this field and the insufficiency of publications and to be spread of doping has increased the importance of the research. All of ACTH, anabolic substances, barbiturates, benzodiazepines, beta-blockers, caffeine, cannabis and cocaine have the various contraindications on the sportsmen. The change of goal in sport has changed the quality and to its effects on the sportsman. This has led to various like doping, which do not comply with fair play and sportsmanship.

Key words: Doping substances, sportsmen, acth, steroids, evaluation

INTRODUCTION

Sportsman personally herself, a manager and a trainer and a technical director and a doctor and a physiotherapist use doping for mental or physical increase. And then they participate the competition. It is not ethic and healthy. Throughout the human beings history, humans try to reach physical power to protect and developed themselves. But they use chemical materials and doping in the 20 and 21st century at the same time. Sportsman personally herself, a manager's and a trainer's and a technical director's and a doctor's and a physiotherapist' negative supports causes doping usage for mental or physical increase. It is not available for Sportsmen health and medicine. Furthermore, the close link observed between doping and addiction. These materials taking at the abnormal quantities by sportsmen or abnormal one sends sportsman during the competition because of increasing sportsman's performance through high point. They are the psychological procedures at the same time (Betts, 2007; Bowers, 1998; Brooks *et al.*, 1979; Cody, 2000; Cody, 2007; De Jong *et al.*, 1988; De Rose, 2008; ElSohly and Salem, 2000; ElSohly *et al.*, 2007).

Impossible records and developments which are seen unbelievable and old records vanished. Today, doping materials is more than the plants mixture. The chemist's work for finding new doping materials and their wiper for evade punishment. Hereby, chemist's work for human health and dope related has become comprised at the terrific formulae at the same time. Countries managers, doctors, masseurs and hospitals entered this doping issue

in practice, doping industrialized. Sportsman like competitions' turns big interstate struggle arena. For this reason, sports has lost its innocence with this reason. Until a point the one at the exercises sportsmen do not work over technical or tactical loading methods and exercise means and similar factors affects development and the chemical materials' captive at your state. The healthiest road of taking good concludes and performance is that doing a good exercise and taking well-fed nutrition. The success at the sport, is connect with a seasoned essential appropriate scientific trainer and a sport physician and long and self-sacrificing with a team who becomes comprised from sport scientists like a psychologist possible. At this shadow, we can balk the misleading hypocritical forger humans in the sport life and fields. National treaties gave the punishment who uses doping medicines (ElSohly *et al.*, 2007; Eril, 2000; Fennessey *et al.*, 1988; Gaillard *et al.*, 2000).

There are 2 ways to reach high performance. The first one is that fulfill intense exercise process. The other one is that using somewhat about doping for reaching high performance. Doping is one of the main problem of sports ethic due to the causes unequal conditions and unfair earning power. For drugs classified on the list of prohibited doping substances and methods subjected to certain restrictions, the profile of students having consumed such substances during their lifetimes is different than the preceding profile. This behaviour is rather masculine, but does not differ by age, nor by the school year results. It is well linked to practicing sports and to the use of all observed psychoactive substances,

including the regular use of tobacco. An upcoming study concentrates on the link between taking drugs and a classification in 6 groups, created from the intensity of practicing of each group of discipline and between the global weekly duration. Having recourse to this typology, globally confirms the link between the intensity of sports practicing and consumption of drugs to improve performances, except for intensive mass sports practicing, which leads to a lower consumption of common prescribed or socially integrated drugs. Overall, intensive practicing favours taking drugs of the doping type and particularly those for the track and field and combat sports (pupils of this class are masculine in majority), showing a tie to a specific body. In some investigations, the main sports mentioned were cycling (45%), musculature and weight lifting (28%), athletics (18%) and football (9%), cycling and athletics seem to be linked to taking drugs, but not necessarily strongly linked to doping substances. As for boxing, musculature and weight lifting, same as for the football and rugby, the link to consumption of doping substances is more evident, but the intensity of practicing these mass sports does not appear to be linked to taking common prescribed drugs. The position adopted here thus navigates between these various notions (sports doping, consumption to improve one's performances and consumption of prohibited doping substances, etc.). In this study, variety and ambiguity of definitions is considered. Finally the mobilised sources shape up the maintained approach. Generally speaking, the mass expertise on doping and sports practicing achieved in 1998 (Hampl and Stárka, 1979; Hatton, 2007; Hilderbrand, 2007; Holm, 2007; Hong, 2006; Isacson *et al.*, 1998; Kintz *et al.*, 1999; Kintz, 2003; McNamee, 2007; Oseid, 1984; Raes *et al.*, 2007; Savulescu, 2004; Segura *et al.*, 2000, 2007; Tamburini, 2006; Teetzel, 2006; Van Eenoo and Delbeke, 2006).

This study deals with the question of psychoactive drug consumption to improve one's performance, whether it's concerning doping in the strictest sense of doping, i.e., use of prohibited drugs or procedures, mostly by sportsmen, in its larger sense, of taking any drug the user thinks might improve performances. Because of the broadness of this field of study, compared to the other developed studies of consumption in this report, entry by substance is not the most adapted here, because the doping behaviours are characterized, above all, by a practice (Fennessey *et al.*, 1988; Hampl and Stárka, 1979; Isacson *et al.*, 1998).

MATERIALS AND METHODS

ACTH or corticotrophin: ACTH is used in an attempt to increase the corticosteroid levels in the blood and to produce the associated euphoric effects on the organism.

The use of these products may cause an allergic reaction, in particular in individuals that have a predisposition towards asthma, urticaria, eczema, etc. Drug injections can cause severe reactions, such as anaphylactic shock. Undesirable side effect of ACTH include many different reactions such as: Water retention, edema, hyperglycemia, blood hypertension, modification in the psycheosteoporosis, decrease in resistance to infections, amphetamines. In addition to their principal effects, amphetamines have different activities on different levels, mediated by more or less specific receptors in the organism. The desired effects include a sense of well-being, a decrease in the perception of fatigue, an increase in self-confidence, in motor function and a decrease in appetite. In contrast to anabolic drugs which are used during the athlete's training, amphetamines are usually consumed just prior to competition. Indeed, there are no positive long term effects. In fact, most of the main pharmacological effects of amphetamines resemble those of cocaine. One athlete may want to increase his concentration and awareness, another one will consume massive doses to become more aggressive and develop endurance and a runner, for instance, may feel ready to deploy more instant energy and speed. An individual may be inclined to increase the doses of amphetamines to obtain the same stimulating effects experienced in the very beginning. This results in rapid addiction. The initial use, the extended use and high-dosage use of amphetamines may all provoke severe side effects, as shown in the table below: Acute or early onset side effects or chronic use side effects: Average Severe, impatience confusion addiction, vertigo fights weight loss, tremors delirium psychosis, irritability, paranoia, paranoid delirium, insomnia hallucinations dyskinesia, euphoria, convulsions. Behavioral disorders: Compulsive, stereotypical, uncontrolled movements, cerebral hemorrhage vascularity, cephalgia, angina pectoris, infarction of the myocardium, neuropathies, palpitations, blood hypertension, anorexia, circulatory collapse, nausea, vomiting (Betts, 2007; Bowers, 1998; Brooks *et al.*, 1979; De Jong *et al.*, 1988; De Rose, 2008; ElSohly and Salem, 2000; ElSohly *et al.*, 2007; Eril, 2000; McNamee, 2007; Oseid, 1984; Raes *et al.*, 2007; Savulescu, 2004; Segura *et al.*, 2000, 2007; Tamburini, 2006; Teetzel, 2006).

An amphetamine user may display the following external signs: Changes in one's judgement capacity, repeated occurrence of wounds, increase in recuperation time, side effects that penalize a sports activity, repeated variations in the mood (stimulation of anxiety). External signs of the amphetamine user: Facial expression of anxiety, pinched nose, dilated pupils, teeth grinding (bruxism), dry mouth, a nauseous state, paleness of mucous membranes and on the finger tips (nails), cold extremities, goose bumps,

sudation, palpitations, accelerated or lowered heartbeat, hyper or hypotension, erection, loss of vision in the absence of visible eye alterations (amaurosis), nervousness, tics (frequent touching of one's face), disorientation relative to people and places, mistrust of one's entourage and the impression of being constantly watched, incoherent speech, violent acts, psychosis (Cody, 2000, 2007).

Anabolic substances (steroids): This class of doping substances includes all steroids that possess anabolic properties, meaning that they cause an extensive increase in the muscular mass. This effect is never isolated: a more or less pronounced androgen activity is also present. This chapter also deals with testosterone. These ergogen substances are generally used without interruption and during several weeks preceding a competition. The preferred method is "piling up" oral ingestion and injections. There has been a report of an athlete diagnosed with AIDS and whose sole risk factor was sharing needles to inject anabolic steroids. It is not uncommon to discover that anabolic steroids bought on the black market have not been adequately sterilized and are deliberately mislabeled (Fennessey *et al.*, 1988; Hampl and Stárka, 1979; Isacson *et al.*, 1998; Kintz *et al.*, 1999; Kintz, 2003; Van Eenoo and Delbeke, 2006).

The side effects associated with the use of anabolic steroids have been scientifically observed and documented: Anomalies in the function of the liver, benign and malignant liver tumors (liver cancer), hypercholesterolemia (excessive blood cholesterol levels), prostate adenocarcinoma (prostate cancer), hypertension spells, infarction of the myocardium, diabetes, sleep, apnoea syndrome, hypogonadotropic hypogonadism and testicular atrophy (decrease in the size of testicles), azoospermia (disappearance of sperm in the semen), reversible sterility, humoral immunity problems, acne, muscular rupture, hair loss. Premature suture of the epithelial cartilage in the prepubescent child which results in an arrest of growth in the young athletes. Non steroid anti-inflammatory drugs (NSAIDs). Severe undesirable side effects of NSAID drugs are rare. The common side effects include irritations and bleeding of the gastric mucous membranes, skin eruptions, ear, ringing, edemas, bronchial spasms (Fennessey *et al.*, 1988; Hampl and Stárka, 1979; Isacson *et al.*, 1998; Kintz *et al.*, 1999; Kintz, 2003; Van Eenoo and Delbeke, 2006).

Barbiturates and benzodiazepines: Barbiturates such as benzodiazepines and alcohol are usually not considered as ergogen drugs. However, there is scientific evidence

that barbiturates and benzodiazepines may have beneficial effects in some specific situations. Indeed, both substances are effective in reducing tremors, which is important in some easily identified sports activities (Betts, 2007; Bowers, 1998; Brooks *et al.*, 1979).

The side effects of these substances are significant: Sedation, reduced acuteness of vision, lowered vigilance (very important when driving a motorized vehicle), problems with walking and keeping balance, decrease in memorization capacity, euphoria, withdrawal insomnia, dependence, tolerance, respiratory distress, coma.

Beta-blockers: The undesirable effects of beta-blockers stem from their inhibitory properties. Asthma sufferers in particular should avoid products belonging to this category since they can cause, bronchial spasms. Certain beta-blockers, such as propranolol, may cause insomnia, nightmares and even a depression syndrome. Some male users also experience sexual difficulties, such as impotence and weakened erection. The use of beta-blockers should be strictly prohibited in case of asthma, cardiac insufficiency, digestive tract hemorrhages, occult bleeding, significant bradycardia, hypoglycemia, troubles with digestion, asthenia, cramps, cephalgia, vertigo, diplopia, hypothermia, cardiac insufficiency, cardiac rhythm problems, anaphylactic shock (Bowers, 1998; Raes *et al.*, 2007; Savulescu, 2004).

Caffeine: Caffeine resembles cocaine and amphetamines in that it essentially stimulates the central nervous system in a dose-dependent fashion. Caffeine is known to have many deleterious effects on the health consulting the table below, one should distinguish the chronic effects of caffeine from acute effects following absorption of this stimulant (which may constitute doping behavior), acute intoxication, severe, acute intoxication, less severe, chronic intoxication, peptic ulcer, nervousness, excitation, increase in cholesterolemia, delirium irritability, increased risk of ischemic, cardiopathy, headaches, tremors, exaggerated fear or anxiety, increased levels of cholesterol and higher risk of heart attack (Bowers, 1998; Raes *et al.*, 2007; Savulescu, 2004).

Cannabis (Marijuana, Hashish): Cannabis has been cultivated for centuries but cannabis-derived products have been available world-wide only starting second world war. The interest in this plant stems from its psychotropic properties. Most countries consider cannabis as an illegal drug (Van Eenoo and Delbeke, 2006).

Psychiatric effects and cardiovascular effects: Panic attacks, tachycardia, delirium orthostatic hypotension, psychosis Increase in carboxyhemoglobin, loss of motivation syndrome, broncho-pulmonary effects, immunological effects, rhinitis, decrease in cellular immunity, pharyngitis, decrease in monocyte maturity, bronchitis, bronchial spasms, endocrinological effects, squamous, bronchial metaplasia, pulmonary fibrosis, decrease in sperm production, pneumomediastinum, inhibition of ovulation in women, gynecomastia in men, negative effects affecting performance, increase in recuperation time after exercise, in the duration of muscle aches, bloodshot and light-sensitive eyes, a faster onset of fatigue during exercise, loss of motivation (Fennessey *et al.*, 1988; Hampl and Stárka, 1979; Isacson *et al.*, 1998; Kintz *et al.*, 1999; Kintz, 2003; Van Eenoo and Delbeke, 2006).

Cocaine: The principal side effects caused by cocaine are listed in the table.

Cardiovascular, complications, cerebrovascular complications, neuropsychiatric complications, ventricular arrhythmia, cerebral infarction, convulsions, sudden death, brain hemorrhage, angina pectoris, meningeal hemorrhage, cephalgia, infarction of the myocardium, transitory cerebral ischemia, visual scotoma, aortic dissection, blindness, myocarditis, optical neuritis, tachycardia gynecological complications, habit formation, premature detachment of placenta, insomnia, ear-nose-throat complications, spontaneous abortion, mental confusion, congenital malformations, aggressiveness, osteolytic sinusitis (Bowers, 1998, 1984; Raes *et al.*, 2007; Savulescu, 2004).

Frequency of use, during the past twelve months, of drugs consumed to improve performances in a general adult population in 2000 (in%):

- Vitamins 2.9
- Medications for the memory 0.7
- Nutrition complements 0.8
- Magnesium-zinc-phosphorous 0.7
- Phytotherapy and homeopathy 0.3
- Anti-asthma agents 0.3
- Anti pain 0.2
- Amphetamines 0.1
- Other 0.2 “This category contains narcotics (n = 6), doping substances (n = 10) and miscellaneous drugs (n = 6).”
- Unidentified substances 0.6
- Total 5.9

At the end of adolescence, 4.5% of young people questioned have already taken a drug to improve physical or sporting performances during their lifetimes. For corticosteroids, anabolic steroids and other hormones, the observed prevalence is very week (Bowers, 1998, 1984; Raes *et al.*, 2007; Savulescu, 2004).

Frequency of experimenting with a drug to improve physical or sporting performances in young people at the end of the adolescence in 2000 (in%):

- Stimulating agents (amphetamines, cocaine, a high dosage of caffeine) 1.5
- Corticosteroids 0.3
- Anabolic steroids 0.3
- Other hormones 0.2

Frequency of experimenting with drugs to improve physical, sports, or intellectual performances in young school students in 1999 (in%):

- Vitamins 2.6
- Medications for the memory 1.0
- Amphetamines and other excitant 0.8
- Proteins and energising beverages 0.7
- Narcotics and alcohol 0.3
- Magnesium-zinc-phosphorous 0.3
- Phytotherapy and homeopathy 0.3
- Peptide hormones 0.1
- Other 0.4
- Not specified 5.0
- Total 11.0

The reasons why sportsmen use doping: It is difficult to explain why sportsmen use doping. Yet, prizes, money, unearned income and many other reasons are the main reasons of doping and drug use. Sportsmen who use doping or drugs, their victories and defeats are remain our minds. Developments in scientific intimidates in last twenty years, Sportsmen who use doping or drugs gained money or success but they can not fit their body and spirit, they can not see their future clearly. All in all the chemical materials and doping which become a remark subject. Before earning the wide masses the artificial habit, professionals gain billions, importance of money, importance of different approaches to sports, a merciless struggle environment which is made become at the sport, prizes and earning big number of moneys and other factors increases the use of doping. Many people create their chance to get and to reach success and money. Unfortunately, all these attempts are not ethical (Gaillard *et al.*, 2000; Hampl and Stárka, 1979; Hatton,

2007; Hilderbrand, 2007; Holm, 2007; Hong, 2006; Isacson *et al.*, 1998; Kintz *et al.*, 1999; Kintz, 2003; McNamee, 2007; Oseid, 1984; Raes *et al.*, 2007; Savulescu, 2004; Segura *et al.*, 2000, 2007; Tamburini, 2006; Teetzel, 2006; Van Eenoo and Delbeke, 2006).

RESULTS

The consumption of psychoactive substances in the French population, for the purpose of improving performances, is described throughout the results of the revealing survey made on samples representing young or adult populations. In adults, the uses considered here are recent use (to have consumed a drug to improve performances during the last twelve months) and, in adolescents, experimentation.

In adults, 6% took at least 1 substance to improve their physical or intellectual performances during the past twelve months. Mainly, they are common prescribed drugs, like vitamins and not prohibited drugs indicated on the list, to be exact. In adult amateur sportsman, the consumption of doping substances does not seem to be totally marginal: between 3 and 10% according to studies. In young people, 11% of school students tried, at least once in their lives, a drug to improve physical or intellectual performances. Here, it is a matter of common prescribed drugs, rather than doping substances. These consumptions concern boys more than girls. They are related to sports practicing and depend on the nature of this sports activity; track and field sports and combat sports are particularly concerned.

Very few surveys were conducted directly relating to sportsmen, amateurs or professionals. The topic is considered highly delicate, because doping is against sports ethics. A recent synthesis of the existing epidemiological data on this topic yielded that the percentage of amateur adult sportsmen, announcing their consumption of doping substances for the purpose of improving their performances, varies between 3.1 and 9.5%, according to 2 French studies. One of which pertains to approximately 2000 amateur sportsman in Lorraine, questioned in 1996 (Middleton, 1999). This study equally shows that it is especially the competitors who use these drugs (10.8% amongst them), but those participating in leisure sports don't abstain, either (4.8%). Resorting to doping is related to the level of the sports competition: 17.5% of high-level athletes announce resorting to doping as opposed to 10.3% of sportsmen from lower levels.

These different categories of drugs, owing to the diverse profiles of consumption, can be grouped into 2

principal types: Common prescribed drugs or socially integrated (a group that includes vitamins, medications for the memory, proteins and energising beverages, magnesium/zinc/phosphorous, phytotherapy and homeopathy and concerns 4.5% of the students) and drugs classified on the list of prohibited doping substances and methods subjected to certain restrictions (a group that includes amphetamines and other excitant, narcotics and alcohol, peptide hormones, benzodiazepines, corticosteroids and betablockers and concerns 1.% of the students), the category 'Other', which is very heterogeneous, has been left aside.

Common prescribed or socially integrated drugs are connected with older individuals, but equally among girls and boys. The use of cannabis (experimenting or regular) and of alcohol seems without incidence, contrary to the regular use of tobacco that turns out to be negatively correlated. Practicing sports and particularly, joining a club, is a factor that determines the consumption of this type of drug. For drugs classified on the list of prohibited doping substances and methods subjected to certain restrictions, the profile of students having consumed such substances during their lifetimes is different than the preceding profile: this behaviour is rather masculine, but does not differ by age, nor by the school year results. It is well linked to practicing sports and to the use of all observed psychoactive substances, including the regular use of tobacco. An upcoming study concentrates on the link between taking drugs and a classification in 6 groups, created from the intensity of practicing of each group of discipline and between the global weekly duration.

Having recourse to this typology, globally confirms the link between the intensity of sports practicing and consumption of drugs to improve performances, except for intensive mass sports practicing, which leads to a lower consumption of common prescribed or socially integrated drugs. Overall, intensive practicing favours taking drugs of the doping type and particularly those for the track and field and combat sports (pupils of this class are masculine in majority), showing a tie to a specific body.

DISCUSSION

The French legislation concerning the fight against doping, distinguishes between sportsmen, users of doping substances and purveyors of these substances. The first encounter of sports sanctions comes following the disciplinary procedures conducted by the federations, the second is equally submissive to criminal sanctions. Acts for the fight against doping versus drug users, are

gauged by anti-doping tests and versus purveyors, are gauged by more classic penal indicators. As for all illicit substances, the data obtained gives insight into the trafficking of doping substances. But, the picture is still incomplete; there was no structured provisioning sequence in France, beforehand. As a matter of fact, the majority of the doping substances are medications that have been misused; they can be prescribed by physicians and sold in pharmacies. It seems that the majority of sportsmen acquire the substance from pharmacies, with the help of medical prescriptions (Gallien, 1998). A study conducted in 1997, on 186 amateur sportsmen who admitted doping, specify that 61% were supplied by physicians, 20% supplied by the black market, 15% from supporters and 4% by other means.

In 2000, the Minister of Youth and Sports reckoned 9.457 eliminations taking place during the 1.636 antidoping tests, on more than 60 different sports federations. The presence of doping substances was revealed in approximately 350 of these eliminations, i.e., in 3.7%. Noting that these tests were quite often conducted in the direction of sports disciplines, for which the probability of doping is strongest. Thus, in 2000, 22% of the eliminations concerned cycling, 11% athletics, 6% football, etc. Frequency of the detected substances at the time of the anti-doping tests in 2000 (in%): Cannabinoids 23, Salbutamol 22, Corticosteroids 20, Stimulating agents 19, Anabolic steroids 10.

The main substances detected are cannabinoids, salbutamol (substance which makes up Ventoline® in particular), corticosteroids and stimulating agents. The presence of anabolic steroids is more rare (but remains stable from one year to the next). Cannabis is found in nearly all tested disciplines and usually corresponds to the only prohibited substance discovered. In 1999, it was equally specified that sanctions were pronounced in 80% of the cases in which the analyses proved positive to prohibited tests, with the exception of the cases when the matter was during training. These sanctions range from one month to one firm year. The remaining 20% of sanctions has placed those using prohibited and authorised substances under certain conditions (medical prescription, threshold not to be surpassed, etc.), which are given instead of a calmativ, or for a medical prescription accepted by the disciplinary commission.

This percentage is still more significant in men than in women. It is usually slightly higher in foreign sportsmen, i.e., non-licensed by the French federation, than in French sportsmen. The efficiency of the anti-doping fight does not rely on multiplying the number of tests conducted, but on improving their goal (especially

a better follow-up on sportsmen during their training period) and in particular, on the detection, the sensitivity and the margin of the results of the collected specimen.

With the sports, the human recognizes herself and after accomplish whatever or will not accomplish and also make your abilities develop or recognize her limits. However in our day at the sport, success and competition are important then development and ethic. Unfortunately, sportsman use doping for break record. This is not acceptable for ethic. Nowadays, we can define "doping" as the use of a drug or blood product to improve athletic performance. It is not acceptable and adequate to fairness and fair-play. At this meaning, "Fair-Play" concept is audio which exists at your inner life and conscience. This audio has been formed with sense of responsibility at in human's inner life. This has been risen from the sanctions at the formal meaning, human is free to to decide to do something because human have an understanding of freedom based on person's free desire. With the sense of freedom, consideration exist inside to the human's honor, material and spiritual respect. At sport ethic gentlemanliness and justice is essential. However, doping is sometimes the consequence of summit sports injure the principles of ethic. Doping brings many problems and possibly many unconscionable sportsmen use doping. Again, when individuals use doping, they will more speedily become virtuous at the moral meaning and opposite his goals, this situation directs sportsman foolish behaviours and practices. Sportsman whoever uses doping break his family's, friends', sports club and the national federation of sports faith to him. The champion and ideal human types which are raised over at the cavy point which the experiments were done. Records which get offended from rival gets renewed and which does not become to the natural reasons because they become at the meaningless and worthless values. Awards and social status have been stolen from truth owners rival, with the roads usurpation to the true nature has been done values.

In our day, summit sports rules allow every road has come lawful for winning championship. For this reason, moral values becomes erosion, in addition to this, sportsmen have been transformed to the robots which have been programmed for success and a victory. A change in moral values causes a deformation over summit sport's competition ethic. Therefore, deviations came to the open space about the values and emotions like honour and bashfulness belong to human beings. Profession ethic becomes necessary for summit sportsmen. This situation between the main issues about sport's ethic.

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