

Editorial

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Holy smoke!

On 27 September WADA announced that nicotine has been added to the monitoring program. Holy smoke! It is emphasized, however, that "It is NOT WADA's intention to target smokers, rather to monitor the effects nicotine can have on performance when taken in oral tobacco products such as snus" (WADA 2011, emphasis in original). This means that snus will not be on the prohibited list, but the effect of the nicotine in snus on performance will be monitored. WADA "is mandated to establish a monitoring program regarding substances that are not on the List, but which the Agency wishes to monitor in order to detect potential patterns of misuse" (WADA 2011). With respect to snus, such monitoring is a surprising move, and one that raises some questions: "Why snus? How can a potential effect be monitored? Is it possible to create a test that can distinguish between smokers and snus users? (Ask athletes to open their mouths and examine their gums?).

Before attempting to address these questions it is probably helpful to provide some background on snus, for those unfamiliar with this particular part of Scandinavian culture. Snus is a moist powder tobacco product consumed by placing a little lump of the product under the lip for extended periods of time (minutes to hours). It is well known that nicotine can cause elevated blood pressure within minutes. And new users of snus often experience dizziness and/or suffer a slight indisposition (which I can confirm). But that in itself does not constitute performance enhancement. Although as connoisseurs of cycling history will know there have been instances where cigarettes have been prescribed for performance enhancing purposes. Gino Bartali's doctor, for example, suggested that he smoke three cigarettes a day in order to raise his slow heart beat (Brunel 1996).

Despite such anecdotes, and WADA's recent action regarding snus, there is little in the sports medicine literature that links nicotine to performance enhancement. David Mottram's standard work on *Drugs in Sport* (2011), generally a good factual source, says nothing about 'snus', nor American variants such as 'snuff', 'chewing tobacco' or 'dipping tobacco'. In fact there is no information relating to tobacco or nicotine. So the discovery of the drug's performance enhancing capacities must be quite recent.

Yet, in the Swedish daily *Aftonbladet* professor Bengt Eriksson from the Swedish doping commission is quoted for saying: "Snus affects the brain and can have performance enhancing effect." He did not say how, but stressed that "snus has greater effect than for instance caffeine" (Aftonbladet 2011). Caffeine's effects on endurance performance on the other hand "appear to be unquestionable" (Mottram 2011). Nevertheless, caffeine was removed from the Prohibited List in 2004. According to Mottram this was because it was deemed impossible to distinguish between the caffeine consumed as part of everyday activities and caffeine consumed for performance enhancement. Caffeine was a culturally accepted stimulant that was too integrated in ordinary life to be on the List. In line with this the Director of Anti Doping Denmark, Lone Hansen, suggests that WADA would probably reach the same conclusion about nicotine, if it should end up on the List (Schwarz-Nielsen 2011).

Others are not as convinced of the effect as Eriksson. Several Danish athletes, who have been introduced to snus by their Swedish colleagues, express surprise at the idea that it is supposed to have a performance enhancing effect. (Schwarz-Nielsen 2011). Also, the legendary icon of Swedish Team Handball, Staffan Olsson, who is now coaching the Swedish National Team, has been using snus for years but doesn't believe it has an effect: "It wouldn't be good" he says, "to get the snus portion in the throat when you get a tackle" (Aftonbladet 2011). Olsson's irony is understandable. Although snus is known in a number of countries around the world, its use is most common in Norway, Finland and especially in Sweden. Here it is considered a more healthy form of tobacco use, since it does not involve inhaling smoke and therefore is less likely to be a causative factor in the development of lung cancer or coronary heart disease than cigarettes. In fact snus is often used to quit smoking, which has led to a significant decrease in the prevalence of smoking among men. In fact, Sweden has the lowest male smoking rate in the European Union (Wikipedia 2011).

The usual snus portion is approximately 1 gram. In the year 2000 6,200 tons of snus was consumed in Sweden, equalling an average of 750 grams per capita – from infants to the very old (Wikipedia 2011). So, if snus ends up being on the list, WADA has got a huge potential for increasing the prevalence rate for positive doping cases by intensifying its testing of Swedish athletes and those who have been contaminated by their habit. In light of all the problems with detecting EPO, blood doping and Human Growth Hormone here is potential for a real success.

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The official reason for why WADA wants to monitor snus use is that the authority is acting upon a report produced by the accredited laboratory in Lausanne, Switzerland. This report, according to the Associated Press, "describes alarming evidence of nicotine use by athletes across 43 sports studied" (Dunbar 2011). The report also stated that the performance enhancing effects of nicotine include: "increased vigilance and cognitive function, and reduced stress and body weight." It also stated that nicotine "triggers a significant increase of pulse rate, blood pressure, blood sugar and epinephrine release owing to simultaneous stimulant and relaxant properties." On this basis the researchers behind the report suggested that "Smokeless tobacco is a very attractive drug from a doping perspective," since it does not damage the athlete's breathing and respiratory system. The report's findings are based on 2,185 urine samples from the Lausanne lab, which documented that although a lower percentage of the athlete population used nicotine (15%) than the general population (25%), "athletes in ice hockey, gymnastics, rugby and skiing rated as above-average users of nicotine". The report interpreted these data as bringing "a very significant support to the hypothesis of smokeless tobacco use as a performance enhancer." As is well known; a drug can be put on the List if it meets two out of three criteria – it is performance enhancing, it damages health, it is against the spirit of sport – and the report states that "nicotine meets all three" (all quotes and figures in this section are from the Associated Press article by Dunbar 2011).

Since the days of the medieval British philosopher Roger Bacon it has been well known that humans are biased towards the affirmative when investigating a hypothesis. I guess that if the Lausanne lab had been looking for sugar they would also have found that endurance athletes "rated as above-average users of sugar", and could have concluded that that was "a very significant support to the hypothesis of sugar use as a performance enhancer", and further that "sugar meets all three" of WADA's criteria to measure a drug against. But does this say anything about "patterns of misuse" or does it say something about a cultural pattern? The football player Anders Randrup of Brøndby – a team that plays in the best Danish league and has a few Swedish players on the roster – reveals that "half of the team uses it [snus]" (Schwarz-Nielsen 2011). If this is the case for a mediocre Danish football team (that for the moment definitely could use something to enhance its performances) the prevalence rate must be close to 100% on many Swedish ice hockey teams.

Even if the facts from the Lausanne report may answer why WADA is monitoring snus they do little to answer how the widespread use of nicotine as a popular stimulant can be regarded as "patterns of misuse", how it differs from caffeine, how one will distinguish between smokers and other users of tobacco, or how to test for the drug. What the facts do is once again emphasise the absurdity of the 'two out of three' criteria (which is highlighted by the fact that individuals who endanger their health by smoking cigarettes will "NOT" be targeted). If the fact that caffeine – despite its performance enhancing capacities – is a culturally accepted and widely used stimulant was

sufficient to lead to its removal from the WADA prohibited list, couldn't similar arguments be used in the case of nicotine products, as also Lone Hansen suggests? This leaves us with the question of the motive.

If the motive to put snus on the monitoring program is not to investigate the potential for a dramatically increased hit ratio of doped athletes, what is it then? Maybe the connection to caffeine has more relevance than first expected. *Swedish Match*, the leading manufacturer of Swedish snus, is currently test-marketing snus in Canada, Russia and several regions throughout the United States. But neither Swedish Match nor other snus-manufacturers are heavy sponsors of sport. Because it is hard to find other logical explanations, this might be a link to an understanding of WADA's initiative, despite the element of conspiracy theory. Think of the confusing signals that were sent in the days when caffeine was on the List and athletes around the world were drinking Coca Cola and even offered a can of Coke on the podium. It did not look too good to have winners promoting a product containing a substance that was banned in sport. What happened? Caffeine was removed from the List with the explanation that it was a culturally accepted stimulant. The result: Coca Cola could continue its sponsorships of elite sport without confusing signals. Since then the performance enhancing capacities of caffeine have only been further confirmed (and athletes are more convinced than ever before that it is a good idea to have caffeine tablets ready in the pocket for competitions). So, perhaps one should congratulate WADA (and the IOC, who is the single most influential stakeholder in WADA) for a cunningly thought out strategy to convince snus manufacturers to become big sponsors of sport.

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