

BU 01337 – ATHLETES WITH TYPE 1 DIABETES MELLITUS: IS THERE ANY WAY TO SIMPLIFY WADA RULES?



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BACKGROUND

Insulin effects go beyond glucose utilization for immediate and delayed energy supply in terms of ATP production and glycogen storage by inhibiting protein breakdown and promoting cell growth, which on the whole helps preserve lean body mass [1]. Its short circulating half life (a few minutes at most) drives some non-diabetic athletes to self-administer insulin as anabolic hormone and carbohydrates to “enflate” their muscles with massive glycogen stores. By doing so they feel like running virtually no risk to be caught by anti-doping lab analyses and often also rely on multiple drugs including growth hormone and anabolic steroids to maximize muscle hypertrophy. This way they are known to cause health hazard not only to themselves but also to the whole society [2].

WORLD ANTI-DOPING AGENCY (WADA) LIST OF PROHIBITED SUBSTANCES

Therefore, as health protection is a priority in all countries, the need to keep sports as free as possible from any kind of doping contamination has led the World Anti-Doping Agency (WADA) to include insulin in the list of prohibited substances among Hormone and Metabolic Modulators and dedicated labs have been raised to develop tests endowed with higher and higher specificity and sensitivity for exogenous insulin detection in body fluids.

However WADA recognizes the irreplaceable role of the hormone in athletes with T1DM and thus asks for a Therapeutic Use Exemptions Certificate initially including details of the onset, investigation and diagnosis of the condition, with specialist-supported documentation [3].

THERAPEUTIC USE EXEMPTIONS CERTIFICATE (TUEC): A TWO-FACED COIN

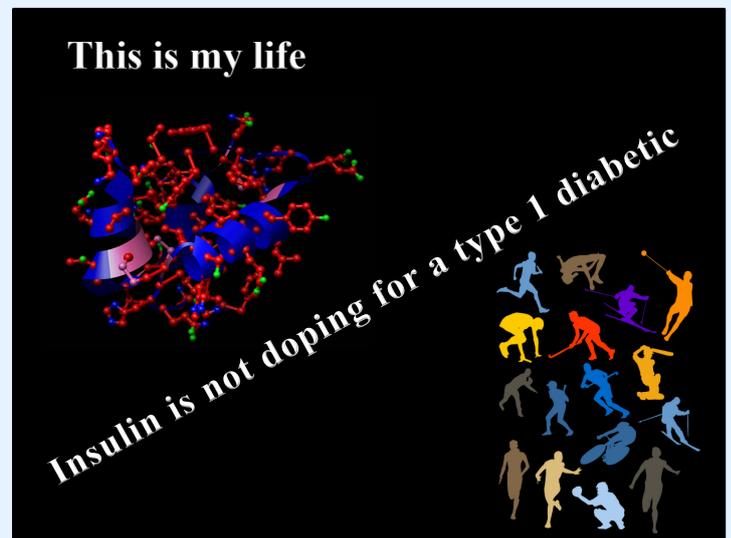
However, quite recently a transient intensive insulin treatment immediately after diagnosis proved to allow good control on oral medications for the rest of their lives in people with T2DM [4]. As a consequence of that, insulin TUECs are to (i) be reviewed after 12 months with documentation obtained from the GP and the specialist / specialist unit and (ii) be granted again for some time in athlete's life.

Nowadays all athletes on insulin willing to participate in any competition in Italy have to be certified as fit by a sport physician (SP) who should ask the specialist to attest regular self-monitoring, glucose control, treatment adherence and the absence of any serious

disease complications, according to the Italian law 115/1987[5] which grants voluntary patient associations the role of advocacy.

In fact insulin TUECs almost doubled (from 5% to 9%) in Italy between 2013 and 2016 and have been following an increasing trend ever since.

Athletes can appeal against any certificates hampering their lives, which unfortunately occurs quite often in case of SPs who, being unaware of most advanced technology (including insulin analogues, sensors, hybrid pumps and so on), ask athletes for unwarranted and costly examinations at yearly intervals or even cut short their careers.



HOW TO OVERCOME UNNECESSARY BUREAUCRATIC BARRIERS

The Authors hope IDF will support ANIAD by pressing WADA to issue new evidence-based rules in line with continuous developments in diabetes without giving up fighting against faster and faster changing doping solutions: insulin might be excluded straight away from the list of doping substances in people with T1DM (who might be certified only once at their first visit) or with T2DM in secondary failure (who might be certified yearly just for the first 2 to 3 years).

Such attitude would be very farsighted of both IDF and WADA in front of an increasingly active and empowered diabetic community whose members already feel quite uneasy about this situation and, as it seems to be about to happen in Italy, might even be ready to take social, political and legal actions at the highest national and international level against anything inconsistent with the Universal Declaration of Human Rights [6].

References

- 1) Dimitriadis G et al. Insulin effects in muscle and adipose tissue. *Diabetes Res Clin Pract.* 2011, 93 (Suppl 1): S52-59
- 2) Lentillon-Kaestner V, Carstairs C. Doping use among young elite cyclists: a qualitative psychosociological approach. *Scand J Med Sci Sports.* 2010, 20: 336-345.
- 3) WORLD ANTI-DOPING CODE 2015 with 2019 amendments. https://www.wada-ama.org/sites/default/files/resources/files/wada_anti-doping_code_2019_english_final_revised_v1_linked.pdf. (accessed October 31, 2019).
- 4) Chon S et al. Long-term effects on glycaemic control and β -cell preservation of early intensive treatment in patients with newly diagnosed type 2 diabetes: A multicentre randomized trial. *Diabetes Obes Metab.* 2018, 20: 1121-1130.
- 5) Gazzetta Ufficiale delle leggi italiane n. 71 del 26/03/1987
- 6) <https://www.un.org/en/universal-declaration-human-rights/> (accessed October 31, 2019).