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Should a pilot on insulin really fly?

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Summary Full Text References

In their Comment, Simons and colleagues¹ proposed that European aeromedical regulations for insulin-requiring diabetic pilots should be changed. They use the example of the few insulin-treated pilots flying in Canada to show low risk in aviation. The changes proposed by the authors are not medically justified, not ethically and practically admissible, and could jeopardise flight safety.

Investigators have established the incidence of mild hypoglycaemia and severe hypoglycaemia in real life in insulin-treated people with diabetes.² Hypoglycaemia leads to cognitive impairment, behavioural changes, and psychomotor abnormalities.³ Studies of people with diabetes driving cars can be used to show that a blood glucose lower than 3.1 mmol/L (hypoglycaemia) is dangerous for flight safety;¹ however, the decrease in performance begins before signs of neuroglycopenia, might not be detected by the individual with diabetes, and can last a long time after the end of symptoms.⁴

The modified UK civil aviation protocol requires a HbA_{1c} of 6.5–8.0% for pilots,¹ which is, in our view, not acceptable. Epidemiological data show that a high HbA_{1c} is not associated with a low risk of hypoglycaemia in people with type 2 diabetes.⁵ In addition, for ethical reasons, health must be given top priority and professional pilots should have HbA_{1c} lower than 7%, as recommended to reduce their risk of long-term complications. Of note, the [original UK protocol](#) includes a warning to make pilots fully aware of this risk.

The protocol allows only one severe hypoglycaemia episode in the previous 5 years (with no restriction on frequent mild hypoglycaemias);¹ however, because of this long grounding period, we question which motivated pilot would declare such episodes?

The protocol also states that to maintain blood glucose of 5–15 mmol/L during flights, eligible pilots must regularly control their glycaemia in the cockpit, monitoring glucose intake and enacting a rapid landing as necessary.¹ In case of flight-operational priority, they should ingest carbohydrates to

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avoid a possible hypoglycaemia.¹ Copilots must check glucometer values, which causes issues with medical confidentiality and responsibility in case of a crash. If passengers were questioned and protocols really applied, then would they agree to this arrangement and accept that their flight could be delayed, cancelled, or rerouted because of the high or low blood sugar of their pilot?

In this proposed protocol, experts of aviation medicine will check all glycaemia values during and between flights to look for out-of-limits concentration values.¹ And yet, we know that the constraints and lifestyle of airline pilots favour hypoglycaemic episodes. As a key principle of aviation medicine, the duties of a pilot should not worsen a pilot's condition.

Finally, in our view, experts of aviation medicine should agree that some medical situations cannot justify a determination to declare a pilot fit to fly. One argument to accept pilots taking insulin in cockpits could be that accidents fortunately do not result from a sudden incapacitation of only the pilot, but from combinations with other circumstances (no copilot on board, tricky stages of flight, etc). But if we accept this notion, in the future, will pilots with any disorder with the potential to jeopardise flight safety be able to fly because there is a specific protocol to manage in-flight complications?

We declare that we have no competing interests.

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