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**Value of basal serum cortisol to detect corticosteroid-induced adrenal insufficiency in elite cyclists.**

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The frequent use of glucocorticoids by athletes necessitates testing for adrenal insufficiency because of the risk of death in cases of associated severe stress (trauma, infection). During the 2001 and 2002 sporting seasons, we assessed the value of measuring baseline serum cortisol concentrations and the frequency of corticosteroid use during compulsory medical tests carried out by the French Cycling Federation on 659 elite cyclists (585 men and 74 women); the risk of adrenal insufficiency is negatively correlated with the basal serum cortisol level. Adrenal insufficiency was suspected in 34 cyclists (5.2%; 22 in 2001 and 12 in 2002) on the basis of below normal cortisol concentrations and in three cyclists (in 2001) because they had received corticosteroid treatment. In 2001, 10 of the 25 cyclists convoked underwent baseline follow-up serum cortisol determinations and 15 underwent dynamic exploration of adrenal function with the short ACTH test. Adrenal function was found to be deficient in four of these cyclists, at the limits of the normal range in four and normal in seven. Based on these results, the FFC sent a questionnaire in 2002 to all the cyclists to assess the use of corticosteroid in this population. This survey revealed that 85 of 538 cyclists (15.8%) had received corticosteroid treatment in the previous 3 months. Moreover, 11 of the 12 cyclists (92%) with low basal serum cortisol concentrations had received corticosteroid therapy. These results show that basal serum cortisol is relevant to detect adrenal insufficiency in sportsmen, in particular in cases of values below the normal range. The high frequency of corticosteroid use among elite cyclists, and in particular road cyclists who are at risk of trauma and infection, justifies screening tests to detect adrenal insufficiency.