COMPARISON OF PERCEPTUALLY-BASED VALUES DURING AN INCREMENTAL TEST AND A TEST WITH RANDOMISED POWERS OUTPUT
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INTRODUCTION
A study has suggested already that the powers output during a continuous incremental test (CIT) tended to be perceived harder that the isolated powers output during a discontinuous test with randomised powers output (DT) (Skinner et al., 1973). This non-significant trend may be linked with the fatigue induced by the first stages of CIT (Skinner et al., 1973). However, no study has simultaneously investigated the influence of this fatigue on Ratings of Perceived Exertion (RPE) and Estimated Time Limit (ETL). Consequently, the purpose of this study was to examine the influence of the fatigue generated by the first stages of incremental test on RPE and ETL in cycling.

SUBJECTS
27 male competitive cyclists (Age = 22.7, SD = 5.1yrs; Mass = 69.1, SD = 5.8kg; Height = 177, SD = 6cm; Body fat = 12.0, SD = 1.8%) were recruited.

MATERIALS
Perceived effort was expressed with the RPE (Borg, 1970) and ETL (Garcin et al., 1999) scales. Respiratory gas exchanges and heart rate (HR) were recorded throughout each test (Ergocard, Medisoft®, Sorinnes, Belgium).

METHODS
All subjects performed in counterbalanced order a CIT and DT on cycle ergometer in order to compare the perceptually-based values (RPE and ETL values) at four different powers output (150, 200, 250 and 300W). During the CIT, the initial power output was set at 150W for 4 min then increased by 50W every 4 min, until 300W. The DT consisted of alternating 4-min pedalling periods with 8-min passive recovery periods. During the pedalling periods, the powers output were 150, 200, 250 and 300W but the order of these one were counterbalanced. At each power output, RPE, ETL, different respiratory gas and HR values were collected.

STATISTICAL ANALYSIS
The different measured variables were compared by a recent appropriated method: the mixed linear model.

RESULTS
The results showed no significant difference between the tests for RPE and ETL. However, ventilatory, respiratory rate and HR were significantly higher during the last powers output (i.e., 250 and 300W) of CIT (p<.05).

DISCUSSION
The present study showed that the output powers during the CIT have generated a higher cardio-respiratory work than the DT, which has probably produced a higher fatigue. However, the cyclists have succeeded to do abstraction of this fatigue and so to determine precisely the perceptually-based values (RPE and ETL).

REFERENCES

Keywords: Perception, Cycling, Exercise