WORKLOAD AND RACE STRATEGY: A COMPARISON BETWEEN THREE DIFFERENT COMPETITIONS LASTING THREE TO SEVEN DAYS.

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Introduction
Finnmarksløpet (FL) is Europe's longest sled dog races, with a 1000km and 500km category. The race lasts up to 7-days; the 'mushers' are physically active most of the time, with little and fragmented rests. The same is the situation in the 700km biking event OffroadFinnmark (OF), taking about 5-days. The intensity and distribution of activity and rests (race strategy) determine the success in the race. Physical training that aims to improve the special abilities required, increase the chance of winning and reduce the risks of accidents, injuries, and avoid overloading the dogs. The aim of this study was to describe the athletes’ workload in these competitions (FL500km, FL 1000km, and OF 700km), and the strategy that they used in the race.

Methods
Heart rate (HR) was continuously recorded using HR-monitor in 5 participants at the FL500km, 5 at the FL1000km, and 6 at the OF700km. Maximal oxygen consumption and peak HR were measured about a week before the competitions started. The HR data were processed using Microsoft Excel. The official race reports have been used for separating the ‘active parts’ (AP= while the athletes were active on the trail and working with the equipment) from the ‘resting parts’ (while the athletes were resting in the check-points). The data have been studied macroscopically at first, observing the distribution of the effort across the different tracks of the race. Student’s t-test has been used to compare parameters describing the workload in the different competitions

Results
The bikers (OF) spent shorter time in the check-points (22% of the total race time) compared with the mushers (FL) (ab. 40%). The OF had long rests (>3-hours) in 31% of the check-points, while the FL500km and FL1000km had long rests in 67% and 75% of the check-points. Nevertheless in all the races the participants had the chance to sleep for about 3/4-h per day. The overall HR (mean+SD) in AP, was significantly higher for the OF and the FL500km (62.42±10.34 and 60.36±5.47 respectively) than the FL1000km (50.78±2.67). The FL500km had a higher range of HR in AP (8.61±0.66) compared with the OF (5.92±1.22), no significant difference was found compared to the FL1000km (9.08±3.80). In all the races, the HR decreased across the competition, the closer to the arrival the lower the HR values.

Discussion
These competitions present big differences in terms of race-strategy and type of workload. It is not clear if the reduction of the HR values across the competitions is caused by physiological adaptation, physical exhaustion or reduction of motivation because the placing is obvious because of the distance to the closest competitor. This study provides information about HR in response to strenuous tasks as well as helpful indications in order to plan training and race strategy.

TOPIC: TRAINING AND TESTING
PRESENTATION FORM: ORAL
SESSION ART: THEMATIC

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