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Heart rate and blood lactate concentration of male road-race motorcyclists

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**Résumé / Abstract**

Although motorcycling performance strongly depends on the characteristics of the motorcycles and capabilities of the riders, little information is available on the physiological profiles of riders. The aim of this study was to evaluate the physical load of official international men's road-race motorcycling competitions. Data were obtained from 34 male riders during the 2005 European Road-Race Motorcycling Championship (categories classified by size of engine: 125 GP, 250 GP, and 600 cc) during free practices, qualifying sessions, and official races. Participants' heart rates were recorded and blood lactate concentrations determined. During races, heart rates were most often above 90% of maximum heart rate (frequency of occurrence: 125 GP=92.9%, s= 5.3; 250 GP=93.6%, s= 7.3; 600 cc=93.2%, s=10.2). The heart rate distribution during riding showed main effects between phases of competition, engine sizes, and different portions of the race ( $P < 0.001$ ). No difference was observed between riders on and not on the podium at the end of the race. Peak blood lactate concentrations after the qualifying sessions ( $5.2 \text{ mmol } \cdot \text{l}^{-1}$ , s=1.2) and official races ( $6.0 \text{ mmol } \cdot \text{l}^{-1}$ , s = 2.1) were higher ( $P < 0.001$ ) than at baseline. The present results show that road-race motorcycling imposes a high load on the riders, who should possess adequate fitness to maintain high-speed rides and minimize the effects of fatigue during competition.