tions (3, 4) was maximal around the exhaustion point (.17 points for the difference between conditions 4 and 5, and .27 points for the difference between conditions 1 and 2, F(7, 91)=4.03, p< 01, for the corresponding interaction). Performance in the mental workload task was always above chance. Conclusions: i) concomitant mental workload did not accelerate exhaustion, yet slowed subjective recovery down; ii) the presence of physical workload affected performance in a concomitant cognitive, mentally loading task, without causing complete disengagement from it. *This research has been carried out in collaboration with the Centro Andaluz de Medicina Deportiva (Consejería de Turismo, Comercio y Deporte, Junta de Andalucía) and funded by a Iniciación a la investigación grant from the University of Granada, for the first author, and by MICINN grant (PSI2009-13133) for the third one.

IMPACT OF STRENUOUS EXERCISE ON THE RELEASE OF CARDIAC BIOMARKERS

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Background: Cardiac troponins (cTn) are considered as the best biomarkers for detection of myocardial cell injury and NT-proBNP as the best for the cardiac insufficiency. In this study, cTnT was measured by new commercially available high-sensitive methods in subjects undergoing the Maasmarathon. Our aim was to compare cTnT and NT-proBNP levels in sportive subjects before and after a strenuous exercise. Materials and Methods: Twenty eight subjects (26 ♂, 42.5±11yo) underwent a race of 42.195 kilometers between Visé (Belgium) and Maastricht (The Netherlands). We drowned blood samples before (T0), just after (T1) and three hours after the race (T3). For all patients, cTnT concentrations were measured by high sensitive methods (hsTnT, Roche Diagnostics) on heparin plasma. The NT-proBNP was also determined with the kit Roche on heparin plasma. The protocol was approved by the ethics committee of the University of Liège (Belgium). All subjects gave their informed consent. All statistical analyses were performed using Medcalc version 8.1 for Windows. p-value <0.01 was regarded as statistically significant. Results and discussion: A significant difference between hsTnT concentrations at T0 and T1 (p<0.0001) was measured as well as between T0 and T3 (p<0.001) for NT-proBNP, but not between T1 and T3. This observation appeared only after a strenuous exercise but today this type of exercise is not reproduce easier in a laboratory of sport. Moreover, at this moment, nobody knows if these observations would have cardiac consequences at long terms. Conclusions: Measurement of cardiac troponins by high sensitive methods allows detecting significant release of biomarkers from the heart during exercise. The levels of NT-proBNP were found significantly increased but in less extent than TnThs. We think that the TnThs could be an interesting marker in the future to help sport medicine to detect risk of developing a cardiac problem.

17:00 - 18:30

Plenary sessions

PS-PL01 Cycling Economy: From Performance to Business

PROFESSIONAL ROAD CYCLING: A BUSINESS NETWORK PERSPECTIVE

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Professional road cycling: a business network perspective Although cycling is (1) a very popular sport in core European countries, (2) is developing in other countries and (3) was one of the first commercial sports to be practised professionally, the business of professional road cycling has been insufficiently researched (Brewer, 2002, Rebeggiani & Tondani, 2008, Benijts, et al, 2011). The product 'professional road cycling' is an individual sport practiced in teams, rather capital intensive, outdoor sport organized on public ground. Professional cycling is built around the world calendar of the Union Cycliste International, that consists of a non-homogeneous set of one-day and stage races. An additional peculiarity, especially of relevance in media coverage and television broadcasts, is that teams are labelled through the name(s) of the title sponsor. Teams depend, within their business-to-business environment, strongly on sport sponsorship deals as revenues from television rights, prize money and gate revenues are limited (Lagae, 2005). In addition, road cycling is vulnerable to doping, which has become a more prominent issue for corporate sponsors, who are entitled to cancel their barter trade or sport sponsoring agreements if evidence (and sometimes only indication of speculative nature) is found of either a team's or a rider's involvement in doping. Cycling is also characterized by a large and heterogeneous set of stakeholders with various interdependencies. The influence of stakeholders on the governance of cycling, ownership and distribution of television and marketing rights and anti-doping policy are hot topics (Morrow & Idle, 2008; Benijts, T. & Lagae, W. (2012). References Benijts, T. and Lagae, W. (2012), Using program theory to evaluate sport league reforms: the case of professional road cycling, European Sport Management Quarterley, Vol. 12 No. 1, (accepted). Benijts, T., Lagae, W. and Vanclooster, B. (2011), "The influence of sport leagues on the business-to-business marketing of teams: the case of professional road cycling", Journal of Business and Industrial Marketing, Vol. 26 No. 8, pp. 602-613. Brewer, B.D. (2002), "Commercialization in professional cycling 1950-2001: institutional transformations and the rationalization of doping", Sociology of Sport Journal, Vol. 19 No. 3, pp. 276-301. Lagae, W. (2005), Sports Sponsorship and Marketing Communications. A European Perspective, Harlow, Prentice Hall/Financial Times. Morrow, S. and Idle, C. (2008), "Understanding change in professional road cycling", European Sport Management Quarterly, Vol. 8 No. 4, pp. 315-335. Rebeggiani, L. and Tondani, D. (2008), "Organizational forms in professional cycling – an examination of the efficiency of the UCI ProTour", International Journal of Sport Finance, Vol. 3 No. 1, pp. 19-41.

WINNING THE TOUR DE FRANCE: A SPORT SCIENCE PERSPECTIVE

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Introduction The Tour de France is the most popular bike race in the world attracting ~15million spectators annually. In 2011 cyclists raced 3,430 km (1100-1200k per week) in 3wks. Of the 198 professional cyclist that began the race only 167 finished. For the first time, the winner of the 2011 Tour was an Australia (CE). From a sport science perspective the story of how a competitive teenage mountain biker became a Tour de France Champion is interesting because CE was involved with sport science teams throughout his development; first at the Aus-