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KEYNOTE LECTURES AND ORAL PRESENTATIONS

SESSIONE DI APERTURA: ESERCIZIO, PREVENZIONE E TERAPIA 1 – COVID

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Impact of the covid-19 lockdown on changes in physical activity levels, eating habits and psychological well-being of the florentine academic population: role of socio-demographic factors

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Purpose: The confinement and lockdown imposed by the COVID-19 pandemic have produced restrictions in the lifestyle of Italian citizens with variations in their psychological well-being. The aim of the study was to identify changes and relationship with socio-demographic parameters.

Methods: An online survey was administered to 1383 subjects (1007 females and 307 males) working in the University of Florence, Italy. Three validated questionnaires were used for the survey: the Global Physical Activity Questionnaire, the Med Diet Score and the Psychological General Well-Being Index-A. All the subjects were asked to complete the questionnaires twice, in order to attain a picture of the habits before and a later time point during confinement.

Results: Our results show that work-related physical activity was decreased, along with an increase in sedentary behaviour (from 07:22 ± 03:20 to 08:49 ± 03:41 h:min; $p < 0.001$, ES = 0.38), whereas recreational physical activity was increased (vigorous exercise varied from 568.5 ± 838.6 to 833.7 ± 1263.0 METs; $p < 0.002$, ES = 0.25). Eating habits changed according to the place where meals were eaten, with an increased habit for breakfast and snacks and a slight increase in alcohol consumption. Psychological well-being decreased (Index from 21.4 ± 3.9 to 18.0 ± 5.3; $p < 0.001$, ES = 0.723), especially in

terms of vitality and positive thinking. The socio-demographic variables affecting these variations were mostly represented by age, gender and working conditions.

Conclusions: Young age and self-employment conditions can be considered factors for the changes in daily habits induced by confinement that may affect psychological well-being.

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An in-home low-intensity structured exercise program improved mobility and strength after intensive care hospitalization for COVID-19

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Purpose: Prolonged hospital stay due to Covid-19 infection resulted in patients' deconditioning. In this prospective pragmatic trial in Covid-19 patients after discharge from intensive care unit, we studied the effects on exercise capacity of a structured in-home exercise program compared to a traditional walking prescription.

Methods: Between January and May 2021 we enrolled Covid-19 patients with the following criteria: aged > 18 years old, both sexes, capacity to walk for at least 20 m; absence of clinical conditions contraindicating exercise. Patients, 3-month after the first positive swab (T0), were evaluated with 6-min walking test (6MWT), 30-s sit-

from 20 to 90% 1RM at each 10% interval was obtained and, subsequently, the mean power output was calculated using the individual power-load polynomial equation at the new standardized absolute load. A two-way repeated measures ANOVA was used to explore differences among the different exercises and relative load from 20 to 90% 1RM.

Results: PBP displayed a higher average power output (P_{avg}) from 40 to 90% 1RM compared to BP and BBP ($p < 0.0001$), while no statistical difference was found between the latter at any load percentage ($p > 0.05$). In addition, the % 1RM that maximized P_{avg} was, respectively, 60% 1RM for PBP, 50% 1RM for BBP and 40% for BP. Post hoc analysis showed that the relative load at the maximum P_{avg} was not statistically different ($p > 0.05$) from 40 to 80% 1RM in the PBP, from 40 to 60% 1RM in the BBP, and from 20 to 60% in the BP.

Conclusions: The main finding of our study is that in professional canoeists and kayakers the power-load relationship differs between PBP, BP and BBP exercises, with the highest average power output monitored in the PBP in comparison with both, BP and BBP. Our study agrees with the one carried out by Sánchez-Medina et al., using a strength-trained population.

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Relationship between muscle soreness and training load in a beach handball goalkeeper: a case study

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Purpose: To assess the relationship between the subjective perception of muscle soreness and external and internal load in a youth male beach handball goalkeeper.

Methods: A youth male goalkeeper (age: 16 y; height: 181 cm; weight: 76 kg) of the U17 Lithuanian National Beach Handball team was monitored during 14 training sessions. Muscle soreness was obtained by administering the Wellbeing scale 1 and taking into account only the item relative to the muscle soreness. External load was monitored by means of inertial movement units. Internal load was objectively assessed using the summated heart rate zones 2 whereas the subjective internal training load was assessed using the session rating of perceived exertion³. The Pearson correlation coefficient (r) was calculated to assess the relationship between muscle soreness and external and internal load, respectively.

Results: A large negative ($r = -0.51$) relationship was found between the subjective internal load and muscle soreness, whereas a moderate negative ($r = -0.39$) relationship was found between the objective internal load and muscle soreness. For the relationship between the external load and muscle soreness a trivial negative ($r = -0.04$) correlation coefficient was found.

Conclusions: The present results show that muscle soreness is most strongly related with the subjective internal load. This relationship might be related to the peculiarity of the role of the goalkeeper, characterized by fewer movements than field players⁴. Therefore, in the case of beach handball goalkeepers, subjective internal load monitoring may be more useful than the external workload, with the aim to monitoring players' response to training stimuli and being able to understand excessive player fatigue and be able to act to prevent injuries or overtraining.

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Serve quality analysis in tennis men at roland garros from 2003 to 2019

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Purpose: In last decades serve has become one of the most important shots of elite tennis and use of new materials and training Methods contributed to make it faster and powerful. Nowadays, the role of tennis serve becomes fundamental during match because it allowed to gain points with no or very short rallies. Therefore, the primary aim of this study was to investigate the tennis serve related parameters during the Roland Garros tournament and to compare them with the Wimbledon tournament.

Methods: The data collected refer to 17 years; in these 17 years $n = 2159$ were played, of which $n = 1632$ in the first week and $n = 527$ in the second week. For each year and each group we evaluated two macro-categories of topics. The first refers in particular to the success of the serve, while the second to the performance of the same fundamental.

Results: Over the years we graphically witness a common trend of the various parameters analyzed, which consists of a rapid increase in the first years, followed by a stabilization of the same. As regards the comparison between the two weeks, highly significant ($p < 0.01$) and on average significant ($p < 0.05$) changes in parameters can be noted.

Conclusions: The Results confirmed that serve is the most incisive shot of modern tennis on all surfaces, both at Roland Garros and both at Wimbledon.

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