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Methods. A new exercise machine that allows the execution of chest press and row on an upright position—upright press and upright row—has been designed. In order to verify if these methods are applicable to elite athletes, increasing load tests (strength-speed curve) have been made on female athletes of Italian Juodian and Rugby National Team. This study has been made on 14 judo athletes, 6 of them training for Beijing Olympic Games 2008 and 12 of the National Rugby Team; aged 25.7±3.8 for judo, 25.8±1.6 for rugby, weight 62.8±9.7 for judo, 66.1±9.7 for rugby, height 168.5±7.1 for judo, 165.5±6.7 for rugby. The aim of this research was to verify the reliability of the test and how it is suitable for elite athletes.

Results. The results prove that either the standing pull or push have a good intra-tester reliability with positive statistical values: 1.4% for the pull and 0.97% for the push. Moreover, for the upright press and upright row the data show a good inter-day repeatability; with values between -0.1 ± 11.4% among different days for upright row and between -9.7 ± 47.7% for upright press. We can attest that the measure system used has a good reliability and so it can be applied for the functional evaluation of elite athletes. It is not possible to extend this good reliability to non-professional or younger athletes and further studies should be done for this purpose. Moreover, during the tests no athletes showed joint injury or pain.

Conclusions. In sports where you stand and with important contact phases with the opponent it is relevant to propose specific training exercises. In order to achieve a satisfactory reliability and for a good compliance as the athletes refer we can suppose to use the measure system suggested for the training planning and control.

The effect on joint mobility after one-week training with karate-preparatory exercises vs sport games in children

The aim of the present study was to analyze if the use of specific training vs sport games training has comparable impact on technical gestures and joint mobility in children who practice karate. Hundred-sixty-eight children were randomized in two groups: Karate Game (KG) (n=84) and Sports Game (SG) (n=84). All children have done two workouts a day (one hours in morning and one hour in afternoon) for a week. Before and after the training period, they underwent a battery test: throwing of the medicine ball, standing long jump, joint mobility and lateral and frontal jumps. KG group was trained in specific way, considering coordination, balance and joint mobility exercises aspects. KG group was trained playing mini-football and volleyball. After one week of training all subjects were analyzed, showing that the KG group only was improved (throwing of the medicine ball (+4%, p<0.05), standing long jump (+5.179%, p=0.001), joint mobility (+1.5%, p<0.001) and lateral/frontal jumps (+22.89%, p<0.001), while in the SG group there was significant improvement only in lateral jumps (+1.5%, p<0.05). From this study we demonstrated that exercise induces physiological changes but the choice of exercises is important for the optimization of training and the technical development of children oriented towards a specific sport activity.

Comparison of the effects of massage with mineral oil or ozonated oil bioperoxoidis® on blood lactate, stress perceived and heart rate in cyclists

Muscular fatigue is a factor that influence heavily performance of athletes. There is a lack of data about effect of massage with substances "ad hoc". The aim of our research was to investigate the effect of application of ozonated oil on some parameters linked to fatigue in cyclists.

30 cyclists male were divided in two groups of 15 (PLO = placebo oil; OZO = ozonated Oil). Subjects were submitted in two different session to work protocol that consist in a rectangular test on cyclometer followed by 30' of rest. After the rest, athletes performed an incremental test. HR (heart rate), Wmax (maximal power), RPE (rate of Perceived Exertion) and Lab(lactic lactate) was measured at the end and after 5' and 10' after the test. In the first session (PS) subjects remaining at completely rest after rectangular test (Off rest), in the second session athletes executed a self massage (MS) on lower limbs with OZO or PLO during rest.

Results shows that 10' after test massage “di per se” may reduce the Lab by 10° but there was a greater reduction at PLO MS (6.5±PLO PS 10.5±OZO PS 10) significant decrease with ozonated oil (OZO PS 10° Lab 7.6±6.1°). There was no significant difference on HR and Wmax whilst there wasn’t 2.0±4.5 significant difference on RPE within the groups (PLO PS vs PLO MS 17.6±6.8°) and between massage with 0.2±15.7±0.8° (OZO PS vs OZO MS 15.2±15.6°). In conclusion our study 15±17° OZO or PLO PS vs OZO MS 16.6 demonstrate that massage “di per se” may reduce blood lactate and RPE after intense exercise but also that massage with ozonated oil may increase benefits of massage.

The meto-hydrological analysis and the sport performance: which are the connections? The case of the XXI Winter Olympic Games, Vancouver 2010

The main goal of this research is to show how the climatological and meteorological analysis, relatively to a determine geographical zone and with reference to a specific period of interest, are able...
be used in sport area for the amelioration of the athlete's performance. For this reason it was decided to contextualize the research to the competition field of the XXI Winter Olympic Games held in Canada (Vancouver-British Columbia) in February 2010. The central part of the work consists in the examination of historical series of temperature, precipitation, relative humidity and wind; moreover, the whole data analysis has been completed with the study of meteorological phenomena on different scales, verifying the existence of recurrent meteorological pattern.

The results of this study have shown how Nino conditions, that have characterized February 2010, were predictable since October 2009; so far in advance, we would be able to assess higher temperatures in comparison with the average ones and, with similar altitude, a greater quantity of rainy precipitations.

The research is integrated with the evaluation of the biometeorological aspects and with the study of the influence of atmospheric variables on the physical activity. Using the climate index NINO, we have demonstrated how the combined action of wind and humidity contribute in decreasing the perceived temperature even of 6°C.

In conclusion, applying the "S.F.E.R.A." model and the natural evolution of the "Nino S.F.E.R.A.", it’s been possible to develop a "performance analysis" on some athletes participating to different competitions in alpine skiing during Vancouver’s Olympic Games. This analysis has underlined how the uncertainty level resulting from the meteorological aspects is among the most substantial one, thus confirming that the athlete’s performance are strongly influenced by environmental conditions.

Movement variability and stability in aerobic gymnastics at different skill levels

M. Romazzini1,2, D. Galante3, L. Fasini3, A. Apolloni4, S. Schironi5, C. Sforza6

1Dipartimento di Morfologia Umana e Scienze Biomediche, "CNR" S. Giorgio, Università di Trieste
2Scuola Universitaria Interfaccia in Scienze Motorie, Università degli Studi di Trieste, Italy

Aerobic gymnastics is the ability to perform continuous complex and high intensity movement patterns to music, which originate from traditional aerobic exercises; the routine must demonstrate continuous movement, flexibility, strength, and perfectly executed all the movements including the difficulty elements. The definition of the performance model of a discipline that has been emerging recently but that, up to now, has not been examined deeply by the scientific world, is a fundamental step.

For our purpose, sixteen intercollegiate aerobics athletes, aged between 8 and 18 years, have been examined. The aim of the study was to valuing the strength performances of this group and to compare them to the performances of similar sports. In order to examine this comparison, we employed a set of tests calculating the different features of exploitative muscular strength for the upper and lower limbs. The tests were: Squat, (SJ), Counter Movement Jump (CMJ), Counter Movement Jump with Free Arms (CMJfA), Stiffness Test, Multiple Jumps 15 cm, and Bench Press. The average height in SJ test was 23 ± 1.6 cm, in CMJ 23 ± 1.7 cm, in CMJfA 30 ± 1.4 cm, in Stiffness Test 143 ± 105 Nm, in Multiple Jumps 15 cm 22 ± 2.9 cm, whereas for the upper limbs the mean value was 170 ± 45.52 W in Bench Press test.

The results of the lower limb explosive force and reactivity are a little higher than the results obtained by gymnastics athletes of the same age and the same qualifying level; nevertheless, these data are lower in comparison with the data from other sports activities.

Although literature does not show any comparison for the Bench Press test with the same age athletes, the parameters cannot be considered very high. From that, we can easily understand that the explosive force in general is not sufficiently developed for reaching higher technical objectives. Even though the results are not satisfactory, the level is in line with national athletes.

Development of a sport-specific test battery to assess climbing performance

A. Rosemberg1, E.M. Malpighi2, M. Fanchini3, P. Schena3

1Research Centre for Sport, Mountain and Health, Faculty of Exercise and Sport Science, University of Verona, Verona (TN), Italy
2Neuromuscular Research Laboratory, Schulthess Clinic, Zurich, Switzerland

References