the vegetative nervous system.
METHODS The study was made on a number of 11 football players with ages within 16-18 years old, registered with the International Curtea de Arges sports club. We have noticed the influence of the subalpine climate over the football players' health status as they were on their recovery training in Nucsoara Camp on August, 2008. For evaluation, we performed measurements for cardiac frequency and blood pressure daily, in the morning and we used the parameters that they had noted on the self-control journal. For a better emphasis of the variations concerning the physiological indicators we performed the Schellong test and we used the Dorgo index of recovery.
RESULTS The final testing shows an improvement of the results for the Dorgo index (in the initial testing the average of the indexes was of -3, reaching in the final testing an average of -20; $p<0.001$) and also for the Schellong testing (in the initial testing the differential blood pressure in clinostatism was of 55 mmHg, and in orthostatism of 65 mmHg; in the final testing the differential blood pressure in clinostatism was of 45 mmHg, and in orthostatism of 52 mmHg; $p<0.001$).
DISCUSSION & CONCLUSION Combining conducted recovery programs with the influence specific to subalpine climate on the organism shows positive results, by influencing in a significant manner the variability of the physiological indexes pursued. We have to keep into account the fact that sportsman's life regime influences considerably the variability of the physiological indexes pursued. The minimum period of time after which notable physiological modifications occur is of 10 days.
KEY WORDS Climatology, recovery, sportsmen

The rightward shift of v-slope on increasing ramp in cardiopulmonary exercise testing (cpx)

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OBJECTIVE To evaluate the effects of increasing ramp on the v-slope (VO_2 vs VCO_2 relation) and anaerobic threshold (AT) detection in CPX.
METHODS Six college soccer club members (mean age of 20.8 (SD:1.0)) underwent 3 symptomatic maximal bicycle CPX using 3 ramp protocols (15, 25, 50 watt/min). The sequence of tests were varied randomly and each test done on separate days. On the v-slope plot the slope before and after AT was termed S1 and S2, respectively. The v-slope shifted rightwards immediately following exercise and stayed that way (to the right of R=1 diagonal line, where R denotes respiratory exchange ratio) until the appearance of AT. The slope before S1, which was significantly less than a rest R value, was termed S transient (Str) and probably represented tissue CO_2 storage effect. The rightward shift was quantified as the average distance between the R=1 line and the v-slope, expressed in VO_2 (ml/min).
RESULTS The exercise duration (minute) in 3 protocols was 16.4, 909 and 5.5, respectively. The peak VO_2 (ml/min/kg) was 58.1, 54.5 and 49.8 respectively. The average rightward shift of the v-slope was 122, 188 and 170, respectively (15 vs 50 watt, $p<0.05$). Generally ramp increase resulted in the lengthening of Str, shortening of S1 with slope unchanged, and a steeper rise in S2. AT, however, remained constant.
DISCUSSION & CONCLUSION The ramp increase in the bicycle exercise using ramp protocol resulted in the rightward shift of the v-slope representing accentuated tissue CO_2 storage effect. Although the shift did not alter AT, it made AT detection procedure more complex.

Continuos incremental field test to estimate velocity and maximal oxigen consumption in not-expert runners

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OBJECTIVE Parameters such as maximal oxygen uptake (VO_2max) and velocity at which VO_2max occurs ($VelVO_2max$) are often used to training control purposes to enhance runner's performance. This study had two purposes: (i) determine the relationship between $VelVO_2max$ obtained in continuous incremental filed test (CIFT)) and $VelVO_2max$ determined on a treadmill in a laboratory; and (ii) verify if it is possible to estimate the VO_2max based on CIFT velocity.
METHODS Fourteen recreational runners (3 to 4 training sessions per week) with average body mass 72.87 kg ± 7.35,

174.78 cm ± 4.81 in height and 29.85 years ± 7.12 years-old of age, were tested. The subjects were evaluated in two separate sessions. One session in the field (running in a track field): each subject performed a continuous incremental test until exhaustion; first step 10 km/h, and 1 km/h increment every two minutes. The velocity of the last complete bout was registered and considered as CIFTvel. Respiratory changes were not evaluated. In the second evaluation session we applied a protocol similar to CIFT in the lab (running on a treadmill). Oxygen uptake, respiratory exchange ratio (R) and heart rate (HR) were continuously recorded and averaged for the last 30s of each bout. VO_2 was measured using a stationary breath-by-breath metabolic unit (Cortex, Model MetaLyzer 3B, Leipzig, Germany) which includes a heart rate transmitter (Polar Electro Oy, Kempele, Finland). It was considered the VO_2max the highest value registered during test. The VelVO_2max was the velocity corresponding to the bout at which the increment in the VO_2 to the next bout was lower to 2 ml/kg/min. When this did not occur VelVO_2max was the velocity corresponding to VO_2max.
RESULTS It was found a good relationship (R = 0.82, P < 0.01) between determined VO_2max and estimated VO_2max by the formula: VO_2max (ml/kg/min) = CIFTvel (km/h) x 3.5, as. proposed firstly by Leger and Mercier (1984)*. It was found a very good correlation between determined VelVO_2max in lab and CIFTvel (R=0.97, P<0,01). In this sample, this relationship could be expressed as: VelVO_2max (km/h) = 0.99 CIFTvel (km/h) + 0.35.
DISCUSSION & CONCLUSION The estimated VO_2max and VelVO_2max based on the data obtained from CIFTvel seem to be strongly related with VO_2max and VelVO_2max determined in lab. Besides, that is an easy, practical and non-invasive method to estimate those parameters, namely were lab facilities were not available. * Léger L., Mercier D.: Gross energy cost of horizontal treadmill and track running. Sports Med. 1, 270-77, 1984.
KEY WORDS VO_2max, VelVO_2max, Field Test, Running, Estimation.

Estimation of relative load from mean propulsive velocity in the concentric bench press exercise

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OBJECTIVE Several acute training variables have been identified for the purpose of designing resistance training programs (Kraemer and Ratamess 2004). Exercise intensity is generally acknowledged as the most important stimulus related to changes in strength levels (Fry, 2004) and has been commonly identified with relative load (percentage of one repetition maximum, 1RM). Movement velocity is another variable which could be of great interest for monitoring resistance exercise intensity but its role has often been overlooked in the everyday practice of strength training (Izquierdo 2006; Pereira and Gomes 2003). This study examined the possibility of using mean propulsive velocity data to estimate relative load in the bench press (BP).
METHODS One hundred and twenty strength-trained young males performed an isoinertial strength test with increasing loads up to the 1RM for the individual determination of the load-velocity profile in the concentric BP. Vertical instantaneous velocity was directly measured by a linear velocity transducer attached to a Smith machine and sampled at a frequency of 1,000 Hz.
RESULTS A very close relationship between mean propulsive velocity (MPV) and load (%1RM) was observed (R2=0.98, SEE=0.06 m/s). Individual second-order polynomial curve fits for each test gave an R2 value of 0.996 ± 0.003 (range: 0.983-0.999; CV=0.3%) Mean velocity attained with 1RM (V1RM) was 0.16 ± 0.04 m/s and was found to influence the MPV attained with each %1RM. Stability in the load-velocity relationship was also confirmed regardless of individual relative strength, although certain tendency towards slightly lower velocity values with each %1RM was found for the strongest subjects.
DISCUSSION & CONCLUSION The results of this study confirm an inextricable relationship between relative load and MPV in the concentric BP; i.e. each percentage of 1RM has its own corresponding MPV value. This finding has important practical applications for monitoring resistance training, such as: 1) evaluate strength without the need to perform a 1RM test, or a test of maximum number of repetitions to failure (XRM); 2) determine the %1RM that is being used as soon as the first repetition with any given load is performed; and 3) prescribe and monitor training load according to velocity, instead of percentages of 1RM or XRM. An equation for estimating relative load from movement velocity was obtained (%1RM = 8.4326 MPV2 – 73.501 MPV + 112.33; R2=0.981, SEE=3.56 %1RM).
KEY WORDS Exercise testing, muscle strength, 1RM prediction, isoinertial assessment.