201 - DETERMINATION OF HEART RATE DURING ENTRY INTO HEAT AND PARTY IN A GROUP OF LEVEL AMATEUR ATHLETES.

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INTRODUCTION

According to (MacDougall et al, 1995), In the "Assessment of the health of the athlete" in the preseason, you can do: 1) A family history 2) Review general physical including blood pressure 3) An orthopedic examination 4) laboratory tests which includes an electrocardiogram (ECG) 5) Nutritional and 6) Determination of percent body fat among others.

With the increase of the means, methods and new technological systems that have been made available to the sports training and allow us to assess these skills and health status so as to generate chronic adaptations to these efforts during the race sports (Platonov, VN, 1994), also sees increased cardiovascular stress that athletes must tolerate both in the Competition and in the training sessions.

Maximum Heart Rate (FCMáx.)

(Castilian, J., masajid, J. and Zubillaga, A., 1997) showed values close to 190.13 ± 4.22 bpm, (Gonzalez-Cabrero, 1996) determined that (FCmáx.) is 184.94 ± 8.16 as average value meaning that most probably the (FCP) has presented much higher values.

(Nogues Martinez, 1996) found that (Fcmáx.) was 202 bpm., While (Pirnay, F., 1993) in career observed values of 188 bpm. first time, 106 bpm. at rest and 185 bpm. in the second half. The same author in amateur football games noted that the (HRmax) evolved as follows: Prime time 189 bpm., Rest 111 bpm. and second time 184 bpm., a good reference indeed given that this study also develops subject Amateur level players.

MATERIALS AND METHODS

This study was carried out during the period selected competitive amateur soccer in the city Puerto Montt, where such selection to obtain the classification sought national championship "Vallenar 2008" to be held in January this year. For the reason of place during the competitive phase, we classify our cross-sectional study had a duration of 2 months when the study group was in competition and regular training in three sessions per week.

Measurements of indirect variables such as VO2max and the characteristics of the subjects were obtained from a roofing Fitness (1 meeting) and synthetic turf pitch (2 sessions) provided during the afternoon where they were entered and immediately Made a template for this record.

Vo2 Max assessment was carried out in a gym roof where the campus developed its training sessions and then 8 weeks later at the same low temperature conditions typical of southern Chile.

The estimate of VO2 max was obtained through the Leger test (Course Navette) and the valuation table was used corresponded to that of (Gonzalez G, 1992, 256) with which it conducted its final estimate.

Study Variables

Direct variables: peak heart rate (FCP in Lat / min.) Average heart rate (MHR in Lat / min.).

Proxy variables: Weight (kg), height (cm.), fat mass (%), lean mass (%), age (years), resting heart rate (Lts / min.) Maximum heart rate (FCMáx.) , maximum oxygen consumption (ml / kg / min).

TOOLS FOR DATA COLLECTION

These were: a) 2 Polar ® Watches Cardiómetros Brand Model RS200, b) 2 "Huinches" for each clock (adapted with suspenders over his shoulder to keep the athlete's Chest fall during the match) the effect of sweat or other, c) 2 Wristbands (To cover and protect the clocks), c) A Multifunctional Balance ® Model Keito K6, which gives details Weight (kg), height (cm.), fat mass (%), lean mass (%) and Blood Pressure (variable not included for this study), d) 1 individual Data Sheet containing the following facts: name, date of birth, weight, height, fat mass (%), lean mass (%) (FCM) and (FCP) in heating and party, e) A brand Sony ® stereo system with 2 speakers Model Genezio Large 1500 Watts of power, f) 1 Notebook Computer Intel ® Celeron ® Processor 540 (1.86 GHz, 533 MHz FSB, 1GB L2 cache), 15.4 "WXGA LCD, 252 MB Mobile Intel ® Graphics Media Accelerator X3100, g) 1 software CD Microsoft Office 2003 version was used where the program Microsoft Excel 2.0.

The data were analyzed with a spreadsheet program of Microsoft Excel, Version 2003, which allowed us to analyze the data mean and standard deviation.

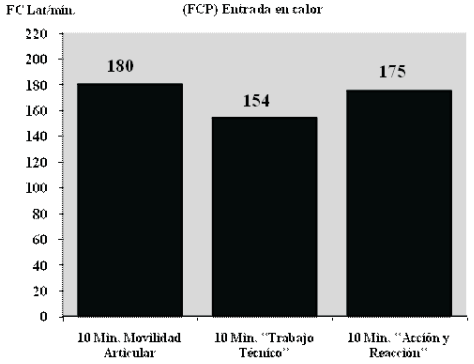
RESULTS

The values recorded by the CFF of the three stages of phase 1 warm-up, Stage 1 of "joint mobility" recorded a value of 180 ± 25.4 beats / min, stage 2 of "paper" value of 154 ± 17.5 Lat / min. and stage 3 a value of 175 ± 24.7 bpm.

Note also in this phase 1 warm-up as some of the values registered FCP reach the 224 beats / min as in the case of subject number 2 in stage 1 of "joint mobility" and a value of 223 beats / min registered the subject number 8 in stage 3 of "Action and reaction, see Table 1 and Graph 1.

FRECUENCIA CARDIACA PICO (FCP) Lat/min.				
Sujeto	10 MINUTOS MOVILIDAD ARTICULAR	10 MINUTOS TRABAJO TECNICO	10 MINUTOS ACCIÓN Y REACCIÓN	Promedio 3 Etapas
1	157	141	149	149
2	224	113	198	178
3	155	155	191	167
4	160	160	150	156
5	184	164	158	168
6	170	173	183	175
7	220	154	160	178
8	182	174	223	193
9	195	156	187	179
10	160	149	155	154
Media	**180**	**154**	**175**	**170**
SD	**±25.4**	**±17.5**	**±24.7**	**±13.6**

Table 1. Peak heart rate (PEF) measured through three stages of an entry
Heat in a group of amateur-level soccer players (n = 10). At the left side appreciates the number Of subjects (n = 10) followed by Stage 1 of "joint mobility" phase 2 "Technical Working"
Stage 3 "Action and Reaction" and finally the average value of these three stages. The values are Presented in Lat / min, mean and ± standard deviation.

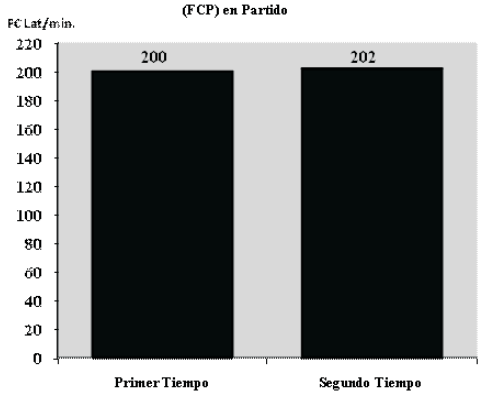


Graph 1: peak heart rate (PEF) measured through three stages of a
Entry into heat applied in a group of amateur-level soccer players (n = 10).
Values are in Lat / min.

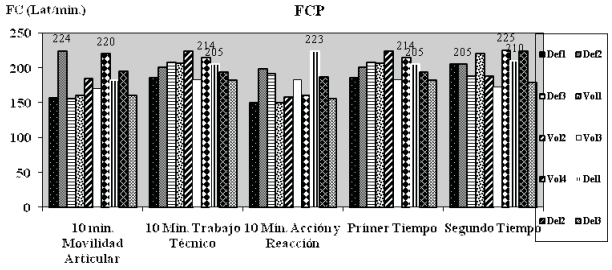
The FCP recorded values of 200 ± 14 beats / min in the first half and a value of 202 ± 18.8 beats / min respectively in the second half, where individual subjects showing larger cardiovascular stress were the subject number seven in the second time with a value of 225 beats / min, followed by the subject number five in the first half with a value of 224 bpm.

FRECUENCIA CARDIACA PICO (FCP) Lat/min.			
Sujeto	**1er tiempo (45 min.)**	**2do tiempo (45 min.)**	**Promedio**
1	185	205	195
2	200	205	213
3	207	188	197
4	206	220	213
5	224	188	206
6	183	173	178
7	214	225	219
8	205	210	207
9	193	223	208
10	182	178	180
Media	**200**	**202**	**201**
SD	**±14**	**±18.8**	**±13.9**

Table 2. Peak heart rate (PEF) measured in the (phase 2) In a group of Party
Level of amateur soccer players (n = 10). At the left side appreciates the number of subjects (n = 10) Followed the First Time (45 min.), Second Time (45 min) and finally the average value Both.
The values are presented in Lat / min, mean and standard deviation.



Graph 2: peak heart rate (PEF) measured in the (phase 2) of Party
In a group of amateur level players (n = 10). Values are presented In bpm.
(FCP) followed by individual



Graph 3. Peak heart rate (FCP) higher, measured on the (phase 1) and warm-up (Phase 2) of game players in a group of amateur level (n = 10). Values are in Lat / min.

CONCLUSIONS

Group-level amateur soccer players in high stress study showed cardiovascular perform individually measured (FCP) in Lat / min., In relation to taxable "unprofessional" and other professional leagues such as Singapore, Saudi Arabia and Australia, where athletes are preparing for it and many of these probably have a multidisciplinary team of professionals. Some values of (FCP) exceeded 220 bpm. Assuming these subjects at high cardiovascular risk if it does not undergo previous training sessions that help you be prepared largely to these efforts. It is also concluded that it is very important that the player Level Professional Amateur or not to undergo an evaluation program of fitness and health, to undergo a training program before and during competition so as to prevent cardiovascular accidents rate occur when many times the cardiovascular system is not ready for high intensity required to cardiovascular stress.

PRACTICAL APPLICATIONS

According to the finding of this study for the high cardiovascular stress intensities at which the player is exposed Amateur level, we believe it is important to continue promoting the importance of: 1) Placing the athlete to a health assessment even at through a qualitative survey 2) Make an assessment of physical abilities either through laboratory test or field test 3) Make a Basic Physical training prior to competition and during it all with the aim of preventing accidents Cardiovascular rate, have a more prepared and Athlete of course increases the chances of achieving sporting success.

GUIDELINES FOR FUTURE APPLICATIONS

We believe that for a better reproduction of this study is important to measure the variables (FCM) and (FCP) in the same match, so as to avoid major variations among a party of more intense effort to a lower intensity. We also advise that the variable is necessary to measure muscle mass and fat mass according to a study that has accurately cineantropométrico and discards biggest mistakes that could lead to Multifunctional balance measurements and finally we realize that athletes need a tape to wider fit your chest (winch Cardiómetro Clock), so we recommend a preliminary measurement of chest circumference to assess the subjects so as not to suffer delays or inconvenience of this type.

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DETERMINATION OF HEART RATE DURING ENTRY INTO HEAT AND PARTY IN A GROUP OF LEVEL AMATEUR ATHLETES.

ABSTRACT

The main objective of this study was to measure the variables mean heart rate (MHR) and peak heart rate (PEF) in a group of footballers at the amateur level (Phase 1) and warm-up (Phase 2) of the party, with the To estimate the level of cardiovascular effort being done by those subjects in relation to players of similar or higher competitive level. A secondary objective was to describe some anthropometric characteristics as (weight, height,% fat,% lean mass) and the third and final objective was to measure maximum oxygen consumption (VO2 Max.) By an incremental test. We measured a total of 10 subjects (n = 10) who signed the agreement shared by the coaching staff. To measure the (FCP.) and (FCM) using 2 Polar ® Watches Cardiómetro Make Model RS200, 2 "Huinches" for each clock, 2 wristbands and a Multifunctional Balance ® Brand Model K6 KEITA which it was obtained, the Weight, height, fat mass (%) and lean mass (%) of each subject before each measurement. The VO2 max. Was obtained through the test of Leger. The results found that (FCM) was 128 ± 9.2 bpm. and during the match a value of 149 ± 11.5 bpm. The (FCP) presented during the heating values of 170 ± 13.6 bpm. and during the game an average of 202 ± 13.9 bpm. Among the most important conclusions which arrived this study suggests that the amateur level player makes a less cardiovascular strain as high as other competitive level soccer player, it is necessary to provide these subjects with a prior physical preparation to enable tolerate high cardiovascular strain and thus to some extent to prevent accidents of this nature.

KEYWORDS: mean heart rate (MHR), maximum heart rate (HRmax), peak heart rate (FCP) and cardiovascular strain.

DETERMINATION DE LA FREQUENCE CARDIAQUE LORS DE L'ENTREE DANS LA CHALEUR ET GROUPE DANS UN GROUPE DE NIVEAU ATHLÈTES AMATEURS.

RÉSUMÉ

L'objectif principal de cette étude était de mesurer les variables de la fréquence cardiaque moyenne (MRH) et la fréquence cardiaque de pointe (DEP) dans un groupe de joueurs de football au niveau amateur (Phase 1) and warm-up (phase 2) de la partie, avec le Pour estimer le niveau d'effort cardio-vasculaire se fait par ces sujets par rapport aux joueurs de niveau compétitif, voire supérieur. Un objectif secondaire était de décrire certaines caractéristiques anthropométriques comme (poids, taille, gras%,% de masse maigre) et le troisième et dernier objectif était de mesurer la consommation maximale d'oxygène (VO2 max.) Par un test supplémentaire. Nous avons mesuré un total de 10 sujets (n = 10) qui a signé l'accord partagé par le personnel d'entraîneurs. Pour mesurer l'(FCP.) et (FCM) en utilisant 2 Polar ® Montres Cardiómetro Marque Modèle RS200, 2 "Huinches" pour chaque horloge, 2 bracelets et un multifonctions Balance ® Marque Modèle K6 KEITA laquelle elle a été obtenue, la poids, taille, masse grasse (%) et la masse maigre (%) de chaque objet avant chaque mesure. La VO2 max. A été obtenue par le test de Léger. Les résultats montrent que (FCM) a été de 128 ± 9,2 bpm. et pendant le match une valeur de 149 ± 11,5 bpm. Le (PCF) présenté lors le pouvoir calorifique de 170 ± 13,6 bpm. et pendant le match une moyenne de 202 ± 13,9 bpm. Parmi les conclusions les plus importantes qui sont arrivés cette étude suggère que le joueur de niveau amateur fait une souche moins cardio-vasculaire plus élevé que d'autres acteur compétitif au niveau football, il est nécessaire de fournir ces sujets avec une préparation physique avant de permettre tolérer souche cardiovasculaire élevé, et donc dans une certaine mesure à prévenir les accidents de cette nature.

MOTS-CLÉS: la fréquence cardiaque moyenne (MRH), la fréquence cardiaque maximale (FC max), la fréquence cardiaque maximale (PCF) et la souche cardiovasculaires.

DETERMINACIÓN DE LA FRECUENCIA CARDIACA DURANTE ENTRADA EN CALOR Y PARTIDO EN UN GRUPO DE FUTBOLISTAS DE NIVEL AMATEUR.

RESUMEN

El objetivo principal de este estudio fue medir las variables Frecuencia Cardiaca media (FCm) y Frecuencia Cardiaca Pico (FCP) en grupo de futbolistas de nivel amateur durante la (Fase 1) de Entrada en Calor y (Fase 2) de Partido, con el fin de estimar el nivel de esfuerzo cardiovascular que realizan estos sujetos en relación a futbolistas de similar o superior nivel competitivo. Un objetivo secundario fue describir algunas características antropométricas como (peso, talla, %grasa, %masa magra) y el tercer y final objetivo fue medir el consumo máximo de oxigeno (VO2 Máx.) por medio de un test incremental. Se midieron un total de 10 sujetos (n=10) que firmaron el consentimiento compartido junto al cuerpo técnico. Para la medición de la (FCP.) y (FCm) se utilizaron 2 Relojes Cardiómetro Marca Polar ® Modelo RS200, 2 “Huinchas” correspondientes a cada Reloj, 2 Muñequeras y una Balanza Multifuncional Marca KEITO ® Modelo K6 de donde se obtuvo; el Peso, talla, masa grasa (%) y masa magra (%) de cada sujeto previo a cada medición. El VO2 máx. Se obtuvo por medio del test de Léger. En los resultados se encontró que la (FCm) fue de 128±9.2 Lat/min. y durante la fase de partido un valor de 149±11.5 Lat/min. La (FCP) presento durante el calentamiento valores de 170±13.6 Lat/min. y durante la fase de partido un valor promedio de 202±13.9 Lat/min. Dentro de la conclusiones más importantes a la que arribo este estudio se sugiere que el futbolista de nivel amateur realiza un esfuerzo cardiovascular igual o tan alto como otro futbolista de nivel más competitivo, se hace necesario brindar a estos sujetos una preparación física previa para que puedan tolerar el alto esfuerzo cardiovascular y así poder prevenir en cierta medida accidentes de esta naturaleza.

PALABRAS CLAVES: Frecuencia Cardiaca media (Fcm), Frecuencia Cardiaca Máxima (FCMáx), Frecuencia Cardiaca Pico (FCP) y Esfuerzo Cardiovascular.

DETERMINAÇÃO DA FREQUÊNCIA CARDÍACA DURANTE A ENTRADA EM CALOR E PARTE EM UM GRUPO DE ATLETAS NÍVEL AMADOR.

RESUMO

O principal objetivo deste estudo foi medir as variáveis freqüência cardíaca média (FCM) e freqüência cardíaca de pico (PEF) em um grupo de jogadores de futebol a nível amador (Fase 1) e warm-up (Fase 2) do partido, com o Para estimar o nível de esforço cardiovascular sendo feito por esses indivíduos em relação a jogadores de nível similar ou superior competitivos. Um objetivo secundário foi descrever algumas características antropométricas como (peso, estatura,% de gordura,% de massa magra) e ao terceiro e último objetivo foi medir o consumo máximo de oxigênio (VO2 máx.) Por um teste incremental. Medimos um total de 10 indivíduos (n = 10) que assinou o acordo partilhada pelo treinador pessoal. Para medir o FCP. () e (FCM), utilizando 2 Polar ® Watches Cardiómetro Make Model RS200, 2 "Huinches" para cada relógio, 2 pulseiras e uma Multifuncional Balance ® Marca Modelo K6 KEITA que foi obtido, o Peso, altura, massa gorda (%) e massa magra (%) de cada sujeito, antes de cada medição. O VO2 máx. Foi obtida através do teste de Leger. Os resultados encontrados, que (FCM) foi de 128 ± 9,2 bpm. e durante a partida um valor de 149 ± 11,5 bpm. O FCP () apresentado durante a valores de aquecimento de 170 ± 13,6 bpm. The Game e durante uma média de 202 ± 13,9 bpm. Entre as conclusões mais importantes que chegou este estudo sugere que o jogador de nível amador faz um esforço cardiovascular menos tão elevado como jogador de futebol competitivo outro nível, é necessário fornecer a esses assuntos com uma preparação física antes de permitir tolerar cardiovascular de alta tensão e, portanto, em certa medida para evitar acidentes desta natureza.

PALAVRAS CHAVE: freqüência cardíaca média (FCM), freqüência cardíaca máxima (FCM), freqüência cardíaca máxima (FCP) e tensão cardiovascular.

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