126 - FLUID REPLACEMENT IN TEENS ATHLETE SWIMMING IGUAÇU FOZ CITY

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SUMMARY

Introduction: Adequate hydration during physical activity can ensure expected performance and prevent health problems. This study aims to check hydration in swimming athletes during training. Methods: Seventeen swimmers aged between ten and sixteen. The hydration state was determined by the urinary staining, the percentage loss of body weight, clinical evaluation of signs and symptoms. Results: Based on body weight and symptoms and signs 58.82% (n = 10) sample showed weight loss of 1% to 2% and 42.17% (n = 7) showed a weight loss lower than 1 0%. The result of staining urinary not coincided with the previous results. The average sweat rate of 4.9 (ml / min). The fluid intake was on average 624 ml / min, and the temperature of the liquid varied between 3 ° C to 23 ° C. 41.1% (n = 7) of the sample held water intake, 35.2% (n = 6) maltodextrin, 11.7% (n = 2) and Gatorade 11.7% (n = 2) without beverage. Conclusion: According to the percentage of the results the majority of the study sample showed dehydration in relation to body mass, signs and symptoms. Moreover, the results indicate that the consumption of drink with temperature, type and quantity was inadequate. It was found that the assessment of urine color does not seem to be a reliable method can be changed to other factors. Regarding the sweating rate, the results were consistent with other studies, and this is not primarily responsible for heat loss.

Key words: Hydration; swimming; children.

1 INTRODUCTION

The daily requirement of water to meet the water needs depend on many factors such as type of exercise, duration of physical activity, type of clothing and intensity (Picolli and JUNIOR, 2012).

Water is present in our environment in three ways: liquids, food and metabolism, and has functions such as gas dysfunction, excretion of metabolites in the urine, feces, joint lubrication and protection bodies. The water beyond all regulates body temperature because it absorbs a large quantity of heat on the temperature change effect (KATCH, 1996).

Junior (2009) indicates that an exercise to be performed safely and with maximum success it is dependent on a number of factors for the elimination of heat. This should be accomplished very effectively, since very high body temperatures above 40 ° C can trigger injuries and fatigue level caused by dehydration. There are several ways to remove the heat produced by exercise, being the main through perspiration or sweating.

The perception of sweating is less in swimming compared to other sports (Henkin, Sehl; MEYER, 2010). Pereira et al, (2008) adds that the water contact with the mouth stimulates nerve receptors located in the oropharyngeal region, giving the impression to hydrated athlete, thus the individual does not realize the seat and do not moisturize.

A relatively small dehydration as of the order of 1 to 2% of body weight, is enough to alter the performance in endurance exercise (Tavares et al, 2008).

Therefore, a degree of hydration will be maintained by correct use before, during and after exercise. According to Carvalho et al. (2009) drink should have a temperature around 15 to 22 ° C.

The water as the source of hydration during exercise is not suitable for sporting events with a longer than an hour and with high intensity, for the loss of electrolytes associated with increased consumption may induce individuals to hyponatremia framework, which has symptoms a mental confusion, shortness of breath, agitation, and in extreme cases death (IGNATIUS et al, 2010)

To add flavor, carbohydrate (CHO) and electrolytes to the beverage, there is an increase of 30 to 45% in consumption compared with the water, reducing the risk of hyponatremia (PERRONE and Meyer, 2011).

According to Ferreira; Almeida and Marins (2007), inadequate hydration procedure, or even their absence, promote the emergence of a dehydrating frame and can cause cardiovascular changes and electrolyte balance

Dehydration in exercise can be characterized by loss of body mass, increasing the physiological stress responses in core temperature, heart rate and perceived exertion during exercise stress especially in the heat (INACIO et al, 2010).

Signs and symptoms of dehydration should be recognized immediately when it is mild to moderate, may experience symptoms such as fatigue, loss of appetite, thirst, red skin, heat intolerance, dizziness, oliguria and polyuria. When dehydration is severe, it is characterized by symptoms such as difficulty swallowing, loss of balance, dry skin, sunken eyes, confused vision, numbness, delusions, and muscle spasms (CARVALHO and MARA, 2010).

This study has the general objective, check the moisture in swimming athletes during training by various methods.

2 METHODOLOGY

This study was conducted with children and adolescent athletes a private swimming school in the city of Foz do approved by the Ethics Committee in Research of the State University of Western Paraná. Parents or guardians received detailed explanations about the procedures that would be used to collect data and then signed an informed consent and informed consent to the research with minors.

The survey was conducted on a day chosen at random workout. To analyze weight loss and sweat rate all participants were previously weighed (PI - initial weight) and then to training (PF - final weight) in a straight position, with slightly apart, bare feet, wearing only swimming trunks (boys) and swimsuit (girls), immersion was requested in the pool before weighing not present difference in the final weighing. For this, we used a scale of Balmak brand with maximum capacity of 140 kg.

For urine collection athletes received specific transparent bottles for urine collection with identification and classification was made according to the framework for urine classification proposed by Tavares et al, (2008).

Signs and symptoms were recorded according to the hydration signal classification recommended by Leal et. al (1990).

It was followed the following protocol: 1 - Athlete Arrival; Dressing for weighing, boys (speedo) and girls (swimsuit); 2 - immersion in water (weighing with wet body before and after activity); 3 - Registration type of drink consumed during training two

hours; 4 delivery of bottles for collection of urine; evaluation of its color and classification; Final weighing 5- (PF); analysis of the presence of signs and symptoms of dehydration through the classification table of hydration status; 6 - completion of the hydration status classification questionnaire found the signs and symptoms; 7 Athlete Waiver; 8- calculating weight loss.

2.1 ANALYSIS OF DATA

To check the percentage of weight loss and sweating was used the formulas proposed by Pereira et al (2011):

PI (KG) - PF (KG) x 100% =% ÷ INITIAL WEIGHT WEIGHT LOSS

TS (sweating rate) = PI - PF / TRAINING DURATION

Through this formula of body mass, the value found in percentage was ranked dehydration from 1%.

From the values found for body weight, urine color and clinical evaluation, an average Microsoft Office Excel 2007 software was performed, regarding the values obtained individually by checking what percentage of the sample that showed dehydration or hydration.

3 RESULTS AND DISCUSSION

The field study conducted showed a profile of 14 male athletes and three female athletes, aged 10 to 16 years.

According to the difference in body weight before and after physical activity, it was found that 58.82% (n = 10) sample showed weight loss of 1% to 2%. The dehydration percentage noticed the weight loss of the athletes in this study averaged 1.52%.

Similar data were found in the study of Perella; Noriyuki and Rossi (2005), which evaluated the water loss for a Rugby training and found an average of 1.5% weight loss. Cirne and Mendes (2011) found a slightly higher value in their study, where their average weight loss was 1.9%.

Rossi, Kings and Azevedo (2009) consider that children have a different hydration classification of adults, where 1% weight loss ever happens to drop in performance, very different from the adult value that starts the performance drop with only 3%.

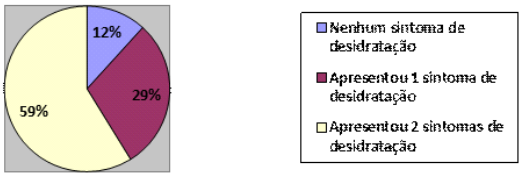
The analysis of urinary staining showed that 58.82% (n = 10) were classified the sample as well hydrated (1 - 3), 29.41% (n = 5) were poorly hydrated (4-5) and only 11 76% (n = 2) dehydrated (6-8), according to the classification proposed by ARMSTRONG (1994).

In the study by Heitzmann et al. (2011), 93.5% of the sample had mild dehydration according to the color of urine. I work Ferigollo; Tretin; Confortin (2012) the average color of the urine was three (3), which is classified as well-hydrated.

However, in this study it was observed that athletes who showed change in body weight, signs and symptoms, showed no change in urine color and vice versa. Note that this parameter is not very reliable for classification of hydration status according to Prado (2009), which points out that there is a scientific consensus yet about the hydration assessment methods and no doubt also about the use of indices of urinary coloration.

Armstrong (2005) states that a large consumption of water (800-1000ml) and vitamin intake can change the color of urine.

Chart 1 - Signs and symptoms of dehydration after the workout.



Referring to Figure 1, we can see that 58.82% (n = 10) of the sample had two symptoms of dehydration, 29.41% (n = 5) a symptom of dehydration and 11.76% (n = 2) no symptom of dehydration.

The average sweat rate found in this study was 4.9 (ml / min). In the study by Pereira et al. (2011), the average sweating rate was 3.6 ml / min. Banin et al (2010) found values slightly larger than the studies cited here, he found the sweating average of 5.8 ml / ml (hydration water) and 5.7 ml / ml (hydration with maltodextrin).

According to the American College of Sports Medicine (2009) sweat rate for any physical activity will vary according to the temperature of the exercise environment, humidity, body weight of the athlete, genetic and metabolic efficiency.

The consumption of liquid in this study was an average of 624 ml / min, and the temperature of the liquid varied between 3 ° C to 23 ° C, only 17.65% (n = 2) of the sample liquid consumed at the correct temperature during training. 41.1% (n = 7) of the sample held water intake, 35.2% (n = 6) maltodextrin, 11.7% (n = 2) and Gatorade 11.7% (n = 2) without beverage.

The American College of Sports Medicine (1996) suggests that events in greater than 1 hour long, it is advisable to add suitable amounts of carbohydrate and electrolytes. This practice in addition to increasing the performance, therefore ensuring the amount of glycogen in the body, prevents events harmful to health as hyponatremia for example.

According to the American Academy of Pediatrics (2005) a quantity of 100 to 250 ml every 20 minutes is sufficient to prevent dehydration.

4 CONCLUSION

According to the percentage of the results, most of the study sample showed dehydration in relation to the body weight, signs and symptoms. Moreover, the results indicate that the consumption of drink with temperature, type and quantity was inadequate, ie, no athlete has the correct hydration procedure.

Based on this study, the color of urine was not compatible with the body mass values, signs and symptoms, however, it was found that the assessment of urine color is not a reliable method can be changed to other factors. Regarding the sweating rate, the results were consistent with other studies, and this is not primarily responsible for heat loss.

We conclude that the fluid intake must be maintained before, during and after workouts in order to balance the losses avoiding dehydration. It is essential that these athletes have the knowledge of the risks they are running and how harmful is dehydration for their performances.

However, the small amount in studies of children and adolescents in the sport of swimming, there is the need for awareness to athletes and the development of new studies to expand knowledge on the subject.

Thus it is suggested that at a next study performs control of fluid intake during the day to check why the presence of dehydrating these athletes.

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SUMMARY

Introduction: Adequate hydration during physical activity can ensure expected performance and prevent health problems. This study aims to check hydration in swimming athletes during training. Methods: Seventeen swimmers aged between ten and sixteen. The hydration state was determined by the urinary staining, the percentage loss of body weight, clinical evaluation of signs and symptoms. Results: Based on body weight and symptoms and signs 58.82% (n = 10) sample showed weight loss of 1% to 2% and 42.17% (n = 7) showed a weight loss lower than 1 0%. The result of staining urinary not coincided with the previous results. The average sweat rate of 4.9 (ml / min). The fluid intake was on average 624 ml / min, and the temperature of the liquid varied between 3 ° C to 23 ° C. 41.1% (n = 7) of the sample held water intake, 35.2% (n = 6) maltodextrin, 11.7% (n = 2) and Gatorade 11.7% (n = 2) without beverage. Conclusion: According to the percentage of the results the majority of the study sample showed dehydration in relation to body mass, signs and symptoms. Moreover, the results indicate that the consumption of drink with temperature, type and quantity was inadequate. It was found that the assessment of urine color does not seem to be a reliable method can be changed to other factors. Regarding the sweating rate, the results were consistent with other studies, and this is not primarily responsible for heat loss.

Key words: Hydration; swimming; children.

REMPLACEMENT DE LIQUIDE EN ADOS ATHLÈTE PISCINE IGUAÇU FOZ VILLE.

RÉSUMÉ

Introduction: Une hydratation adéquate pendant l'activité physique peuvent garantir la performance attendue et de prévenir les problèmes de santé. Cette étude vise à vérifier l'hydratation en natation athlètes pendant l'entraînement. Méthodes: Dix-sept nageurs âgés entre dix et seize ans. L'état d'hydratation a été déterminée par la coloration de l'urine, le pourcentage de perte de poids corporel, l'évaluation clinique des signes et symptômes. Résultats: Basé sur le poids corporel et les symptômes et les signes 58,82% (n = 10) l'échantillon a montré une perte de poids de 1% à 2% et 42,17% (n = 7) a montré une perte de poids inférieure à 1 0%. Le résultat de la coloration de l'urine ne coïncide avec les résultats précédents. Le taux de transpiration moyenne de 4,9 (ml / min). L'apport de fluide est en moyenne de 624 ml / min et la température du liquide varie entre 3 ° C à 23 ° C 41,1% (n = 7) de la prise d'eau de l'échantillon tenue, 35,2% (n = 6) maltodextrine, 11,7% (n = 2) et Gatorade 11,7% (n = 2) sans boire. Conclusion: Selon le pourcentage des résultats de la majorité de l'échantillon d'étude a montré la déshydratation par rapport à la masse corporelle, les signes et symptômes. De plus, les résultats indiquent que la consommation de la boisson avec la température, le type et la quantité est insuffisante. Il a été constaté que l'évaluation de la couleur de l'urine ne semble pas être une méthode fiable peut être modifié à d'autres facteurs. En ce qui concerne le taux de transpiration, les résultats étaient cohérents avec d'autres études, et ce ne sont pas les premiers responsables de la perte de chaleur.

Mots clés: Hydratation; natation; enfants.

REPOSICIÓN DE LÍQUIDOS EN LA CIUDAD DE ADOLESCENTES ATLETA NATACIÓN A FOZ DE IGUAZÚ.

RESUMEN

Introducción: La hidratación adecuada durante la actividad física pueden garantizar un rendimiento esperado y prevenir problemas de salud. Este estudio tiene como objetivo comprobar la hidratación en la natación los atletas durante el entrenamiento. Métodos: Diecisiete nadadores de edades comprendidas entre los diez y los dieciséis años. El estado de hidratación se determinó por el tinción urinaria, el porcentaje de pérdida de peso corporal, la evaluación clínica de los signos y síntomas. Resultados: Basado en el peso corporal y los síntomas y signos 58,82% (n = 10) muestra mostró pérdida de peso de 1% a 2% y 42,17% (n = 7) mostró una pérdida de peso inferior a 1 0%. El resultado de la tinción urinaria no coincidió con los resultados anteriores. La tasa de sudoración promedio de 4,9 (ml / min). La ingesta de líquido fue en promedio de 624 ml / min, y la temperatura del líquido varió entre 3 ° C a 23 ° C. 41,1% (n = 7) de la toma de agua de la muestra celebrada, 35,2% (n = 6) maltodextrina, 11,7% (n = 2) y Gatorade 11,7% (n = 2) sin beber. Conclusión: De acuerdo con el porcentaje de los resultados de la mayoría de la muestra del estudio mostró deshidratación en relación con la masa corporal, signos y síntomas. Además, los resultados indican que el consumo de la bebida con la temperatura, el tipo y la cantidad era insuficiente. Se encontró que la evaluación de color de la orina no parece ser un método fiable se puede cambiar a otros factores. En cuanto a la tasa de sudoración, los resultados fueron consistentes con otros estudios, y esto no es el principal responsable de la pérdida de calor.

Palabras clave: hidratación; natación; niños.

REPOSIÇÃO HÍDRICA EM CRIANÇAS E ADOLESCENTES ATLETAS DE NATAÇÃO DA CIDADE DE FOZ DO IGUAÇU.

RESUMO

Introdução: Uma hidratação adequada durante a atividade física pode garantir o desempenho esperado e evitar problemas de saúde. O presente estudo tem como objetivo principal verificar a hidratação em atletas de natação durante o treino. Métodos: Dezessete nadadores com idade entre dez e dezesseis anos. O estado de hidratação foi determinado pela coloração urinária, percentual da perda da massa corporal, avaliação clínica de sinais e sintomas. Resultados: Baseado na massa corporal e sinais e sintomas 58,82 % (n=10) da amostra apresentaram perda de peso de 1% a 2 % e 42,17 % (n=7), apresentou uma perda de peso menor que 1,0 %. O resultado da coloração urinária não coincidiu com os resultados anteriores. A média de taxa de sudorese foi de 4,9 (ml/min). O consumo de líquidos foi em média de 624 ml/min, e a temperatura dos líquidos variou entre 3ºC a 23ºC. 41,1 % (n=7) da amostra realizaram ingestão de água, 35,2 % (n=6) de maltodextrina, 11,7 % (n=2) de Gatorade e 11,7 % (n=2) sem bebida. Conclusão: De acordo com a porcentagem dos resultados a maioria da amostra do estudo apresentou desidratação em relação à massa corporal, sinais e sintomas. Além disso, os resultados apontam que o consumo de bebida entre temperatura, tipo e quantidade foi inadequado. Constatou-se que a avaliação da cor da urina não parece ser um método confiável podendo sofrer alterações de outros fatores. Já em relação à taxa de sudorese, os resultados encontrados foram compatíveis com outros estudos, sendo que esse não é principal responsável pela perda de calor.

Palavras chave: Hidratação; natação; crianças.