

## 63 - POST-RACE REHYDRATION WITH BEER

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### INTRODUCTION

Environments with high temperature where sportive activities are practice makes with the human body need a thermal regulation through transpiration. If does not happen a correct replacement of liquids dehydration can happen, which leads to a decrease in the athlete's performance so the hydration is really important before, during and after the exercise because the dehydration may happen because the body needs make its own temperature around 37°C (MONTEIRO e GUERRA 2003 , CARVALHO e MARA 2010).

The correct hydration of an athlete is directly linked to his physical well-being. When an athlete's capacity of perform exercises is affected by lack of liquids the athlete's performance may decrease. The moment the athlete feels thirsty during the exercise it is a signal of dehydration. It is recommended that an athlete ingest 400ml to 800ml of liquids a few hours before of physic exercise, rehydrate every 20 minutes of exercise and after the training. The replacement of fluids known as rehydration aims avoid excessive dehydration, greater than 2% of body weight, that decrease the athlete's performance. Therefore, it is of great importance that runners and other athletes rehydrate (PERREIRA, ASSIS e NAVARRO 2010).

Water is the liquid most used to rehydration by runners, however it is not the most indicated liquid because it does not promote glycemic alteration, on the other hand the isotonic drinks help maintain muscle glycogen energy reserves helping to increase performance in athletes. Another possible form of rehydration is beer that if ingested after training does not have a negative effect on runners and athletes because it has magnesium, sodium, potassium and carbohydrates in its composition, which can assist in rehydration. (SANTOS e TEIXEIRA 2010; PERREIRA, ASSIS e NAVARRO 2010; JIMENEZ - PAVON 2015).

The first mentions about beer are from before the invention of writing, represented by symbols and drawings. It is believed that beer was accidentally invented because it contains the same ingredients as bread. In the Middle Ages the beer was produced by woman to family consumption, afterwards the beer passed to be used as a coin giving brewers great prominence in society. In 1516 the beer purity law was created in Germany which says: to produce a beer it is permitted only use of malt, hops and water. Over time this law would be changed by adding the yeast to the production, this German law is used as a basis for beer production and is still in force today. The beer was brought to Brazil by Hollands between 1634 and 1654 but only in 1888 with the first's beer companies creation it could arrive to all Brazilians, currently beer is the most consumed alcoholic drink in Brazil as part of Brazilian culture. (GIORGI 2015; SILVA 2016, RODRIGUES 2016).

In some sportive activities as rugby and Gaelic football it is common the use of beer after the activity performance as a rehydration method. Given this, the objective of this study is to observe the knowledge and acceptance of beer as a means of rehydration in street runners.

## MATERIAL AND METHODS

A questionnaire with 14 questions was made to carry out the research designed to characterize the interviewees and obtain their opinion and knowledge regarding the possibility of rehydration with beer.

For the selection of volunteers, the inclusion criteria were used: be a street runner and participate of running street and consent the use of the provided information. As exclusion criteria: does not accept or does not consent in answer questionnaire questions and be younger than 18 years old.

For the elaboration and divulgation of online questionnaire was used a google forms platform. At the end, the sample contained with 100 volunteers. All participants authorized the use of their answers to carry out this research.

## RESULTS AND DISCUSSION

Based on the results obtained after applying the questionnaire, the interviewees were characterized according to gender, for a better analysis of their profile, as shown in Table 1.

Table 1- Characterization of the interviewed sample

	Woman	Man	Total
N° of individuals	32	68	100
Body weight (kg)	62.6 ± 6.13	83.3 ± 11.3	76.7 ± 13.9
Height (m)	1.62 ± 0.06	1.76 ± 0.06	1.72 ± 0.09
BMI (kg/m <sup>2</sup> )	23.8 ± 2.28	26.7 ± 3.00	25.8 ± 3.09

Subtitle: N°- Number; BMI – Body mass index.

Source: the author.

As noted in Table 1, of the 100 interviewees in the survey 68 were men with an age average of 35.8 years old, body weight average of 83.3 kilos and height average of 1.76 meters and 32 woman's with an age average of 33.9 years old, body weight average of 62.2 kilos and height average of 1.62 meters.

The individuals' running practice time was divided into four bands, runners with less than 6 months of practice, runners between 6 months and 1 year of practice, runners between 1 and 2 years of practice and runners with more than 2 years of practice (Table 2).

Table 2. Individuals' running practice time.

	Male	Female	Total
Less than 6 months	2	3	5
Between 6 months and 1 year	12	8	20
Between 1 and 2 years	19	5	24
More than 2 years	35	16	51

Source: the author.

As showed in Table 2, the running time practice was more than 2 years to 51% of interviewed, 24% of interviewed practice running between 1 and 2 years, 20% of interviewed practice running between 6 months and a year and 5% less than 6 months.

Regarding the rehydration method, 91% of interviewed runners rehydrated with water, 8% with isotonic drinks and 1% with other drinks. According to Montain (2008), the fluids reposition is very important to preserve the physical activity performance and to ensure a good body homeostatic functioning. Nevertheless, Jimenez and Pavon (2015) assert that the water even being the most used liquid by runners after physical activity it is not the most indicated because it does not promote the necessary glycemic change.

The prevalence of alcoholic drink use of volunteers is 79%, they reported to drink alcohol at least once a week, and 21% reported do not consume alcoholic drinks. Of the volunteers who consume alcohol, 43% drink alcohol once a week, 33% twice, 8% three times a week.

Among the drinks consumed reported by the interviewees, the one that stands out is beer, cited by 74% of the volunteers, data consistent with those found in other studies. Silva et al. (2016) studied the context of beer in the Brazilian society and assert that in the country this is the national preferred drink for being light and refreshing. Furthermore, according to 2019 Beer Yearbook, the beer market in Brazil grows every year, today having 1,209 breweries, one brewery every 7,043 km<sup>2</sup>, according to the growth projection until 2025 there will be 7504 breweries, demonstrating the strength of this product in the country.

Wijnen e Annemarte (2016) Jose found that the combination of a moderate amount of beer plus the use of water or electrolyte and carbohydrate drinks can improve rehydration after physical activity. However, when asked about the use of beer as a rehydration option, 77% of respondents never heard of rehydration with beer and 23% said they knew about rehydration with beer. Thus, there is a low spread of this type of study in Brazil.

Of the volunteers evaluated, 68% would use beer as a form of rehydration and 32% would not use beer as a form of rehydration. In the opinion of 39% interviewed, the use of beer as rehydration is beneficial, 42% believe that the use is indifferent and 19% harmful. These data, which demonstrate a greater possibility of acceptance of beer for the purpose of rehydration by most of the study volunteers.

## CONCLUSION

Based on the results obtained, it is possible to conclude that hydration is done by most runners with water, few use isotonic drinks to replace sugars and minerals.

Even though beer is the most consumed alcoholic drink in Brazil and the drink most cited by respondents, only 23% of respondents knew about the possibility of its use for rehydration and 68% would use it for this purpose.

Most respondents believe that beer is beneficial or indifferent to rehydration, however no respondents use beer as a form of rehydration after running.

Thus, there is a need for studies that analyze the possibility of using beer after physical activities and disseminate such results to street runners or other athletes who wish to use beer as an option for rehydration.

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**ABSTRACT** Street running is a physical activity with great energy expenditure, which can lead to possible dehydration and consequent decrease in performance. Beer is a form of post-physical rehydration already used in some countries, it has magnesium, sodium, potassium and carbohydrates in its composition, which can assist in rehydration. The aim of the study was to verify the knowledge and opinion of runners regarding rehydration with beer. A questionnaire was applied to 100 runners, asking about the use of beer as a method of rehydration. The results indicated that beer is the most consumed drink by respondents who use alcohol, and would have a good acceptance for use after the race. It was concluded that although beer is the most mentioned alcoholic beverage in the research and the interviewees accept its use as a form of rehydration, they do not use it for this purpose.

**Keywords:** Beer; Street race; rehydration

**RESUMEN** El street running es una actividad física con un gran gasto energético, que puede conducir a una posible deshidratación y consecuente disminución del rendimiento. La cerveza es una forma de rehidratación posfísica ya utilizada en algunos países, tiene magnesio, sodio, potasio y carbohidratos en su composición, que pueden ayudar en la rehidratación. El objetivo del estudio fue verificar el conocimiento y la opinión de los corredores sobre la rehidratación con cerveza. Se aplicó un cuestionario a 100 corredores, preguntando sobre el uso de cerveza como método de rehidratación. Los resultados indicaron que la cerveza es la bebida más consumida por los encuestados que consumen alcohol, y tendría una buena aceptación para su uso después de la carrera. Se concluyó que si bien la cerveza es la bebida alcohólica más mencionada en la investigación y los entrevistados aceptan su uso como forma de rehidratación, no la utilizan para tal fin.

**Palabras clave:** Cerveza; carrera de calle; rehidratación.

**RESUMO** Corrida de rua é uma atividade física com grande gasto energético, a qual pode levar a uma possível desidratação e consequente diminuição de rendimento. A cerveja é uma forma de reidratação pós-atividade física já utilizada em alguns países, ela possui em sua composição magnésio, sódio, potássio e carboidratos, que podem auxiliar na reidratação. O objetivo do estudo foi verificar o conhecimento e a opinião de corredores quanto a reidratação com cerveja. Foi aplicado um questionário para 100 corredores, indagando a respeito do uso da cerveja como método de reidratação. Os resultados indicaram que a cerveja é a bebida mais consumida pelos entrevistados que fazem uso de bebida alcoólica, e teria uma boa aceitação para uso após a corrida. Concluiu-se que apesar da cerveja ser a bebida alcoólica mais citada na pesquisa e os entrevistados aceitarem o seu uso como forma de reidratação os mesmos não a utilizam para esse fim.

**Palavras chaves:** Cerveja; corrida de rua; reidratação.