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Impact of Dehydration on Players and Ways to Avoid It

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ABSTRACT

Dehydration in a player takes place due to deficiency of water in the body. Normally, dehydration is found in a player in the summer season when the temperature goes higher. Due to dehydration, a player struggles in running and has to face from cramps.

In the season of summer, when weather is hot and temperature goes beyond the normal then a player needs to drink a lot of water to maintain the water level in the body. But, in some cases, it is observed that the player does not take enough liquid so as to maintain good level of water in the body.

The current article highlights the impact of dehydration on players ans ways to avoid it.

KEYWORDS:

Dehydration, Player, Water

INTRODUCTION

The problem of dehydration is mostly found in the players of the game like Cricket, Tennis, Football where a player needs to be present in the field for longer duration in heating environment where temperature is so high.

It is also observed that the temperature of stadium is three to four degrees higher than that of the external environment due to blockage of sufficient air. So a player needs to drink a lot of water so as to avoid dehydration. To protect a player from dehydration, the sports organizations facilitates soft drinks for the players.

It is also observed that in the game of Cricket, a lot of players has to suffer

from dehydration on reaching a mile stone such as near century when they have to play a quite longer inning. For example, Rahul Dravid, a former Indian Cricket player, was often seen struggling from dehydration whenever he played a longer inning to win a match for his country.

It is advised for the players to take as many as liquid they can intake so as to protect themselves from dehydration. If a player can't take enough water then he/she should try to take fruits and other eatable things rich of water.

It is also observed that some yoga activities play a critical part in protecting a player from dehydration. Yoga activities keep the temperature of body normal so that a player can't be suffering from dehydration.

It is also advised to the players who suffer from dehydration quite frequently; to take three to four glasses of water in the morning. A morning time water is so crucial in maintaining the water level in the body and is quite helpful to protect from the dehydration.

As the body becomes increasingly dehydrated, the ability for an athlete to perform at the highest level is affected. The effect of dehydration on performance is predominantly seen in aerobic events. As Ely confirmed, dehydration largely takes a toll on aerobic performance, such as running, cycling, swimming, or soccer. Since these sports require high levels of endurance and sometimes do not allow for the athlete to rehydrate habitually, the body demands far more water for blood flow, which increases the risk for severe dehydration. Accordingly, aerobic performance is affected

because when the athlete's heart is required to pump a decreased blood volume to all muscles and organs that demand it, the athlete fatigues more easily and is not able to sustain the same endurance throughout.

DEHYDRATION AND PERFORMANCE

In terms of mid-performance, thirst and dry mouth is the telltale sign of dehydration. Thirst is perhaps the easiest way to assess hydration, and research suggests using thirst as a guide to prevent severe dehydration or over hydration during exercise. To combat dehydration, research suggests training with fluids during exercise to prepare your gut to absorb fluid while exercising so that you can take in and absorb water at an ideal rate. "Maintaining your fluid balance throughout exercise is ideal."

According to the International Olympic Committee, dehydration impairs an athlete's performance in most events: endurance sports, team sports, power and sprint sports, winter sports and sports with weight classes. Athletes need to be well-hydrated before and during exercise and competition.

For any athlete, minimizing your fluid loss to not more than 2% of your body weight is a good rule. At that 2% body loss, you'll start to see increased fatigue, reduced endurance, the beginnings of heat illness and declining motivation. The good news is that rehydrating will reverse all these problems.

The longer your workout or competition, the more dehydration will hurt your performance. A review of scientific studies showed that endurance athletes like triathletes and

marathoners had a performance drop of 7% to 60% when dehydrated. Athletes requiring muscle strength, like bodybuilders and football linemen, saw their power reduced when their sweat loss was as low as 3% of their body weight.

Before a workout or competition, properly hydrate by drinking 1 to 2 cups of fluid an hour before starting, one cup about 15 to 30 minute prior and then 5 to 10 ounces of fluid every 15 to 20 minutes of activity.

Before and during exercise, you need to monitor your hydration level and drink more if necessary. One quick method is to look at the color of your urine – a dark urine indicates dehydration.

After exercise, you need to rehydrate (2 cups, 16 ounces for every pound lost). It's better to use a sports drink containing electrolytes rather than water alone – after all, we don't sweat plain water. Let's say our 140-pound marathoner did a workout and found she lost 1 3/4 pounds. That's 1.75 pounds * 16 ounces = 28 ounces, or 3 1/2 cups of a sports drink she needs post-workout to rehydrate.

DISCUSSION

The majority of the body is made up of water with up to 75% of the body's weight due to H_2O. Most of the water is found within the cells of the body (intracellular space). The rest is found in the extracellular space, which consists of the blood vessels (intravascular space) and the spaces between cells (interstitial space).

Diarrhea is the most common reason a person loses excess water. Diarrhea consists of unusually frequent or unusually liquid bowel movements and

excessive watery evacuations of fecal material. Persistent diarrhea is both uncomfortable and dangerous, as a significant amount of water can be lost with each bowel movement.

Worldwide, more than four million children die each year because of dehydration from diarrhea. A reduced maximal cardiac output (i.e., the highest pumping capacity of the heart that can be achieved during exercise) is the most likely physiologic mechanism whereby dehydration decreases a person's

.VO2max and impairs work capacity in fatiguing exercise of an incremental nature.

Dehydration causes a fall in plasma volume both at rest and during exercise, and a decreased blood volume increases blood thickness (viscosity), lowers central venous pressure, and reduces venous return of blood to the heart. During maximal exercise, these changes can decrease the filling of the heart during diastole (the phase of the cardiac cycle when the heart is relaxed and is filling with blood before the next contraction), hence, reducing stroke volume and cardiac output. Also, during exercise in the heat, the opening up of the skin blood vessels reduces the proportion of the cardiac output available to the working muscles.

Even for normally hydrated (euhydrated) individuals, climatic heat stress alone decreases .VO2max by about 7%. Thus, both environmental heat stress and dehydration can act independently to limit cardiac output and blood delivery to the active muscles during high-intensity exercise. Dehydration also impairs the body's ability to lose heat. Both sweat rate and

skin blood flow are lower at the same core temperature for the dehydrated compared with the euhydrated state.

Body temperature rises faster during exercise when the body is dehydrated. The reduced sweating response in the dehydrated state is probably mediated through the effects of both a fall in blood volume (hypovolemia) and elevated plasma osmolarity (i.e., dissolved salt concentration) on hypothalamic neurons. As explained previously, as core temperature rises towards about 39.5° C (103° F), sensations of fatigue ensue. This critical temperature is reached more quickly in the dehydrated state.

Dehydration not only elevates core temperature responses but also negates the thermoregulatory advantages conferred by high aerobic fitness and heat acclimatization. Heat acclimation lowered core temperature responses when subjects were euhydrated. However, when they were dehydrated, similar core temperature responses were observed for both unacclimated and acclimated states.

CONCLUSION

The body can lose significant amounts of water when it tries to cool itself by sweating. Whether the body is hot because of the environment (for example, working in a warm environment), intense exercising in a hot environment, or because a fever is present due to an infection; the body uses a significant amount of water in the form of sweat to cool itself. Depending upon weather conditions, a brisk walk will generate up to 16 ounces of sweat (one pound of water).

The inability to drink adequately is another potential cause of dehydration. Whether it is the lack of availability of water or the lack of strength to drink adequate amounts, this, coupled with routine or excessive amounts of water loss can compound the degree of dehydration.

Fluid replacement is the treatment for dehydration. This may be attempted by replacing fluid by mouth, but if this fails, intravenous fluid (IV) may be required. Should oral rehydration be attempted, frequent small amounts of clear fluids should be used.

REFERENCES

[1]. *Mange K, Matsuura D, Cizman B, Soto H, Ziyadeh FN, Goldfarb S, Neilson EG (November 2012). "Language guiding therapy: the case of dehydration versus volume depletion". Annals of Internal Medicine.* ***127*** *(9): 848–53.*

[2]. Ashcroft F, Life Without Water in Life at the Extremes. Berkeley and Los Angeles, 2010, 134-138.

[3]. *"UOTW #59 - Ultrasound of the Week". Ultrasound of the Week. 23 September 2015. Retrieved 27 May 2017.*

[4]. *Riebl SK, Davy BM (November 2013). "The Hydration Equation: Update on Water Balance and Cognitive Performance". ACSM's Health & Fitness Journal.* ***17*** *(6): 21–28.*

[5]. *Hooper L, Abdelhamid A, Attreed NJ, Campbell WW, Channell AM, Chassagne P, et al. (April 2015). "Clinical symptoms, signs and tests for identification of impending and current water-loss dehydration in older people". The Cochrane Database of Systematic Reviews.* ***4****(4): CD009647.*

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[6]. *"Dehydration Risk factors - Mayo Clinic". www.mayoclinic.org. Retrieved 2015-12-14.*

[7]. *Borra SI, Beredo R, Kleinfeld M (March 2012). "Hypernatremia in the aging: causes, manifestations, and outcome". Journal of the National Medical Association.* ***87*** *(3): 220–4.*