

Can Dehydration Affect Your Accuracy?

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In this short article, I discuss some research on the impact of dehydration on ball speed and target accuracy. You might be surprised by the results. The article discusses the research as well as offers some guidance on evaluating your hydration level and keeping yourself hydrated properly.

Impact of Dehydration on Ball Speed and Target Accuracy I often review research from other sports. This provides insight into sports science as a whole. And, most importantly, it provides guidelines on the sport of tenpin bowling. We can learn a great deal to move our preparation more toward elite sport. When I read the following article discussing the impact of hydration levels on target accuracy and ball speed consistency, I knew it would be very important to share with the global bowling community. An article, *Moderate levels of hypohydration impairs bowling accuracy but not bowling velocity in skilled cricket players*, in the June 2001 *Journal of Science and Medicine in Sport*, has important implications for elite tenpin bowling. Without overstating the importance, the research revealed facts associated with human performance in a hand-eye coordination sport. Specifically, the researchers found that dehydration negatively impacted targeting accuracy but did not effect ball speed. When the players became moderately dehydrated, their throwing accuracy decreased. Specifically, the cricket bowlers were not able to throw accurately in the line they wanted to throw. In addition, the length of their throws were negatively impacted. Yet, their ball speed consistency remained. So, these bowlers might not realize that their performance is declining. Thus, dehydration negatively affected accuracy but not ball speed. This has serious implications for elite tenpin bowling.

Implications for Elite Tenpin Bowling Although this was a study of skilled cricket players, the research demonstrates that target accuracy was negatively impacted by hypo-hydration levels. From these research findings, we can make the following claim. Tenpin bowlers would perform at a more consistent level if they were hydrated properly for a tournament or practice. How many elite tenpin bowlers actually reflect on preparing for a tournament by evaluating their hydration levels. Or, how many tenpin bowlers actually prepare for a tournament with a hydration plan. And, interestingly, the bowler's ball speed was not diminished by dehydration. Think about these facts. How many times have you questioned your ball reaction when you thought you threw it well. From these findings, your ball speed might have been consistent but your targeting accuracy inconsistent. Dehydration increased the strain on the body, from a physiological standpoint. Specifically, there is evidence that dehydration can negatively impact cognitive and mental performance. So, clearly, in addition to target accuracy declines, dehydration can be detrimental in a bowler's ability to read transitional changes in lane conditions as well as to make astute and quick changes on the lanes.

Testing Your Own Hydration You can evaluate your hydration the evening before a tournament as well as the morning of a tournament. Look at the following urine color chart. If the color of your urine is similar to the colors 1, 2 or 3, you are hydrated. This would be a state of euhydration or normal water levels in the body. If your urine is one of the other colors, 4 - 8, you are dehydrated.

Recommendations to Keep Yourself Hydrated. The American College of Sports Medicine recommends hydrating before engaging in physical activity. ACSM recommends drinking water 4 hours before the activity. Drink between 400 - 600 ml (12 - 16 ounces) of water before the event. You should drink slowly. If you have not urinated by 2 hours before, you should drink some additional water. As I have written before, drink an isotonic drink 30 minutes before your squad. And, consume water every half an hour during the squad. Immediately after your squad, drink an isotonic drink. This will help you recover from the squad and be ready for a later squad or help with tomorrow's preparation.

Additional Focus Points If you begin sweating heavily during your tournament, this is a sign of dehydration. Your core temperature is too hot causing you to sweat. Dehydration prevents you from cooling your core. Immediately consume water or an isotonic drink. But, be warned, if you are sweating heavily during bowling, it is often too late. The same if you begin to feel thirsty. This is a late sign. Be sure to do an adequate preparation for the next event.

Conclusion Bowling is unique. Bowlers throw as shot or two. Then, there is some rest time. Yet, we need to begin thinking for as an elite sport. Considering the importance of the research findings on the fact that dehydration negatively impacts target accuracy, a bowler serious about optimum performance should be sure to evaluate their hydration levels several hours before a squad. In addition, those who want to improve performance should develop a hydration plan to ensure the hydration levels remain high during the event.

References American College of Sports Medicine (2007). *Exercise and Fluid Replacement: Position Statement*. Devlin, L.H., Fraser S.F., Barras N.S. and Hawley J.A. (2001, Jun). *Moderate levels of hypohydration impairs bowling accuracy but not bowling velocity in skilled cricket players*. *Journal of Science and Medicine in Sport* 4(2):179-87.