

Cutting Weight and Losing Out: How Rapid Weight Loss in Wrestling and Judo Impacts Performance *by John Schneider*

There is something universally appealing about the story of David and Goliath. The concept of the "little guy" overcoming the challenge of the opponent's size and strength with the odds against him appeals to our idealism. On the other hand, when given the option, most of us would choose to be Goliath when facing off against an opponent. Athletes in weight-class sports like judo and wrestling have been known to cut large amounts of weight using extreme methods (9), trying to be Goliaths in David-sized weight divisions. If athletes can gain an edge over the competition, most will make the sacrifice to get there. However, is it really an advantage? How does the rapid weight loss due to the weight-cutting methods of wrestlers and judo competitors affect performance?

As a former wrestling coach and a competitive judo athlete, I have seen all sorts of methods for cutting weight. From jumping rope while wearing a garbage bag in a room of hot showers, to spitting in a cup while in a car with the heat on in the middle of summer, athletes will go to extreme measures to "make weight." I was taught these methods by my coaches, who were taught from their coaches, who had it passed down from their coaches. It has become a tradition in these sports; something athletes do, not only to gain a competitive advantage, but just to maintain a level playing field because "everyone else is doing it." Due to the 1997 deaths of three collegiate wrestlers, rules have been put in place to restrict the lowest weight class a wrestler can drop to at the beginning of the season, and practices such as laxative use and exercising in steam rooms have been banned (17). However, while these rule changes have made improvements, coaches and athletes continue to press the limits and find ways around rules meant to ensure the safety of athletes (1,5,9,10,13). Competitors will take risks that may have long-term health hazards if it will increase their chances of winning in the short term. Furthermore, while wrestling has made efforts to deter extreme weight cutting practices, sports like judo do not have the same level of organization and oversight to institute and enforce similar rules. Because of this, we need to take a closer look at the results of these practices and determine whether cutting weight is really going to give an athlete an advantage. This question needs to weigh the intended benefits with the negative aspects of physiological performance, mental and emotional health, and the risk of injury. If there is no real advantage, or if there is a negative effect, athletes and coaches need to be educated. This will have more effect on discouraging these dangerous methods than rules and regulations.

Methods of cutting weight result in a restricted energy diet and severe dehydration. Dehydration of 3-4% body weight causes a loss in strength and power of 3% on average, and a decrease in high intensity endurance of 10% on average (8). This counters the intended result of being the strongest competitor in the lower weight class. In order to attach significance to these numbers, if the average high school athlete can squat 1.5 times his body weight, David, a judo competitor at the 73kg weight class, would lift 109.5kg. Goliath, an athlete at 76kg trying to cut down, would naturally be able to lift 114kg. If Goliath cut 3kg (4% of his body weight) to get to the lower weight class it would cost him 3.5kg off his max lift, so he would still be stronger than his competition, but not by much. Meanwhile, if Goliath were able to squat that weight 20 times in a minute, this rapid weight loss would leave him only able to squat that weight 18 times in a minute. You can imagine how this trade off would take the efforts into the red by the end of a match. The slight strength advantage would not make up for the negative effect on endurance. There have been studies that have shown wrestlers who recovered their strength and power by the end of the season (3,4) but these studies have focused on Division I collegiate wrestlers. I would argue that there are a couple

of factors going on here including that these are the most experienced athletes choosing fewer extreme rapid weight loss methods. In addition, these studies compared the athlete against themselves at various points in the season and not against a control group. Based on the vast majority of other studies out there (3,9,12,13,15,16) these athletes could potentially be looking at better results with more conservative weight management.

Another concern over cutting weight is how it affects cognitive abilities. Both judo and wrestling are “thinking man’s” sports. If the results of cutting weight leave the athlete unfocused mentally, he is likely to find himself on the bottom of a pin or staring at the ceiling after being on the wrong end of a throw. Cutting weight can leave an athlete distracted and impair his ability to make good and timely decisions (14). Rapid weight loss prior to a competition has also been shown to cause concussion like symptoms, affect short term and visual memory, and increase a self awareness of fatigue (6, 12). The impact on an athlete’s mood should also be taken into consideration. Judo competitors who practice rapid weight loss have experienced increased anger and depression (16). If an athlete is in an unstable emotional state, it will have a negative impact on performance (2). The impact of both these mental and emotional factors needs to be taken into consideration in regards to whether an athlete should drop a weight class.

Finally, athletes need to be aware of an increased risk of injury. We cannot justify a practice that only gives a marginal advantage at best when there is an increased risk of young athletes being hurt. One study found that in judo competition, judo competitors who lost more than 2% of their body weight had an increased risk of injury during competition; and athletes who lost more weight were at an even greater risk (7). The combination of negative effects on cognitive ability and physiological performance create a dangerous state for performing intense physical activity (18). Hormonal factors such as an increase in creatine kinase concentration can lead to an impairment of muscular function and an increased susceptibility to injury (12).

With these clearly negative results, I find it difficult to justify cutting more than a few pounds to make a lower weight class. The prospect of being weaker and having less endurance just to fight smaller people is a bad coaching decision. The mental and emotional side also cannot be underrated. While it may be difficult to quantify this aspect, the importance is undeniable. I cannot begin to count the number of talented athletes I have seen walk away from judo and wrestling purely out of burn out. The increased risk of injury is the best reason not to cut weight when your primary concern is performance and winning. If an athlete is hurt, he isn’t competing or practicing, and thus not improving. I have also witnessed a belief in the myth that you can rehydrate as quickly as you dehydrate. Competitors will cut weight for weigh-ins and then drink water and Gatorade immediately afterwards hoping to rehydrate before their first match, but this is misguided. There is a finite rate of absorption and it will take time for that liquid to adequately rehydrate the body.

It will be challenging to convince athletes and coaches with years of experience that what has been done for decades by “everyone” is wrong. Education is necessary to make these points clear. Clinical studies exposing the practices of elite athletes, who use healthy methods of regulating weight, are going to be essential in changing the environment that surrounds these sports. It is not enough to tell athletes simply not to cut weight; we need to give them the tools so they know what they should be doing in regards to diet and exercise to reach their potential. The same way that athletes know they need to warm-up before a competition, we need to build that same sense of common sense on this issue. Hopefully, this knowledge will revolutionize the approach coaches take toward fostering a competitive advantage – realizing the health of their athletes is paramount to achieving this goal. In the meantime, stricter rules and regulations should be implemented by the national governing bodies of these sports in order to deter these dangerous practices.

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