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**Weight Cutting in Mixed Martial Arts: Annotated Bibliography**

**Critical Preface**

In the combative sport of mixed martial arts (MMA), weight cutting is an undertaking virtually every fighter must attend before a competitive fight. In the sport, weight cutting is considered as a requirement and an obligation for fighters who need to fit into a particular weight class they intend to compete. As such, MMA athletes are expected to observe some nutritional practices that help them reduce lower their body mass to meet the strict weight class requirements. Failure to make the weight for a class an MMA athlete intends to compete in is looked down upon. The fighter is often judged as unprofessional and lazy.

The main purpose of weight cutting in the sport, and its primary advantage is, fighters are able to achieve the lowest weight possible for a weight class. Therefore, larger athletes can dehydrate themselves to qualify for a competitive match in a weight class lower than their usual weight. Since MMA athletes tend to rehydrate their bodies between a weigh-in and the bell that starts the first round of an MMA fight, they gain superior body mass, strength, and size advantage over their opponents. However, rapid weight loss intended to help competitors meet the requirement of the weigh-in through practices such as ‘water loading' – a form of extreme dehydration caused by consuming copious amounts of water to stimulate excessive urination - presents significant health risks for fighters. These extreme weight loss practices are detrimental to athletes and the sports as a whole.

**Annotated Bibliography**

**Barley, Oliver R., Dale W. Chapman, and Chris R. Abbiss. "The current state of weight-cutting in combat sports." *Sports* 7.5 (2019): 123-134.**

Mixed martial arts athletes exploit the weight class requirement to fight in weight classes they would typically be excluded from due to their bulk (Barley, Chapman, and Abbiss, 123). As such, athletes are now using extreme weight cutting measures to increase their chances of winning against opponents with lesser body weight (Barley, Chapman, and Abbiss, 123). The practice of extreme weight cutting measures is considered dangerous for athletes due to the health implications it carries. At the same time, it is deemed to be unprofessional as extreme weight cutting measures a few days before a fight can mean pitting a much smaller opponent against a much larger opponent. Moreover, weight cutting techniques gives athletes an advantage over their opposition since they can regain weight lost through rehydration before the fight. Therefore, athletes who can regain the lost weight can have significantly superior weight, size, and strength compared to opponents who naturally qualify for a weight class.

However, while the authors conduct considerable literature research into the adverse effects of weight cutting in MMA, they fail to provide a quantitative basis for their conclusion. The literature research does demonstrate the fact that extreme weight cutting practices in MMA have detrimental impacts on the health of athletes, but there is lacking quantitative data to support the above conclusion, as per the documentation provided by the authors.

**Crighton, Ben, Graeme L. Close, and James P. Morton. "Alarming weight cutting behaviours in mixed martial arts: a cause for concern and a call for action." (2016): 446-447.**

Extreme weight cutting techniques have helped MMA athletes lose up to 15 kilograms in less than 48 hours, and since they gain that weight before the fight, athletes who cut weight typically have a size, strength, and weight advantage over opponents. These techniques include extreme forms of dehydration and starvation or a combination of the two. These nutritional practices, according to Crighton, Close, and Morton (446), are dangerous as they might contribute to fatalities in the sport. The authors believe that the contact nature of the sport (Crighton, Close, and Morton, 446) and the establishment of 11 restrictive weight classes coupled with the growing number of competitors often mean athletes are seeking an edge to improve their chances of winning. Hence, being able to fight in lower weight classes is often a pursuit to guarantee a quick victory. To qualify the above statement, an athlete weighing 80 kilograms and seeking to compete against fighters in the featherweight category (65 kilograms) can employ drastic weight cutting practices. These practices can help the 80-kilogram athlete reduce his weight to meet the requirements of the featherweight class in 48 hours, thereby meeting the requirement at the time of the weigh-in. After that, the athlete can gain some of his weight back and thus have an advantage over his opponent, who weighs 65 kilograms.

The study presents a compelling argument against extreme weight cutting techniques used by MMA athletes – increased susceptibility to brain damage. However, in making that argument, and offering possible courses of actions that would discourage weight cutting techniques in MMA, the authors fail to provide literature or research driven support.

**Kasper, Andreas M., et al. "Case Study: Extreme Weight Making Causes Relative Energy Deficiency, Dehydration, and Acute Kidney Injury in a Male Mixed Martial Arts Athlete." *International journal of sport nutrition and exercise metabolism* 29.3 (2019): 331-338.**

Kasper, Crighton, Langan-Evans, Riley, Sharma, Close, and Morton (343) arrived at a similar conclusion – rapid weight loss was detrimental to the performance of MMA athletes - in their study. The researchers found that rapid weight loss in MMA contributed to a deficiency in body power and exposed the fighters to acute kidney injury. Therefore, it is evident that even when rapid weight loss has historically been used as a vehicle to compete in lower weight classes where an athlete stands a greater chance of winning, the technique will reduce the chances of winning while exposing the fighter to more significant health dangers.

While the authors go to extensive lengths to provide quantities data on the adverse effects of excessive weight cutting that the MMA sport can rely on when making recommendations, the authors fail to propose a solution to the underlying causes of extreme weight cutting practices in the sport.

**Rossi, Sandra, et al. "Fluid management in acute brain injury." *Current neurology and neuroscience reports* 18.11 (2018): 74.**

The loss of water in the body inherently means that the brain also loses some of the fluid that surrounds it, as per the findings of Rossi, Picetti, Zoerle, Carbonara, Zanier, and Stocchetti (74). The loss of this fluid, coupled with the fact that MMA is a contact-heavy sport where head strikes can occur even after the loss of consciousness, means fighters who practice extreme forms of dehydration stand greater chances of experiencing traumatic brain injuries.

A review of how brain injury arises is informative to the study, especially when such brain injury is associated with excessive fluid loss. However, failing to connect excessive dehydration experienced during extreme weight loss in MMA does not fully inform the study in as a far as demonstrating how excessive dehydration can cause brain injury.

**Soolaman, J., M. Gaetz, and J. Brandenburg. "6 The cognitive and physical effects of pre-competition rapid weight loss and gain in mixed martial arts athletes." (2017): A4-A4.**

Soolaman, Gaetz, and Brandeburg (2017) also noted that rapid weight loss in the sport has considerable cognitive and physical effects on the athletes, most of which are negative. According to the researchers, rapid weight loss led to a significant decrease in upper body strength contributing to athletes' ability to perform optimally in matches. It also resulted in lower body power, similarly affecting in-match performance, and contributed to cognitive malfunctions meaning athletes were unable to make optimal decisions during their fights. These findings indicate the inefficacy of rapid weight cutting techniques in helping MMA athletes win their matches. At the same time, the results expose the dangers of rapid weight loss in the sport. While the authors extensively demonstrate the cognitive impairments and adverse physical effects of extreme weight cutting techniques, the sample size of 60 athletes is not a sufficient reflection of the entire population of MMA athletes.

To conclude, it is evident that extreme weight cutting measures employed by athletes in MMA present a performance bottleneck as well as a health risk. While the requirement to cut weight before a competition is required to ensure fairness, it must be done safely and benignly. Athletes must seek to preserve their health instead of projecting their desires of winning into the requirement to cut weight before a fight. Additionally, the onus falls on the organizers of the sport to develop new and accommodating weight classes to curb against the trend of rapid weight loss. Revising the weight classes will not only ensure healthier and competitive fighters, but it will also open the sport to more fighters and entertainment for the millions of fans around the world who do not have to watch their idols struggle with health concerns all in the name of meeting the requirements of the sport.

**Works Cited**

Barley, Oliver R., Dale W. Chapman, and Chris R. Abbiss. "The current state of weight-cutting in combat sports." *Sports* 7.5 (2019): 123-134.

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