

Hydration and Nutrition for Motorcycle Racers and Riders

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Motorcycle racers (and riders) have characteristics in common with fighter pilots. Both are highly motivated, work in high performance environments, have harsh physical requirements, and excel in precision execution.

From my military experience being assigned to an attack helicopter unit and an F-16 fighter squadron, I see physical needs of the motorcycle community similar to fighter pilots. My job here is to alert you, the motorcycle racer or rider, to physical preparation. It is my intent to add to your safety, enjoyment, and ultimate performance with the following advice.

The Bottom Line

- Force yourself to drink water or sports drinks because 3% dehydration = 50% decrease in athletic performance.
- Eat carbo's and protein for strength maintenance and alertness. Fats slow you down.

Hydration

- From USAF tests in the human centrifuge: 3% dehydration decreases G-force tolerance by 50%. In other words, 3% dehydration decreases athletic performance by 50%.
 - This is why athletes on the sidelines hydrate aggressively.
 - Force yourself. Athletes allowed to drink at will, only replaced _ of their fluid needs.
 - Air circulation over your body on a bike increases transpiration (the active loss of body water in addition to perspiration) – a unique motorcycle factor.
- Drinking 15 – 20 fluid ounces (450 – 600 cc) a half hour before a strenuous race or ride will maintain hydration status during that ride.
- Your gut will absorb an absolute maximum of one Liter per hour in perfect conditions. During one July TrackAddix track day, I drank over a gallon of water but was moderately dehydrated at the end of the day.
- Your muscle strength and mental abilities will be diminished with 2% dehydration.
- You will be thirsty at 3% dehydration.
- At 4% dehydration you will no longer be thirsty. You are in deep trouble at this point and need to quit all activity and re-hydrate. Keep up with your hydration, (see below).

- You have to train yourself to hydrate during exercise. Otherwise, you won't be able to optimally drink during a race or ride.

Nutrition

- The brain uses only glucose (table sugar).
- Muscles during demanding activity use primarily glucose.
- Loss of potassium and sodium (electrolytes) cause weakness, muscle spasms, and mental fatigue.
- Sports drinks contain glucose and electrolytes.
 - 7 ounces of 7% glucose every 15 minutes is reasonable guideline.
 - The above sports drink will double the time before you fatigue.
 - Find a sports drink that suits you: not too sweet, doesn't cause stomach upset, and tastes good to you. You will be more inclined to drink "your" sports drink.
- Fruit and sports bars are a better alternative to fatty foods during exercise. Fats need more digestive processes and time to absorb than carbohydrates and proteins.
- Muscle recovery is optimized if replenishment occurs 30 –60 minutes after the exertion event.

Other Factors

- Balance
 - Balance is 60% visual.
 - Be sure to have your helmet visor clean, glasses on, and eyes open.
- Perception of speed
 - Binocular vision for depth perception is good to about 12 feet.
 - Beyond this, parallax and size changes are used to judge speed.
 - Parallax is the visual perception due to different views from each eye. Motion parallax comes from changing viewpoints on a moving bike (think of the changing view of the two sides of the track or street during movement).
- Body position sense
 - Body position is based on receptors such as stretch receptors in muscle and tendon.
 - Pressure receptors are located in your fingers, butt, and feet, etc.
 - This feedback for position sense is called proprioception.
 - Muscle memory is one prime objective of motorcycle training. Muscle memory is dependant on training your stretch and pressure receptors described above.
- Training
 - Warm up: a warm muscle will contract more forcefully and relax more quickly.

- Stretching: passive static stretching is used to avoid injury. Bouncing-type stretching causes micro-tears.
- Remember: all muscle tissue is contractile only. That is why stretching is so important.
- Cardio and Strength: bicycling is used by many motorcyclists to improve cardio-pulmonary (heart and lung) and lower extremity fitness in a single exercise package.
- Immune system
 - Athletes are more susceptible to infections when training hard and long.
 - Your infection fighters (lymphocytes) use glucose fuel. Under stress such as flu or a cold, they switch to glutamine (an amino acid used by body builders).
 - Glutamine levels go down during strenuous exercise.
 - Consider glutamine supplementation during stress. Glutamine can be found in grocery stores and pharmacies.
 - Be sure to eat a good diet.
- Diet, Vitamins, and Antioxidants
 - Vegetables – low in fat, high in vitamins and antioxidants.
 - Fruits – see above.
 - High quality protein – fish, red beans and rice, skinless chicken and turkey. Egg protein – the most complete, high quality protein.
 - Vitamins – a good multivitamin that includes the B-vitamin complex is sufficient unless you discuss your specific needs with a knowledgeable professional.
 - Antioxidants – this is a complex cascade of molecules used to handle the high energy electron produced by aerobic metabolism. Sorry about the lingo here, but there is no simple way of handling this topic. Be sure to discuss antioxidant supplementation with a knowledgeable professional about your specific needs. Otherwise, you are likely wasting your money and possibly hurting yourself.

The Most Important Factor

This is, of course, you and your limits. Knowing your limits comes from exploring your limits safely. RawHyde Adventures allow you to properly train with excellent instructors in a safe environment to expand your limits.

You will now be able to maximize your motorcycle experience.

See you at the next RawHyde Adventure event.

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