



Why do athletes need “recovery”?

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During a day of gymnastics training or competition, many different things happen inside the athlete’s body that require an athlete to have a plan for recovery. The recovery plan is just as important as the training plan and should be implemented and modeled by coaches.

All exercise, including gymnastics, causes a small amount of damage to muscle fibers, tendons, ligaments, and bones. This damage is necessary and helps your body adapt to the type and level of exercise that you’re doing. This micro-damage, however, needs to be repaired. During this repair process, the body repairs or replaces these damaged tissues that allow gymnasts to gain strength in muscles, add thickness to ligaments and tendons, and increase bone density. Active recovery, proper nutrition and fueling, adequate sleep, and rest days are all important ways to help your body repair the damage to the structures inside your body. Depending on the intensity of exercise, it can take muscles 24-48 hours to repair and rebuild so taking one or two days off each week from moderate to intense exercise is important for recovery. It can take tendons, ligaments, and bones even longer to recover. Sports medicine physicians recommend that young athletes take 2-3 months off per year (these can be broken up into 1-2 week breaks throughout the year) from a particular sport for full recovery.¹

Exercise also causes a depletion of energy stores in the body, namely glucose and creatine phosphate. Jumping and sprinting activities rely more on creatine phosphate for energy and endurance activities rely more on glycogen. A 3-hour gymnastics practice or competition involves both power and endurance. At the end of practice, these energy stores may be very low and need to be replenished so that the body has the fuel it needs to heal damaged tissues and give the body energy for the next practice. Interestingly, the brain’s primary source of fuel is also glucose, so if you don’t replenish your glucose using carbohydrates after exercise, the brain will also suffer. Creatine phosphate is replenished from proteins. Sports nutritionists recommend replenishing these 2 essential macronutrients within a window of 30-60 minutes after practice (when the body is most ready to replenish itself) by consuming foods with protein and carbohydrates like chocolate milk.

¹ Joel S. Brenner, and the Council on Sports Medicine and Fitness; Overuse Injuries, Overtraining, and Burnout in Child and Adolescent Athletes. *Pediatrics* June 2007; 119 (6): 1242-1245. 10.1542/peds.2007-0887

Lastly, exercise causes an excess of metabolic by-products like lactic acid. Lactic acid quickly turns into lactate and protons that need to be flushed from the body. Drinking lots of water and reducing the intensity of exercise to low intensity are the best ways to flush lactic acid build-up. Walking, yoga, biking, active stretching, foam rolling, deep breathing, and rest are all good ways to reduce lactic acid.

Proper recovery plans on a daily, weekly, monthly, and yearly basis are important for all athletes to help repair damaged tissues, restore depleted energy sources, and remove excess metabolic byproducts of exercise. Gymnasts should do an active cool-down after training and competition, follow good nutrition principles immediately after training, competition and throughout the week, sleep 8-10 hours per night, take at least one day off from training per week, and take longer breaks from gymnastics training periodically throughout the year. Incorporating these principles will help your athletes recover well and go a long way toward keeping them healthy.