Focus on Canine Sports Medicine

Preventing Injuries

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Injuries happen. They are a part of life with a dog. And while it is impossible to prevent every injury, research and experience suggest that injury rates could be reduced by 25% if owners took appropriate preventative action. That would include proper conditioning and training, appropriate warm-ups, cool-downs, stretching, sport medicine wellness exams, and, when appropriate, maintenance treatment such as chiropractic, cold laser, and massage.

Conditioning and Strengthening

Adequate training and conditioning for agility is essential in preparing your dog for competition and helping prevent injuries. Swimming, sport-specific conditioning, and hiking, in addition to practicing agility, can help condition a dog's musculoskeletal system to handle the rigors of a specific activity such as agility.

That said, it also is very important not to overdo exercise. Many injuries occur during times of fatigue, such as after a long training session when you want to squeeze in one last run. Many canine athletes will not reveal clear signs of fatigue due to their intense drive, so the trainer must recognize when the dog has had enough. Thus, balancing a regular conditioning program of sport-specific exercises with a competitive but reasonable training schedule is critical for injury prevention.

Make sure you train your dog to build up his muscle strength, endurance, and ligament strength before asking him to compete. You also should condition your dog to be symmetrical, training him to turn one way as strongly and as frequently as the other, to avoid muscle or conditioning imbalances.

Different parts of the body are conditioned at different rates. First the muscles and the cardiovascular system adapt, then the tendons, and ultimately the ligaments. Although your dog may have the initial strength and endurance to perform a specific maneuver or obstacle, make sure you have trained and conditioned appropriately to allow all his body parts to have strengthened.

Warm Up Wisely

Most research about the human anatomy's response to exercise and injury comes from animal studies, especially those done with dogs. These studies have helped guide the way humans undergo rehabilitation and prepare for athletic events. Even though the intent of these studies was to benefit humans, the data can also be applied to canine athletes.

Research suggests that human athletes benefit from warming up prior to competition. The same theory can be applied to dogs. A warm-up increases several physiological and metabolic rates. It increases heart and breathing

rates, which means an increase in blood pressure so that more oxygen and energy are delivered to muscles. It increases muscle and joint temperature (which allows a full range of motion and function), increases glide of the muscle fibers and joints (which decreases the chance of strains), and allows nerve impulses to travel faster. All of this translates to the chance of a better performance that is more likely to be injury free.

A proper canine warm-up should consist of 5 to 15 minutes of light walking and trotting on similar terrain to that on which the sport will be performed. This also allows your dog to mentally adapt to the new environment. After the initial warm-up period you can initiate short periods of cantering/galloping and jumping over low jumps. These activities should be performed within 30 minutes of the run to retain the benefits of the warm-up. Your dog will need a longer, more gradual warm-up in colder weather or if he has been traveling a long distance in a small space such as a car or crate.

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Stretch Actively

There has been much debate about whether both human and canine athletes should perform "static" stretches after a warm-up. Static stretches are slow and constant, and the stretch is held at an end position for up to 30 seconds. There are many studies that have not demonstrated any benefit (and some have even demonstrated a detriment) of static stretching before athletic activity in humans or dogs. There is, however, a good consensus among researchers that a gradual warm-up that includes "active" stretching reduces the risk of muscle tears and tendon ruptures. Active stretches, those in which your dog performs movements that stretch his limbs and spine in ways that are similar to, or mimic, the actions he will undergo in the competition ring, are an important finish to a good warm-up. Performing active stretches allows your dog to regulate how far to push his own muscles. If you place your dog into a passive stretch, you run the risk of overstretching the muscle. Static stretches, described later in the article, should only be performed after the trial or training session is over and a proper cool-down has been performed. It is at this time where the art of static stretching will hold the most benefit (increasing range of motion) and have the least detriment on your canine athlete.

An active gracilis (a muscle in the groin area) stretch as well as a hamstring stretch can be accomplished by tugging with your dog. The active "cookies-at-the-hip" stretch should be performed in both directions to help stretch the paraspinal muscles (located along the spine), which are used for making tight turns. The "paws-on-the-chair" stretch is another good active stretch for the back muscles. It also provides a nice stretch for the quadriceps (a muscle group of the upper legs) and the iliopsoas (a muscle in the lower back/hip area). A play bow is an excellent front-end stretch that focuses especially on the large triceps muscle group, which accounts for 60% of the dog's weight-bearing mechanism.

Active stretches should be performed immediately after you finish your warm-up, while muscles are still warm.

While you warm up your dog for competition, watch for hazards in the practice area as well as in the ring. Slippery or hard surfaces should not be used when practicing high jumps, contacts, tight turns, or pivoting. Be sure your dog has the traction and support he needs for the activity you're asking him to do, in training, during warm-ups, and while competing. If you are outdoors, scan the area for any thorny plants, trash hazards, or holes before allowing your dog to warm up. During the hot summer, be aware of the temperature of black asphalt or pavement as it can burn the pads on your dog's paws. Some indoor events have padded matting over concrete surfaces, which is great, but the surface may be less than ideal in the warm-up area. Remember to keep your dog's activity and warm-up appropriate for the support the surface provides.

Most injuries, especially CCL ruptures and medial shoulder instabilities, happen to the canine athlete when a leg is planted and the dog pushes off in another direction. By minimizing other contributing factors such as poor conditioning, inadequate warm-ups, and questionable surfaces, you can help lessen the chance of serious injury.

The Critical Cool-Down Period

After your dog's training or competition session, it is important to cool him down. His heart and respiratory rate are elevated, and he is panting to cool his body and muscle temperature. You can help your dog cool down by decreasing the intensity of exercise slowly over 10 to 15 minutes. Do this by taking him from a trot to a vigorous walk, and finish with a 5-minute slow walk. This cool-down period helps his body to remove metabolic waste products from muscles, which will help prevent soreness and tension.

Be aware of the air temperature. Use cooling aids in hot weather, such as cool water on your dog's paws and ears. Use a dog coat in cold weather to help prevent rapid cooling of the muscles, which can lead to lactic acid build-up and cramping.

Passive Range of Motion and Static Stretching

Passive range-of-motion exercises and static stretching should be done immediately after the cool-down, while muscles are still warm. Never perform passive range-of-motion exercises or stretching on cold muscles. Large muscle groups, such as the quadriceps, hamstrings, paraspinals, and triceps, which performed at their peak during exercise, may contain lactic acid, resulting in stiffness and soreness. You should statically stretch these muscles to maintain their length and pliability. You can also perform massage along the length of the muscle fibers to help push waste products from the muscle tissue into circulation and out of the body.

Passive range-of-motion (PROM) exercises for the front and hind limbs consist of taking each limb through a normal range of motion and holding it in complete flexion and extension for 8 to 10 seconds. It's best to perform these movements while your dog is lying on his side in a relaxed atmosphere, because if you attempt

them while your dog is standing, he might resist them due to fear of falling or instability.

After performing 5 to 10 cycles of PROM on each limb, you then can statically stretch individual muscle groups.

Wellness Exams

Annual or semi-annual sport medicine wellness exams will help detect early breakdown of your dog's musculoskeletal system. Gait analysis, proper palpation, and ancillary diagnostic procedures can help make sure that your canine athlete is in peak health to continue to perform at his highest level. Monthly maintenance therapy (such as chiropractic, acupuncture, massage, and cold laser) can also help your canine competitor maintain a peak performance level. Talk to your local

Know When to Stop

If an injury does happen, do not ignore it or try to encourage your dog to work through it. Immediately assess the situation and have him examined by a qualified veterinarian as soon as possible. Injuries can range from obvious, with substantial lameness, to subtle, indicated only by refusal of one or more obstacles or a change in course times. You can turn a minor injury into a major one by continuing to exercise your dog after an injury. Don't let your own drive get in the way of your dog's health. Listen to what he is saying and showing you and give him the benefit of the doubt.

If your dog seems all right, increase his activity slowly, keeping a close eye on his reaction to movement and obstacles. Monitor him for any signs of limping or avoidance of certain motions or activities. If there is any doubt as to his soundness, keep him out of competition or activity until you can have him fully assessed. Risking a permanent injury is not worth lost entry fees or a planned training session. Follow up with your veterinarian or with an orthopedic or sports medicine veterinarian if you suspect any persistent signs of injury or lameness.

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