# Dogs with Head Trauma

WSAVA Global Veterinary Community This article reviewed imaging modalities and treatment strategies for dogs suffering traumatic brain injury (TBI). TBI is defined as a structural injury or physiological disruption of the brain induced by an external force and resulting in acute onset of 1 or more of the following: a period of decreased or lost consciousness, alteration in mental status, neurologic deficits, and/or an intracranial lesion. Up to 25% of dogs with severe blunt head trauma suffer from TBI. The modified Glasgow coma scale (MGCS)—which evaluates motor activity, brainstem reflexes, and level of consciousness—is an important prognostic indicator. Many dogs with TBI will recover; however, a recent study found that 10% of dogs studied developed posttraumatic epilepsy.

TBI treatment focuses on providing adequate blood and oxygen to the brain. Injury severity and treatment response should guide therapeutic decisions using a tiered approach. Tier 1 therapy is for all TBI patients and includes fluid and oxygen therapy and ventilation management. Patients failing Tier 1 progress to Tier 2 therapy, which may also include diuretics and antiepileptic drugs. Tier 3 treatments are reserved for patients with a severe MCGS and failure of Tier 1 and Tier 2 treatments. Advanced imaging should be reserved for Tier 3 cases to determine if surgery is warranted. Tier 3 treatment includes surgery. It may include hyperventilation and hypothermia; however, the benefits of these 2 therapies remain unproven. The authors concluded that management of TBI patients can be successful when the patient is frequently and accurately assessed.

## Global Commentary

Head trauma is a relatively common disorder in veterinary neurology. In an ideal world, advanced imaging would be performed for all patients with TBI, especially those with moderate-to-severe clinical signs. However, veterinary patients usually require heavy sedation to general anesthesia for advanced imaging, and the cost of imaging may be cost-prohibitive when factored into the overall cost of treatment and hospitalization for TBI patients. Although many patients improve without the need for advanced imaging, it should be considered for patients that are not improving or are getting worse. An MGCS should be used to assess all TBI patients to establish a general prognosis at the time of injury and to subsequently monitor the patient for improvement or decline. A MGCS should be performed at least once a day, or more often as indicated on an individual basis. Aggressive treatment is recommended for all TBI patients to reduce morbidity and mortality and to hopefully lead to a successful outcome.—*Mark Troxel, DVM, DACVIM (Neurology)*

**The modified Glasgow coma scale should be used to assess all traumatic brain injury patients.**

### Source

Platt S, Freeman C, Beltran E. Canine head trauma: an update. *In Practice*. 2016;38(1):3-8.