### What Is It?
A brain tumor describes a cancerous mass within the cavity of the skull associated with the brain. Brain cancer is common in older dogs, though emerging research shows that brain tumors are found among younger animals as well. Brain tumors are either primary (arising from the brain or brain lining) or secondary (caused by the spread of cancer). The most common forms of primary brain tumors in dogs include meningiomas, gliomas, choroid papillomas, pituitary adenomas and adenocarcinomas. Meningiomas (the most common of those listed) arise from the lining of the brain rather than the brain itself. Secondary tumors spread to the brain from somewhere else in the body. Examples of secondary brain tumors include hemangiosarcoma, mammary carcinoma, and melanoma. Secondary tumors carry a guarded prognosis as metastasis (spread) within the body is present at the time of diagnosis and may be an indication that the pet’s cancer is already severely progressed. Depending on the location of the tumor, the symptoms will vary. For example, tumors that affect the brainstem typically impair the ability to walk, respiratory function, circulation, mentation, balance and nerve function to the face and mouth while tumors of the forebrain typically cause seizures and changes in mentation or behavior.

### Diagnosis
A diagnosis is determined by a complete medical workup and detailed physical exam. Typically, brain tumors are undetectable on x-rays and blood work. The brain can be imaged using magnetic resonance imaging (MRI) or computed tomographic (CT) scans. The following diagnostic steps are recommended as a general workup: complete physical and neurological examination, routine blood work to rule out other problems, chest x-rays to check for the spread of cancer to the lungs, abdominal ultrasound to check for the spread of cancer to internal organs, and CT or an MRI of the brain. In general, an MRI and CT scan are the best choices to definitively identify brain tumors. However, advanced imaging diagnostics generally require anesthesia and are expensive, available only at specialty facilities.

### Treatment and Management
Treatment options for brain tumors include surgery, radiation, and chemotherapy. If none of the above therapies are an option, it is still possible to treat the symptoms with palliative care. A dog with a brain tumor that has seizures can be placed on anti-epileptic drugs such as Phenobarbital. Tumors that tend to cause fluid to accumulate around them can respond to palliative treatment with steroids, such as prednisone, which has the potential to improve the quality of your pet’s life for a period of time. Supporting healthy brain function with cognitive supplements has proven helpful for some pets as well.

### Prognosis
It is important to note that most brain tumors are treatable, but not curable. The mean survival time for pets with untreated brain tumors is relatively short, and even with radiation therapy, survival times may only reach around a year on average. Untreated brain tumors, or those that are particularly aggressive,
will result in quickly progressive
disease with worsening symptoms.
Improved survival times may
be possible when treating
meningiomas with surgery and
radiation, as these tumors are
the most amenable to treatment.
In general, the more severe the
signs and the larger the tumor,
the worse the outcome. It is
important to discuss a personal-
ized treatment and management
plan with your veterinarian and
veterinary oncologist to provide
the best outcome for your dog.

Management Tips
Consider providing:
• Easily accessible food and water
• Modified surfaces to increase traction
• Ramps/stairs to common areas
• Safety gates where needed to prevent
  falls in multi-story homes
• Warm, soft sleeping areas
• Night lights
• Natural, safe calming products

Try to:
• Be consistent with medications
• Block off stairs and other areas of
  potential hazzard. See above comment
  re: safety or baby gates
• Limit strenuous activity/rough play
• Track weight, appetite, energy level, etc.
• Access to “safe” quiet areas. If changes
  in the pet’s mentation or behavior
  occur, it may be necessary to isolate
  them from other animals in the home
  when unsupervised to avoid altercations
• Cognitive function supplements
• Prescription diets promoting brain
  function
• Track good days vs. bad days
• Limit stress (kids, people, noise)
• Keep separate from other animals
• Be cautious with handling
• Approach slowly, do not startle
• Avoid sudden movements, lights, sounds
• Easily accessible food and water
• Modified surfaces to increase traction
• Ramps/stairs to common areas
• Safety gates where needed to prevent
  falls in multi-story homes
• Warm, soft sleeping areas
• Night lights
• Natural, safe calming products

Before your dog’s condition becomes unmanageable it is important to begin
palliative care discussions with your veterinarian. Maintaining normal functions
such as eating, drinking, urinating, and defecating does NOT mean your pet
is pain-free. Discuss providing palliative medications for pain regardless of
“normal” body functions.