Half of all dogs over 10 die from cancer. High risk breeds are predisposed to cancer. INCaSe is a simple blood test to detect malignant growth in apparently healthy dogs with no overt signs of disease.

**Benefits of cancer screening**

For many pet owners, discovering their dog has cancer is a moment filled with fear and uncertainty. Often, cancer is discovered in later stages when treatment options are limited and costly. Sadly, the diagnosis of cancer typically ends poorly.

By detecting cancer prior to overt signs of disease, more effective treatment options are available. Even aggressive cancers like hemangiosarcoma can be readily treated cost-effectively, when caught early.

**Early detection is challenging**

For screening to be effective it must be sensitive, specific and cost effective. Ultrasonography is costly and lacks specificity for cancer. Palpation finds cases typically in later stages. Biopsy is invasive, costly, and can only be performed when a mass has already been identified. Although these are important tools on the path to diagnosis, they are not particularly effective as a screening tool.

**INCaSe Canine Cancer Screen**

INCaSe (Initial Notification Cancer Screen) is a routine cancer screen for the apparently healthy dog with no signs of disease*. By employing dual-biomarkers in a proprietary algorithm, a POSITIVE INCaSe finding detects malignant growth prior to overt signs of disease and a NEGATIVE INCaSe finding is a strong indication the pet is cancer free.

**Studied for intended use**

INCaSe has a unique intended use—a wellness screen for the apparently healthy dog PRIOR TO the onset of visible signs. For a product to make this claim, it must be clinically studied for this specific intended use; this is what separates INCaSe from other cancer screening tests. INCaSe is part of a family of cancer diagnostic services designed and studied for the conditions they are to be used.

*Dogs with suspected cancer or dogs undergoing treatment should use VDI-TKCANINE+ for diagnostic workup and monitoring.
**Principles of the Biomarkers**

INCaSe is based upon a patent-pending dual biomarker algorithm that has been optimized around cancer-specific thymidine kinase (TK) type 1 and a general inflammatory marker, C-reactive protein (CRP).

**TK** is involved in the synthesis of DNA precursors and is only expressed in S-G2 cells (i.e., cell division). TK levels have been shown in numerous studies, both in humans as well as animals, to correlate to the proliferative activity of tumor disease.

**CRP** is a major acute phase protein produced, mainly in the liver, in response to inflammation and the release of cytokines. Serum CRP levels correlate to both the severity and duration of the inflammatory stimuli.

VDI researchers have found that if TK is measured at very small concentrations, low levels of abnormal cell replication can be detected. By coupling an ultra-sensitive TK measurement with CRP in a proprietary algorithm, malignant growth can be detected before any signs of disease are apparent.

**Clinical Study**

In an ongoing major clinical study involving the University of Missouri, 327 “apparently healthy” dogs of high cancer risk breeds and most over the age of five years (primarily Golden Retrievers and German Shepherd Dogs) were collected for analysis. These dogs were then followed for health changes up to 9 months.

**Findings:** Of the 327 dogs, 10 dogs developed cancer (incidence rate 3.06%). INCaSe was able to detect 100% of all cancers developed up to 109 days prior to the onset of visible signs.

**ROC area under the curve:** 0.971  
**Sensitivity:** >0.99  
**Specificity:** 0.87  
**High Positive Specificity:** >0.99

**How to use**

- Perform INCaSe assessment at wellness visits for dogs over the age of 5 or high-risk breeds
- **POSITIVE** findings should reflex to VDI-TKCANINE+ for a complete diagnostic and prognostic workup