



### How is canine oral melanoma diagnosed?

Tumors in the mouth are often difficult for you to detect — but your veterinarian can easily identify them during a routine oral examination. You can help identify the potential of tumors by looking for secondary signs, including:

- Difficulty swallowing<sup>8</sup>
- Bad breath<sup>8</sup>
- Bleeding<sup>8</sup>
- Loss of teeth<sup>8</sup>
- Facial swelling<sup>8</sup>

To properly diagnose a tumor and determine whether it is melanoma, your veterinarian may perform a biopsy, removing a small tissue sample and sending it to a laboratory. The laboratory will study the cells to determine if the tumor is malignant or benign; report the type of tumor; and comment on how aggressive it might be.

Since canine melanoma will have a strong tendency to spread to other parts of your dog's body (metastasize),<sup>1,2</sup> your veterinarian also may conduct other tests to determine how far it has spread. This will help determine the most effective treatment for your beloved dog.

This information about canine malignant melanoma and ONCEPT, the first DNA-based cancer vaccine,<sup>4</sup> is brought to you by Merial. Merial is a leader in recombinant canarypox-vectored vaccine technology and advanced vaccines like PUREVAX<sup>®</sup> Recombinant Leukemia, PUREVAX Feline Rabies and RECOMBITEK<sup>®</sup> canine distemper vaccines.

For the name of a cancer specialist in your area, visit [www.acvim.org](http://www.acvim.org) or [www.vetcancersociety.org](http://www.vetcancersociety.org).

**For additional questions about ONCEPT, please contact Merial Technical Solutions at 1-888-MERIAL-1, option 3.**

**ONCEPT**<sup>™</sup>

<sup>1</sup>Bergman PJ, et al. Development of a xenogeneic DNA vaccine program for canine malignant melanoma at the Animal Medical Center. *Vaccine* 2006;24:4582-4585.

<sup>2</sup>Bergman PJ, et al. Long-Term Survival of Dogs with Advanced Malignant Melanoma after DNA Vaccination with Xenogeneic Human Tyrosinase: A Phase I Trial. *Clinical Cancer Research* 2003;9:1284-1290.

<sup>3</sup>Bergman PJ, Wolchok JD. Of mice and men (and dogs): development of xenogeneic DNA vaccine for canine oral malignant melanoma. *Cancer Therapy* 2008;6:817-826.

<sup>4</sup>Tremayne J. Researcher eyes vaccines to treat canine skin cancer. *DVM* 2005;36(8):22.

<sup>5</sup>Data on file at Merial. Study 05-171. 2009.

<sup>6</sup>Liao JCF, et al. Vaccination with human tyrosinase DNA induces antibody responses in dogs with advanced melanoma. *Cancer Immunity* 2006;6:8-17.

<sup>7</sup>ONCEPT product label.

<sup>8</sup>Dhaliwat RS, et al. Oral Tumors in Dogs and Cats. Part 1. Diagnosis and Clinical Signs. *Compendium* 1998;20(9):1011-1021.



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*An exciting therapy  
to prolong survival of  
dogs treated for*

**canine oral  
melanoma.\***



\*Product indications: vaccine aids in extending survival times of dogs with stage II or stage III oral melanoma and for which local disease control has been achieved.

# Proven technology aids the treatment of canine oral melanoma.

Dogs like yours live longer than ever before, thanks to advances in preventive health care, nutrition and vaccination practices. Unfortunately, with age, cancer is more likely to develop in your dog.

Melanoma is a common type of cancer in dogs. It is in fact the most common malignant tumor of the dog's mouth. It also can be seen in the nail bed and footpad.<sup>1</sup> Canine melanoma is a highly aggressive cancer that frequently spreads throughout the body.

## What if your dog is diagnosed with malignant melanoma?

If your dog is diagnosed with canine malignant melanoma, your veterinarian may refer him or her to a specialist in cancer (oncology). This cancer specialist will evaluate treatment options, including:

### Local control

- Surgical removal of your dog's tumor
- Radiation may be used following or instead of surgery to treat any tumor cells in the surrounding tissues and local lymph nodes

**Distant control** (for tumor cells that have spread away from the location of the initial tumor)

- Chemotherapy (using strong chemicals to kill tumor cells in your dog)
- Immunotherapy (using your dog's own immune system to target tumor cells)

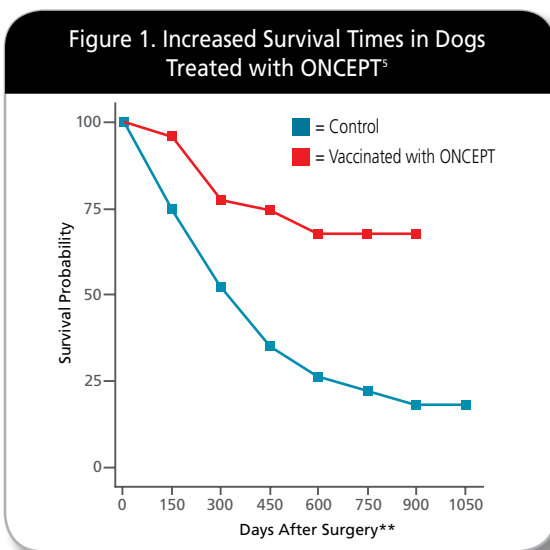
Canine melanoma is known to be highly resistant to chemotherapy. In fact, chemotherapy may do little to prolong survival.<sup>1,2</sup> This is why many researchers have focused on immunotherapy to target tumor cells.

## Can combining controls improve survival times?

Historically, dogs with stage II or stage III oral melanoma have reported survival times of less than five to six months when treated with surgery alone.<sup>3</sup>

Promising new immunotherapy technology has led to the first DNA-based vaccine for cancer in either animals or humans.<sup>4</sup> An innovative canine melanoma vaccine called ONCEPT™ is now available for dogs like yours. ONCEPT has been used in dogs with stage II or stage III canine oral melanoma to support surgery and/or radiation therapy and prolong survival time.

Figure 1 compares survival times for dogs treated with surgery alone and those also treated with ONCEPT.<sup>5</sup> Multicenter efficacy trials were performed, and here are the results:



Survival probability between stage-matched historical controls and vaccinates receiving four biweekly doses of ONCEPT, followed by "booster" injections at six-month intervals. Local disease control was activated for both vaccines and controls.

\*\*At a follow-up for survival data six months after the conclusion of the study, less than 50% of treated dogs have died of disease related to canine oral melanoma.

## How does ONCEPT work?

Conventional vaccines stimulate an immune response directed against foreign proteins. Tyrosinase, a protein present on canine melanoma cells, is not usually targeted by your dog's immune system because it also is present on normal cells.

- ONCEPT is produced with a human gene for tyrosinase inserted into a small ring of DNA.
- Human tyrosinase is different enough from canine tyrosinase that an immune response is generated, yet is similar enough to canine tyrosinase that this immune response is directed against the protein on canine melanoma cells.
- When used in conjunction with surgery and/or radiation therapy to treat your dog's local tumor cells, ONCEPT has been shown to significantly prolong the survival time for dogs with advanced stages of melanoma.<sup>1,2,5,6</sup>

Vaccination involves an initial four-dose series, once every two weeks, using a needle-free transdermal device. After this initial series, your dog will receive one booster vaccine every six months.<sup>7</sup> There are no known contraindications for ONCEPT in dogs with oral melanoma.<sup>7</sup>

Your veterinarian can work with a cancer specialist to answer other questions you may have about canine malignant melanoma and if the ONCEPT vaccine is right for your dog.

