HTVista
BY HTVET

FAQ Document for Veterinary Professionals

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General

Q1- What is HT Vista 4.0?

HT Vista is a **cancer detection** tool for lumps and bumps in dogs, offering both **screening** and **diagnostic** capabilities. It utilizes innovative **Heat Diffusion Imaging** technology combined with **cloud-based analysis** to support veterinary decision-making. By analyzing thermal patterns, HT Vista helps veterinarians determine the next best step- whether to monitor the lump or proceed with further diagnostic tests- avoiding unnecessary invasive procedures and delays in treatment, ultimately enhancing early detection and care.

Q2- How does HT Vista 4.0 differ from previous versions?

HT Vista 4.0 introduces two key improvements:

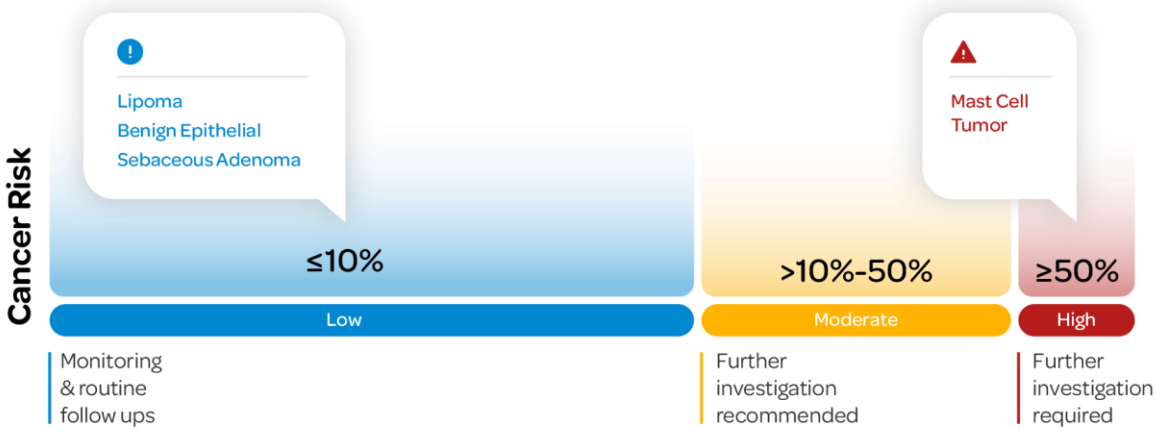
- **Cancer Risk Values and Levels:** A visual framework to classify masses as low, moderate, or high risk.
- **Tumor-specific Subclassifiers:** AI-powered tools that flag **Lipomas** and **Mast Cell Tumors (MCTs)** to minimize unnecessary procedures (Lipoma) and improve early detection (MCT).

Q3- What is the purpose of the Cancer Risk Levels?

Cancer Risk Levels (low, moderate, high) provide an additional decision-making layer to help veterinary teams determine the next steps for each case. Low-risk cases can be confidently monitored, while moderate- and high-risk cases warrant further investigation.

Q4- What is the Recommended Cancer Risk Value in which I can rule out cancer?

You can confidently rule out cancer when the Cancer Risk Value is **10% or lower**. This can be done with a level of confidence of 90% sensitivity and NPV of 98%.



Q5- How does HT Vista 4.0 work and heat diffusion imaging?

HT Vista 4.0 uses AI-based heat diffusion imaging technology to analyze heat transfer patterns in tissue. The AI interprets these patterns to determine the likelihood of malignancy, providing Cancer Risk Values and subclassification results when the specificity is 90% or higher.

Q6- Does HT Vista 4.0 replace cytology or histopathology?

No. HT Vista 4.0 is an adjunctive tool that aids decision-making. Cytology and histopathology remain the gold standards for definitive diagnosis when cancer risk is moderate or high.

Q7- When should I recommend further investigation with additional testing?

Further investigation should be recommended for moderate and high Cancer Risk cases when the risk for cancer **exceeds 10%**.

Interpreting Results and Algorithm Performance

Q8- How does HT Vista rule-out and rule-in cancer of lumps and bumps in dogs?

The following metrics help assess HT Vista's effectiveness in both screening (high sensitivity and NPV) and diagnostic (high specificity and PPV) applications, ensuring accurate detection and reducing unnecessary procedures.

Metric	Explanation
Sensitivity	Measures HT Vista's ability to correctly identify cases with the disease (**true positives**), ensuring minimal missed cancer cases.
Negative Predictive Value (NPV)	The probability that a mass with a **negative test result** truly does not have the disease, providing reassurance for negative cases.
Specificity	Measures HT Vista's ability to correctly identify cases without the disease (**true negatives**), reducing false positives.
Positive Predictive Value (PPV)	The probability that a mass with a **positive test result** actually has the disease, ensuring diagnostic accuracy.

Q9- What key metrics should be considered when assessing the performance of a screening *vs.* a diagnostic tool in cancer detection?

When evaluating the performance of cancer detection tools, different metrics are prioritized depending on whether the tool is used for screening or diagnosis:

- **Screening Tool (Primary HT Vista Classifier)**: The focus is on high **sensitivity** (90%) and **negative predictive value** (NPV: 98%) to ensure that most true cancer cases are detected while providing reassurance for negative results. A high sensitivity minimizes missed cancer cases (false negatives), which is critical for early detection.

- **Diagnostic Tool (HT Vista Subclassifiers)**: The priority is high **specificity** (Lipoma: 90%, MCT: 90%) and **positive predictive value** (PPV: Lipoma: 99%, MCT: 77%) to ensure accurate confirmation of cancer. High specificity reduces false positives, preventing unnecessary interventions, while a high PPV increases confidence that a positive result truly indicates cancer.

Q10- What is the confusion matrix for the screening and diagnostic tool?

	Primary Classifier	Subclassifiers	
		Lipoma	MCT
Sensitivity	**90%**	69%	44%
NPV	**98%**	40%	78%
Specificity	70%	**90%**	**90%**
PPV	42%	**99%**	**77%**

Q11- How are Cancer Risk Values calculated?

Cancer Risk Values are derived from the model's predictive scores and adjusted using Bayes' theorem to match real-world benign-to-malignant prevalence ratios (85:15).

Q12- What happens if a mass is flagged for further investigation?

If a mass falls into the moderate or high Cancer Risk category, further diagnostic tests, such as fine needle aspiration (FNA) or biopsy, are recommended for definitive diagnosis.

Q13- What kind of tumors does the device scan?
HT Vista is designed for scanning dermal and subcutaneous masses and uses a growing database to refine its analysis.

Patient and User Considerations

Q14- Do dogs react to the heat/device?
Most dogs do not react negatively. The device heats tissue by 6-7°C, which is comparable to a warm beverage and does not cause burns or any other damage to the skin.

Q15- What does the device use to heat the mass?
HT Vista uses two blue LED bulbs for safe heating. The optic camera records the HDI activity, while the thermal sensor camera measures thermal changes in the tissue.

Q16- How do I clean the device?
The device is not waterproof. Use a dry towel with antibacterial spray to wipe debris. A soft makeup brush can remove hair inside the scanner.

Q17- How does HT Vista 4.0 improve clinical decision-making?

- Provides immediate assessment of masses.
- Prioritizes cases based on Cancer Risk Levels.
- Reduces unnecessary cytology/biopsy procedures for low cancer risk cases.
- Flags potential cases for early intervention.

Q18- Can HT Vista 4.0 be used for all types of canine masses?
HT Vista is optimized for dermal and subcutaneous masses. It is not designed for, mucosal, ocular, testicular, mammary glands, foot pads, or internal organ masses.

Q19- Can the scan be performed under general anaesthesia (GA) or sedation?
Yes, as long as the mass has not been lying on a heat mat for a prolonged time. The device uses adjacent healthy skin as a reference.

Q20- Can the device scan cats?
Not yet, but an algorithm for cats is under development.

Q21- Can we scan a lump on my dog's eye?

Unfortunately, no. If the light is too close to the eye it may cause damage and be uncomfortable for the patient.

Q22- Can an ulcerated lump on my dog be scanned?

Ulcerated masses are excluded from being scanned. We recommend treating inflamed and infected masses before scanning, to obtain an accurate result.

Q23- Can we scan a lump on my dog's testicle?

No, testicles, mammary tissue, and lymph nodes cannot be scanned. As these tissues react differently to heat, in comparison to dermal and subdermal tissue.

Training & Learning

Q24- How do you train the team?
Training is conducted via **HT Vista Academy** (on the HT Vista website), online or in person with a HT Vista expert. All include theory, practical scanning, and case discussion. Refresher sessions are available.

Q25- How do I scan a subcutaneous mass?

- Palpate the mass.
- Use a thin blue ink pen to mark the mass edges with brackets.
- Position the scanner over the mass and healthy tissue.

Q26- How does inflammation affect the result?

Inflammation can impact HT Vista's results by altering the heat diffusion patterns that the system analyzes. Since inflammation increases blood flow and tissue temperature, it may create thermal signatures similar to those seen in certain (malignant) tumors. As a result, benign cases may be advised to be further investigated... but it is better to be safe than sorry!

Q27- Can I contribute to the algorithm?
Yes. Clinics can submit scan data and lab reports through a dedicated application to enhance the AI model.

Q28- Is the device portable?

Yes, but it requires connection to a power source and Wi-Fi access. When switched back on, it requires about five minutes to boot unless using an external power bank. It enters sleep mode after an hour of inactivity.

Q29- What are the 3 reasons for scan termination, what should I do and how to avoid it in future scans?

Reason for scan termination	What should I do?	How can I prevent future termination?
Movement-related interruptions	Reposition your patient in a comfortable position and **rescan**.	To avoid movement in future scans, ensure the scanner is placed in direct contact with the skin and remains stable throughout the scan.
Fur detection	Ensure proper clipping and/or proper placing of the scanner are corrected and **rescan**.	To avoid fur detection in future scans, ensure proper clipping of the mass and surrounding area.
Post-marking rejections	Reposition your patient in a comfortable position and ensure proper clipping and/or proper placing of the scanner are corrected and **rescan**.	To avoid fur detection in future scans, ensure proper clipping of the mass and surrounding area.

Q30- What if the dog moves during the scan?

Minor movement is tolerated, but excessive movement will terminate the scan. Keeping the dog still with a treat or distraction is recommended. The system will be ready for you to re-scan immediately.

Q31- What are red zones?
Red zones indicate areas that were not effectively heated due to movement or uneven fur clipping. If a large red zone appears covering het whole mass area or the whole area of the adjacent healthy tissue, the scan will be terminated and a rescan is needed.

Q32- What is a follow up scan and how do you perform one?

A follow-up scan is a subsequent scan conducted on the same mass to monitor changes over time. This helps in assessing its progression and determining whether further action is needed. To perform a follow-up scan, use the "Follow-Up" button on the scan card, ensuring accurate comparison and analysis of previous and current scan data.

Q33- Does the scanner need to be flat on the skin?
Yes. Direct contact ensures accurate heating and analysis. When scanning a large/raised mass or masses located on tails and limbs, any air gaps should be covered with a black towel or black glove provided.

Q34- Does the device require maintenance?
Yes. Software updates improve AI accuracy and user experience. Updates are accessed via system notifications. To benefit from ongoing system calibration and daily checks, keep your device powered on at all times.