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VISTA iQ

The First Step in Early Cancer Detection

Results Guide

SCANNING Process

4 key steps

CLIPPING

SCANNING

MARKING

ANALYSING

for a high-quality scan

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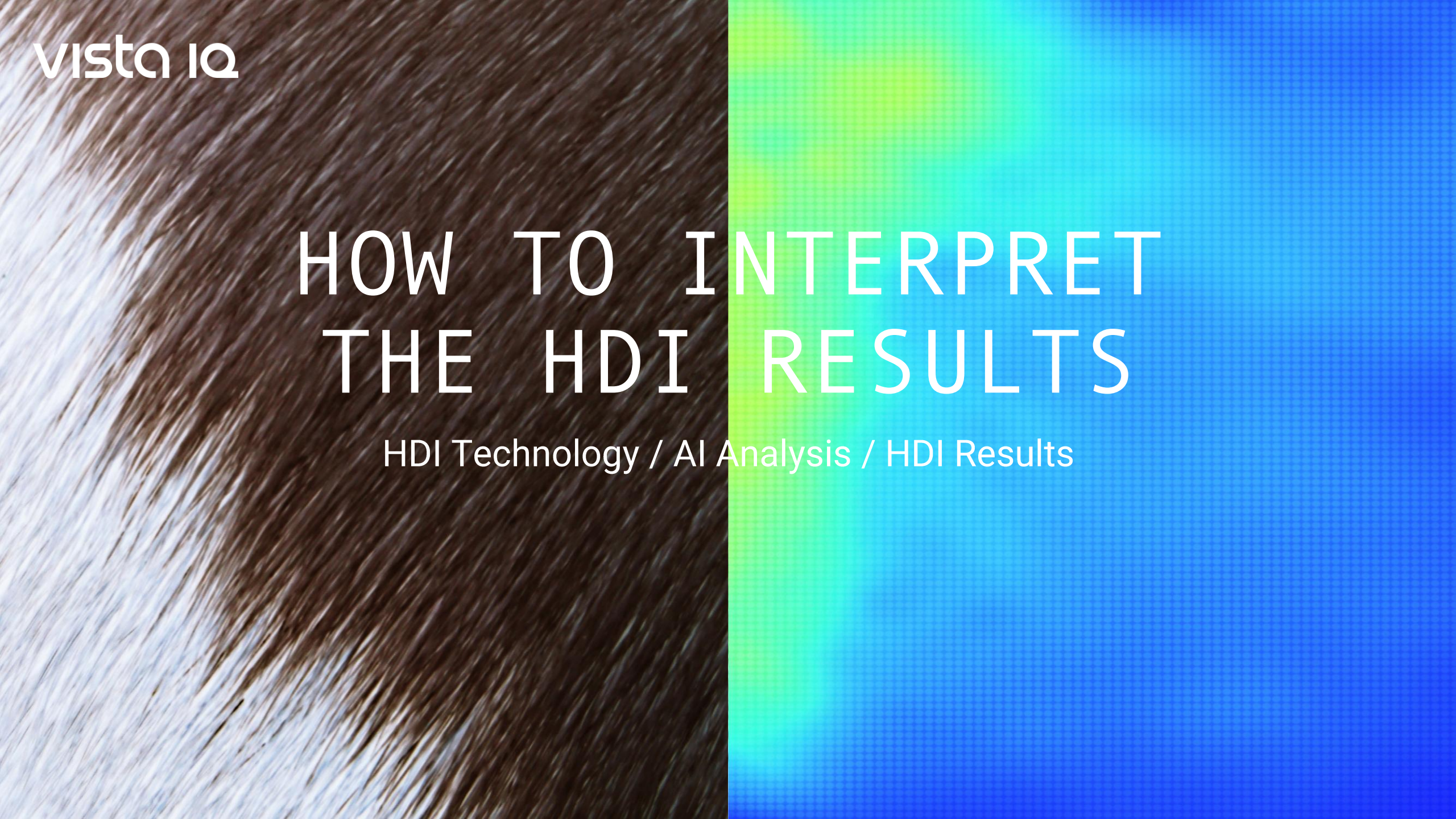
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HOW TO INTERPRET THE HDI RESULTS
HDI Technology / AI Analysis / HDI Results

Heat Diffusion Imaging (HDI) Technology

VISTA iQ is powered by Heat Diffusion Imaging (HDI).

- HDI distinguishes benign from malignant tissue by measuring how tissues respond to controlled heat stimulation (**460 nm blue light**).
- Variations in density, metabolism, vascular structure, and other biological properties create distinct thermal signatures.
- A rapid 40-second scan compares the mass with adjacent healthy tissue, applying **10 seconds of heat excitation** followed **by 30 seconds of natural cooling** to analyze tissue-specific heat transfer behavior.

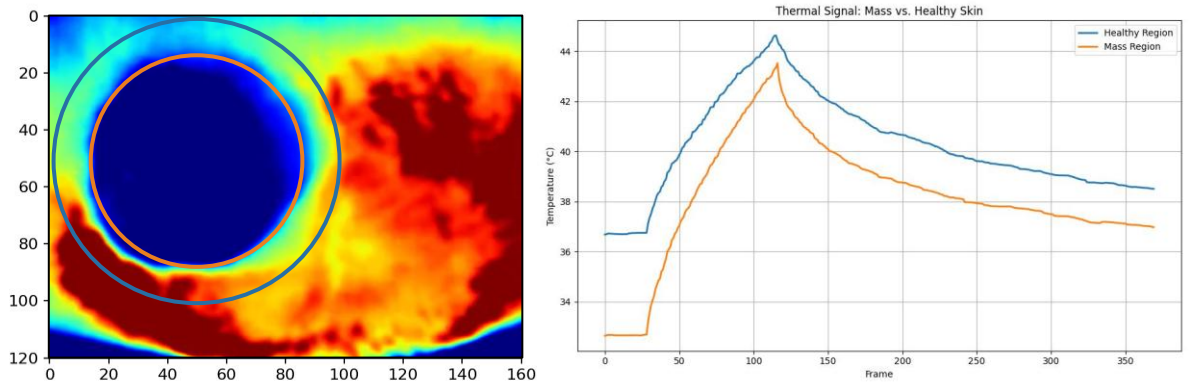
AI Analysis System

The HDI system uses a structured, multi-stage machine-learning pipeline composed of 4 steps:

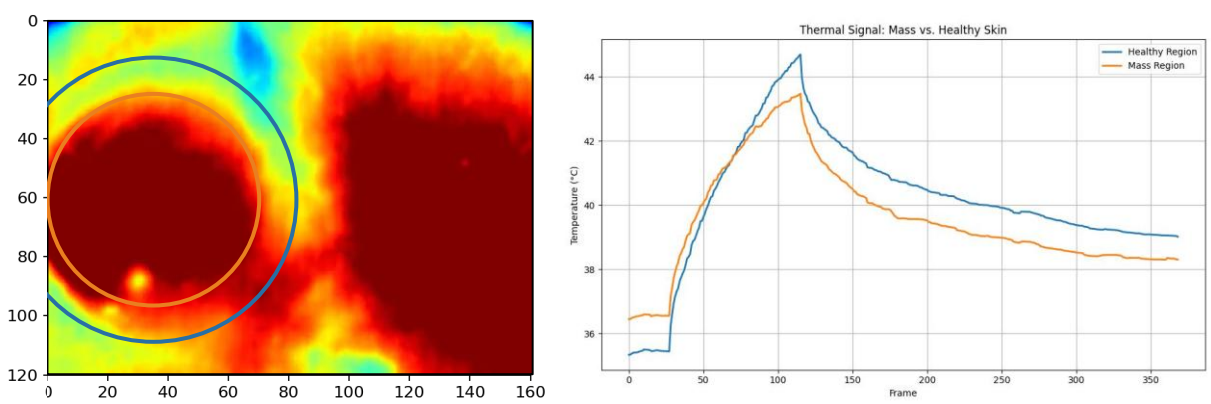
1. Pre-processing
2. Feature extraction and selection
3. Primary classification
4. Tumor-specific classification

Healthy skin
Mass

Lipoma



Mast Cell Tumor



1. Pre-Processing

Real-time algorithms run during scanning to ensure only high-quality thermal data are collected. These include:

- **Fur Detection:** Verifies adequate clipping; scanning proceeds only if residual fur is minimal.
- **Movement Detection:** Monitors patient motion and discards scans with excessive movement.
- **Heated Area Validation:** Confirms proper tissue heating and excludes poorly heated regions; scans are aborted if insufficient valid data remain.
- **Skin Segmentation:** Separates skin from fur and background to restrict analysis to relevant tissue.

2. Feature Extraction and Selection

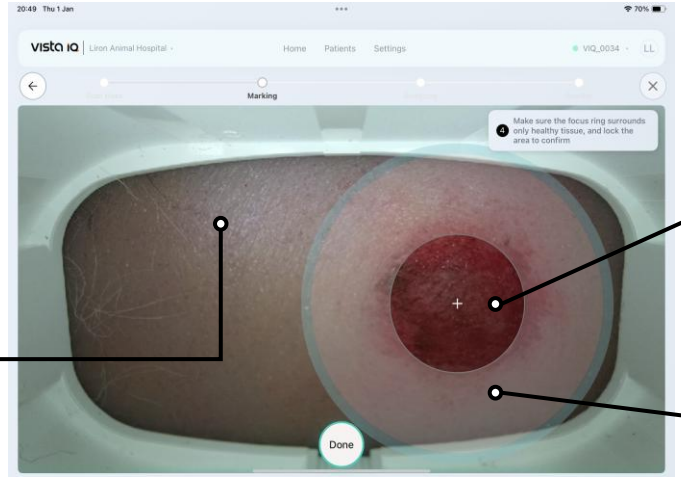
1. Features are derived from thermal data across three scan

Steady State features: Baseline temperature, uniformity, spatial distribution [2 seconds]

Heating features: Heat absorption rate, gradients, diffusion characteristics [10 seconds]

Cooling features: Recovery rate, heat retention, decay patterns [30 seconds]

2. Darta is collected from three areas



3. Area outside of the Outer Ring = Healthy Area (Excluded)

1. Inner Circle = Mass Area (Analyzed)

2. Outer Ring = Mass Margin (Analyzed)

Only Areas **1 & 3** are analyzed by the VISTA iQ Algorithms

3. Primary Classification

This model distinguishes between benign and malignant tumors, targeting **90% sensitivity** & **98% NPV** to reduce false negatives, and produces a **cancer risk**, which is based on malignant probability (in %).

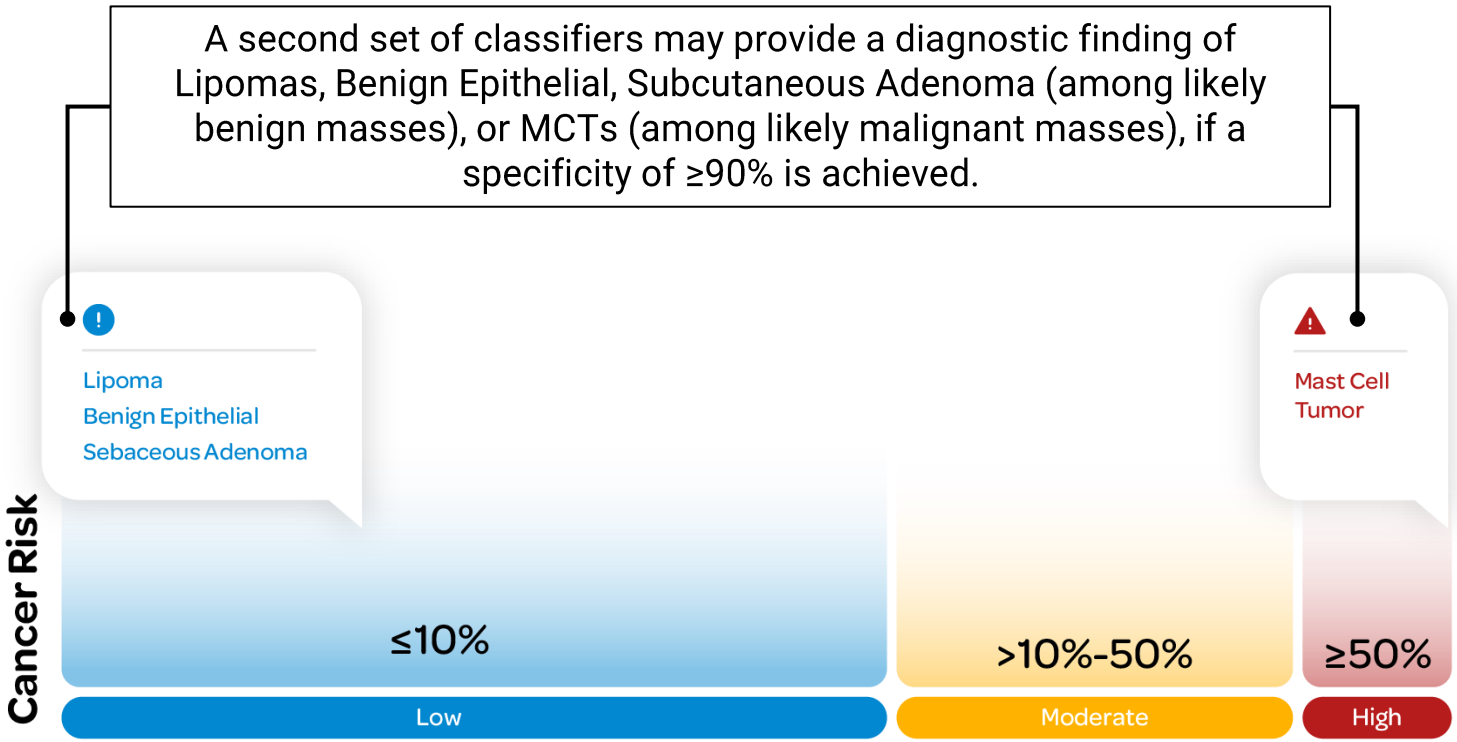
Three Cancer Risk Groups:

- Low-Risk ≤10%
- Moderate-Risk >10%-50%
- High-Risk ≥50%

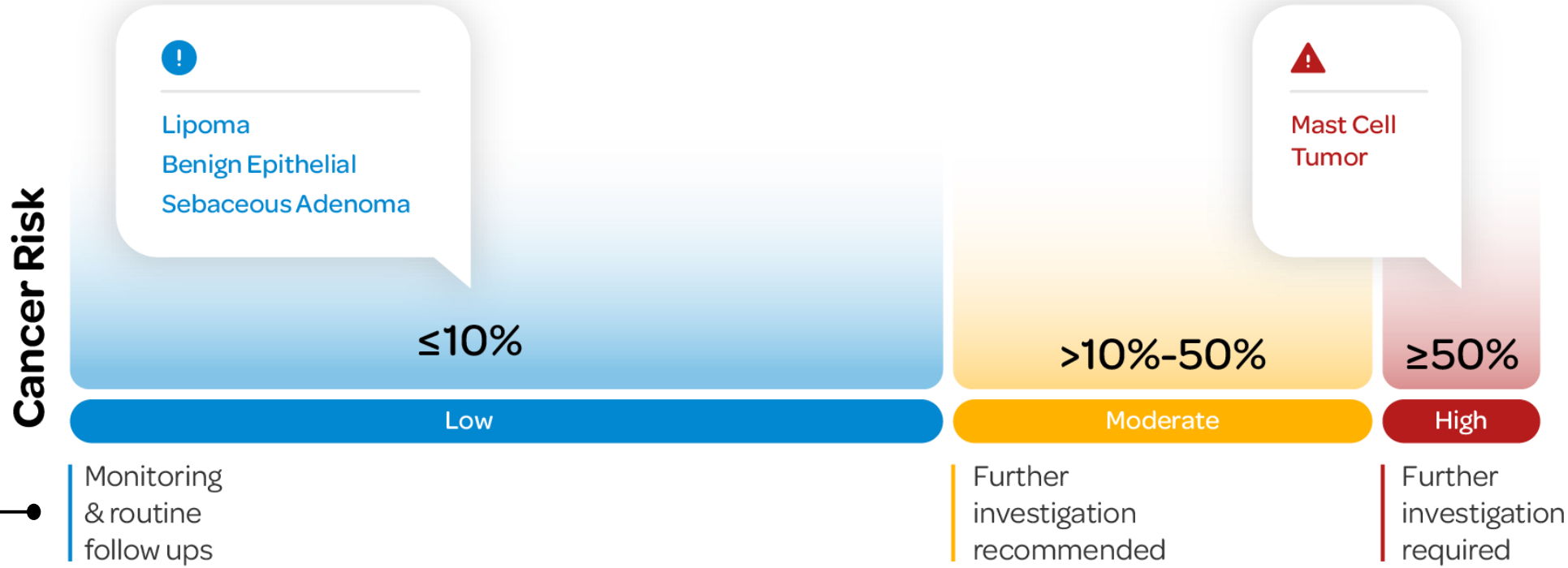
4. Tumor-Specific Classification

Two conditions need to be met for this process:

1. **Specificity ≥90%**
2. Cancer Risk Value
   - Low-Risk ≤10%
   - High-Risk ≥50%



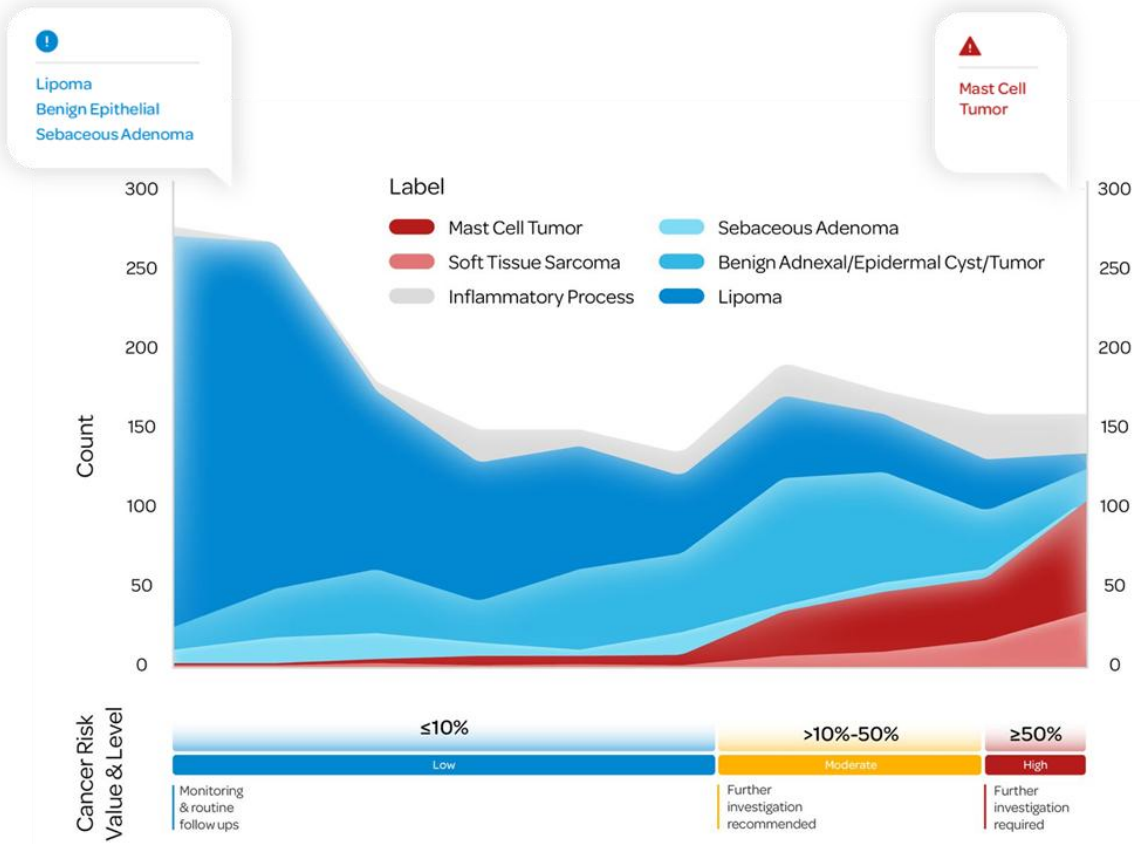
Recommended Next Steps



Dataset & Algorithm Performance

	Cancer Risk	Diagnostic Findings	
		Lipoma	MCT
Sensitivity	**90%**	69%	44%
NPV	**98%**	40%	78%
Specificity	70%	**90%**	**90%**
PPV	42%	**99%**	**77%**

Current Algorithm Performances



Distribution of Cancer Risk Values with corresponding diagnosis
(cytology/histopathology)
n = ~1,300 cases

>35,000 scans in market, results consistent with validation.

Where to find the HDI Report

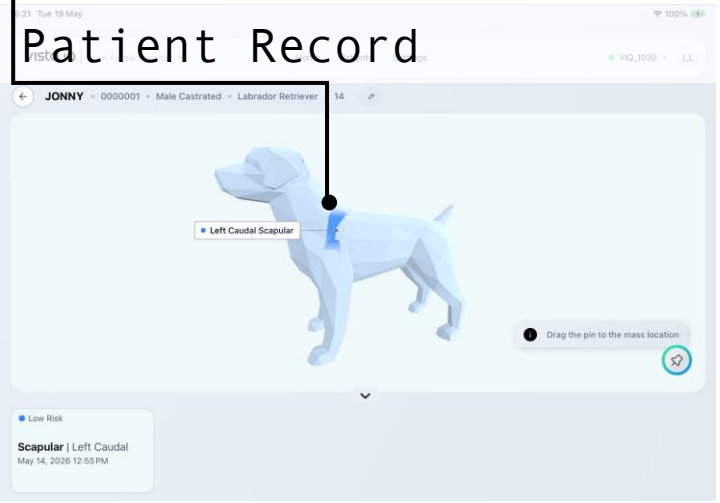
Once the analysis is completed the results will be available for you on the patient record:

Choose the mass record by tapping on the location of the mass/scan

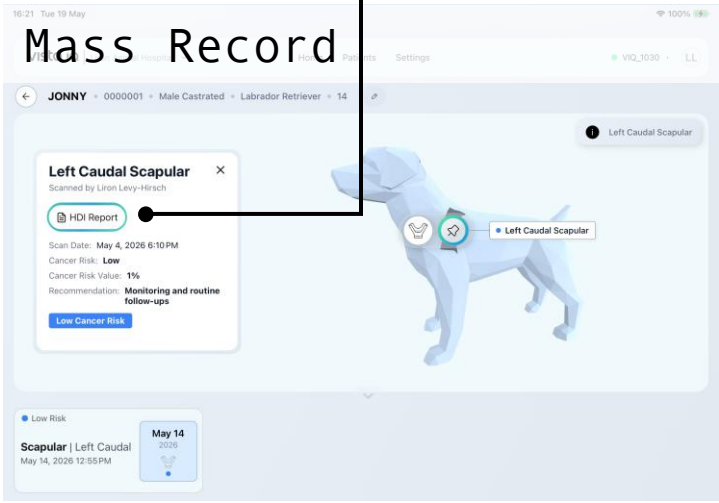
Tap of the ‘Record’ icon to view the result report

Review the result report and communicate the results to the pet owner

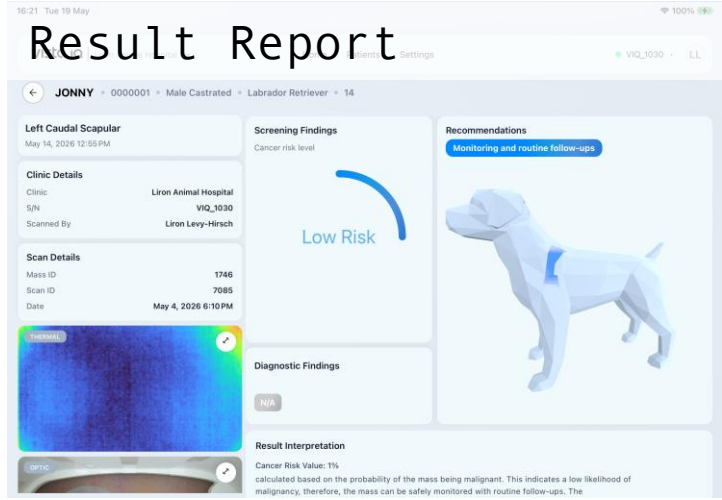
Patient Record



Mass Record



Result Report



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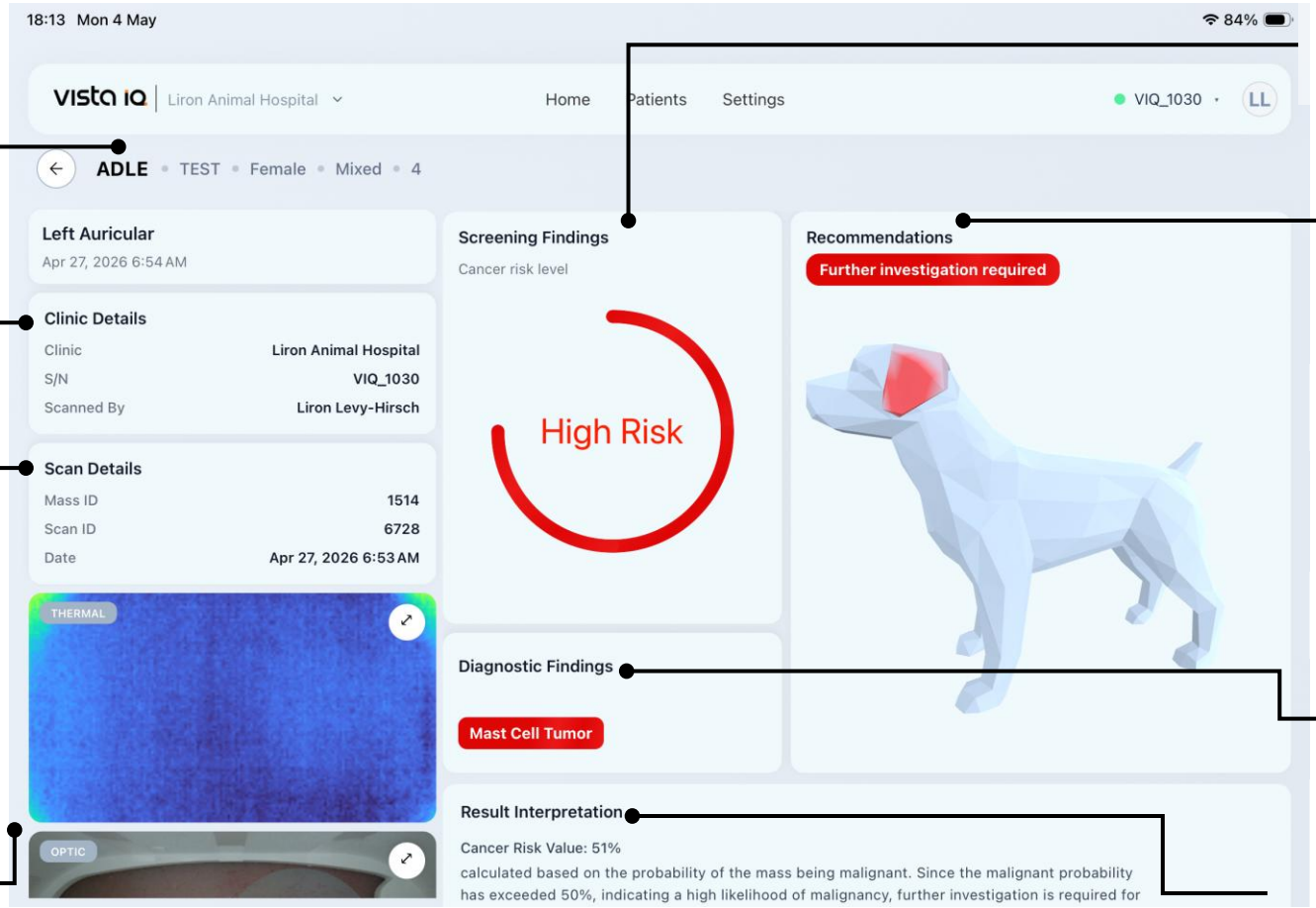
The Result Report

Patient Details including name, sex, age and breed.

Clinic Details including clinic's name, name of user and scanner serial number.

Scan Details mass ID, Scan ID and Date of scan.

Thermal and Optical Images of the scanned area.



Screening Findings- Cancer Risk following primary classification of the mass.

Recommendation based on Cancer Risk Level.

Diagnostic Findings based on a tumor-specific classification.

Interpretation of the screening and diagnostic findings and recommendations. Providing calculated Cancer Risk Value(in percentages), based on the chances for malignancy.

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How to Interpret the HDI results

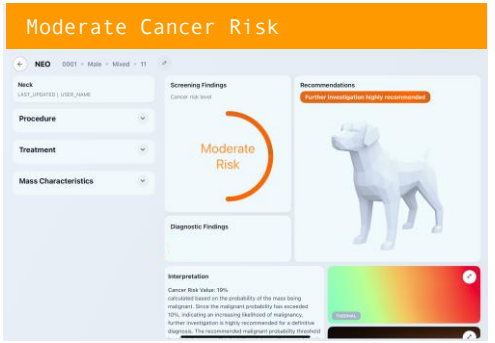
Increasing risk of malignancy

1:200 | 4:200 | 1:4 | 2:4 | 3:4

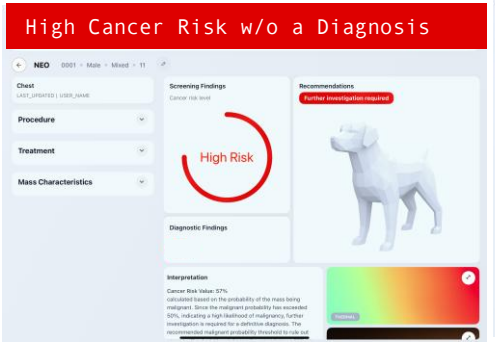
Low Cancer Risk with a Diagnosis

Low Cancer Risk w/o a Diagnosis

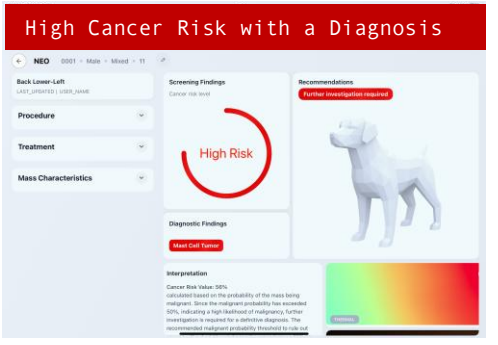
Moderate Cancer Risk



High Cancer Risk w/o a Diagnosis



High Cancer Risk with a Diagnosis



Monitor with routine follow-ups

Further investigation needed

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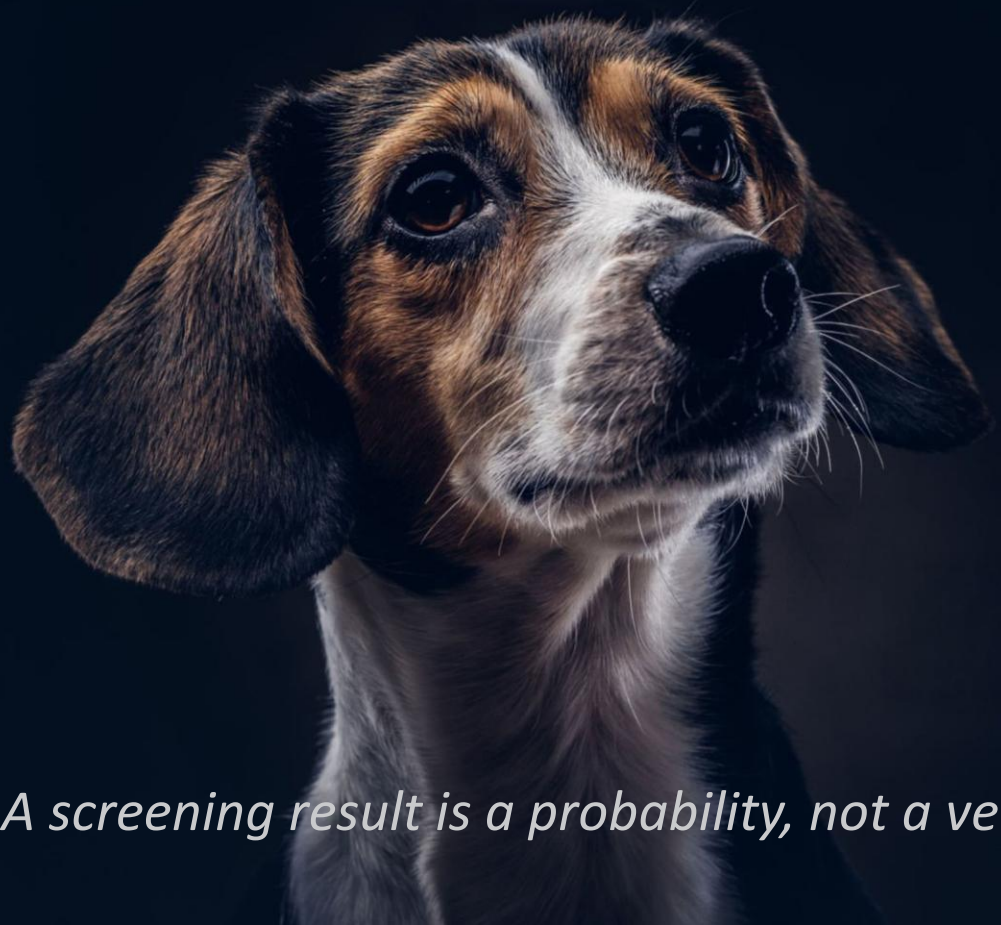
HDI 5 Potential Outcome- Summary

Risk Category	Diagnosis Status	Average Cancer Risk	Interpretation	Recommendation
Low Cancer Risk	With Diagnosis	1%	198 out of 200 will be benign (TN) 2 out of 200 will be malignant (FN)	Monitor with routine follow-ups
Low Cancer Risk	No Diagnosis	2%	196 out of 200 will be benign (TN) 4 out of 200 will be malignant (FN)	Monitor with routine follow-ups
Moderate Cancer Risk	No Diagnosis	25%	1 in 4 will be malignant 3 in 4 will be benign	Further investigation recommended
High Cancer Risk	No Diagnosis	50%	2 in 4 will be malignant 2 in 4 will be benign	Further investigation required
High Cancer Risk	With Diagnosis	75%	3 in 4 will be malignant (TP) 1 in 4 will be benign (FP)	Further investigation required

CLINICAL SCENARIO GUIDE

How to interpret and communicate unexpected VISTA iQ results.



A screening result is a probability, not a verdict.

Cancer Risk Is A Probability, Not A Diagnosis.

Use this guide whenever the VISTA iQ result and the sampling result disagree. Most apparent contradictions are not errors, they are expected behaviour of a screening tool with a 10% sampling threshold.

LOW	MODERATE	HIGH
~2%	**~25%**	**~50%**
malignancy probability	malignancy probability	malignancy probability
NPV 98%	**Above 10% threshold**	**Above 10% threshold**
Routine monitoring	*Sampling recommended*	*Sampling required*

Sampling threshold: VISTA iQ recommends sampling once malignancy probability crosses 10%. Both Moderate and High are well above that line - by design.

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Low Cancer Risk- Malignant On Cytology / Histopathology.

Sensitivity 90% · NPV 98%

THE NUMBERS

From every 100 masses classified as Low, ~98 are correctly benign. ~2 may still harbour malignancy.

THE FRAME

Standard recommendation after Low is monitoring, not sampling - so most Low masses are not biopsied. False negatives are rare and usually caught by clinical follow-up.

WHAT TO DO

VISTA iQ supports - not replaces - clinical judgement. If clinical findings raise concern despite a Low result, investigate further.

SAY TO THE OWNER

“The screening flagged this as low risk, but the clinical signs suggested we look further. We caught it through that follow-up.”

Moderate or High Cancer Risk — benign on cytology / histopathology.

IMPORTANT **This is NOT a false positive. VISTA iQ is a screening tool - Cancer Risk reflects a probability of malignancy, not a diagnosis.**

Moderate Risk ≈ 25% malignancy

High Risk ≈ 50% malignancy

THE FRAME

Both Moderate and High are well above the 10% sampling threshold - so by design, a proportion of cases will return benign. A benign sample after a moderate/high result is reassuring, not a system error.

WHAT TO DO

Set expectations BEFORE the scan. Owners should know a moderate or high result means further diagnostics, and a benign sample is entirely possible - and welcome.

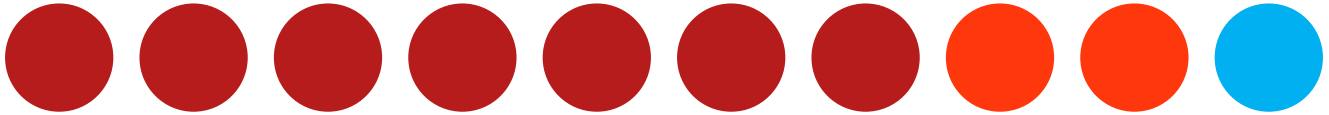
SAY TO THE OWNER

"The screening flagged it as worth checking, we checked, and the news is good. The system worked the way it's meant to."

High Cancer Risk with MCT flag — benign on cytology.

MCT Algorithm Performance: Specificity ~90% · PPV ~70%

OUT OF 10 CASES FLAGGED AS MCT



7 confirmed MCT

2 different malignancy

1 genuinely benign

KEY POINT **Benign cytology alone is not definitive in this scenario. Recommend biopsy + histopathology to confirm.**

WHY

Cytology can appear benign on aspiration even when histopathology subsequently confirms malignancy. The MCT flag carries significant clinical weight.

ACTION + SAY TO OWNER

Biopsy + histopath are strongly recommended when clinically appropriate. “The screening was specific enough that one benign sample isn’t the end of the story. A biopsy gives us the certain answer.”

REMEMBER

Three things that hold across every scenario.

1

A screening result is a probability, not a verdict.

VISTA iQ supports clinical judgement. Disagreement between the scan and the sample is information, not a failure.

2

Set owner expectations BEFORE the scan.

A moderate or high risk means further diagnostics. A benign result after sampling is a welcome outcome — say so up front.

3

The MCT flag carries significant clinical weight.

Only 1 in 10 MCT-flagged cases is genuinely benign. When clinically appropriate, biopsy + histopathology confirm.

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VISTA iQ Support