

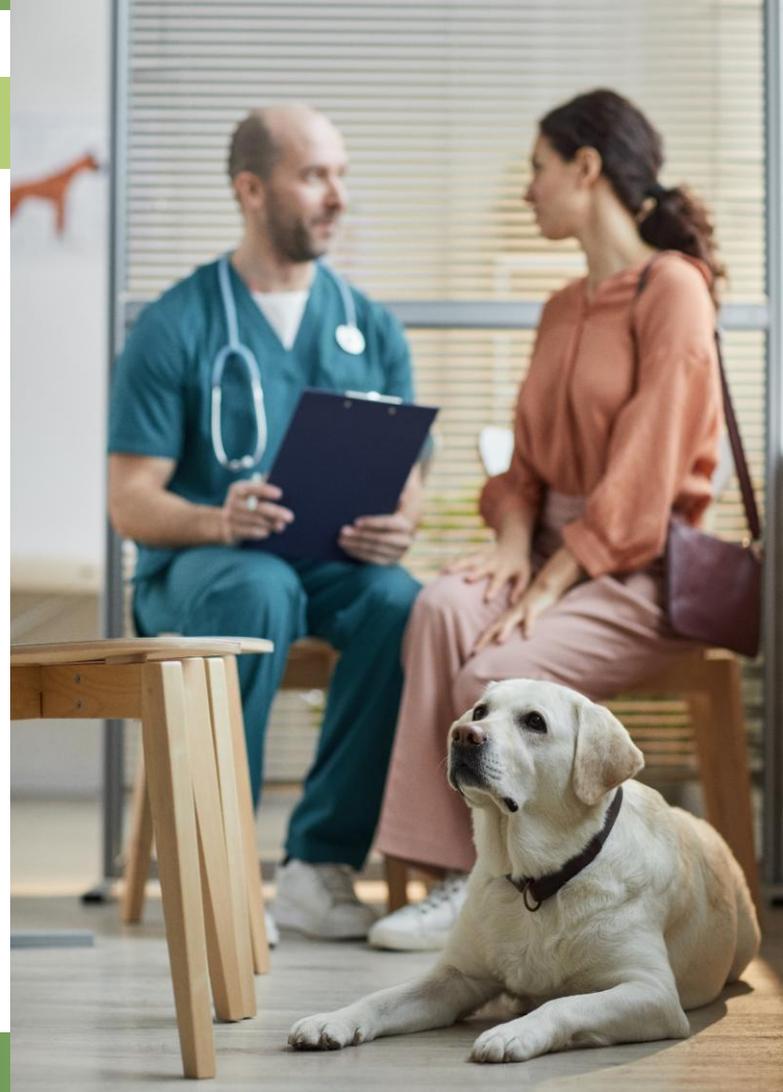


# Utilizing the Nu.Q<sup>®</sup> Vet Cancer Test in Practice

Dr. Sue Ettinger, DVM, DAVCIM (Oncology)

# How Cancer is Detected Today

- Some cancers may develop quickly, showing no signs
- Not all symptoms of cancer are the same
- Pet owners may choose to wait out symptoms
- Dogs are often brought in once symptoms have worsened



# Canine Cancer Today

- Almost 50% of dogs over 10 will develop cancer<sup>1</sup>
- Approximately 6 million new cancer diagnoses a year
- Hemangiosarcoma and lymphoma make up almost 1/3 of cancer cases diagnosed<sup>2,3</sup>
  - HSA and LSA account for more than 50% of cancers treated by veterinarians
- Cancer is often diagnosed late and through costly and/or potentially invasive procedures such as CT scans &/or biopsies

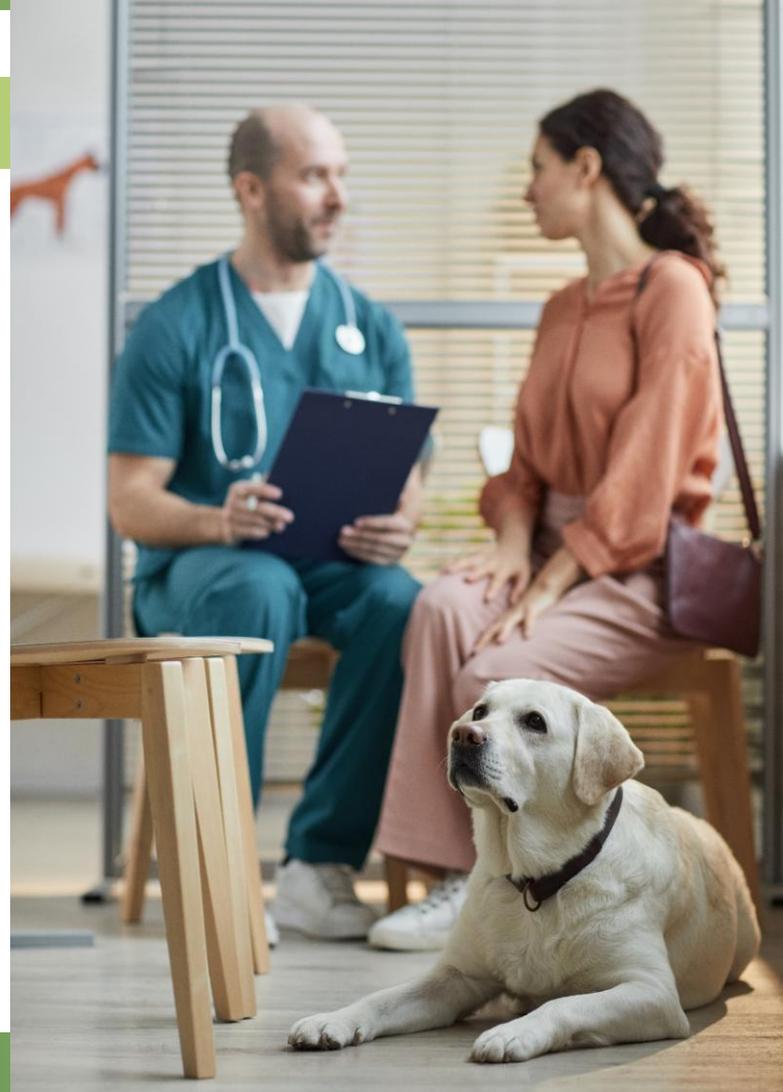


Many dogs asymptomatic

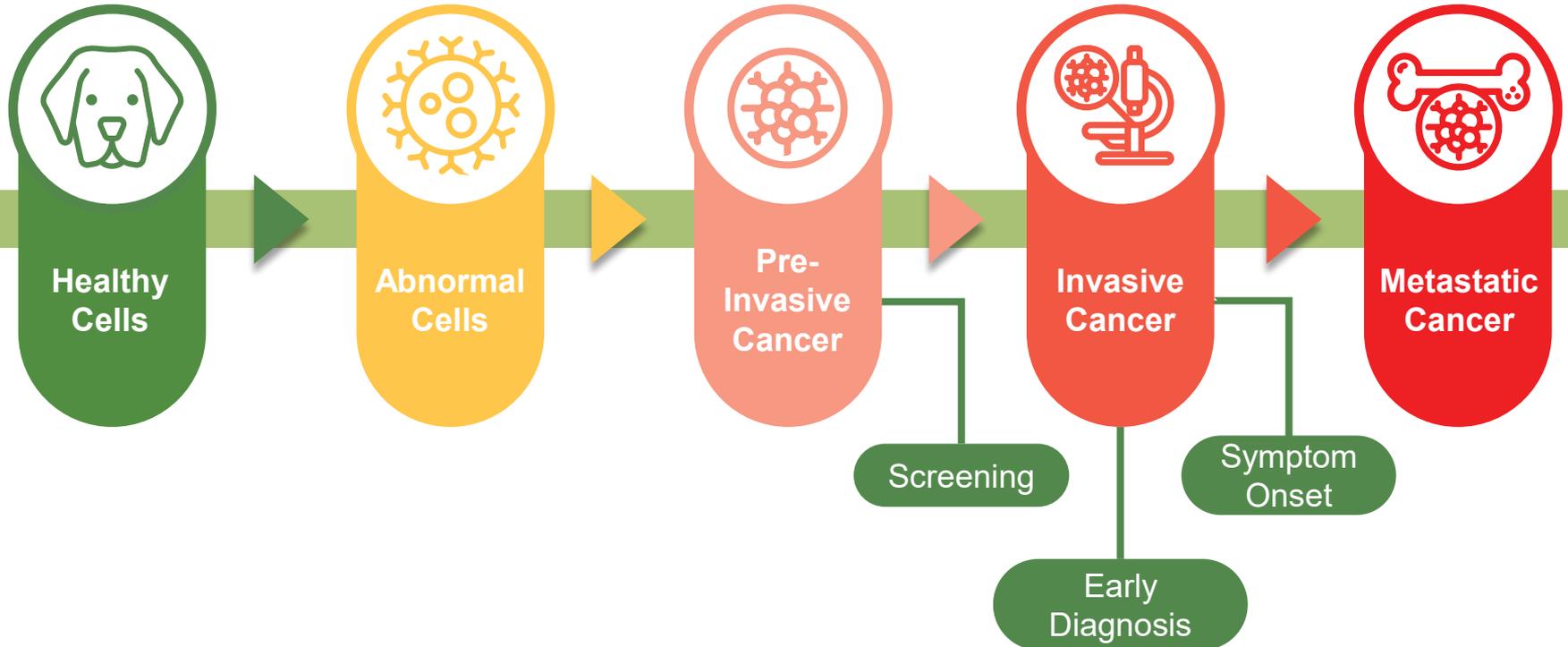


When clinical signs, owners often wait it out

1. [AVMA website](#) accessed Jan 2025
2. <https://www.csuanimalcancercenter.org/2019/11/14/common-cancers-in-dogs/>
3. <https://www.akcchf.org/canine-health/your-dogs-health/canine-hemangiosarcoma.html>



# The Value of Screening





nu·q  
vet

# Cancer Test

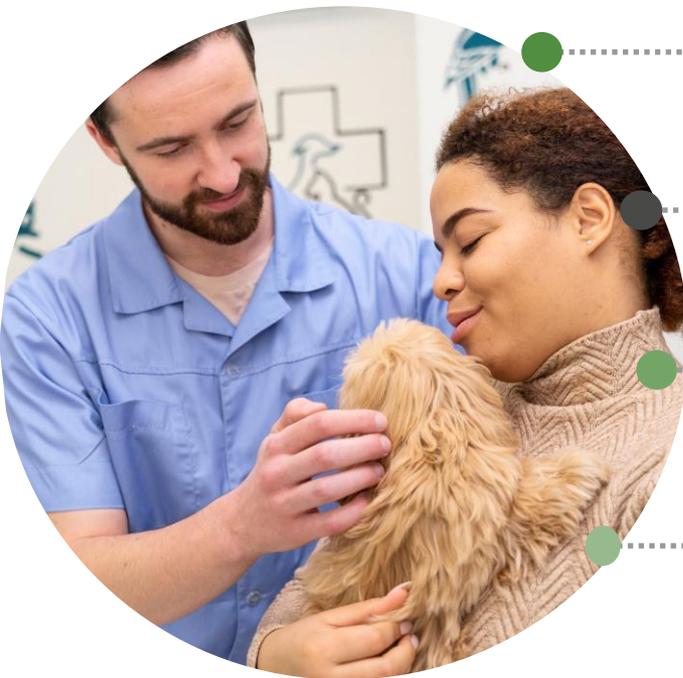
Integrating an accessible, affordable,  
easy-to-use blood test into your practice

# Preventive Care & Cancer Screening

- Early detection leads to **early** intervention
  - Allows owners more time to make/prepare for decisions vs on emergency basis
  - Allows the space to be able to choose from their spectrum of treatment or monitoring options
  - Less emotional toll on owners
  - Less secondary unintentional emotional backlash to vet and team
- Early intervention leads to more **positive** outcomes
- Cancer screening is ideally **easy to do, affordable, & accurate**

**Nu.Q® Vet Cancer Test** is an accessible, affordable and easy-to-use blood-based test capable of reliably detecting elevated levels of cell-free DNA in canine patients

# The Cancer Conversation



Approaching pet owners on the topic of cancer can be an emotional situation



Screening process can heighten anxiety in pet parents



Emotionally and financially prepare pet owners for potential outcomes

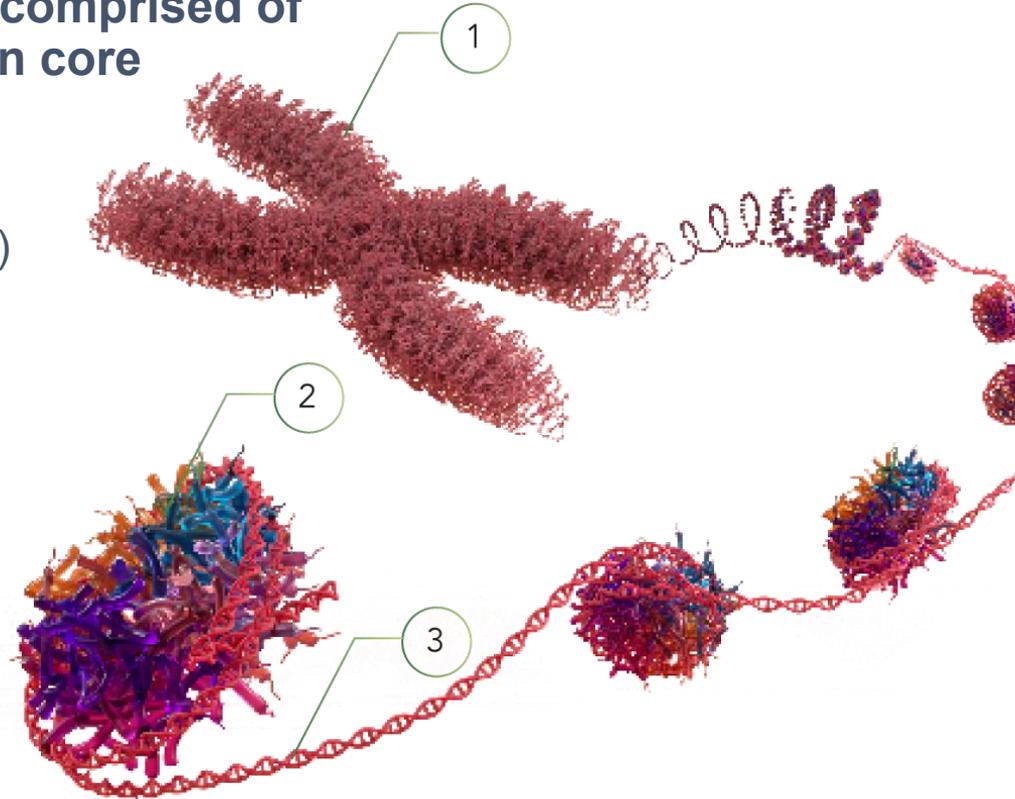


Need to prepare staff and owners for what test is

# How Does the Test Work?

**Nucleosomes are beadlike structures comprised of DNA coiling around the histone protein core**

- 1 Chromosome
- 2 Nucleosome (DNA wrapped histones)
- 3 DNA Strand



# How Does the Test Work?



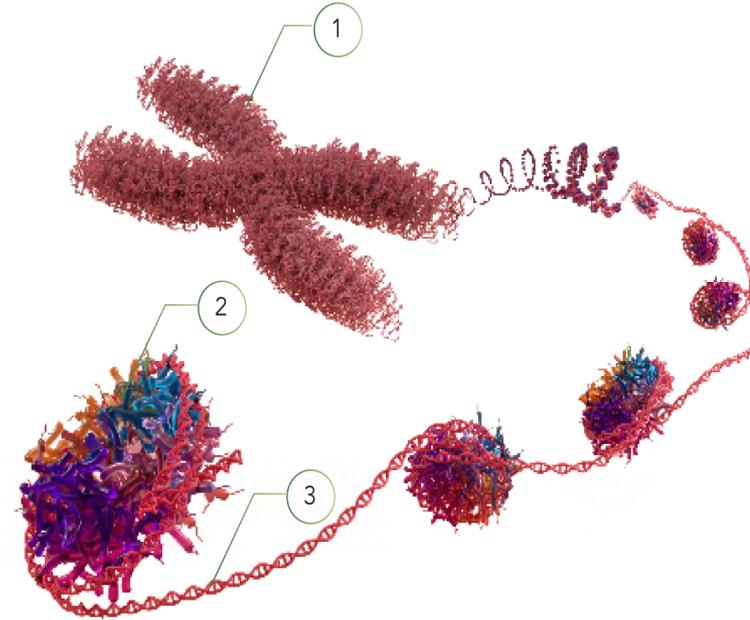
High cellular turnover - due to diseases like cancer - can lead to increased concentration of nucleosomes in bloodstream



Nucleosomes can be captured using antibodies tailored specifically to detect them



The Nu.Q<sup>®</sup> Vet Cancer Test quantifies these circulating nucleosome levels in the blood



# Elevated Levels of Nucleosomes

## Elevated levels of nucleosomes documented in:

- **Many human cancers due to high cellular turnover**
  - Colorectal
  - Hematopoietic
  - Breast
  - Pancreatic
  - Lung
  - Urological cancer
- **Non-neoplastic diseases such as stroke, sepsis and trauma**



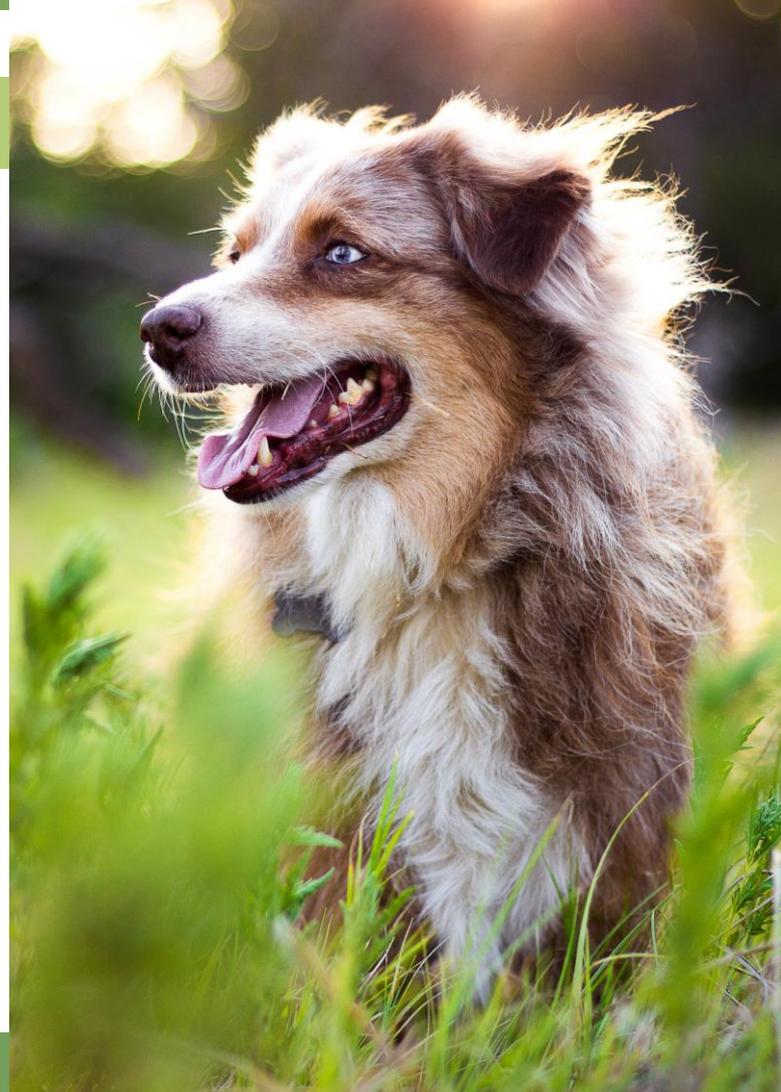
# Clinical Evidence

- Peer-reviewed and published case series<sup>1</sup> of 662 dogs (134 healthy and 528 with cancer)
- 7 common cancers were evaluated in this study
  - Lymphoma
  - Hemangiosarcoma
  - Osteosarcoma
  - Soft tissue sarcoma
  - Malignant melanoma
  - Mast cell tumors
  - Histiocytic sarcoma

 **BMC** Part of Springer Nature

**BMC Veterinary Research**

1. H. M. Wilson-Robles et al, BMC Vet Res, 2022, <https://doi.org/10.1186/s12917-022-03429-8>

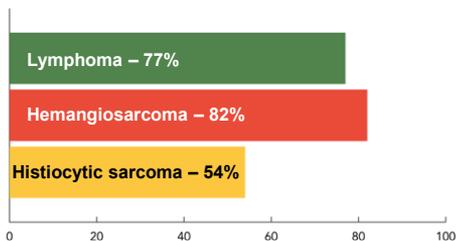
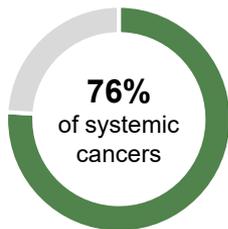
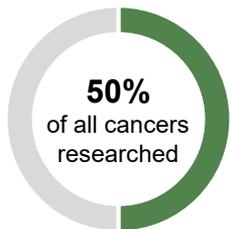


# Clinical Evidence

A peer-reviewed and published case series<sup>1</sup> of 662 dogs.

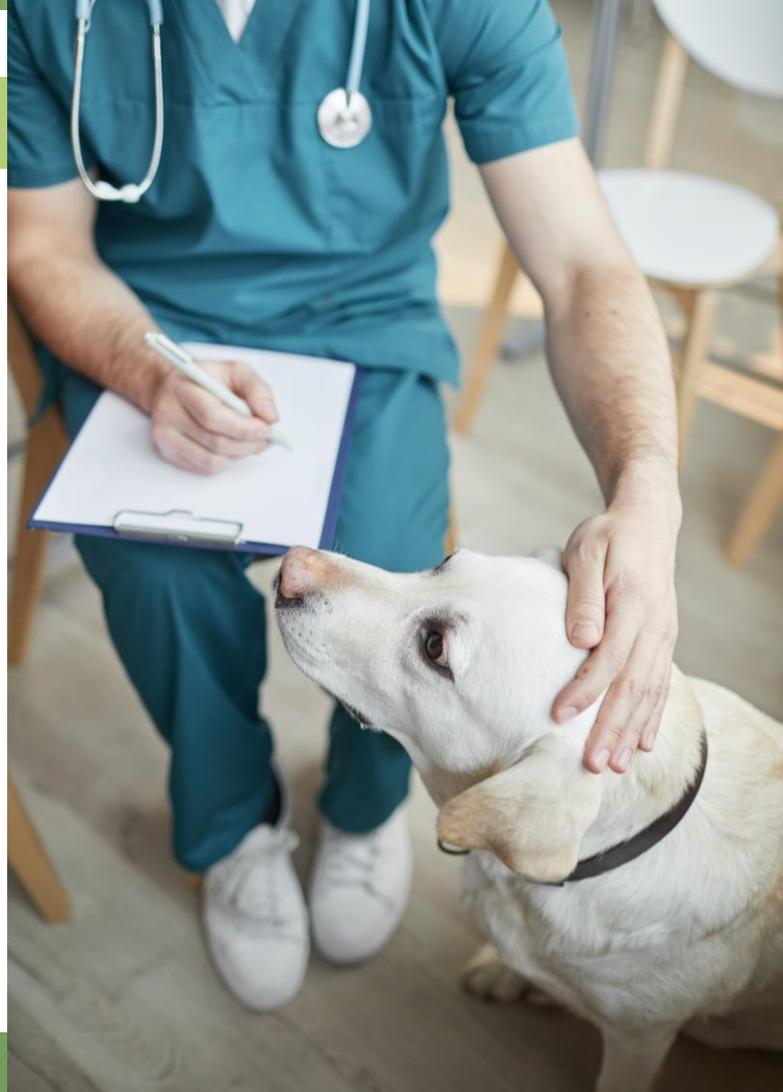


At **97% specificity**, the **Nu.Q® Vet Cancer Test** was able to detect approximately



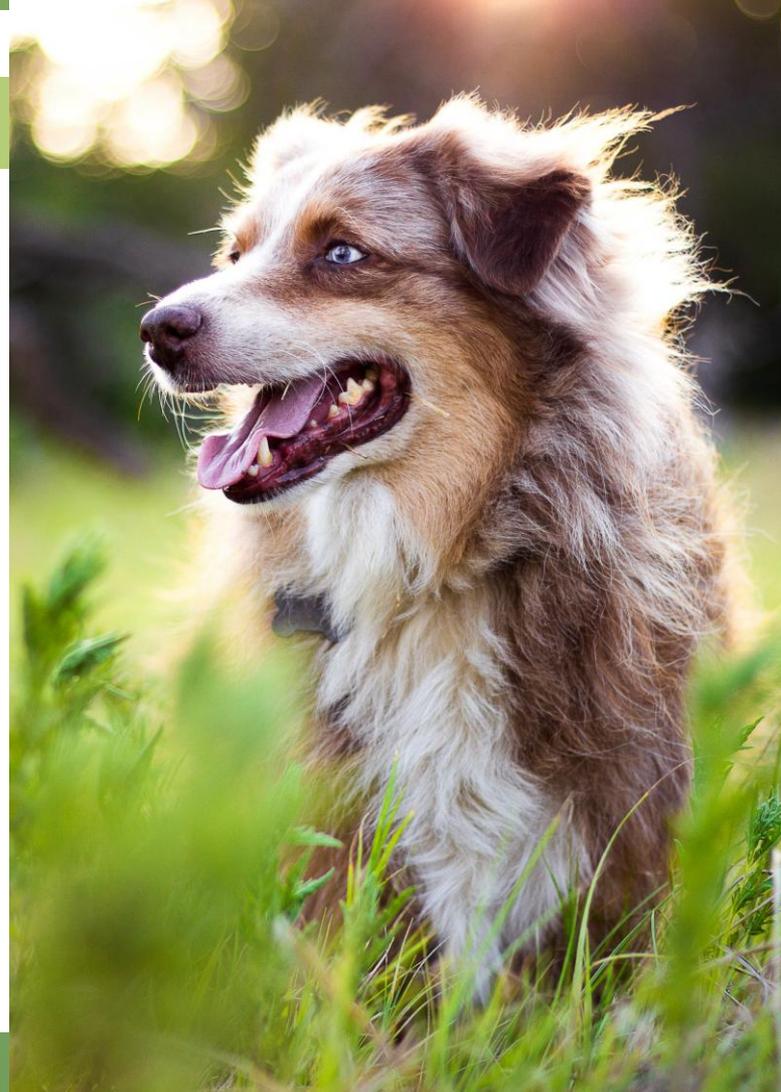
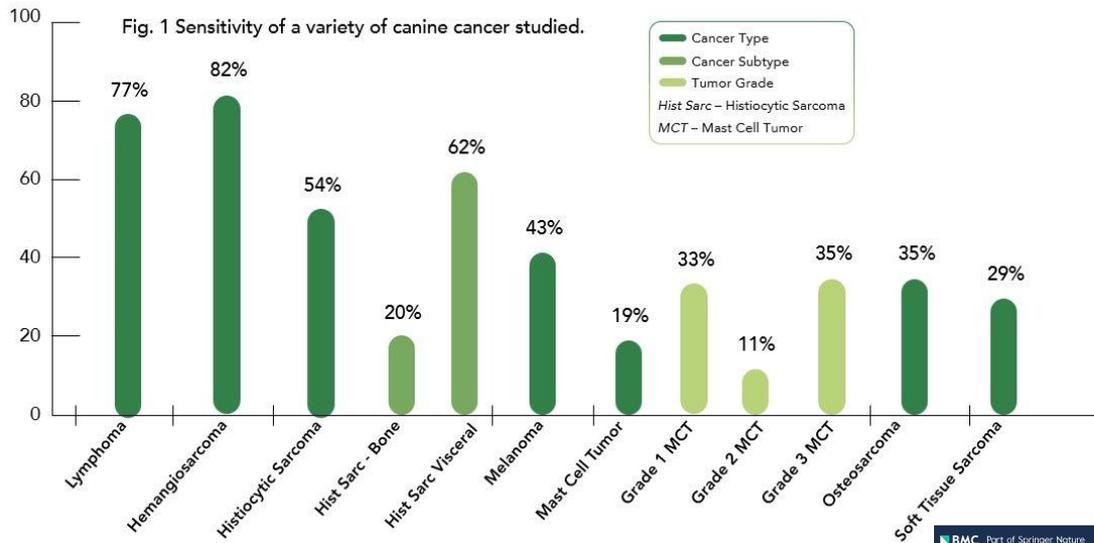
 **BMC** Part of Springer Nature  
BMC Veterinary Research

1. H. M. Wilson-Robles et al, BMC Vet Res, 2022, <https://doi.org/10.1186/s12917-022-03429-8>



# Sensitivity for a variety of cancers

- Getting additional clinical trial data on various carcinomas and other cancers



# Lymphoma: Disease Type/Stage<sup>1</sup>

Stage I



7 of 11 cases detected

Stage II



1 of 7 cases detected

Stage III



28 of 37 cases detected

Stage IV



31 of 39 cases detected

Stage V



27 of 33 cases detected

B cell Lymphoma



41 of 43 cases detected

T cell Lymphoma



10 of 18 cases detected

**At 97% specificity, the Nu.Q<sup>®</sup> Vet Cancer Test was able to detect 77% of lymphoma<sup>1</sup>**



**BMC Veterinary Research**

1. C. Dolan et al, BMC Vet Res, 2021 <https://doi.org/10.1186/s12917-021-02991-x>

# Hemangiosarcoma: Disease Type/Stage

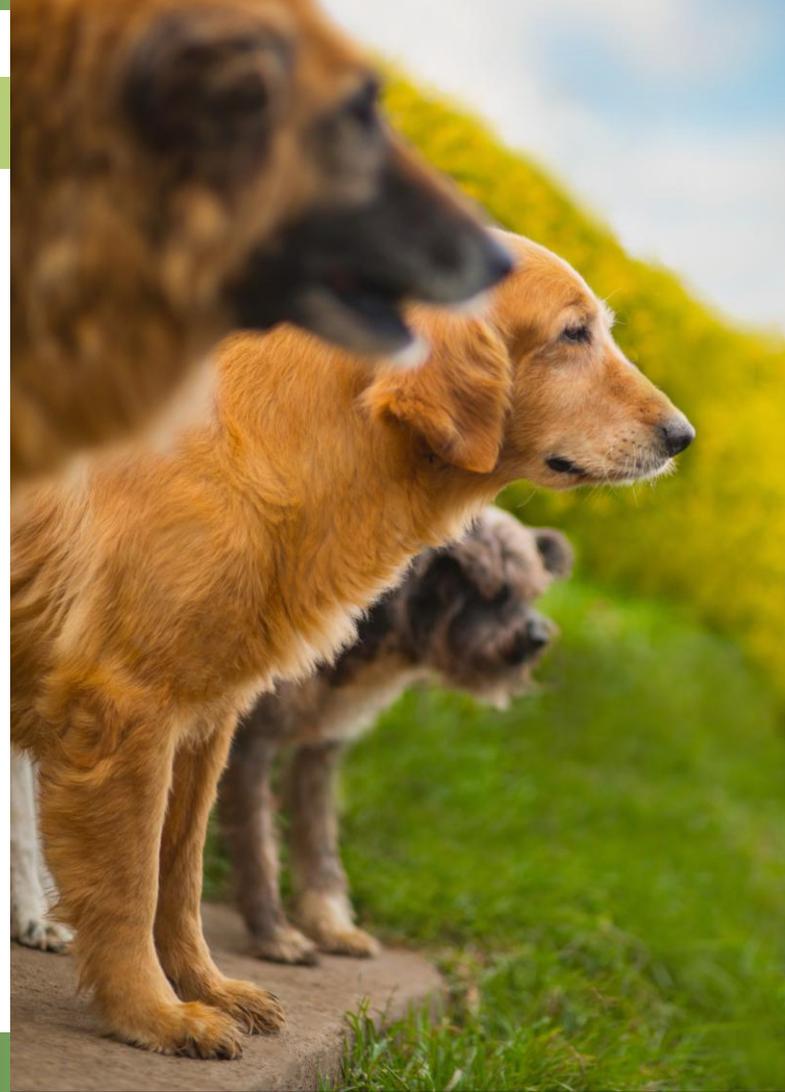


**At 97% specificity, the Nu.Q<sup>®</sup> Vet Cancer Test was able to detect 82% of hemangiosarcoma cases**

1. H. M. Wilson-Robles et al, BMC Vet Res, 2021, <https://doi.org/10.1186/s12917-021-02934-6>

# When to Screen

- **Leverage your Senior Wellness Profile**
  - **ALL Healthy Dogs 7 and older**
- **Breeds with increased risk of developing cancer**
  - **Age 4 and older**
- **Cancer screening can easily be added to routine check-ups alongside other bloodwork**
- **We strongly recommend that screening be performed 2x per year**



# The Nu.Q<sup>®</sup> Vet Cancer Test



The Nu.Q<sup>®</sup> Vet Cancer Test is recommended for ALL dogs over age of 7, & **younger dogs age 4 and older with an increased risk of cancer such as:**



Labrador Retriever



French Bulldog



Golden Retriever



German Shepherd



Great Dane



Miniature Schnauzer



Siberian Husky



Bernese Mountain Dog



Beagle



Rottweiler



Boxer



Pembroke Welsh Corgi



Mastiff



Irish Wolfhound



Flat Coated Retriever



Scottish Wolfhound

# How to Submit a Sample (reference lab)

-  1. Draw 2-5mL of blood from peripheral or jugular vein
-  2. Immediately fill EDTA tube with blood and gently invert 10 times
-  3. Spin the sample in-house 1600xg for 10 minutes within one hour of sampling  
\*typically, blood button setting button

-  4. Remove plasma place in non-additive tube  
\*be careful to not disturb buffy coat

-  5. Store sample in fridge and ensure pick up is within 24 hours

 Results will be available in 1-3 days

# Point of Care Testing

- Results provided in **6 minutes**
- NO need to refrigerate sample or test reagents
- Allows veterinarians to make informed clinical decisions quickly, in-house, while patient is still in clinic and discuss in person

...Ask your local **Antech**™ representative!



# How to Run Nu.Q<sup>®</sup> on Elementi<sup>+</sup><sup>®</sup>



# Interpreting Results

**Interpretation:** Nu.Q® Vet Cancer Test results at the low risk level are consistent with those found in healthy animals over the age of 1 year, and all genders.

Low Risk

**Action:** Maintain wellness check schedule and educate pet owners on early cancer signs. Retest at the next visit.

**Interpretation:** Nu.Q® Vet Cancer Test results at the high risk level are consistent with an increased risk of cancer in healthy animals over the age of 1 year, and all genders.

High Risk

**Actions\*:**  
Review medical history for previous conditions.  
Check for lumps, swollen lymph nodes, or signs of pains.  
Look for elevated white blood cell counts indicating inflammation.

**Interpretation:** Nu.Q® Vet Cancer Test results in the caution zone may have a number of contributing factors.

Caution Zone

**Actions\*\*:**  
Recommendation is to retest, with a fasted patient, within 4 weeks.

# Interpreting Results: Green Level

Low  
Risk

## Interpretation:

- Nu.Q<sup>®</sup> Vet Cancer Test results at green level are consistent with those found in **healthy** animals over the age of 1 year, and all genders.

## Action:

- Maintain **regular** wellness checks and educate pet owners on early cancer signs
- **Retest** at the next visit



The Nu.Q<sup>®</sup> Vet Cancer Test identifies patients who may have cancer however, not all neoplastic conditions are detectable using elevated plasma nucleosomes. Localized tumors are least likely to cause elevated plasma nucleosomes, and this test is not able to differentiate severe/systemic inflammation from cancer. If there is a suspicion of cancer, we recommend that you perform confirmatory diagnostics to confirm the suspicion of cancer.

# Reading Emotions: Green Level

Low  
Risk

- Use positive news (**~90% of the time**) as opportunity for continued vigilance – celebrate peace of mind results
- **Recommend bi-annual tests** to ensure pet stays in the low-risk category
- Educate pet owners on cancer signs
  - Lumps and bumps, weight loss and appetite, lethargy, pain and mobility, breathing issues, abdominal issues, changes in urination or defecation



# Interpreting Results: Orange Level

High  
Risk

## Interpretation:

- Nu.Q<sup>®</sup> Vet Cancer Test results at the orange level are consistent with an **increased risk of cancer** in healthy animals > 1 year, and all genders

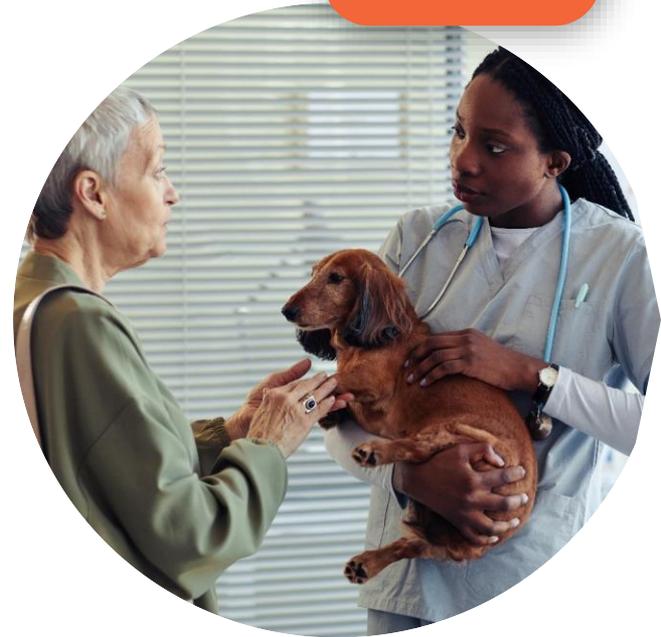


# Interpreting Results: Orange Level

High  
Risk

## Action:

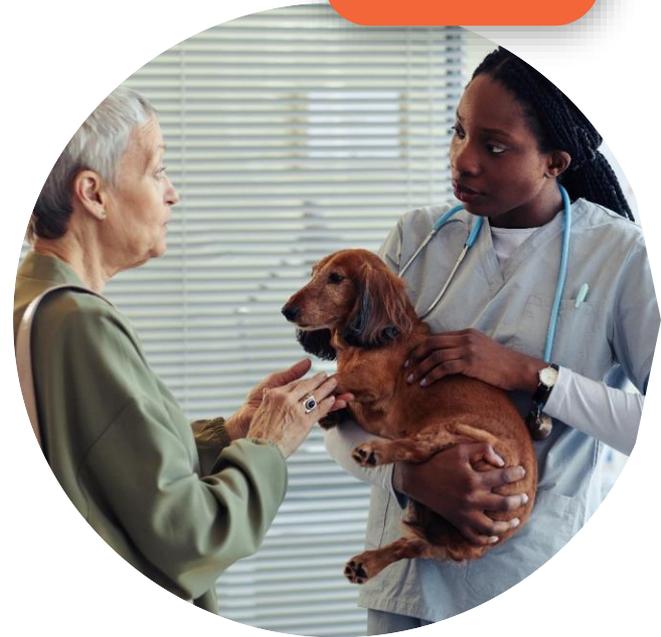
- **Take a pause:** review medical history for previous inflammatory conditions, surgeries, or familial cancer history
- **Physical Examination:** Check for enlarged lymph nodes, abdominal mass, abnormal discharges, lumps, rectal, or signs of pain
- **Bloodwork:** Look for elevated WBC count indicating inflammation/infection, anemia, abnormal liver/kidney values, or other anomalies hinting at disorders
- **Further Diagnostics:** Consider radiographs, ultrasound and other imaging



# Communicating Results: Orange Level

High  
Risk

- **Moderate to significant elevation of blood nucleosomes**
  - Confirm sample processed appropriately
  - Then consider diagnostic workup
- **High-risk does NOT equal a cancer diagnosis, BUT this tells us something is going on internally to be investigated**
- **Alternative plan: recheck Nu.Q<sup>®</sup> result in 2 to 4 weeks to monitor trend**



# Interpreting Results: Caution Zone

Caution  
Zone

## Interpretation:

- Nu.Q<sup>®</sup> Vet Cancer Test results at yellow level may have a few contributing factors
  - Sample collection and/or handling being the large majority



# Interpreting Results: **Caution Zone**

**Recommendation: retest a fasted sample (min. 4-hour) within 2 to 4 weeks**

- **If the Nu.Q<sup>®</sup> score remains at increased level**
  - Refer to “**high risk**” actions for patient information to consider before conducting more costly or invasive procedures
- **If the Nu.Q<sup>®</sup> score returns to low risk level**
  - Educate the pet owner on early cancer signs and schedule a re-test in 6 months

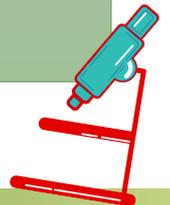
**Caution  
Zone**



Why is **early detection** so important for lymphoma & hemangiosarcoma?

# What Are Lymphoma Prognostic Factors?

Factor	Critical factor	Prognosis
Immunophenotype	T	<b>Negative:</b> ↓ ST, RR and remission duration
WHO substage	<b>b (sick)</b>	<b>Negative:</b> ↓ ST, RR and remission duration
Response	<b>Complete Remission (CR)</b>	<b>Significantly longer ST</b> <b>Consider protocol change if not CR</b>
Prednisone	Prior to chemo	Negative
WHO stage	Stage I/II (III) Stage IV-V	Positive Negative (inconsistent)
Histologic subtype	Low grade High grade	longer ST, may not need chemo ↓ ST but ↑ chemo-responsiveness (CR)
Hypercalcemia	↑ iCa <sup>2+</sup>	Negative: ↓ ST, usually T cell
Mediastinal location	Present	Negative



# Hemangiosarcoma Prognosis

- ❖ Poor with:

- ❖ No treatment

- ❖ Surgery 1 to 3 months

- ❖ Worse prognosis with

- ❖ Gross non-surgical disease

- ❖ Metastasis

- ❖ Better prognosis with

- ❖ Stage I non-ruptured

- ❖ Low grade

- ❖ Chemotherapy post-op

- ❖ Adjunctive chemotherapy

- ❖ 6 to 9 months

- ❖ Doxorubicin-based

- ❖ 1-year survival <10%

# Coming soon

## New clinical data (proof-of-concept)

Volition's latest clinical study suggests strong performance of the Nu.Q<sup>®</sup> Vet Feline assay in detecting **feline lymphoma**<sup>1</sup>, the most common cancer in the species<sup>2</sup>

1. Data on file; manuscript in preparation for peer review

2. Vail D, Thamm D, Liptak J, eds. Withrow and MacEwen's Small Animal Clinical Oncology, 6th ed. Elsevier Health Sciences; 2019.

# What You Need to Know

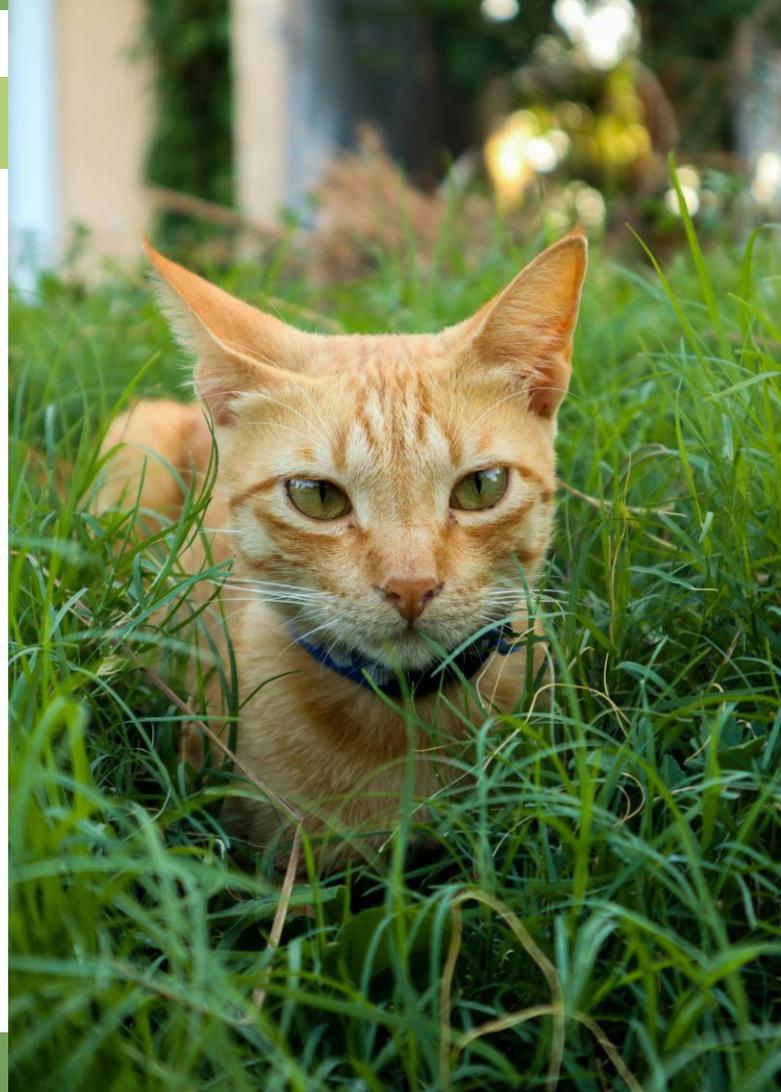
## In this proof-of-concept cohort<sup>1</sup>

- Observed **100% specificity** (no false positives)
- Assay detected > 80% of feline lymphomas

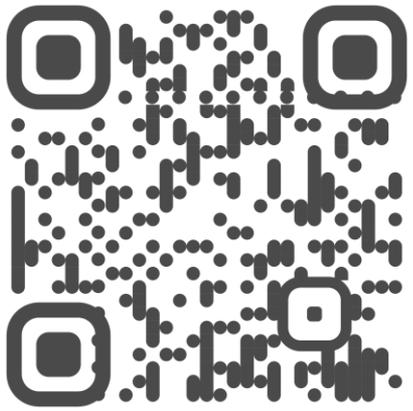
**This data focused on lymphoma**; broader validation and clinical use-case **are being evaluated**

This breakthrough supports development of what Volition expects to be the world's first simple, affordable **blood-based liquid biopsy** to aid detection of **feline lymphoma**

1. Data on file



# Stay up to date - newsletter



# Case Studies



# Charlie



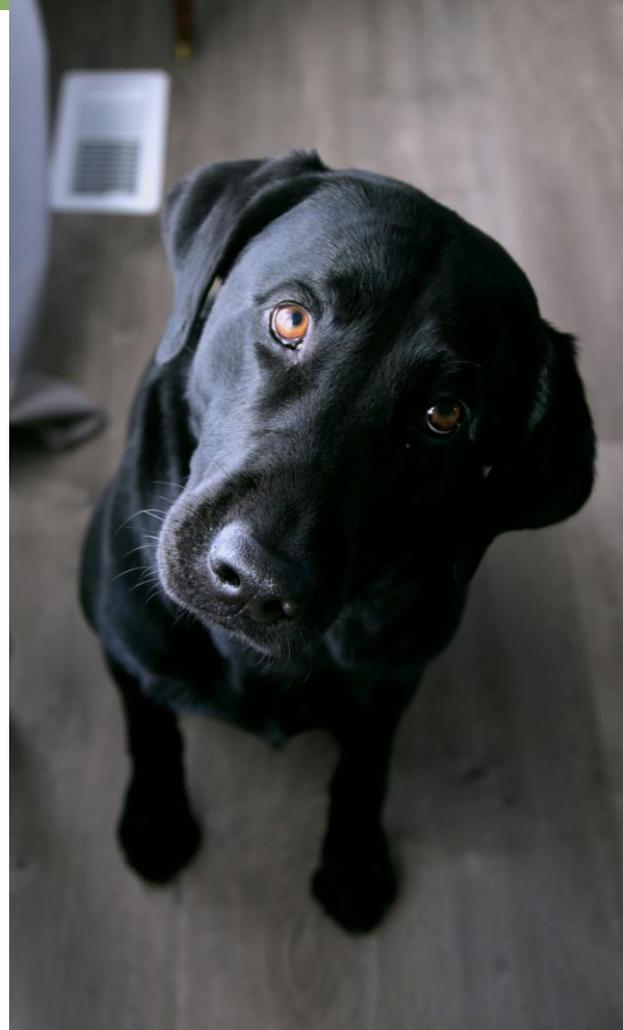
# Charlie

- **8-year-old MC Labrador**
- **Presenting with 2-week history of uveitis and blindness**
  - Work up with internist
  - Confirmed intermediate to large cell B-cell lymphoma via cytology of popliteal LN
- **Chemotherapy elected**
  - Started CHOP September 8, 2024
  - Transferred to Oncology
  - Graduated January 6, 2025



# Charlie: Monthly Rechecks

- **February 4, 2025:**
  - Normal exam
  - Normal CBC, chemistry panel
  - Normal Nu.Q<sup>®</sup> Vet Cancer Test



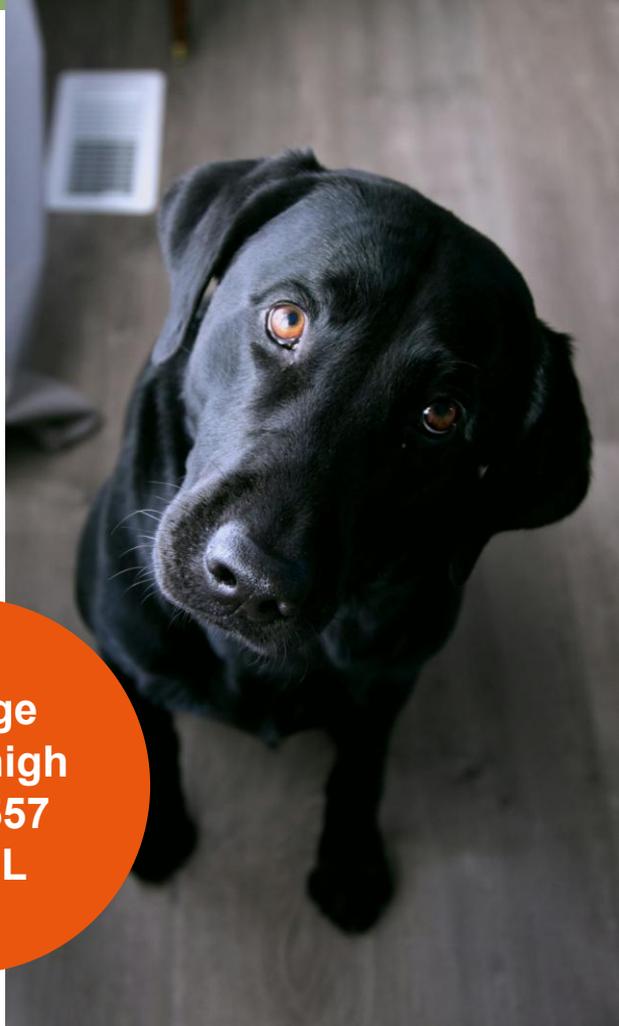
# Charlie: Monthly Rechecks

- **March 11, 2025:**

- Owners requested CBC, chemistry panel and T4
- Prominent popliteal LN → unable to get diagnostic sample to submit
- Nu.Q® Vet Cancer Test: **557 ng/mL – high risk**
- Went in exam room to discuss with owner

- **Plan:**

- Thoracic radiographs: normal
- Abdominal ultrasound



**Orange  
Level/high  
risk: 557  
ng/mL**

# Charlie: Ultrasound Results

- **Spleen:**

- Normal size
- Within the tail of spleen: solitary, hypoechoic nodule measuring 0.68×0.96 cm

- **AUS-guided FNA:**

- Expanded population of large lymphocytes, consistent with recurrence of large cell lymphoma
- With mild extramedullary hematopoiesis



# Charlie: Next Steps

- Restarted chemo the following week
- Alternating doxorubicin/then mitoxantrone with Tanovea
- NuQ normalized during chemotherapy
- Sept 15 (day before last planned chemo) presented to ER for increased RR, inappetence, lethargy
- Normal CBC, chemistry panel, CXR
- **NuQ: >650**
- AUS: liver, spleen and LN consistent with relapse → changed protocol



# Benjamin & Boomer



# Benjamin

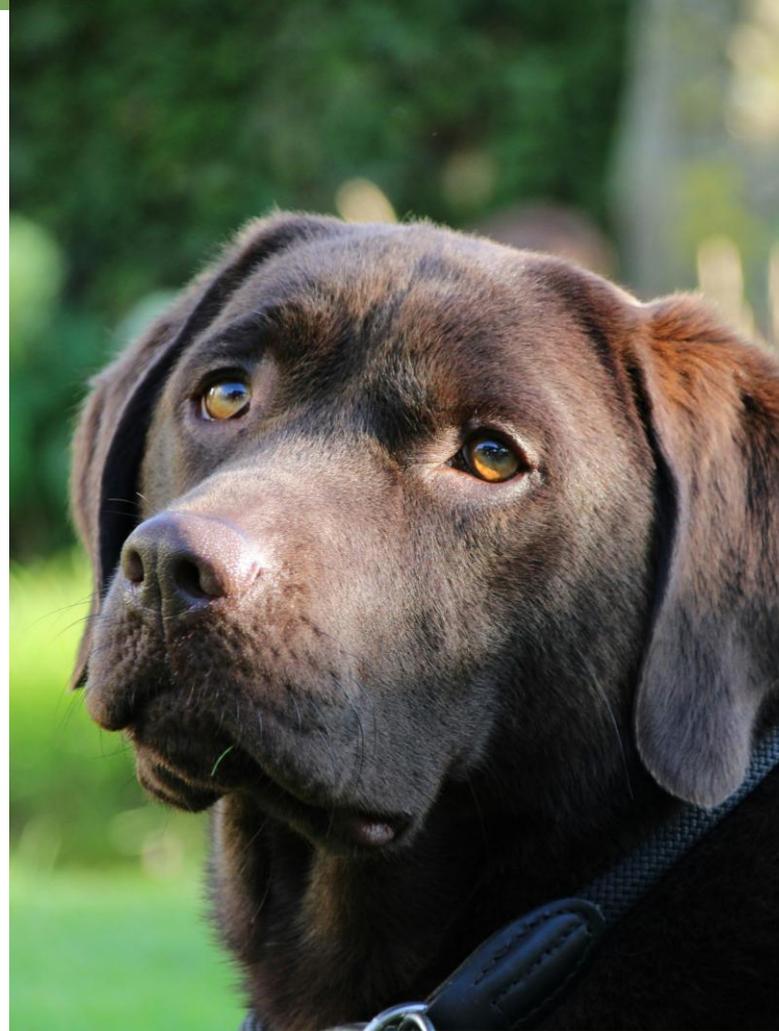
- 9-year-old MC Labrador
- Diagnosed with splenic HSA, 4/26/2023
  - Splenic mass was found after positive OncoK9 test
  - Splenectomy
  - Treated with 5 doses doxorubicin
  - Follow up ultrasound at pDVM was concerning for peritoneal metastasis
- Referred 10/16/2023 – physical exam:
  - Pale pink mm
  - Rest of exam was normal

**Plan:**  
Full workup  
and run the  
Nu.Q<sup>®</sup> Vet  
Cancer Test



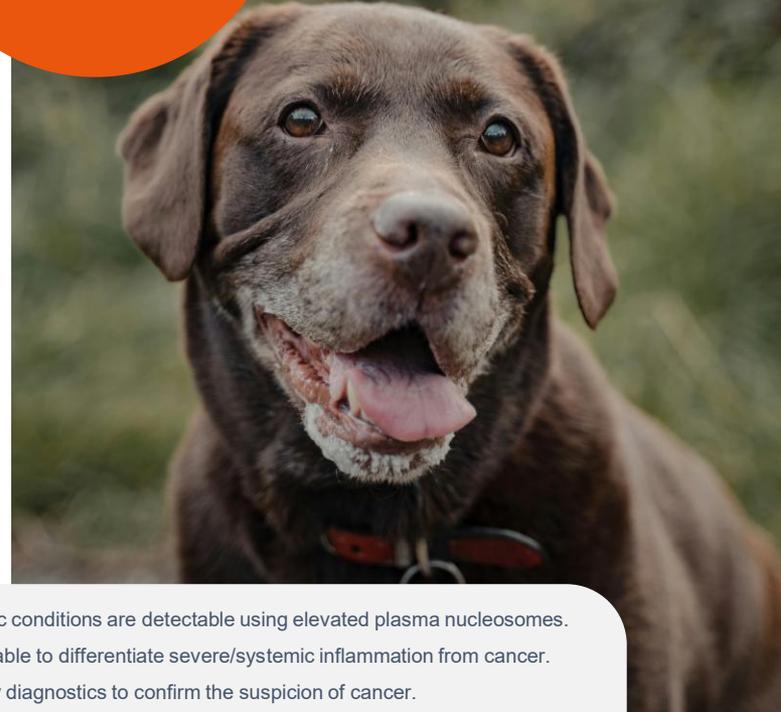
# Benjamin: Diagnostics

- **CBC:** Anemic 24%
- **Chemistry Panel:** normal
- **Urinalysis and UPC:** no significant findings
- **3-view chest radiographs:** no metastasis
- **Abdominal ultrasound:**
  - No peritoneal nodules
  - No effusion
  - Hyperechoic fat in retroperitoneal space (RPS)
- **Aspirate of mass in RPS**



# Benjamin: Results

Orange  
Level/high  
risk: 255  
ng/mL

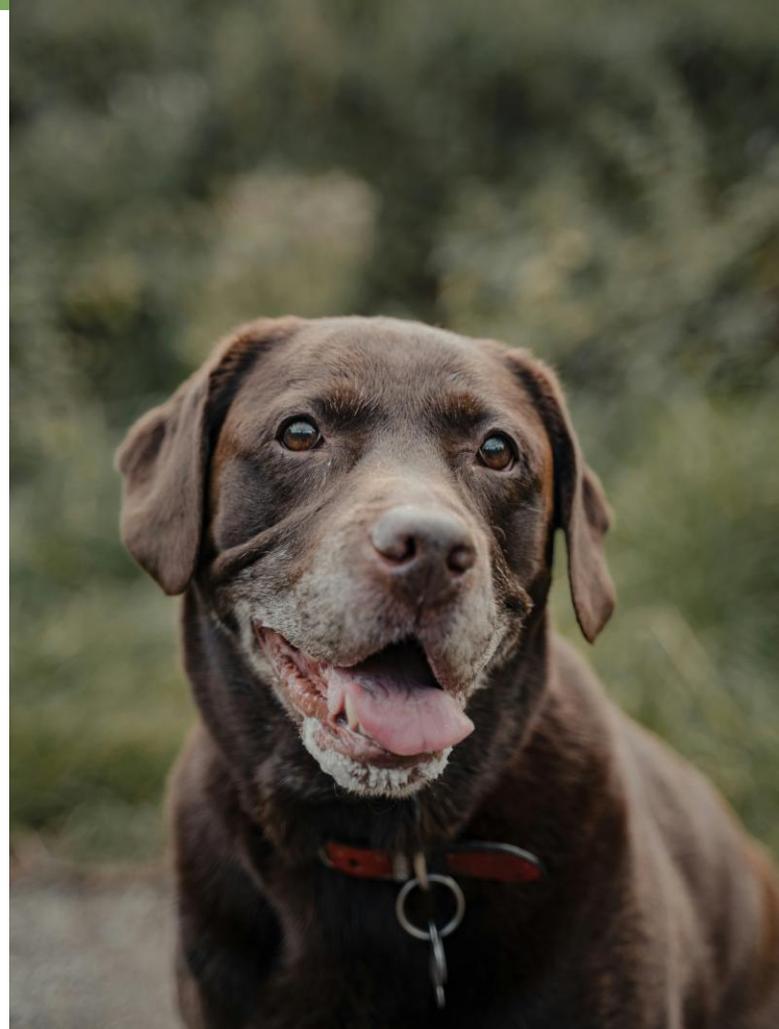


- Results at **Orange level** are **consistent with increased risk of cancer** in healthy animals over the age of 1 year, and all genders
- **Confirmatory diagnostics** should be used to confirm suspicion of cancer
- Review medical history → r/o HSA metastasis
- Aspirate was non-diagnostic
- Based on Nu.Q<sup>®</sup> & anemia, presumed metastasis
- Started oral Palladia
- Plan to monitor with Nu.Q<sup>®</sup>

The Nu.Q<sup>®</sup> Vet Cancer Test identifies patients who may have cancer however, not all neoplastic conditions are detectable using elevated plasma nucleosomes. Localized tumors are least likely to cause elevated plasma nucleosomes, and this test is not able to differentiate severe/systemic inflammation from cancer. If there is a suspicion of cancer, we recommend that you perform confirmatory diagnostics to confirm the suspicion of cancer.

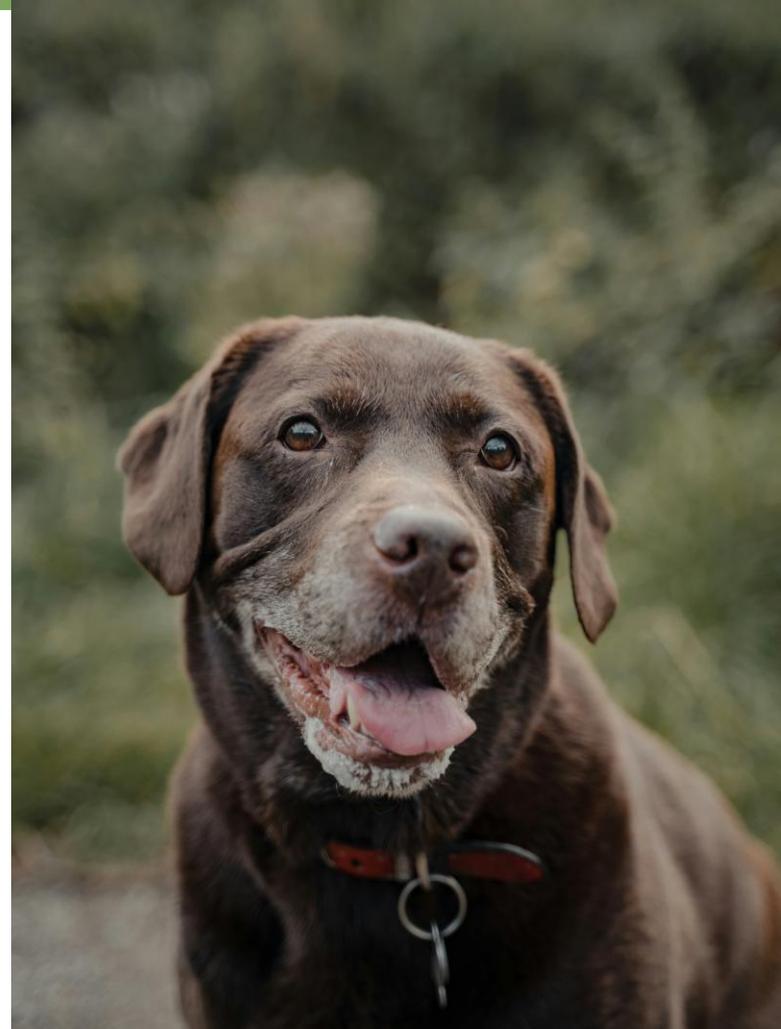
# Benjamin: Next Steps

- Did clinically well for 2 months, anemia resolved
- Dec. 11 2023:
  - Nu.Q<sup>®</sup> increased from 255 ng/mL to 311 ng/mL
  - CXR: no metastasis noted
  - AUS: similar RPS mass, no effusion
- Dec. 18 2023 presented for vomiting and lethargy
  - Anemia
  - Moderate thrombocytopenia



# Benjamin: CT Scan

- **CT Scan on 30 December, 2023**
- **Diffuse metastatic disease**
  - Too numerous to count nodules in skin, subcutaneous tissues, body wall muscle, mesentery, retroperitoneal space, and skeletal muscle of pelvic limbs and paraspinal muscle
  - Regional subcutaneous, peritoneal and retroperitoneal fluid most likely hemorrhage from bleeding metastatic lesion
- **Euthanized 2 weeks later**
  - Progressive anemia and hypoglobulinemia



# Boomer

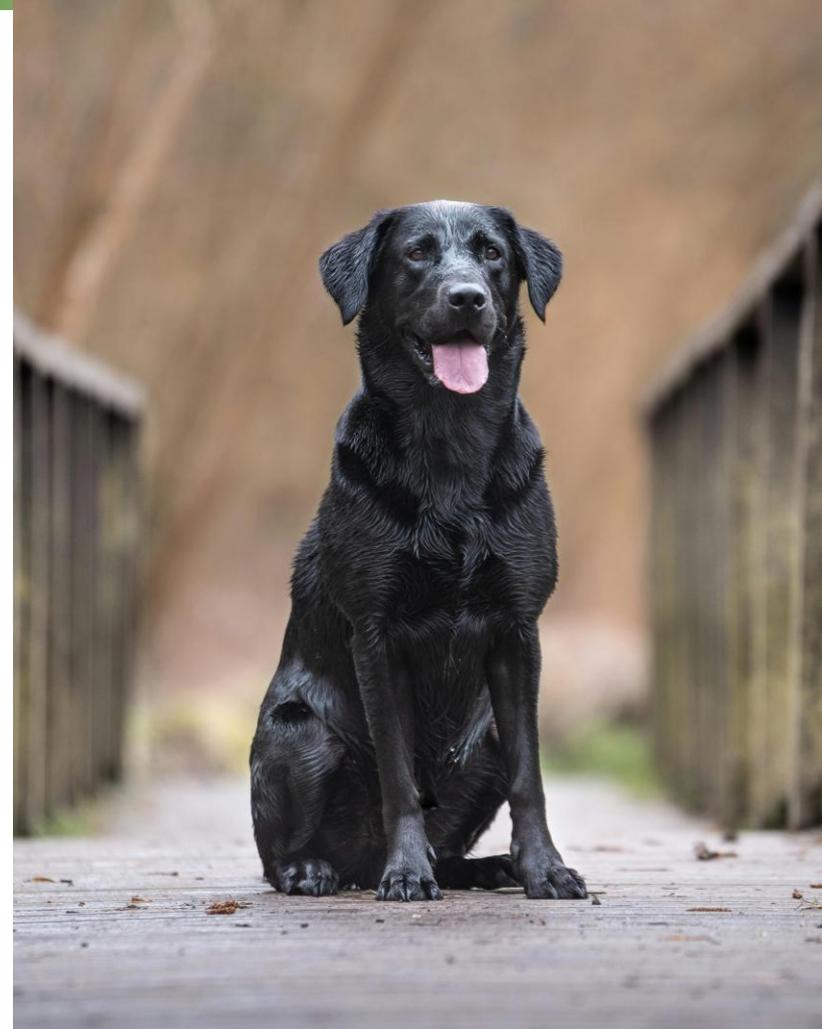
- 6-year-old MC Labrador
- Presented March 2024 for cancer screening
  - Had recent lab work
  - No problems on history
- **Physical exam: normal**



**Plan:**  
Full screening  
and run the  
Nu.Q<sup>®</sup> Vet  
Cancer Test

# Boomer: Diagnostics

- **3-view chest radiographs**
  - No metastasis, normal
- **Abdominal ultrasound**
  - Age related kidney changes
  - Cyst in left kidney
- **Nu.Q<sup>®</sup> Vet Cancer Test submitted**



# Boomer: Results

- Consistent with those found in healthy animals over the age of 1 year and all genders
- Continue monitoring bi-annually

**Green Level/low  
risk: (<15 ng/mL)**



The Nu.Q® Vet Cancer Test identifies patients who may have cancer however, not all neoplastic conditions are detectable using elevated plasma nucleosomes.

Localized tumors are least likely to cause elevated plasma nucleosomes, and this test is not able to differentiate severe/systemic inflammation from cancer.

If there is a suspicion of cancer, we recommend that you perform confirmatory diagnostics to confirm the suspicion of cancer.

# Boomer: Next Recheck

**November 19, 2024:**

- **CBC & chemistry panel** normal
- Urinalysis USG 1.016
- In house **Nu.Q<sup>®</sup>** <15ng/mL - low suspicion
- **3-view CXR: Normal, no metastasis**
- Abdominal ultrasound: age related kidney changes, cyst in left kidney stable, new one in right → Internist recommended IM consult



# Boomer: Next Recheck

**December 23, 2025:**

- **CBC normal**
- **Chemistry panel normal (BUN/Cr 16/1.3)**
- **Urinalysis USG 1.004**
- **In house Nu.Q<sup>®</sup> <15ng/mL - low suspicion**
- **3-view CXR: Normal, no metastasis**
- **Abdominal ultrasound: stable kidneys, → recommended follow-up with internist for hyposthenuria**



# Introducing Boomer's younger brother, Baxter



# Polly

**Case Background:** Presenting for recurring urinary signs and history of bladder transitional cell carcinoma (January 2020)

- 15-year-old female spayed Border Collie cross
- Bladder TCC diagnosed Jan 2020
  - Trigonal mass on ultrasound
  - CADET<sup>®</sup> BRAF-mutation urine test positive
  - Treated with oral BRAF-inhibitor thru Sept 2021
  - Stopped due to side effects
- Recurrent urinary signs Nov 2021



# Polly

## Case Background: Presenting for recurring urinary signs and history of bladder transitional cell carcinoma (January 2020)

- Presents to me Jan. 3, 2022
- Physical exam:
  - Moderate dental tartar
  - Grade 2/6 heart murmur
- Plan: staging and restart new chemotherapy
  - CBC and chemistry panel: normal
  - 3-view CXR: no metastasis
  - AUS
    - Trigonal mass (1.8 x 0.8 x 0.6cm)
    - Splenic mass (7.3 x 5.9 cm)
    - No free fluid
- Incidental splenic mass → WWYD?
- Plan to do Nu.Q® Vet Cancer Test



## Results: Green Level/Low Risk

- Consistent with those found in healthy animals over the age of 1 and all genders
- The Nu.Q® Vet Cancer Test identifies patients, however, confirmatory diagnostics should be used to confirm the suspicion of cancer

Low Risk



		<b>Gastrointestinal Laboratory</b> Dr. J.M. Steiner Department of Small Animal Clinical Sciences Texas A&M University 4474 TAMU College Station, TX 77843-4474			
Website User ID: drsuecancervet@gmail.com OR vrec OR vrecereception@vca.com					
GI Lab Assigned Clinic ID: 12988					
Dr. Sue Ettinger VCA - Veterinary Referral and Emergency Center 123 West Cedar Street Norwalk, CT 06854 USA		Phone: 203 854 9960 Fax: 9 203 838 5956 Animal Name: <b>Polly</b> Owner Name: <b>Harrar</b> Species: Canine Received: Jan 07, 2022			
VCA - Veterinary Referral and Emergency Center Tracking Number: 93956			GI Lab Accession: 353035		
<b>Test</b>	<b>Result</b>	<b>Reference Interval</b>	<b>Assay Date</b>		
NuQ Vet Cancer Screen Fasting	10.8 ng/mL	9.1-57.4	01/10/22		
<small>Interpretation: Plasma nucleosome concentrations ranging below 57.4 ng/mL are consistent with those found in healthy animals of all genders over the age of 1 year. Not all neoplastic conditions are detectable using elevated plasma nucleosome concentrations therefore, if clinically indicated, additional tests may be needed to confirm or deny the suspicion of cancer in your patient.</small>					
<small>Dogs that have not been fasted may have artificially elevated nucleosome levels and should be retested after fasting. If you would like to discuss this result with an oncologist, please contact us at AskNuQVet@volition.com or call 979-709-2348.</small>					

# Polly

## Polly's histopathology:

- Microscopic findings: Splenic hematoma, arising from a myelolipoma



**ANTECH** Pet Cancer Specialty  
800.872.1001

**VCA Veterinary Referral and Emergency Center #735**  
123 W Cedar St, Norwalk, CT, 06854, USA

**Dr. Dr. Sue Ettinger Dacv DVM**

Received **01/20/22** Reported **01/22/22** NYBCOS

Pet Name	Owner	Species	Breed	Sex	Age	Ch
<b>Polly</b>	<b>Harrar Peter</b>	<b>Canine</b>	<b>Border Collie</b>	<b>SF</b>	<b>15Y</b>	<b>25</b>

Spleen. Polly has stable TCC of the bladder. A recent abdominal ultrasound revealed a splenic mass. Other PPH includes a prior diagnosis of rear limb weakness/tenderness.

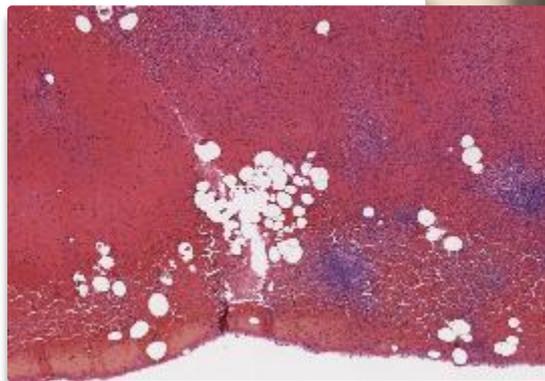
Received: 19.0 cm x 7.0 cm tissue, with a 9.0 cm x 7.0 cm mass.

This Pet Cancer Specialty Biopsy has been reviewed by 3 Pet Cancer Pathology Team Members: Phil Labelle, DVM, DACVP, Cynthia Bacmeister, DVM, PhD, DACVP and Michael Zinn, DVM, DACVP

**MICROSCOPIC DESCRIPTION:**  
The mass at the head of the spleen is characterized by erythrocytes enmeshed in fibrin, distending the parenchyma, attenuating the capsule, and pushing up part resident follicles and smooth muscle trabeculae. Interspersed, are well differentiated adipocytes and hematopoietic elements. In the remaining parenchyma, there is lymphoid nodular hyperplasia. There are numerous larger macrophages encircling capsular vessels and some multifocally.

**MICROSCOPIC FINDINGS:** Splenic hematoma, arising from a myelolipoma

**PET CANCER PATHOLOGY TEAM REVIEW:**  
All 3 reviewing members of the Pet Cancer Pathology Team are in agreement that this is a splenic hematoma arising from a myelolipoma



# Polly

## What to do next?



### VETERINARIAN

- Suggest to keep monitoring at bi-annual wellness visits



### For Polly

- After splenectomy, started IV chemotherapy for TCC
- Treated her for 5 additional months



## Case Background: Presenting for annual wellness exam

- 5 years old FS Golden Retriever
- Doing well at home, a little more tired since new puppy arrived
- Physical exam: no significant findings
- Owner agrees to minimum database and Nu.Q<sup>®</sup> Vet Cancer Test
- CBC: mild thrombocytopenia 136,000
- Chemistry: mild elevation ALP 243 mg/dl
- Urinalysis: no significant findings



# Belle

## Results: Orange Level/High Risk

- Plasma nucleosome concentrations in the orange level are consistent with an increased risk of cancer in healthy animals over the age of 1 year, and all genders
- The Nu.Q® Vet Cancer Test identifies patients who may have cancer however, confirmatory diagnostics should be used to confirm the suspicion of cancer.

High  
Risk



# Belle

## What to do next?



### VETERINARIAN

- Recommends abdominal ultrasound and thoracic radiographs, owner agrees
- CXR: cranial mediastinal mass
- AUS: splenomegaly with severely mottled appearance (“moth eaten”)
- Performs fine needle aspirate to get definitive diagnosis: **high grade lymphoma**
- Refers patient to an oncologist to start treatment

High  
Risk



# Belle

## What to do next?



### OWNER

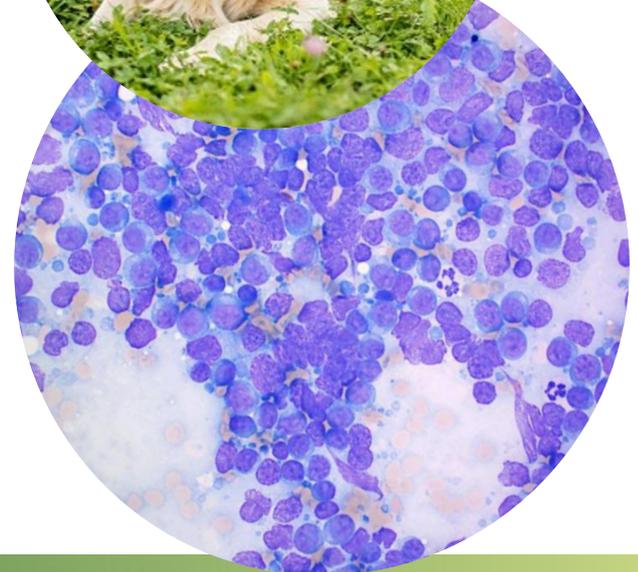
- Able to prepare to start chemotherapy, getting Belle to treatment early giving her the best chance at beating cancer



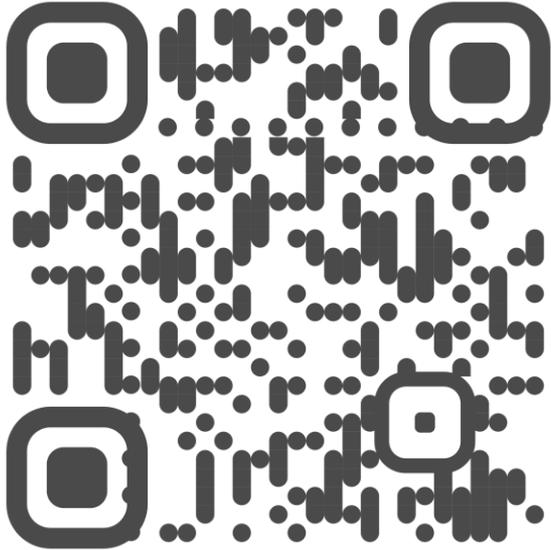
### PATIENT

- Belle started multi-agent chemotherapy before she started showing signs of cancer (substage a)

High  
Risk



# More case studies and other resources



A black dog, possibly a Labrador Retriever, is sitting in a field of green grass and white dandelions. The dog is looking towards the camera with its mouth slightly open. The background is a soft-focus field of dandelions, and the lighting is warm, suggesting a sunny day. The text "Frequently Asked Questions" is overlaid in white on the left side of the image.

# Frequently Asked Questions

# Beyond the Basics



Will this test specify the type of cancer the dog might have?

- No, it does not but it detects a significant percentage of systemic cancers with high specificity
- Data suggests potential detection capabilities for other cancers such as mast cell tumors, osteosarcoma, oral melanoma, and soft tissue sarcoma

# Beyond the Basics: When to screen



When should we screen our canine patients?

- Ideally at every wellness visit
- Should be conducted on **ALL** healthy dogs over age of 7 and **high-risk breeds** as early as age 4
- **At least 2x per year**

# Beyond the Basics

- Only very small percentage of results would be expected in “**high**” range
- A “**high suspicion**” result in otherwise healthy animal is certainly suggestive of cancer, but requires further clinical work up
- “I have some concerns about the NuQ result”

“How do I communicate a high result to the pet owners?”



**Remember, this is a screening not a diagnostic**

# Beyond the Basics: Clinical conditions



Does the baseline Nu.Q<sup>®</sup> Vet level offer any prognostic insights?

- No, it is not prognostic
- A "**high**" Nu.Q<sup>®</sup> Vet value doesn't imply advanced disease or predict a shorter survival span

# Beyond the Basics

- For highest pet owner compliance, hospitals who are running large amounts of tests have integrated it into their wellness offerings or preventative panels
- Recommending price be reasonable to pet owner when combined into their wellness panels
- This is a Volume-Repeat-Screening test

“How can I price this most effectively?”



# Beyond the Basics: Clinical Conditions



How well can Nu.Q® differentiate hemangiosarcoma from hemangioma (or other benign symptoms similar to HSA)?

- Dogs presenting with hemoabdomen are likely to be in shock which also increases nucleosome concentrations
- If there is NO evidence of bleeding, then it can help differentiate benign from malignant incidental splenic masses but not 100%

# Beyond the Basics: When to run



Can I run this test on a sick patient?

- No
- But Volition current research suggests managed conditions including atopic dermatitis, otitis externa, hypothyroidism, osteoarthritis, or routine non-infectious dental disease do not influence the Nu.Q<sup>®</sup> Vet Cancer Test results

# Where to find it?



U.S. / ANZ / HK/Singapore/ **most**  
EU countries



Coming soon U.S.



U.S & Canada



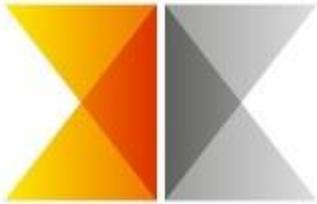
Japan



UK & Ireland



Singapore



Portugal & Spain

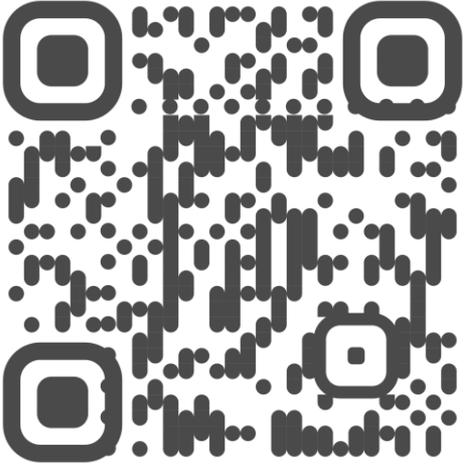


Taiwan

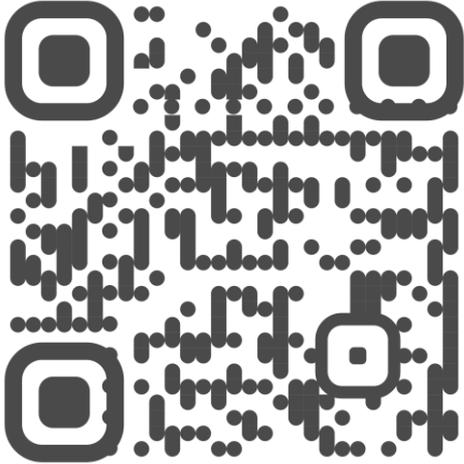


Poland & Czech Republic

# Where to Find:



**IDEXX**



**Antech**<sup>TM</sup>

# Summary

- Cancer is a **leading** cause of death in dogs
- **Early** detection leads to **early intervention**
- Nu.Q<sup>®</sup> Vet Cancer Test is an **accessible, affordable and easy-to-use blood-based test** capable of reliably detecting common cancers including lymphoma and hemangiosarcoma
- Introduce it to **your** practice for dogs 7-years-old+ AND for at-risk breeds from 4-years-old

““ Questions? ””

# Thank you for your interest in Volition.

For more details, please visit [www.veterinary.volition.com](http://www.veterinary.volition.com)



You can reach us via e-mail or via our hotline for a free oncology consult



[AskNu.Qvet@volition.com](mailto:AskNu.Qvet@volition.com)



979-709-2348