

# PRES A PRACTITIONERS APPROACH TO WELLNESS BLOOD TESTING: IMPROVED MEDICINE, INVOLVED STAFF AND BETTER PROFITS

PRESENTED BY:

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Abaxis**

**Veterinary Care Center, St. Louis, MO**



**FREE TO GOOD HOME**



Beautiful 6 mo. old male kitten - orange & caramel tabby. playful, friendly, very affectionate. Ideal for family w/kids.



Handsome 32 yr. old husband - personable, funny, good job, but doesn't like cats. Says he goes or cat goes.

**OR**

Call Jennifer - 265-5543 - come see both & decide which you'd like.

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**Willow**

*let's Scan*  
**ABAXIS** BETTER. ACTUALLY.

- 3 year old Labrador Retriever
- Presented March 11, 2003 for regular physical examination and vaccinations.
- OWNER REPORTS NO ILLNESS OR ABNORMAL BEHAVIOR.
- Physical Examination findings:
  - Obesity
  - Otitis Externa Right Ear




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**Wellness Blood Testing**

*let's Scan*  
**ABAXIS** BETTER. ACTUALLY.

ALP 135 (Normal 20 – 150)  
 ALT 48 (Normal 10 – 118)  
 BUN 13 (Normal 7 – 25)  
 CRE 1.6 (Normal 0.3 – 1.4)  
 GLU 517 (Normal 60 – 110)  
 TP 9.3 (Normal 5.4 – 8.2)

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**BETTER. ACTUALLY.**

**Scooter**

**18 month old male castrated Shetland Sheepdog presented 6/13/05 for regular examination and vaccines.**

**No problems or concerns noted by owner.**

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**BETTER. ACTUALLY.**

**Scooter - Wellness Testing**

ALP: 74	(20-150)
ALT: 23	(10-118)
BUN: 47	(7-25)
CRE: 2.0	(0.3-1.4)
GLU: 131	(60-110)
TP: 7.5	(5.4-8.2)

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**BETTER. ACTUALLY.**

**Scooter - Additional Blood Work**

WBC: 14.5	(6-17)	RBC: 7.01	(5.5-8.5)
LYM: 3.42	(1-4.6)	HGB: 18.8	(12-18)
MON: 0.48	(0-3)	HCT: 47.2%	(37-55)
LY%: 23.6%	(3-12)	MCV: 26.8	(19.5-24.5)
MO%: 3.3		MCHC: 39.7	(31-34)
GR%: 73	(62-87)	RDWc: 15.1%	
PLT: 371	(200-500)		

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**BETTER. ACTUALLY.**

**Scooter – Additional Bloodwork**

ALB:	2.5	(2.5-4.4)
AMY:	1148	(200-1200)
TBIL:	0.9	(0.1-0.6)
CA++:	11.4	(8.6-11.8)
PHOS:	2.6	(2.9-6.6)
NA+:	147	(138-160)
K+:	3.8	(3.7-5.8)
GLOB:	4.5	(2.3-5.2)

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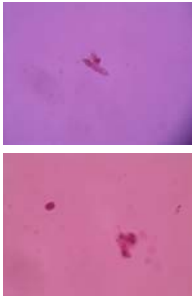
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**BETTER. ACTUALLY.**

**Scooter - Urinalysis**

Stick	
Leukocytes:	Neg
Nitrite:	Neg
Urobilinogen:	Neg
Protein:	300 mg/dl (3+)
pH:	6.0
Blood:	Neg
Ketone:	Neg
Bilirubin:	Neg
Glucose:	Neg
Sp. Gr.:	1.020
Microscopic	
3+ Cuboidal Cells	
2+ Granular Casts	



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**BETTER. ACTUALLY.**

**Scooter Urine Protein/Creatinine Ratio**

3.8  
(>1.0 suggests glomerular disease)

Urine Culture:  
No growth

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### Scooter - Ultrasound Examination

Consistent with renal hypoplasia with evidence of interstitial nephritis/renal fibrosis

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### Program Outline

- Recipe for Success in Wellness Testing
- Results of Our Program
- Training Your Staff and the Benefits this Provides
- Our Wellness Program and How to Implement It
  - Abnormal RBC with wellness testing
  - Abnormal WBC with wellness testing
  - Bile acid with abnormal liver values
  - Thyroid testing as part of a wellness program
- Achieve 100% Compliance with Pre-anesthetic Testing
- Financial Analysis
- Blood Testing Financials of Veterinary Care Center
- Benefits to the Hospital, Staff and Patients

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### Perceived Hospital Resistance to Wellness Testing Programs



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**BETTER. ACTUALLY.**

- Clients Will Not Pay
- Veterinarians and Staff Do Not Want to "Sell"
- "I don't have time."




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**BETTER. ACTUALLY.**



### Do veterinarians "sell"? Is this a bad thing?

- The "sell" is the recommendation for optimum diagnostics, treatment, health and longevity.
- Except for "A" clients, veterinarians must "sell" their services, concepts, treatments, preventatives and recommendations.
- The veterinarian and staff should not pre-judge the clients ability and willingness to pay for recommended services.
- Veterinarians should always have "the nerve" to recommend proper and appropriate healthcare.

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**BETTER. ACTUALLY.**

### My Recipe For Success

- An Enthusiastic and Educated Staff Provides Exceptional Client Education
- Wellness Visibility
- Simple, Accurate and Reliable Laboratory Instrumentation
- One visit Complete Service
- Outstanding Medical Care
- High Value and Reasonable Cost




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### Important Points to Remember

- Implementation Does Not Occur Overnight
- It Takes Time To Educate Both Clients and Staff
- Resist the Temptation to Give Up or Become Frustrated



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### The Hospital Staff is the Key to Success

Our Staff Motto:

Recommend and perform what is in the best interest of the pet. Recommend what you would provide for your own pet.



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### The Importance of Staff Participation



1. Staff communication and behavior must be consistent with the practice philosophy.
2. Staff serves to inform and recommend wellness, allowing the veterinarian to focus on medical care.
3. Staff serves to introduce, re-state, remind and "close" clients on wellness procedures.
4. Consistency and repetition of concepts is required to improve compliance. Teach your clients what is best for their pets.
5. Staff members are the first and last contact for the client.

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**Requirements For Staff Participation**

- Education must be an ongoing process.
- Education leads to confident and consistent staff recommendations.
- Education allows technicians to present the clinical needs for (and general interpretation) of blood tests.
- Education supports the practice philosophy of *Proper and Appropriate Health Care*.
- Staff participation WILL EXPAND to improve all aspects of the practice.

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**Awareness leads to compliance.  
Continued awareness leads to demand.**

- *Eventually, clients request testing rather than it need to be sold or recommended.*



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**An educated and enthusiastic staff:**

- Exceptional Knowledge
  - Intimate Participation with Every Patient
  - Client Advisor Role
  - Ongoing Weekly Educational Meetings
- All provide exceptional client education

*The veterinarian only needs to confirm the necessity of blood testing.*



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BETTER. ACTUALLY.

**What does a “call-back” cost you?**

The best revenue generator in your practice is:  
YOUR TIME




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BETTER. ACTUALLY.

**When results are available during the scheduled appointment, your time is already blocked off and accounted for. There is no additional labor cost to discuss results.**

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BETTER. ACTUALLY.

Physical Examination/Office call fee	\$30.00	
Length of routine appointment (minutes)	20.00	
Appointments per hour	3.00	
Calculated doctor hourly medical fee	\$90.00	
Calculated doctor hourly surgical fee	\$315.00	3.5XMedical
Hours per day medical	7.00	
Hours per day in surgery	2.00	
Average doctor hourly fee	\$140.00	
Doctor time per minute	\$2.33	

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**BETTER. ACTUALLY.**

**Outstanding Medical Care**



*Availability of immediate results eliminates call-backs and maximizes client satisfaction.*

**ARE YOU PRACTICING THE BEST POSSIBLE MEDICINE AND PROVIDING THE BEST POSSIBLE SERVICE?**

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**BETTER. ACTUALLY.**

**Training Your Staff**

- Provide basic knowledge of the importance of wellness testing.
- Provide basic knowledge of the need for pre-anesthetic testing.
- Provide basic knowledge of the meaning of individual tests.
- Utilize case examples to reinforce the need for wellness testing.




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**BETTER. ACTUALLY.**

**Veterinary Economics 42[4]:36-40 Apr '01**

- 28% of all wellness tested patients demonstrate at least one abnormal blood value that requires either a recheck visit, further diagnostics or immediate treatment.
- At least 10% of all wellness tested patients are diagnosed with sub-clinical disease.

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**100 day (85 working days) retrospective review of VCC wellness/pre-anesthetic records**

- 44% of patients had at least one abnormal chemistry value
- 38% of patients had at least one abnormality in basic chemistry values (BUN, Creat, ALT, ALKPPOS, Glu, TP)
- 415 total patients
- 183 patients with at least one abnormality
- 159 patients with at least one abnormality in basic values

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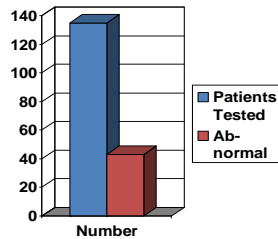
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**Retrospective Review 6 Test Chemistry Only**

- 135 Patients
- Average Age: 2.86 years
- 43 patients with at least one abnormality
- 32% of patients had at least one abnormality




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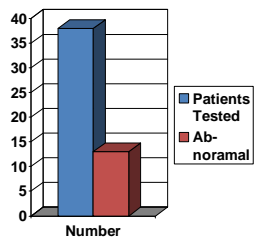
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**Retrospective Review CBC/6 Test Chemistry Pre-anesthetic**

- 38 Patients
- Average Age: 1.52 years
- 13 patients with at least one chemistry abnormality
- 34% had at least one abnormality
- 4 patients (10.5%) had abnormal WBC, RBC, Hgb or Hct.
- 1 patient (2.6%) had a platelet abnormality




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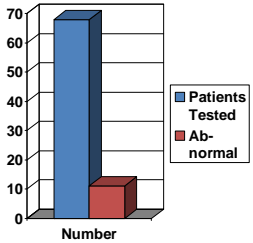
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**Retrospective Review  
CBC/6 Test Chemistry  
Wellness**


 BETTER. ACTUALLY.

- 68 patients tested
- Average age 5.88 years
- 11 patients had at least one chemistry abnormality
- 16% of patients had at least one chemistry abnormality
- 21 patients (30%) had abnormal WBC, RBC, Hgb or Hct.
- 8 patients (11.7%) had a platelet abnormality.



Category	Number
Patients Tested	68
Ab-normal	11

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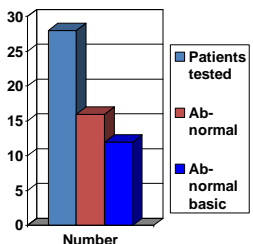
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**Retrospective Review  
CBC/14 Test Chemistry  
Pre-anesthetic**


 BETTER. ACTUALLY.

- 28 patients tested
- Average age 9.54 years
- 16 patients had at least one chemistry abnormality
- 57% of patients had at least one chemistry abnormality
- 12 patients had at least one basic chemistry abnormality
- 43% of patients had at least one basic chemistry abnormality
- 21 patients (30%) had abnormal WBC, RBC, Hgb or Hct.
- 8 patients (11.7%) had a platelet abnormality.



Category	Number
Patients tested	28
Ab-normal	16
Ab-normal basic	12

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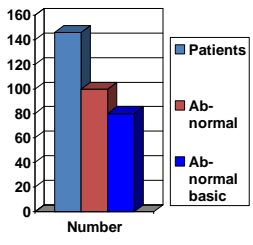
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**Retrospective Review  
CBC/14 Test Chemistry  
Wellness**


 BETTER. ACTUALLY.

- 146 patients tested
- Average age 10.15 years
- 100 patients had at least one chemistry abnormality
- 68% of patients had at least one chemistry abnormality
- 80 patients had at least one basic chemistry abnormality
- 55% of patients had at least one basic chemistry abnormality
- 45 patients (30.8%) had abnormal WBC, RBC, Hgb or Hct.
- 4 patients (2.7%) had a platelet abnormality.



Category	Number
Patients	146
Ab-normal	100
Ab-normal basic	80

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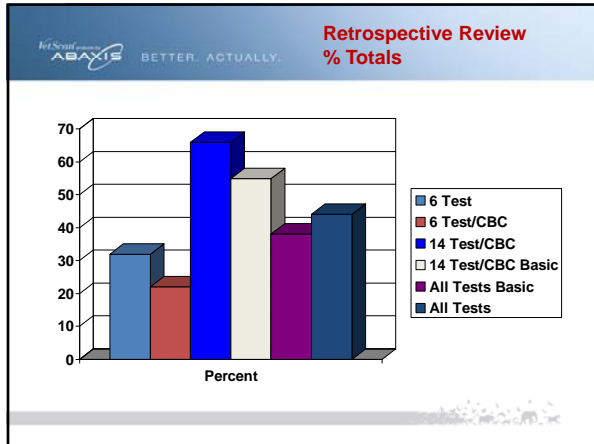
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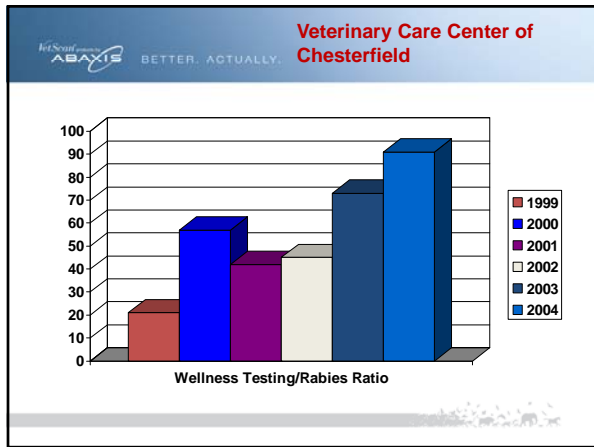
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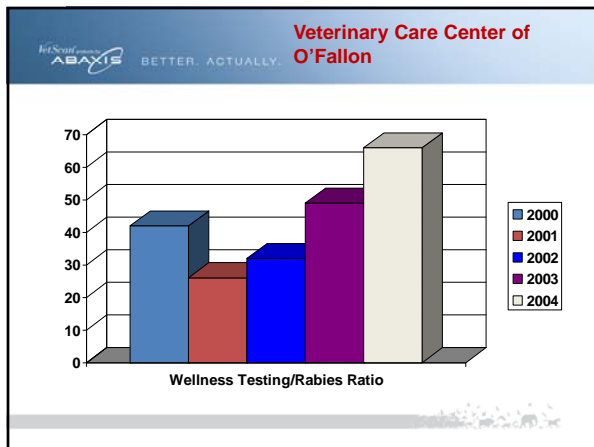
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**Benefits of a Staff Training Program and In-Office Testing**

- Staff members who understand and believe in the importance of laboratory testing will adamantly promote it.
- Well-trained staffers will relieve pressure on the veterinarian to promote wellness testing.
- Well-trained staffers will support and re-affirm veterinary recommendations (and visa-versa).
- A well trained staff enjoys greater job satisfaction, especially when their recommendations result in the detection and treatment of sub-clinical disease.



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**Informative staff, client education and equipment availability leads to increased utilization of your in-hospital blood equipment.**

- Pre-anesthetic – Performed on every patient
- Ill patient diagnostics
- Outpatient monitoring and follow-up rechecks
- Inpatient monitoring
- Wellness testing – Performed on every patient



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**Our Wellness Program and How to Implement Yours**



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### Implementing a Wellness Testing Program

1. Believe that this is best for your patients and your practice.
2. Set goals.
3. Determine testing parameters.
4. Set a tracking method.
5. Plan your presentation to clients. Educate your clients.
6. Consider a staff bonus plan.
7. Train your staff – repeatedly.
8. BE CONSISTENT
9. Prepare or obtain client information literature.
10. GO!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

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### Intimate Participation of the Staff

Patient files and computer records are accessed to prepare the  
**Complete Wellness Checklist**  
 prior to the patients arrival.

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**VETERINARY CARE CENTER**  
 Pet Owner's Checklist - Complete Wellness Care  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_ Age: \_\_\_\_\_  
 Breed: \_\_\_\_\_ Sex: \_\_\_\_\_

<b>PHYSICAL EXAMINATION</b>	Thorough physical examination. This should be performed by a qualified person for the pet's age and breed. The pet should be weighed and the body condition score recorded. The pet should be vaccinated against rabies and distemper.
<b>RABIES VACCINE</b>	Thoroughly rabies. Pet owners should be required to have their pet vaccinated for rabies.
<b>DPP VACCINE</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>BORDETELLA VACCINE</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>LYME DISEASE</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>HEARTWORM TEST</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>FECA EXAMINATION</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>WILDLIFE BLOOD TESTS</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>HEARTWORM PREVENTION</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>FLU PREVENTION</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>DENTISTRY</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>ADVANCED TESTING</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.

**VETERINARY CARE CENTER**  
 Pet Owner's Checklist - Complete Wellness Care for Cats  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_ Age: \_\_\_\_\_  
 Breed: \_\_\_\_\_ Sex: \_\_\_\_\_

<b>PHYSICAL EXAMINATION</b>	Thorough physical examination. This should be performed by a qualified person for the pet's age and breed. The pet should be weighed and the body condition score recorded. The pet should be vaccinated against rabies and distemper.
<b>RABIES VACCINE</b>	Thoroughly rabies. Pet owners should be required to have their pet vaccinated for rabies.
<b>FUNGUS VACCINE</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>FECA EXAMINATION</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>BORDETELLA VACCINE</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
<b>HEARTWORM TEST</b>	Distemper, Parvovirus, Adenovirus-2, and Bordetella. This vaccine is essential for all dogs and cats.
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**BETTER. ACTUALLY.**

**Reminder Card**

Vet. Care Center of Chesterfield Valley  
 18830 Chesterfield Airport  
 Chesterfield, MO 63005

Dear Irish,  
 Next month you are due for the treatments or products listed below. Please have your owner call our office at 636-537-9960 to schedule an appointment. Remember that a yearly physical examination is just as important as vaccinations.

Visit our web site at [www.veterinarycarecenter.net](http://www.veterinarycarecenter.net).

06-06-06	DHLPPVC Annual
04-11-04	Heartgard Plus Blue 6 Pack
06-06-06	Wellness Examination
07-01-05	Heartworm Test - Antigen
06-06-06	Bordetella-Kennel Cough
06-06-06	Wellness Blood Testing

Joseph Pruegan  
 15333 Brodsky Place Dr.  
 Chesterfield, MO 63005

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**BETTER. ACTUALLY.**




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**BETTER. ACTUALLY.**

**Intimate Participation of the Staff**

Upon review of all needed services in the exam room, the Technician informs the client as to which wellness panel *the patient is due to receive.*

If wellness testing is declined, The technician will educate the client as to why the blood tests are a necessary component of the patients health care, and an educational handout is provided.

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**BETTER. ACTUALLY.**

"It is important that we perform blood testing on your pet every year. We watch for changes in organ systems such as the kidney and liver. We also monitor important blood cell levels, among many other things. Should we find abnormalities, we can often treat the illness with better results and often at a lower cost. If everything is normal, you will have piece of mind that all is well, and we will have normal baseline values to monitor your pets' health in the future."




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**BETTER. ACTUALLY.**

**Intimate Participation of the Staff**

Technician notes all declined services on the **Complete Wellness Sheet**.  
 If wellness testing is declined, an educational handout is provided.




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
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**Veterinary Care Center**

**Wellness Blood Testing - An Important Part of Your Pet's Health Care**

During your visit today, we will ask you many questions to obtain the best possible history of your pet's activity. This is important because your pet's activity is a key to his or her health. We will also perform a complete physical examination to look for signs of disease. However, there are many diseases which are not detectable through a physical exam, such as blood tests. They are not only age and breed related but also, and for organ systems, are related to a pet's breed and lifestyle. We will recommend appropriate testing for your pet at certain ages.

As a pet's age, they are prone to many of the same diseases which humans experience - diabetes, kidney and liver disease, heart disease, cancer, hypertension (high blood pressure), and hyperlipidemia (high blood cholesterol). To diagnose these conditions, we recommend blood testing at certain ages, and more frequently for older pets.

There are many benefits to regular blood testing such as:

1. **Identify health problems early.**
  - Many problems show subtle changes in their blood values over time. The changes cannot be detected without the normal tests that are included in blood testing.
2. **Identify subtle changes in organ systems or their function.**
  - If an organ is already in an ongoing disease process before symptoms are noticed, the likelihood of a successful outcome is reduced.
  - Identifying disease early often allows for the best prognosis.
  - Early identification of a problem permits a more timely search for subtle signs of organ disease.
3. **Prevent a progressively debilitating disease from becoming a life-threatening condition.**
  - A blood profile may help us better understand what may be at work for a pet's health condition or health status.

In addition to our tests, we have recommended preventive tests. Just as the time an animal's physical condition deteriorates, the veterinarian will detect the signs of cancer, heart failure, and kidney disease. We will discuss the benefits of these tests and the importance of early detection.

Is my pet a candidate for blood or other testing?  
 An animal can benefit from some level of blood testing. Even if your pet appears otherwise healthy, the other full blood abnormalities in young to middle age animals. Based on your pet's age and personal health status we recommend:

**Core Chemistry Panel (CCP):** Basic values for liver, kidneys, blood sugar and protein levels.


**Core Chemistry Panel plus Complete Blood Count (CCP+):** Evaluation of red blood cells, white blood cells and platelets as well as the above.

**Complete Chemistry Panel plus Complete Blood Count (CCP+):** A complete chemistry panel is fully inclusive of internal organ, blood count of red blood cells and some levels of cancer.

**Thyroid hormone panel (T4):**

I believe the recommended blood testing for my pet is \_\_\_\_\_ and I will discuss this testing option further after this visit. I understand that I will be responsible for the cost of the testing. I understand that I will be responsible for the cost of the testing. I understand that I will be responsible for the cost of the testing.

Owner or Agent: \_\_\_\_\_




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### Sales points the technician utilizes for wellness testing.

- Education regarding what we are testing for, why it is needed, and the different panels available at each age level.
- Patient's "human age".
  - Most people are familiar with their own physicians performing blood tests at regular health checkups – even young adults. Use the terminology *"just like your doctor does at your checkups"*.
- Previous tests results.
- Need for anesthesia – ears, skin, teeth.
- Need for baseline values should the patient become ill.
  - Not all normal animals have blood values "in the normal range".

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### Staff Participation

In the examination room, the technician performs a brief examination, with special attention to the ears, teeth and skin.

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### Staff Participation

Examination of the ears, teeth and skin often indicates the need for an anesthetic procedure. In these cases, the technician repeats the need for blood testing and recommends the testing again.

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### Why is anesthesia declined?

1. Cost
2. Fear




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**VETERINARY CARE CENTER** **QUESTIONS ABOUT ANESTHESIA**

Please review this information for your practice and with your clients. The only anesthesia technique to be considered is general anesthesia. For more information, please contact your veterinarian. This document is intended to help you understand the risks and benefits of anesthesia. It is not intended to be a substitute for professional advice. Please consult your veterinarian for more information.

QUESTION	ANSWER	FOR THE CLIENT
WHY USE ANESTHESIA?	Anesthesia is used to provide the most accurate and complete diagnosis and treatment. It is necessary to perform many procedures that would be painful and stressful for the animal. Anesthesia also allows for a more thorough examination and treatment.	<ul style="list-style-type: none"> <li>• SAFETY OF THE ANIMAL</li> <li>• COMFORT OF THE ANIMAL</li> <li>• ACCURATE DIAGNOSIS</li> <li>• COMPLETE TREATMENT</li> </ul>
WHY IS ANESTHESIA DECLINED?	Anesthesia is declined when the risks outweigh the benefits. This can occur due to the animal's health status, the procedure being performed, or the availability of resources. It is important to discuss the risks and benefits of anesthesia with your veterinarian.	<ul style="list-style-type: none"> <li>• EVALUATION OF THE ANIMAL'S HEALTH</li> <li>• EVALUATION OF THE PROCEDURE</li> <li>• EVALUATION OF THE AVAILABILITY OF RESOURCES</li> </ul>
WHY IS ANESTHESIA DECLINED DUE TO COST?	Anesthesia is declined due to cost when the cost of the procedure exceeds the value of the animal. This is often the case for older animals or animals with chronic conditions. It is important to discuss the costs of anesthesia with your veterinarian.	<ul style="list-style-type: none"> <li>• EVALUATION OF THE ANIMAL'S VALUE</li> <li>• EVALUATION OF THE COST OF THE PROCEDURE</li> </ul>
WHY IS ANESTHESIA DECLINED DUE TO FEAR?	Anesthesia is declined due to fear when the animal is too stressed or agitated to undergo the procedure. This can occur due to the animal's temperament or the environment. It is important to discuss the risks of anesthesia with your veterinarian.	<ul style="list-style-type: none"> <li>• EVALUATION OF THE ANIMAL'S TEMPERAMENT</li> <li>• EVALUATION OF THE ENVIRONMENT</li> </ul>
WHY IS ANESTHESIA DECLINED DUE TO THE AVAILABILITY OF RESOURCES?	Anesthesia is declined due to the availability of resources when the necessary equipment or personnel are not available. This can occur due to the size of the practice or the location. It is important to discuss the risks of anesthesia with your veterinarian.	<ul style="list-style-type: none"> <li>• EVALUATION OF THE AVAILABILITY OF RESOURCES</li> </ul>

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**BETTER. ACTUALLY.**

**Should the client still decline blood testing, the veterinarian will repeat the recommendation when he or she enters the room and has performed a physical examination.**

Example terminology: "Everything appears to be OK, but I would still like to ensure that all of the internal organs are functioning properly. This would require blood testing."

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**BETTER. ACTUALLY.**

**Important points**

- The client has been educated as to the need for and indications for blood testing.
- The client has received 3 separate presentations about blood testing if they decline the initial recommendation.
- The client has received educational literature about blood testing.

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**VETERINARY CARE CENTER** YOUR DOG'S COMPLETE PHYSICAL EXAMINATION

Patient: \_\_\_\_\_

DOB: \_\_\_\_\_

Sex: \_\_\_\_\_

Weight: \_\_\_\_\_

Color: \_\_\_\_\_

Microchip: \_\_\_\_\_

Spay/Neuter: \_\_\_\_\_

Medical History: \_\_\_\_\_

Current Medications: \_\_\_\_\_

Physical Exam: \_\_\_\_\_

Diagnosis: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**VETERINARY CARE CENTER** YOUR CAT'S COMPLETE PHYSICAL EXAMINATION

Patient: \_\_\_\_\_

DOB: \_\_\_\_\_

Sex: \_\_\_\_\_

Weight: \_\_\_\_\_

Color: \_\_\_\_\_

Microchip: \_\_\_\_\_

Spay/Neuter: \_\_\_\_\_

Medical History: \_\_\_\_\_

Current Medications: \_\_\_\_\_

Physical Exam: \_\_\_\_\_

Diagnosis: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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**"Harley"**  
 BETTER. ACTUALLY.

- 14 year old Castrated Male Yellow Labrador Retriever
- Presented 5/10/05 for shaking head, pruritis and evaluation for arthritis.
- Previous History:
  - Recurrent Idiopathic Vestibular Disease
  - Seasonal Pruritis




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**Harley Physical Examination**  
 BETTER. ACTUALLY.

- Eyes: Mild sclerosis
- Ears: Mild inflammation
- Skin: Two small areas of moist dermatitis
- Heart/Lung: WNL
- Abdomen: Tense - Difficult to palpate

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**Harley CBC**  
 BETTER. ACTUALLY.

WBC: 5.55 X 10 <sup>9</sup> /l	(6-17)
LYM 0.42 X 10 <sup>9</sup> /l	(1-4.8)
MON: 0.32 X 10 <sup>9</sup> /l	
GRA: 4.00 X 10 <sup>9</sup> /l	(3-12)
LY%: 7.7%	(12-30)
MO%: 5.8%	
GR%: 86.5%	(62-87)

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**Harley CBC**

RBC: 4.79 X 10 <sup>12</sup> /l	(5.5-8.5)
HGB: 11.6 g/dl	(12-18)
HCT: 29.3%	(37-55)
MCV: 61 fl	(60-77)
MCH: 24.3 pg	(19.5-24.5)
MCHC: 39.6 g/dl	(31-34)
RDW: 17.4%	
PLT: 107 X 10 <sup>9</sup> /l	(200-500)

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**Harley Chemistry**

BUN: 19	(7-25)	TP: 7.0	(5.4-8.2)
CRE: 0.7	(0.3-1.4)	ALB: 2.4	(2.5-4.4)
ALP: 65	(20-150)	GLOB: 4.7	(2.3-5.2)
ALT: 33	(10-118)	PHOS: 5.1	(2.9-6.6)
TBIL: 0.5	(0.1-0.6)	CA <sup>++</sup> : 10.6	(8.6-11.8)
GLU: 98	(60-110)	NA <sup>+</sup> : 153	(138-160)
AMY: 671	(20-1200)	K <sup>+</sup> : 3.8	(3.7-5.8)

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**Harley CBC Comparison From Wellness Testing 2003 - 2005**

2003		2005	
RBC: 6.43 X 10 <sup>12</sup> /l	(5.5-8.5)	RBC: 4.79 X 10 <sup>12</sup> /l	(5.5-8.5)
HGB: 14.2 g/dl	(10-18)	HGB: 11.6 g/dl	(12-18)
HCT: 36.4%	(35-55)	HCT: 29.3%	(37-55)
MCV: 56.7 fl	(58-73)	MCV: 61 fl	(60-77)
MCH: 22 pg	(19.5-24.5)	MCH: 24.3 pg	(19.5-24.5)
MCHC: 39.0 g/dl	(28-40)	MCHC: 39.6 g/dl	(31-39)
RDW: 9.8%	(8-12)	RDW: 17.4%	
PLT: 182 X 10 <sup>9</sup> /l	(120-600)	PLT: 107 X 10 <sup>9</sup> /l	(200-500)

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let's start  
**ABAXIS** BETTER. ACTUALLY.

**Harley**

Histopathology Diagnosis:  
Splenic Hematoma



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let's start  
**ABAXIS** BETTER. ACTUALLY.

*What do we do when wellness testing finds anemia?*



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let's start  
**ABAXIS** BETTER. ACTUALLY.

**Determine if the anemia is regenerative or non-regenerative.**

Red cell indices  
RDW  
Reticulocytes



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### **Anemia and the in-clinic CBC Analyzer**

**MCV = Mean Corpuscular Volume**  
*average red cell size*

**MCHC = Mean Cell Hemoglobin Concentration**

**RDW = Red cell Distribution Width**  
*electronic measure of anisocytosis*

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### **Types of Anemia:**

1. Macrocytic-normochromic
2. Microcytic-hypochromic, Microcytic-normochromic
3. Normocytic-normochromic
4. Macrocytic-hypochromic

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### **Macrocytic-normochromic**

***Non-regenerative - No Reticulocytes***

#### **Causes:**

1. B-12 Deficiency
2. Feline Leukemia Associated Myeloproliferative Disorders
3. Some Poodles (without anemia)

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BETTER. ACTUALLY.

**Microcytic-hypochromic (microcytic-normochromic)**

***Non-regenerative - No Reticulocytes***

**Causes:**

1. Iron Deficiency-ALWAYS  
*small cells with insufficient hemoglobin*




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BETTER. ACTUALLY.


**Macrocytic-hypochromic**

***Regenerative - Increased Reticulocytes***

*larger than normal rubricytes, hypochromic  
increased RDW (often before increased MCV)*

**Causes:**

1. Blood Parasites (*ehrlichia*)
2. AIHA
3. Blood-Loss Anemia




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BETTER. ACTUALLY.

**Normocytic-normochromic**

***Non-Regenerative or PRE-Regenerative***




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BETTER. ACTUALLY.

**PRE-regenerative:** *hemorrhage or hemolysis (AIHA, ehrlichia), too recent to detect bone marrow response*

**Causes:**

1. Trauma
2. Hemorrhaging Splenic Tumor, Hematoma
3. Early AIHA, drug reaction, etc

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BETTER. ACTUALLY.

**NON-regenerative:** *anemia of chronic disease*

**Causes:**

1. Chronic Renal Disease
2. Neoplasia
3. Chronic Sepsis, etc

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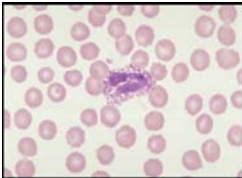
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BETTER. ACTUALLY.
RDW

- An electronic measure of anisocytosis (variation in cell size).
- With a wide variety of cell sizes present, the RDW is high.
- With regenerative anemia, RDW increases when large cells are produced (often before MCV increases).
- When excessive numbers of small cells are produced (iron deficiency anemia) it also increases.



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**Reticulocyte Response by Percentage**

<u>Response</u>	<u>Dogs</u>	<u>Cats</u>
No response	<1%	<1%
Slight response	2-4%	1-2%
Moderate response	5-20%	3-4%
Marked response	>20%	>5%

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**Reticulocyte Response by Count**

<u>Response</u>	<u>Canine</u>	<u>Feline Aggregate</u>	<u>Feline Punctate</u>
None	60,000	<15,000	<200,000
Slight	150,000	50,000	500,000
Moderate	300,000	100,000	1,000,000
Marked	>500,000	>200,000	1,500,000

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**Reticulocyte Response By Corrected Reticulocyte Percentage (CRP) and Reticulocyte Index**

$$CRP = \frac{\text{Reticulocyte \%} \times \text{patient's hematocrit}}{\text{normal hematocrit}}$$

$$RI = \frac{CRP}{\text{life span of reticulocytes}}$$

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*let's start* **ABAXIS** BETTER. ACTUALLY. **Reticulocyte Index**

Hematocrit	Expected Reticulocyte Life Span (days)
45	1.0
35	1.5
25	2.0
15	2.5

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*let's start* **ABAXIS** BETTER. ACTUALLY.

**In cases where the cause of the anemia is not readily apparent, blood smears and new methylene blue examination of blood gives the veterinarian the proper tools to examine the blood for abnormal cell types and parasites.**

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BETTER. ACTUALLY.

When an abnormal level is noted in the white count, red count or platelet count, a blood smear to evaluate the cellular morphology is REQUIRED for proper diagnosis.




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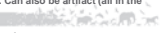
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BETTER. ACTUALLY.

Some of the morphologic changes seen in red cells – must be determined by visual examination:

- **Heinz Body:**
  - RBC contains retractile objects made of hemoglobin precipitated from oxidative substances.
- **Howell-Jolly Bodies:**
  - Nuclear RBC remnants. Common in regenerative anemias.
- **nRBC:**
  - Young RBC still containing a nucleus
- **Schizocytes:**
  - Irregular fragments of RBC. Indicate abnormal erythropoiesis.
- **Acanthocytes (spur cells, spiculated cells):**
  - Occur due to changes in plasma lipids causing increased cholesterol in the RBC membrane without a change in phospholipids. Results in a cell with excess membrane.
  - Seen with hepatic disease, shunts and splenic disease (hemangioma, hemangiosarcoma). Can lead to hemolysis.
- **Spherocytes:**
  - Small, spherical RBCs with reduced cell surface area. Formed when antibody complexes attach to the cell and the damaged portion of the membrane is removed.
  - Common in AIHA
- **Target cells:**
  - Develop when hemoglobin is redistributed in the cell due to an increase in the cell membrane in relation to the amount of hemoglobin.
  - Common in hypochromic anemia, liver disease and bone marrow suppression.
- **Dacryocytes:**
  - Teardrop shaped cells formed after the spleen removes inclusions. Can also be artifact (all in the same direction).
- **Echinocytes:**
  - Crenated cells from artifact – have even projections unlike acanthocytes.




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BETTER. ACTUALLY.

Blood parasites to visually identify:

- Hemobartinnella (Mycoplasma haemofelis, M. haemoniuntun)
- Cytauxzoon felis
- Babesia canis
- Babesia gibsoni




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### Intrinsic Limitations of Automated Hematology

- Cannot or have great difficulty differentiating nucleated RBC from white blood cells (usually reads as granulocyte).
- Cannot determine red cell morphology (i.e. spherocytes).
- Cannot see cellular parasites (ehrlichia, hemobartinea).
- Cannot determine white blood cell morphology:
  - Bands (?)
  - Toxic Neutrophils
  - Degenerate Neutrophils
  - Lymphoma/Lymphosarcoma

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### Prepare and Read Blood Smears

It is imperative that blood smears be prepared and examined with abnormalities noted on a CBC.

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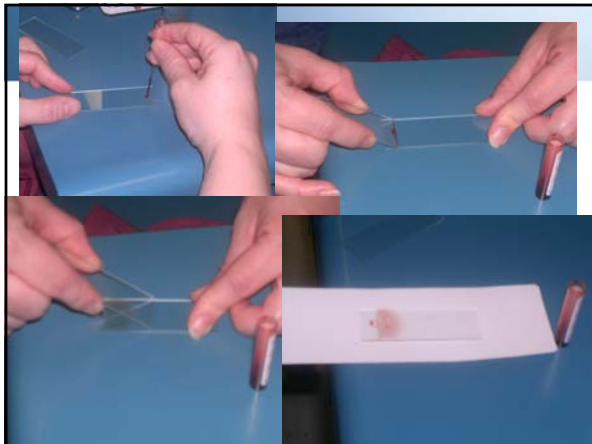
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**Achieve 100% Compliance With Pre-anesthetic Testing**



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**"Tiger" – 5 Month Old DSH Routine Castration (12/19/02)**



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**Tiger Pre-Operative CBC**

WBC: 7.67	(5-18)	RBC: 7.85	(4-9)
LYM: 3.24	(0.2-5.4)	MCV: 47.7	(35-55)
MON: 0.59	(0.1-1.0)	HCT: 37.4%	(24-45)
GRA: 3.84	(2-14.4)	MCH: 14.9	(16-24)
LYM: 42.3%	(5-30)	MCHC: 31.2	(28-40)
MON: 7.8%	(2-6)	RDW: 10.8	(9-15)
GRN: 49.9%	(40-80)	Hb: 11.7	(9.5-15)
		PLT: 278	(120-500)

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**BETTER. ACTUALLY.**

**Tiger Pre-Operative Chemistry**

BUN:	20	(Normal 10-30)
CREAT:	1.3	(Normal 0.3-0.6)
GLU:	104	(Normal 70-150)
T.P.:	6.3	(Normal 5.4-8.2)
ALT:	717	(Normal 20-100)
ALP:	237	(Normal 10-90)

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**BETTER. ACTUALLY.**

**Tiger**

		<b>Bile Acids</b>
Pre-meal:	16	(Normal <13)
Post-meal:	132.2	(Normal <30)

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**BETTER. ACTUALLY.**

**Tiger**

		<b>Bile Acids</b>
Pre-meal:	16	(Normal <13)
Post-meal:	132.2	(Normal <30)

**Ultrasound Examination:** Probable vascular anomaly/malformation in area of porta hepatis – suspected portosystemic shunt. Recommended exploratory laparotomy or contrast radiology. Could not rule out hepatopathy secondary to portal hypertension.

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BETTER. ACTUALLY.

**Tiger**

Consultation with Internal Medicine Specialist

- Mild pre-meal elevation in bile acids more likely a hepatopathy than shunt.
- Owner elected to try medical management.
- Rx: 30 days of Clavamox and Denosyl.

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BETTER. ACTUALLY.

**Follow-up Testing**

7/1/03

- ALKPHOS: 20
- ALT: 244

11/4/03

- ALKPHOS: 44
- ALT: 260

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BETTER. ACTUALLY.

**Follow-up Testing**

12/7/04

- ALKPHOS: 131
- ALT: 644

Initiated Lipo Tabs

6/23/05

- ALKPHOS: 38
- ALT: 343
- GGT: 5 (0-2)
- Bile Acids 6 (0-25)

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### Bile Acids

- Synthesized from Cholesterol.
- A family of detergent-like compounds.
- Provide intestinal fat digestion and absorption.

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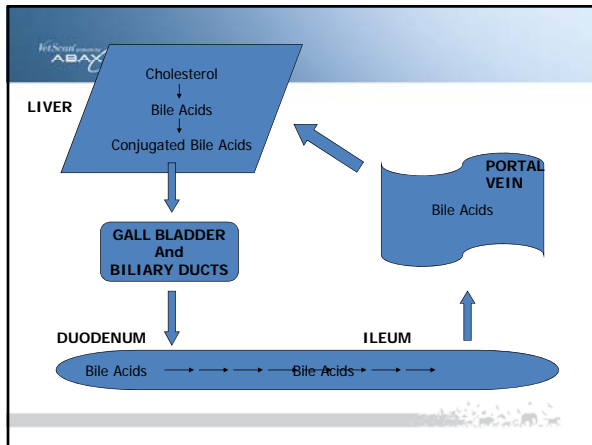
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### Bile Acids

Bile acids are an important component of the overall testing for the presence of liver disease.

High sensitivity for Hepatic Disease

*Used to assess the function of the enterohepatic circulation, the adequacy of hepatocellular perfusion and overall functioning of the hepatobiliary tree.*

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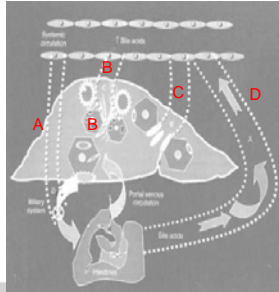
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### Why do Bile Acids Elevate with Liver Disease?

- Decreased biliary excretion of BA.
  - A) Impaired bile flow due to any cause.
- Decreased BA clearance from portal blood.
  - B) Hepatocyte damage reduces functional hepatic mass – impairing clearance or causing intrahepatic cholestatic disease.
  - C & D) Congenital and acquired portosystemic or microvascular shunts.



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### Abnormal Bile Acid Levels Can Possibly Indicate:

- Congenital hepatic shunts
- Acquired hepatic shunts
- Bile duct obstruction
- Cholangiohepatitis
- Cirrhosis

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### Bile Acids

- Paired samples are usually run.
- First sample after fasting (12 hours is best).
- Second sample 2 hours after eating.



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**Animals with other tests consistent with liver disease**

- Persistently high ALT or other indications of hepatobiliary disease.
- Indicates shunting because of increased resistance of hepatic portal blood flow from intrahepatic disease.
- **THIS IS A GOOD INDICATION OF ACTIVE LIVER DISEASE.**
- Low levels of bile acids with high ALP suggest steroid hepatopathy or endocrine disease.

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**Bile Acid Testing**

Normal/Mild elevation post-prandial	Normal Liver Function
Significantly elevated pre-prandial	Liver dysfunction or portosystemic shunt
Normal pre-prandial, very elevated post prandial	Subtle liver dysfunction or shunting
Elevated pre and post-prandial, minimal rise post-prandial	Post-hepatic biliary shunting
Pre-prandial higher than post-prandial	Spontaneous interdigestive gall bladder contraction

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**Jaxson: 7 month old castrated Pit Bull Terrier**

Presented for limping on left front leg.  
Unknown previous history – recently rescued from a shelter in the southwest United States.



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### Jaxson



#### Physical Examination

- Carpal Valgus left front limb.
- Pain on palpation and a definite limp.
- Bilateral medial luxating patellas, grade II.
- All other systems normal.

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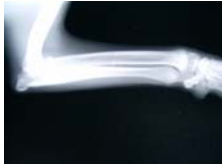
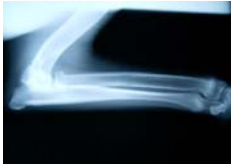
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### Jaxson Radiology



Diagnosis: Premature closure of the distal ulnar physis – left front leg.

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### Jaxson Pre-anesthetic CBC

WBC 39.87	(6-17)	RBC: 6.3	(5.5-8.5)
Lym: 6.3%	(12-30)	HGB: 11.9	(12-18)
Mon: 4.4%	(2-4)	HCT: 33.29	(37-55)
Gra: 89.3%	(62-87)	MCV: 53	(60-77)
Lym: 2.5	(1.0-4.8)	MCH: 18.9	(19.5-24.5)
Mon: 1.75	(0.1-1.5)	MCHC: 35.7	(31-34)
Gra: 35.61	(3.0-12.0)	RDW: 20.9%	
		PLT: 516	(200-500)

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let's work together  
**ABAXIS** BETTER. ACTUALLY.

### Jaxson Pre-anesthetic Chemistry

ALP: 75 (20-150)  
ALT: 25 (10-118)  
BUN: 12 (7-25)  
CRE: 0.7 (0.3-1.4)  
GLU: 108 (60-100)  
TP: 7.4 (5.4-8.2)



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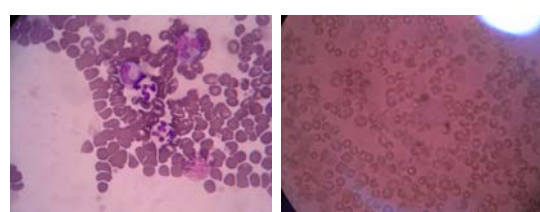
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let's work together  
**ABAXIS** BETTER. ACTUALLY.

### Jaxson Blood Smear/NMB



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**Jaxson Radiology**  
let's work together  
**ABAXIS** BETTER. ACTUALLY.



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BETTER. ACTUALLY.

**Jaxson Tick Serology**

- Ehrlichia Canis      Negative      (Negative)
- Lymes Titer, IgG    1:64            (<1:64)
- RMSF                    Negative      (<1:64)

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BETTER. ACTUALLY.

**Jaxson Fungal Serology**

- Histoplasma:                    Negative
- Blastomyces:                    Negative
- Aspergillus:                    Negative
- Cocci Antibody (IgM):        Negative
- Cocci Antibody (IgG):        Positive
- Coccidiomycosis Titer (AGID): 1:64

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BETTER. ACTUALLY.

**What do we do when  
Wellness testing discovers  
Elevated WBC?**

**BLOOD SMEAR!**

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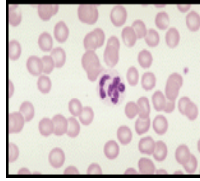
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### Other Neutrophils

- **Hypersegmented**
  - Older Neutrophil
  - Excessive numbers are called **RIGHT SHIFT**



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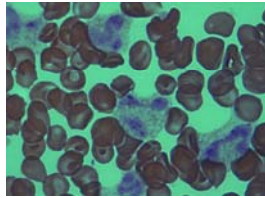
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### Other Neutrophils

- **Toxic Neutrophils**
  - Caused by severe infections, toxicity or acidosis.
  - Often accompany degenerative left shifts.
  - Poor prognostic sign.



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### Neutrophilia

*a blood smear must be evaluated to properly assess:*

1. Mature Neutrophilia
2. Left Shift
3. Regenerative Left Shift
4. Degenerative Left Shift  
*(metamyelocytes, myelocytes)*
5. Right Shift  
*(hypersegmented)*

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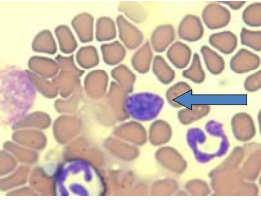
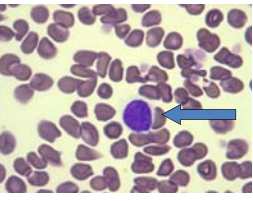
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**BETTER. ACTUALLY.**

**Normal Lymphocytes**

<b>Canine</b>	<b>Feline</b>
	

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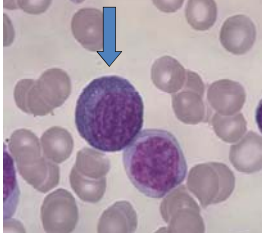
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**BETTER. ACTUALLY.**

**Reactive Lymphocytes**

Reactive lymphocytes can display many different features but some of the following are usually present:

1. Cytoplasm is often abundant.
2. May have vacuoles.
3. May have azurophilic granules.
4. Cytoplasmic margin may be indented by surrounding erythrocytes and may be a darker blue than the remainder of the cytoplasm.
5. The overall staining color of the cytoplasm may be gray, pale blue, or a very deep blue.



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**BETTER. ACTUALLY.**

**“Sadie” Not a wellness case but:**

- 3 year old female spayed mixed breed.
- Presented for coughing after boarding.
- Repeat cough on tracheal palpation with mildly swollen submandibular lymph nodes.



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BETTER. ACTUALLY.

**CBC**

WBC: 48.04 X 10 <sup>9</sup>	(5.5-19.5)	RBC: 4.21 X 10 <sup>12</sup>	(5.5-8.5)
LYM: 4.23 X 10 <sup>9</sup>	(1.5-7)	HGB: 9.2 g/dl	(12-18)
MON: 3.22 X 10 <sup>9</sup>	(0.1-0.3)	HCT: 26.45	(37-55)
GRA: 40.59 X 10 <sup>9</sup>	(2.5-14)	MCV: 63 fl	(60-77)
LY%: 8.8%	(20-55)	MCH: 21.9 pg	(19.5-24.5)
MO%: 6.7%	(1-4.0)	MCHC: 34.9 g/dl	(31-34)
GR%: 84.5%	(35-80)	RDWc: 18.5%	
PLT: 14	(300-800)		

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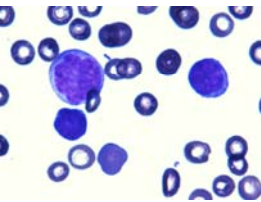
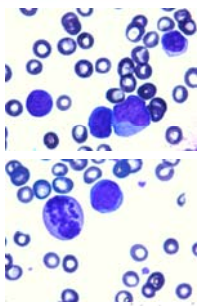
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BETTER. ACTUALLY.

**Blood Smear**

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BETTER. ACTUALLY.

**100% Compliance**

**REQUIRE PRE-ANESTHETIC BLOOD TESTING!**

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### Benefits of Pre-anesthetic Bloodwork

- Provides better care for the patient.
- Provides peace of mind for the owner as well as the veterinary team.
- Allows the veterinarian to modify pre-anesthetic medications, delay procedures or proceed with confidence based on the results.
- Can identify unidentified medical conditions.
- Improves hospital revenue.

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### 100% Pre-anesthetic Compliance

- Pre-anesthetic bloodwork must be required.
- Cost of the bloodwork should be invoiced separately from the surgical procedure.
  - Allows future wellness bloodwork to have at least the same value.
- Cost should be consistent with other wellness bloodwork testing costs.
- Staff needs to be educated as to why the blood work is required.
- Clients need to be educated as to why the blood work is required.

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QUESTIONS ABOUT ANESTHESIA FOR YOUR PET		
<p><small>Pets require anesthesia for many medical and surgical procedures. Many people are afraid of the word "anesthesia" and have heard terrible stories from friends about other animals. The only satisfactory outcome to an anesthetic procedure is that your pet stays relaxed from the procedure without any lasting side effects. Veterinary Care Center is proud of the fact that we use the most recent and advanced equipment and protocols during anesthesia. This allows for a much lower risk to your pet's health when anesthesia is performed. This will allow you to make an educated decision on the true versus cost of the technique performed on your pet.</small></p>		
<p><b>QUESTIONS</b></p> <p>WHAT ARE THE MOST IMPORTANT CONSIDERATIONS REGARDING ANESTHESIA FOR MY PET?</p> <p>WHICH TYPE OF ANESTHETIC AGENT IS THE BEST?</p> <p>OF THE GAS ANESTHETICS, WHICH IS THE BEST?</p> <p>IS THERE ANY PRE-ANESTHETIC PREPARATION FOR MY PET?</p> <p>WHAT STEPS CAN YOU TAKE TO COMPLICATE?</p> <p>WHAT POST-ANESTHETIC CARE SHOULD I DO FOR MY PET?</p> <p>WHY ANESTHESIA COST MORE AT YOUR HOSPITAL?</p>	<p><b>ANSWERS</b></p> <p>Depend on your pet's condition in the most important considerations are choosing an anesthesia protocol. Considerations of pre-anesthetic medications such as organ failure, infection and pain.</p> <p>Careful labeling to ensure your pet is returned to you with as little trauma as possible.</p> <p>Cost considerations are always important, but excellent care with advanced equipment, with more costly, provides better care for your pet.</p> <p>Gas anesthesia is much better than injectable agents, injectable agents are used by many veterinary hospitals because they are not as painful, and because equipment costs are lower. There is a time when gas anesthesia is appropriate to use, and should be used when appropriate.</p> <p>Isopropurane and Sevoflurane are the newest and best gases for your pet. They have much less effect on the heart, liver and kidneys than older anesthetics. Paks wake up much faster with little respiratory depression or upset.</p> <p>A pre-anesthetic blood screen is needed to evaluate liver and kidney function, evaluate for diabetes or other health problems and to determine if the patient is capable of an anesthetic procedure.</p> <p>Isopropurane, Butyl Sengly helps maintain normal blood pressure during anesthesia and allows for rapid administration of medicine in case of an emergency situation.</p> <p>Pre-medication of the patient is important to prevent vomiting, in certain procedures on the pet.</p> <p>The pre-anesthetic blood testing to determine that the anesthesia is safe for the pet.</p> <p>Pre-medication and pre-anesthetics are always used.</p> <p>Advanced labeling technology by technical staff and staff of the pet hospital.</p> <p>Your pet will be discharged by a trained veterinary assistant and it is able to be seen. This interview is done throughout the procedure.</p> <p>Anesthesia at Veterinary Care Center may cost slightly more than other veterinary facilities because of the cost of the medications and the quality of our staff. We take great pride in our quality of anesthesia.</p>	<p><b>PRECAUTIONS WE TAKE</b></p> <p>STATE OF THE ART VETS HOSPITAL AND EQUIPMENT</p> <p>EXPERIENCED VETERINARIAN</p> <p>CARING, KNOWLEDGEABLE STAFF</p> <p>UTILIZATION OF ONLY GAS ANESTHETICS</p> <p>VETERINARY CARE CENTER USES ONLY ISOPROPURANE OR SEVOFLURANE GAS ANESTHETICS</p> <p>PRE-ANESTHETIC HEALTH SCREEN</p> <p>IV CATHETER AND FLUID THERAPY</p> <p>PROPER PAIN MEDICATION</p> <p>PRE-ANESTHETIC HEALTH SCREEN</p> <p>IV CATHETER AND FLUIDS</p> <p>RESPIRATORY MONITORING</p> <p>PATIENT MONITORING</p> <p>CONSTANT INTENSIVE CARE MONITORING</p> <p>QUALITY CARE</p>

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**Once the client is educated about blood work, the value is apparent. You must now be comfortable with pricing so that you will not feel that you will lose clients/patients due to the policy.**

***In reality***, you will not lose any patients if the client is properly educated and there is value to the bloodwork.

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**Tiered Pricing Example**

	Ill Patient	Wellness/Pre-anesthetic	Recheck
Comprehensive Diagnostic Rotor	\$60	\$50	\$40
Include a CBC	\$70	\$60	\$50

**Benefits:**

- Increase compliance
- Improve perception of value
- Boost revenue on full panel results
  - Additional testing
  - Additional treatments and medications




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**Recommend Testing Parameters**

- Panels
  - Less than "50 years old" – 6 Chemistry + CBC
  - Greater than "50 years old" – 14 Test + CBC

*Utilize an age chart to help educate the client.*

- Time
  - Suggest MAXIMUM of 30 days prior to anesthesia.
    - Some practices use 1 week or less.

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**BETTER. ACTUALLY.**

AGE	0-20	21-50	51-90	Over 90
8 Months	13-16	13-16	13-16	13-16
2	24	24	24	24
3	28	28	29	32
4	32	33	34	38
5	36	37	39	42
6	40	42	45	49
7	44	47	50	56
8	48	51	55	64
9	52	56	61	71
10	56	60	66	78
11	60	65	71	86
12	64	69	77	93
13	68	74	82	101
14	72	78	88	108
15	76	83	93	115
16	80	87	99	123
17	84	92	104	
18	88	96	109	
19	92	101	115	
20	96	106	120	

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**BETTER. ACTUALLY.**

- Cost
  - The practice must be comfortable with fees.
  - Veterinary Care Center Charges:
    - \$52.50 Prep/CBC
    - \$87.50 CDP/CBC




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**BETTER. ACTUALLY.**

### Additional Practice Revenue From Pre-anesthetic Testing

- Pre-anesthetic testing that finds sub-clinical disease allows a patient to survive surgery.
- Additional diagnostics are often performed when abnormalities are noted.




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**BETTER. ACTUALLY.**

**Don't Forget Thyroid Testing as Part of a Complete Wellness Visit!**




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**BETTER. ACTUALLY.**

**Uses for an in-office T4/Cholesterol Profile - Feline**

Feline

- Diagnosis of Hyperthyroid Disease – need only T4
  - Prevalent in middle age and older
    - Weight loss
    - Ravenous appetite
    - Vocalization
- Medication Titration
- Monitoring
  - Medication, Surgical, Radiation




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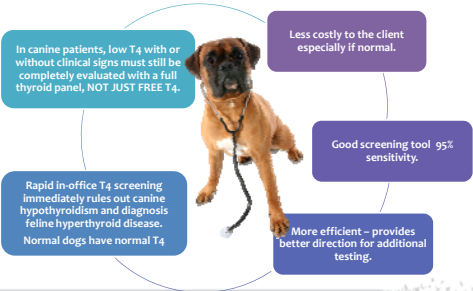
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**BETTER. ACTUALLY.**

**What are the benefits of testing Total T4 in-house?**



In canine patients, low T4 with or without clinical signs must still be completely evaluated with a full thyroid panel, NOT JUST FREE T4.

Less costly to the client especially if normal.

Good screening tool 95% sensitivity.

More efficient – provides better direction for additional testing.

Rapid in-office T4 screening immediately rules out canine hypothyroidism and diagnosis feline hyperthyroid disease. Normal dogs have normal T4

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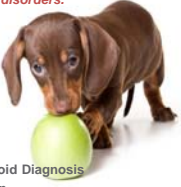
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**BETTER. ACTUALLY.**

**Thyroid disease is one of the most common endocrine disorders.**

- Testing Hypothyroid Disease in dogs.
  - Include it as part of Wellness Testing Package
  - Especially those that are;
    - Overweight
    - Lethargic
    - Unhealthy Coat - *signs of allergy*
    - Middle Aged or Senior Canines
- Medication Titration and Monitoring upon Hypothyroid Diagnosis
  - Determine proper frequency of medication given
  - Determine proper dose of medication



Panel Name	Rotor	CBC	Price
T4 Wellness/Recheck	T4	NO	\$ 27.00
T4 Diagnostic	T4	NO	\$ 42.00

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**BETTER. ACTUALLY.**

**Incidence Of Physical and Laboratory Findings in Hypothyroid Dogs in Decreasing Order of Frequency**

- Hypercholesterolemia
- Weight Gain
- Dry coat/excessive shedding
- Alopecia
- Lethargy/Mental Dullness
- Anemia
- Anestrus (Intact Females)
- Hyperpigmentation
- Bradycardia
- Cold intolerance/Hypothermia

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**BETTER. ACTUALLY.**

**Results of Thyroid Screening - 2 months**

- 17 Wellness Test Performed
- 4 Positive Hypothyroid Canine Patients
- 2 Positive Hyperthyroid Feline Patients
- Recent retrospective study – 8%

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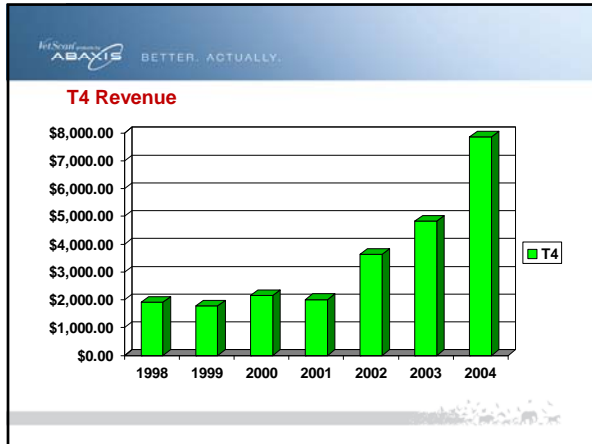
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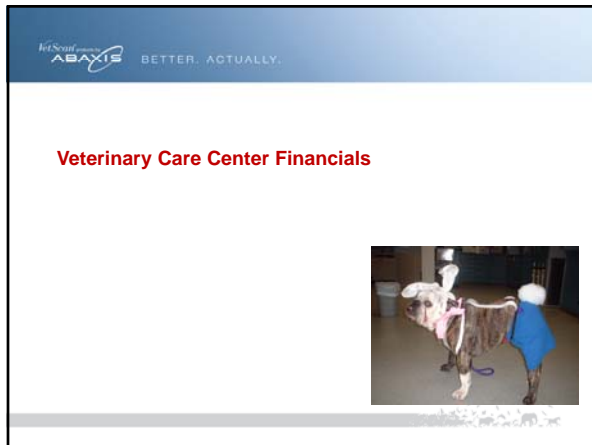
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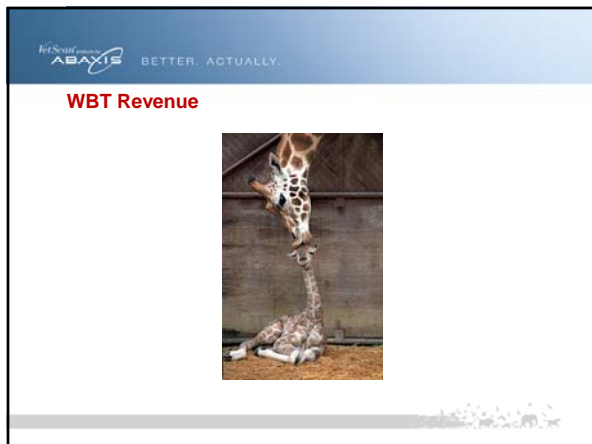
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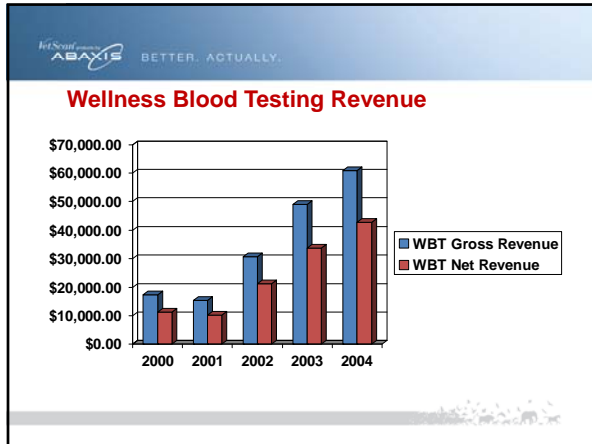
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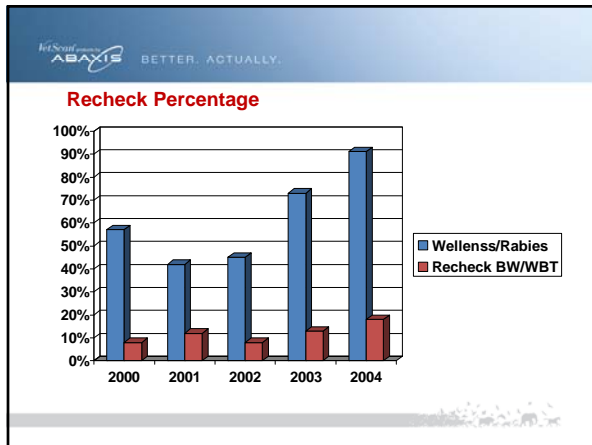
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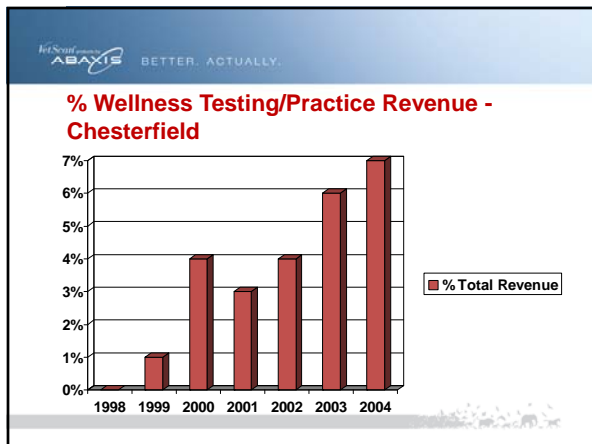
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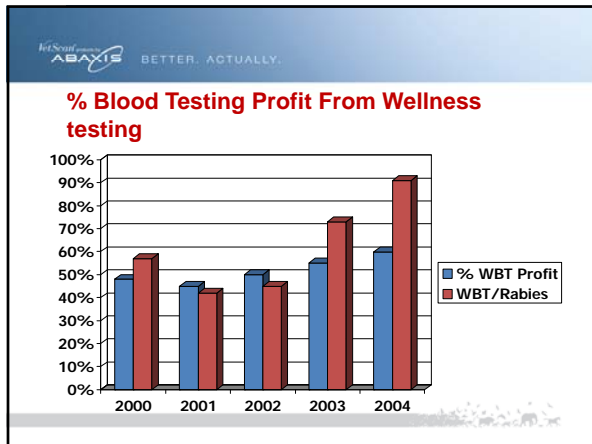
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**BETTER. ACTUALLY.**

### Wellness Testing Also Adds Added Testing and Revenue in Other Practice Areas

Abnormalities found because of wellness testing lead to other diagnostics.




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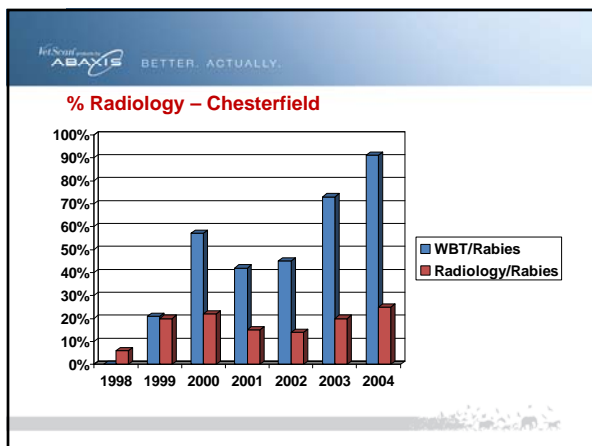
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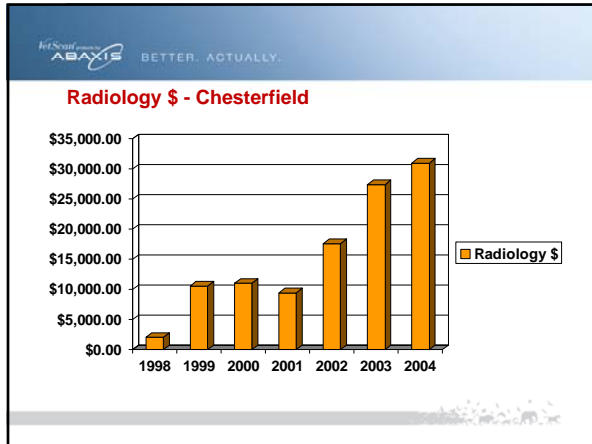
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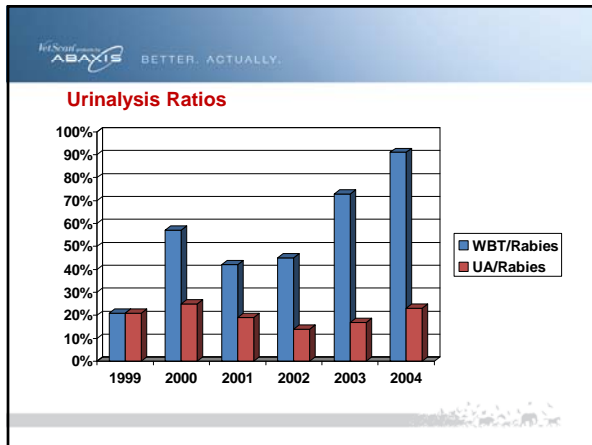
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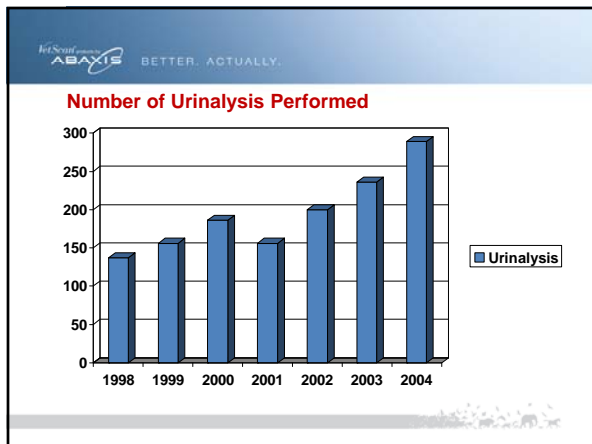
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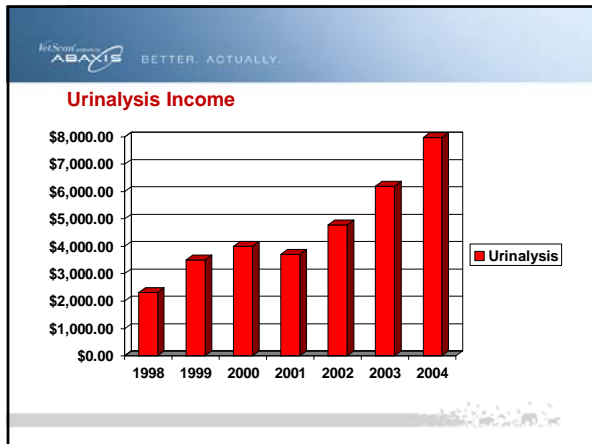
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**BETTER. ACTUALLY.**

### Scooter




Additional Revenue Generated From Diagnosis:

Urinalysis:	\$32.00
Cystocentesis:	\$35.50
Urine Protein/Creatinine:	\$65.50
Diagnostic Profile:	\$87.50
Urine Culture/Sensitivity:	\$97.50
Ultrasound Examination:	<del>\$354.50</del>
Total Additional Revenue:	\$672.50 (3 weeks)

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**BETTER. ACTUALLY.**

### Tiger




Additional Testing and Revenue:

Bile Acids:	\$86.50
Ultrasound Exam:	\$320.00
Recheck Blood Work:	\$220.50
Medications:	\$381.19
Diets:	<del>\$140.40</del>
Total Additional Revenue (1 year):	\$1,148.59

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## Harley

Additional Testing and Revenue:

Survey Radiographs:	\$119.50
Splenectomy:	\$1082.51
Recheck CBC:	\$20.00
Recheck Examination:	\$28.80
Recheck Radiographs:	\$59.75
<b>Total Additional Revenue</b>	<b>\$1,309.76 (1 month)</b>

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Additional Revenues Generated From Diagnosis

Blood Glucose Testing:	\$95.90
Diet:	\$193.31
Recheck Profile:	\$105.00
Urinalysis:	\$32.00
<b>Total Additional Revenue:</b>	<b>\$426.21 (6 months)</b>

## Willow



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## Benefits To The Hospital, Staff and Patients



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let's start  
**ABAXIS** BETTER. ACTUALLY.

**Hospital Benefits**

- Improved Profit
- Improved Medicine
- Improved Image



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let's start  
**ABAXIS** BETTER. ACTUALLY.

**Staff Benefits**

- The early detection of disease and the prevention of clinical illness improves the staff's job satisfaction.
- The staff becomes more involved with every case.
- The staff increases its' desire for learning, thus improving productivity.



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let's start  
**ABAXIS** BETTER. ACTUALLY.

**Patient Benefits**

- Baseline values established.
- Early detection of disease – prior to clinical symptoms.
- Improved response to therapy.
- Increased anesthetic safety.
- Improved safety for chronic medications.



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**Isn't the need for wellness testing obvious for your practice?**



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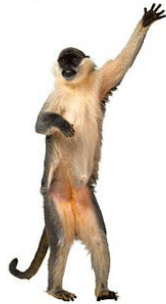
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**Questions?**

[craigtockman@abaxis.com](mailto:craigtockman@abaxis.com)



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