



NC State Veterinary Hospital
1052 William Moore Drive
Raleigh, North Carolina, 27607

Ph
Email

CLINICAL SUMMARY

Animal No.
Clinical No.

Patient Number:

Thank you for the opportunity to care for Zane. Below is the summary for his visit on 01-13-2025. Please read the instructions for care carefully and discuss any questions with the student or veterinarian involved.

Client Details

Name
Address

Patient Details

Name Zane
Species Equine
Breed Arabian
Color Dark Brown
Age 1 year
Sex Gelding

Health Status

Date/Time	Weight (kg)	Temp(°F)	Heart Rate	Respiratory Rate	CRT	MM	Attitude
01-13-2025 1:16:36pm	209.50	100.0	80	68	1-2 sec	Pink	BAR

Presenting Problem

Respiratory W/U

History

01-13-2025 1:24:31pm,

Zane, a 1 year old Arabian Tennessee Walking Horse cross, was presented to the NC State Equine Medicine Service on 1/13/25 for evaluation of a chronic intermittent cough and elevated respiratory rate.

Zane has had an intermittent dry cough since his owners acquired him in September. Zane has been otherwise normal with no history of fevers, nasal discharge, or lymphadenopathy. Zane has previously had no increased respiratory rate or effort before 1/12 (day prior to presentation). Zane is up to date on vaccines, and has been treated with SMZ, ceftiofur crystalline free acid (Excede) as well as flunixin meglumine prior for his cough and for post-castration discharge. His SAA has repeatedly been normal (<20 mg/L).

Zane came from a farm where he lived with all species including donkeys, and is currently pastured with donkeys. He has been dewormed once in September with Zymecterin Gold but has not been dewormed since.

Zane's hay was being soaked and his grain at this time but this has not changed his cough.

All medications were discontinued 1/12 prior to presentation.

Daily Clinical Summary

01-14-2025 9:46:14am,

hospitalization and daily charges 1/13, 1/14, 1/15, 1/16

Physical Exam

01-13-2025 1:17:51pm,

Equine Medicine Physical Exam

Body weight: 209 kgs

Body condition score: 5 / 9

Attitude: Bright, alert, responsive.

Ophthalmic: Patient appears visual. No blepharospasm or ocular discharge noted OU. Complete ophthalmic exam not performed.

Otic: Patient appears to be able to hear. Complete otic exam not performed.

Nasal: Mild nostril flaring with respirations. No nasal discharge. Appropriate airflow bilaterally.

Oral: Complete oral exam not performed.

Cardiovascular: Moderate tachycardia (60 bpm). No arrhythmias or murmurs noted. Pulses and jugular fill appropriate. Capillary refill time <2 seconds. Mucous membranes pink and moist.

Respiratory: Tachypneic (50 brpm) with increased abdominal effort on expiration. Diffusely increased bronchovesicular sounds and expiratory wheezes auscultated bilaterally, right > left. Intermittent dry cough/ coughing fits.

Abdomen: Normal contour. Borborygmi present in all quadrants.

Urinary: No urination noted during exam. External conformation normal.

Reproductive: Normal castrated male. Castration site from December appears healing, with mild amount of granulation tissue (from right incision site) but no heat, swelling, or purulent discharge present. Complete reproductive evaluation not performed.

Musculoskeletal: Patient is ambulatory and weight-bearing in all four limbs with no palpable swelling, heat, or effusion. Patient is sound at the walk. Digital pulses within normal limits. Complete lameness exam not performed.

Integumentary: Haircoat appears shiny and healthy. No evidence of alopecia or ectoparasites.

Lymphatic: No external lymphadenopathy noted. No ventral or distal limb edema visible.

Neurologic: Mentation appropriate. No ataxia noted. Cursory evaluation did not identify any cranial nerve deficits. Complete neurologic examination not performed.

Assessment/Plans

01-14-2025 8:53:24am,

Zane was presented 1/13 for further evaluation of an intermittent cough and increased respiratory rate. Upon presentation, Zane was bright and alert. He coughed multiple times in the parking lot after unloading and prior to walking in the hospital. Physical examination revealed moderate tachycardia (elevated heart rate, 60 bpm) and tachypnea (elevated respiratory rate 50 brpm) with a normal rectal temperature (100.2 F). Cardiopulmonary auscultation revealed severe, diffuse bilateral expiratory wheezes and increased bronchovesicular sounds (R>L). His heart rate was elevated but no murmurs or arrhythmias were appreciated. The remainder of his physical exam was unremarkable aside from mild serous drainage from a mild amount of proud flesh associated with the right incision. Complete blood count and his serum biochemistry revealed no clinically significant findings.

Thoracic radiographs were performed which were unremarkable. Thoracic ultrasound revealed intermittent small based comet tails bilaterally but no other significant abnormalities. A fecal sample was submitted for a McMaster's fecal egg count and Baermann fecal larvae count which revealed 3,200 EPG of strongyle-type ova (eggs). The fecal Baermann did not detect larvae, but that did not definitively rule out other parasites such as lungworms. Due to his high intestinal worm burden, it was elected to start him on fenbendazole (Panacur PowerPac) for 5 days to treat his intestinal parasites - while hopefully avoiding consequences of high worm die-off (colic, systemic inflammatory response).

Zane was persistently tachypneic and required multiple doses of butylscopolamine (Buscopan) to help reduce his respiratory rate, although this had a transient effect. Zane was administered a dose of flunixin meglumine the morning following his first dose of fenbendazole, as he appeared mildly colicky and a large volume of parasites were visualized in his manure. Additionally, he was administered a dose of dexamethasone (steroid) to further help reduce inflammation in his respiratory system. Nebulization with albuterol and acetylcysteine was instituted the morning prior to his bronchoalveolar lavage and tracheal wash procedures to help reduce bronchoconstriction and to reduce mucus in the airway. That afternoon an upper airway endoscopy was performed as well as a tracheal wash (TW) and bronchoalveolar lavage (BAL). Samples were submitted for cytology, culture and Baermann test to characterize the cellular make-up within Zane's lungs and assess for lungworms. The results of the culture are pending and will be shared when available. The Baermann test on the BAL and TW fluid revealed lungworms (*Dictyocaulus arnfieldi*). The tracheal wash sample revealed 53% macrophages, 40% eosinophils, and 7% well-differentiated mast cells, while the BAL revealed 60% macrophages, 35% small lymphocytes, 4% eosinophils, and 1% well-differentiated mast cells which are also consistent with a parasitic pneumonitis caused by lungworms. These findings were not consistent with an underlying bacterial infection nor asthma.

Based on these findings, treatment for lungworms was discussed. Due to the degree of intestinal parasite burden, anti-inflammatory treatment in the form of low-dose dexamethasone (steroid) was instituted until Zane could be safely dewormed with moxidectin, to treat his lungworms. Zane remained comfortable and bright, passing normal manure with a good appetite. He was discharged to the care of his owners 1/16/25 for further monitoring and with instructions to treat his lungworms (see below).

LUNGWORM (*Dictyocaulus arnfieldi*) INFO:

Lungworms cause clinical disease in horses, usually resulting in bronchitis or pneumonitis, caused by the parasitic roundworm

Dictyocaulus arnfieldi. The infection can cause severe coughing in horses and can be difficult to distinguish from other respiratory diseases.

Donkeys, which usually show few signs of the infection, are the prime source of pasture contamination for horses. Horses that share pasture with donkeys or follow them into grazing used by donkeys within a few months are most likely to become infected. Adult female worms in the lungs of infected donkeys (and less commonly horses) lay eggs that are coughed up and swallowed and then hatch in feces. After a short period, the larvae become able to cause infection while in feces on pasture; they may remain infective unless killed by drought or very cold conditions. The severity of disease is related to the number of larvae ingested. Once infected, adults generally become immune to further disease, but some will contract very mild infections. Such animals can act as a source of further larval contamination, although infected horses do not produce many infective larvae.

Infections with few or no visible signs can occur in donkeys. It can be a challenge for a veterinarian to diagnose lungworm because infected animals do not always pass the larvae in their feces, and when they do, they may be few in number. Additionally, special fecal tests (Baermann) are required, as routine fecal tests (McMaster fecal egg counts) will not detect larvae. Due to the difficulty in diagnosing, it is strongly encouraged to treat all animals (but particularly donkeys) on your farm despite negative diagnostics at least once yearly with a product that will kill lungworms. We recommend an anthelmintic medication with moxidectin or ivermectin.

It is imperative that all animals have a fecal egg count performed prior to empirical treatment for lungworms - due to the adverse effects related to moxidectin and large intestinal worm burdens.

RECOMMENDATIONS

MEDICATIONS:

1. Panacur PowerPac (Fenbendazole): Using the red larvicidal dose marks, give 500lb dose by mouth every 24 hours for 1 more day.
Next dose due: **Tomorrow at dinner**
2. Dexamethasone 4mg Tablets: Give 2.5 tablets by mouth once daily (every 24 hours) for 10 days, **starting tomorrow (1/17)**. Afterwards, please utilize the timeline below for tapering Zane's dexamethasone.
1/27/24: Dexamethasone tablet: Give 2 tablets (8mg) by mouth.
1/28/24: Dexamethasone tablet: Give 2 tablets (8mg) by mouth.
1/29/24: Dexamethasone tablet: Give 1 tablet (4 mg) by mouth.
1/30/24: Dexamethasone tablet: Give 1 tablet (4 mg) by mouth.
1/31/24: Dexamethasone tablet: Give 1/2 tablet (2 mg) by mouth.
2/1/24: Skip
2/2/24: Dexamethasone tablet: Give 1/2 tablet (2 mg) by mouth.
2/3/24: Discontinue Dexamethasone.

3. Quest Plus Gel (Moxidectin/Praziquantel) **Administer a 500 pound dose in 10 days (1/27)**

DIET:

Zane may continue his normal diet at this time. If possible, Zane should not be fed from a large round bale due to the increased amount of dust and mold that may irritate his lungs as they are healing. If feeding hay from a round bale, it is advisable to feed in portions and not the entire round bale at once and to wet his hay to prevent exposure to dust and mold. Please see recommendations in the management section below for further modifications to his feed.

MANAGEMENT:

To help prevent Zane's respiratory symptoms from worsening, we want to try to reduce dust and allergens in Zane's environment. Zane's respiratory disease can be exacerbated by dust, pollen, mold, etc. Zane should NOT be fed out of round bales or feeders as these require him to have his nose deep inside the hay where he can breathe in more allergens. Zane should be turned out as much as possible to reduce his exposure to dust and mold. If he must be in a stall, his shavings should be wetted down, and he should not be stalled near a hay loft, indoor arena, or other dusty areas.

ACTIVITY:

Zane should have any forced exercise he is being treated to allow his lungs time to heal and for the inflammation to resolve. Zane should be "rested" for the next 2 months at least, and evaluated by his veterinarian prior to starting any prescribed exercise.

MONITORING:

1. Continue to monitor for any worsening of clinical signs such as increased respiratory effort, lethargy, coughing, nostril flare, and increased respiratory rate (>40brpm). If Zane's cough still persists and you do not see a response to therapy, please contact your veterinarian or the NCSU Equine Internal Medicine Service for alternate steps.
2. Rarely, steroid administration has been linked to laminitis in horses, although scientific evidence of a cause-and-effect relationship is lacking. Though this is unlikely considering Zane's age, please monitor him for any increased lameness or reluctance to move. If noted, please discontinue steroid administration and contact your regular veterinarian or NCSU

immediately.

You may see some worms in his manure, that is normal while we are treating him for his intestinal parasites. Zane's manure should be picked up promptly to help reduce environmental contamination. Zane may also be kept in a separate pen if necessary to avoid any other pasture friends consuming his manure.

DEWORMING INFORMATION:

During the yearling year, the majority of horses should be expected to exceed 1,000 strongyle EPG, and a few may test positive for ascarids as well. Based on this, yearlings will often receive anti-strongyle treatments in the spring, middle of the transmission season, and in the fall. Based on geography and weather (long summer season), one or two additional treatments might be warranted. Praziquantel should be considered during the second half of the year.

Two to 3-year-olds are expected to gradually decrease their strongyle shedding level, although a proportion will still be expected to be high strongyle shedders. In most scenarios, this age group will receive 3-4 annual treatments, with praziquantel included at least once in the second half of the year.

Please reach out to NC State Equine Medicine or with any questions or concerns.

FOLLOW UP EXAMINATION:

Please have a fecal egg count run in 10 to 14 days following his moxidectin (Quest Plus) dewormer to ensure a proper decrease in his fecal egg count (90%). If his fecal egg count remains high, Zane may need to be dewormed again for his intestinal parasites.

Zane's care team consisted of the following members of the Equine Internal Medicine team:

Senior clinician: Dr.

House officer: Dr.

Fourth year veterinary student:

Clinical technician:

Clinical Requests

01-13-2025 1:26:15pm,

- Fecal Baermann

OrchardSoft

Specifics This request has been updated

01-13-2025 1:27:49pm,

- Fecal McMaster

OrchardSoft

Specifics This request has been updated

01-13-2025 1:28:39pm,

- Large Animal Complete Hematology Profile
- EQUINE CHEMISTRY PANEL

OrchardSoft

Specifics This request has been updated

01-14-2025 9:58:08am,

- Fecal Baermann

OrchardSoft

Specifics This request has been updated

01-15-2025 2:37:02pm,

- Fecal Baermann

OrchardSoft

Specifics This request has been updated

01-15-2025 2:39:58pm,

- Cytopathology Analysis

OrchardSoft

Specifics This request has been updated

01-15-2025 2:41:33pm,

- Cytopathology Analysis

OrchardSoft

Specifics This request has been updated

01-15-2025 2:43:06pm,

- Aerobic + anaerobic culture

OrchardSoft

Specifics This request has been updated

 Results/Consult Notes

01-17-2025 4:59:13pm,

Aerobic + anaerobic culture -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

AEANAE (1)
Aerobic + anaerobic culture

Result Date: 01/20/2025 1:02PM

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
	Click Show to View				
<i>STATUS: FINAL</i>					
<i>CLSI VET01S 7th ed interpretations for culture reports are still in progress. Please reference the QR code above and documents for updated interps when making drug choices. For VH clients in need of an Antimicrobial Stewardship Committee Consult, please submit a request by following this</i>					
SOUR	Click Show to View				
<i>STATUS: FINAL</i>					
<i>Body Fluid, transtracheal wash</i>					
SITE	Lung				
<i>STATUS: FINAL</i>					
ISOCOMM	Click Show to View				
<i>STATUS: FINAL</i>					
<i>This organism does not meet the criteria for routine susceptibility, most likely associated with its growth dynamics. Usually acquired antibiotic resistance is not seen in these organisms and empirical therapy for the genus is recommended. Specialized testing may be available at another reference laboratory-please call the lab to inquire. (Isolate 13)</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-15-2025 4:39:13pm,

Cytopathology Analysis -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

CYTOSLIDEREVIEW
Cytopathology Analysis

Result Date: 01/15/2025 4:39PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
CYTO_SPEC	Click Show to View				
STATUS: FINAL Broncho-Alveolar Lavage: BAL					
CYTO_RES	DVM				
STATUS: FINAL					
CYTO_REP	Click Show to View				
STATUS: FINAL DESCRIPTION: Equine BAL, 4 slides (1 direct, 1 concentrated direct, 2 cytospins). The sample has adequate cellularity on a clear background with occasional pink mucus. A 300 cell differential reveals 60% macrophages, 35% small lymphocytes, 4% eosinophils, and 1% well-differentiated mast cells. Occasional respiratory epithelial cells and goblet cells are present. No overtly neoplastic cells or infectious agents are identified. INTERPRETATION: Chronic inflammation with eosinophilic component COMMENT: The increase in small lymphocytes is part of the chronic inflammation. Considerations given the eosinophilic component include hypersensitivity (e.g. inflammatory airway disease, recurrent airway obstruction) and migrating parasite larvae. Please correlate with clinical findings.					
CYTO_CLIN_RES	Click Show to View				
STATUS: FINAL Broncho Alveolar Lavage Clinical Analysis CYT25-000285 Approved: 01/15/25 BAL-Nucleated Cell Count 594.00 cells/ul					
SIGNATURE STATUS: FINAL PDFReport Attachment STATUS: FINAL					

01-15-2025 4:32:01pm,
Fecal Baermann -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

FECBAER (1)
Fecal Baermann

Result Date: 01/15/2025 4:32PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
ParaF	Click Show to View				
STATUS: FINAL Positive for Dictyocaulus arnfieldi lungworms in BAL and TTW fluids. (Per consult with Dr. PDFReport Attachment STATUS: FINAL					

01-15-2025 4:31:43pm,
Cytopathology Analysis -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

CYTOSLIDEREVIEW
Cytopathology Analysis

Result Date: 01/15/2025 4:31PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
CYTO_SPEC	Click Show to View				
<i>STATUS: FINAL</i>					
<i>Transtracheal Wash: Transtracheal Wash</i>					
CYTO_RES	Whitney Chandler, DVM				
<i>STATUS: FINAL</i>					
CYTO_REP	Click Show to View				
<i>STATUS: FINAL</i>					
<i>DESCRIPTION: Equine TTW, 6 slides. The sample has adequate cellularity on a pink background with pink mucus and scattered red blood cells. A 100 cell differential reveals 53% macrophages, 40% eosinophils, and 7% well-differentiated mast cells. Moderate individual and clusters of respiratory epithelial cells are mildly increased. Occasional goblet cells are present. Few lymphocytes are seen. Rare squamous epithelial cells with cocci bacteria adhered to the surface are present (contamination). No overtly neoplastic cells are identified.</i>					
<i>INTERPRETATION: Respiratory epithelial hyperplasia with mixed inflammation (eosinophilic mastocytic)</i>					
<i>COMMENT: Considerations for mixed inflammation with eosinophilic and mastocytic components include hypersensitivity (e.g. inflammatory airway disease, recurrent airway obstruction) and migrating parasite larvae. Please correlate with clinical findings.</i>					
CYTO_CLIN_RES	Click Show to View				
<i>STATUS: FINAL</i>					
<i>Trachael Wash Analysis CYT25-000284 Approved: 01/15/25</i>					
<i>Slide Prepared ready for interpretation Slide prepped and labeled</i>					
<i>Broncho Alveolar Lavage Clinical Analysis CYT25-000285 Approved: 01/15/25</i>					
<i>BAL-Nucleated Cell Count 594.00 cells/ul</i>					
<i>SIGNATURE</i>					
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-15-2025 3:25:20pm,
Cytopathology Analysis -

Outcome

Result Notes:
STATUS: Final
COMMENTS:
C/T: COLORLESS/SLIGHTLY CLOUDY

Clinic Notes / Specifics

TWANA (3)
Trachael Wash Analysis

Result Date: 01/15/2025 4:31PM

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
CP_slide	Slide prepped and labeled				
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-15-2025 3:25:11pm,
Cytopathology Analysis -

Outcome

Result Notes:
STATUS: Final
COMMENTS:
C/T: COLORLESS/SLIGHTLY CLOUDY

Clinic Notes / Specifics

CPBAL (1)
Broncho Alveolar Lavage Clinical Analysis

Result Date: 01/15/2025 4:39PM

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
BAL_NCC	594.00	cells/ul			
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					
CP_slide	Slide prepped and labeled				
<i>STATUS: FINAL</i>					

01-14-2025 3:44:25pm,
Fecal Baermann -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

FECBAER (1)
Fecal Baermann

Result Date: 01/14/2025 3:44PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
ParaF	No Fluke ova observed				
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-13-2025 5:28:42pm,
Fecal Baermann -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

FECBAER (1)
Fecal Baermann

Result Date: 01/13/2025 5:28PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
ParaF	No larva observed				
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-13-2025 4:24:10pm,
Fecal McMaster -

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

FECMCMS (1)
Fecal McMaster

Result Date: 01/13/2025 4:24PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
ParaF	3200 EPG Strongyle ova				
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					

01-13-2025 3:54:11pm,

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

LACHP
Large Animal Complete Hematology Profile

Result Date: 01/13/2025 3:54PM

This request has been updated

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
WBCA	7.90	10 ³ /uL	4.69	10.36	
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					
RBC	8.78	10 ⁶ /ul	5.67	9.97	
<i>STATUS: FINAL</i>					
HGB	12.5	g/dL	10.1	16.4	
<i>STATUS: FINAL</i>					
HCT	35.5	%	26.6	44.2	
<i>STATUS: FINAL</i>					
MCV	40.5	fL	41.1	52.1	
<i>STATUS: FINAL</i>					
MCH	14.2	pg	15.0	20.5	
<i>STATUS: FINAL</i>					
MCH ^C	35.1	g/dL	35.6	39.4	
<i>STATUS: FINAL</i>					
RDW	19.8	%	16.0	18.6	

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
<i>STATUS: FINAL</i>					
MPV	6.6	fL	4.9	9.8	
<i>STATUS: FINAL</i>					
PCT	0.14	%	0.06	0.25	
<i>STATUS: FINAL</i>					
PLT	214	10 ³ /uL	99	277	
<i>STATUS: FINAL</i>					
SEGS	4.503	X10 ³ /UL	2.451	6.824	
<i>STATUS: FINAL</i>					
LYMPH	3.397	X10 ³ /UL	1.328	4.567	
<i>STATUS: FINAL</i>					
PCV	35	%	28	46	
<i>STATUS: FINAL</i>					
PP	6.2	g/dl	5.9	8.0	
<i>STATUS: FINAL</i>					
FIB_MAN	300.00		100.00	400.00	
<i>STATUS: FINAL</i>					
PPFIB	21				
<i>STATUS: FINAL</i>					
POIK	Mild				
<i>STATUS: FINAL</i>					
NON-SPECIFIC POIKILOCYTOSIS IS PRESENT AND CONSISTS OF ECHINOCYTE-LIKE CELLS. THE RBC SHAPE CHANGES MAY BE AN ARTIFACT FROM SAMPLE PREPARATION OR STORAGE, BUT CAN ALSO BE SEEN WITH ELECTROLYTE IMBALANCES AND LIPID DISORDERS. THIS CAN ALSO BE A NORMAL FINDING IN GOATS, PIGS, AND SOME DEER					
PLTAPP	Normal				
<i>STATUS: FINAL</i>					
LARPLT	Occasional				
<i>STATUS: FINAL</i>					
MORSC	Scale				
<i>STATUS: FINAL</i>					
(RARE=<1/100X FIELD; OCC=1-3/FIELD ; FEW=4-10/FIELD ; MOD=10-25/FIELD ; MANY=>25/FIELD)					

01-13-2025 3:10:40pm,

Outcome

Result Notes:
STATUS: Final

Clinic Notes / Specifics

EQCHEM (2)
EQUINE CHEMISTRY PANEL

Result Date: 01/13/2025 3:54PM

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
GLU	219	mg/dL	73	113	
<i>STATUS: FINAL</i>					
PDFReport	Attachment				
<i>STATUS: FINAL</i>					
BUN	12	mg/dL	7	25	
<i>STATUS: FINAL</i>					
CREA	1.0	mg/dL	1.0	1.7	
<i>STATUS: FINAL</i>					
PHOS	3.8	mg/dL	2.1	4.1	
<i>STATUS: FINAL</i>					
CAC	12.3	mg/dL	11.0	13.2	
<i>STATUS: FINAL</i>					
MG	1.9	mg/dL	1.7	2.3	
<i>STATUS: FINAL</i>					
TPC	5.8	g/dL	5.5	7.5	
<i>STATUS: FINAL</i>					
ALBC	2.8	g/dL	2.8	3.5	

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
STATUS: FINAL GLOBC	3.0	g/dL	2.4	4.4	
STATUS: FINAL A_GC	0.93		0.63	1.25	
STATUS: FINAL TRIG	21	mg/dL	12	72	
STATUS: FINAL BILIT	0.7	mg/dL	0.4	2.5	
STATUS: FINAL ALPC	291	IU/L	66	181	
STATUS: FINAL ASTC	259	IU/L	202	338	
STATUS: FINAL GGT	8	IU/L	5	24	
STATUS: FINAL SDH	<0.5	IU/L	6.3	13.8	
STATUS: FINAL CK	269	IU/L	117	564	
STATUS: FINAL NA	135	mmol/L	134	144	
STATUS: FINAL K	4.3	mmol/L	2.9	4.8	
STATUS: FINAL CL	94	mmol/L	98	103	
STATUS: FINAL HCO3	30	mmol/L	24	29	
STATUS: FINAL AGAP	15.1		10.2	15.0	
STATUS: FINAL NA_K	31.5		28.7	50.6	
STATUS: FINAL C-OSM	275.5	mOsm/Kg	267.4	284.4	
STATUS: FINAL ICT	1				
STATUS: FINAL HEMO	32				
STATUS: FINAL LIPE	11				
STATUS: FINAL					

TO SEE WHEN HEMOLYSIS, LIPEMIA, AND ICTERUS INTERFERES WITH RESULTS PLEASE REFER TO INDICES CHART LINK BELOW.

 Procedures

01-15-2025 2:51:41pm,

01-15-2025 7:52:04am, Specifics

nebulize 1/15

01-14-2025 9:43:33am,

01-13-2025 3:52:59pm, Specifics

Soft Tissue Surgery Consultation with

Zane was sedated with intravenous xylazine to facilitate examination of his draining scrotal incision. On palpation, the left scrotal incision was mostly closed aside from a 1 cm opening at the caudodorsal most aspect. Mild drainage was appreciated on this side of the scrotum. The right scrotal incision was closed but had exuberant granulation tissue present along the incision site. Due to patient demeanor, ultrasound examination was not performed.

The scrotal incisions were recently reopened by the rDVM, therefore the left side incision may still be in the process of healing. Further examination and/or surgical revision of the scrotal incisions would warrant general anesthesia, however, Zane is not a good candidate for general anesthesia at this time due to the primary complaint of the respiratory disorder.

Recheck incisions in 5-7 days to determine if left scrotal incision has completely healed. If drainage continues, consider surgical revision under general anesthesia (pending lung health).

Medication

Date/Time	Drug Name	Qty	Instructions	Prescribed By
01-16-2025 4:39:03pm	Dexamethasone 4mg Tablet	32	GIVE 2 & 1/2 TABS BY MOUTH EVERY 24 HOURS FOR 10 DAYS (UNTIL 1/26), THEN TAPER AS DIRECTED: 1/27/24: 2 TABLETS. 1/28/24: 2 TABLETS. 1/29/24: 1 TABLET. 1/30/24: 1 TABLET. 1/31/24: 1/2 TABLET. 2/1/24: SKIP. 2/2/24: 1/2 TABLET. 2/3/24: DISCONTINUE RPH:	
01-16-2025 12:11:50am	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	8	CDM Issued user	
01-15-2025 7:59:54pm	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	8	CDM Issued user	
01-15-2025 2:51:41pm	*STOCK* Xylazine 100mg/ml Inj by the ml	1.25		
01-15-2025 2:51:41pm	*STOCK* Detomidine HCL 10mg/ml Inj 1ml	0.15		
01-15-2025 10:01:23am	*OMNI* Buscopan 20mg/ml Injection (N-butylscopolammonium bromide) per mL	2	CDM Issued user	
01-15-2025 10:00:59am	*OMNI* Butorphanol 10mg/ml Injection by the mg (Torbugesic)	5	CDM Issued user	
01-14-2025 10:28:45pm	*OMNI* Flunixin 50mg/ml Inj 1ml (from 250ml)	5	CDM Issued user	
01-14-2025 4:55:49pm	Acetylcysteine 20% Soln 10ml	6	**INPATIENT** NEBULIZE 5 ML QS TO 10 ML WITH 0.9% NS EVERY 6 HOURS. *DISCARD VIAL 96 HOURS AFTER OPENING* RPH:	
01-14-2025 4:52:53pm	Albuterol 0.83mg/ml Inhal Sol 3ml	12	**INPATIENT** NEBULIZE 1.5 ML QS TO 3 ML WITH 0.9% NAACL EVERY 6 HOURS. MUST USE NEW ALIQUOT EACH TIME. RPH:	
01-14-2025 9:52:57am	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	10	CDM Issued user	
01-14-2025 9:20:39am	*OMNI* Flunixin 50mg/ml Inj 1ml (from 250ml)	5	CDM Issued user	
01-14-2025 8:41:55am	*OMNI* Buscopan 20mg/ml Injection (N-butylscopolammonium bromide) per mL	2	CDM Issued user	
01-13-2025 4:48:50pm	Fenbendazole Paste 57gm Panacur Powerpac 5pk	0.4	GIVE A 500 LBS DOSE USING THE RED LARVICIDAL LINE BY MOUTH EVERY 24 HOURS FOR 5 DAYS. RPH:	
01-13-2025 1:56:01pm	*OMNI* Buscopan 20mg/ml Injection (N-butylscopolammonium bromide) per mL	2	CDM Issued user	

01-13-2025 1:55:40pm	*OMNI* Butorphanol 10mg/ml Injection by the mg (Torbugesic)	3	CDM Issued user
01-13-2025 1:10:51pm	*OMNI* Buscopan 20mg/ml Injection (N- butylscopolammonium bromide) per mL	2	CDM Issued user

Current Medication

Date/Time	Drug Name	Qty	Instructions	Prescribed By
01-16-2025 4:39:03pm	Dexamethasone 4mg Tablet	32	GIVE 2 & 1/2 TABS BY MOUTH EVERY 24 HOURS FOR 10 DAYS (UNTIL 1/26), THEN TAPER AS DIRECTED: 1/27/24: 2 TABLETS. 1/28/24: 2 TABLETS. 1/29/24: 1 TABLET. 1/30/24: 1 TABLET. 1/31/24: 1/2 TABLET. 2/1/24: SKIP. 2/2/24: 1/2 TABLET. 2/3/24: DISCONTINUE RPH:	
01-14-2025 4:55:49pm	Acetylcysteine 20% Soln 10ml	6	**INPATIENT** NEBULIZE 5 ML QS TO 10 ML WITH 0.9% NS EVERY 6 HOURS. *DISCARD VIAL 96 HOURS AFTER OPENING* RPH:	
01-14-2025 4:52:53pm	Albuterol 0.83mg/ml Inhal Sol 3ml	12	**INPATIENT** NEBULIZE 1.5 ML QS TO 3 ML WITH 0.9% NAACL EVERY 6 HOURS. MUST USE NEW ALIQUOT EACH TIME. RPH:	
01-13-2025 4:48:50pm	Fenbendazole Paste 57gm Panacur Powerpac 5pk	0.4	GIVE A 500 LBS DOSE USING THE RED LARVICIDAL LINE BY MOUTH EVERY 24 HOURS FOR 5 DAYS. RPH:	

Dispensed Medication

Date/Time	Drug Name	Qty	Instructions	Prescribed By
01-16-2025 4:39:03pm	Dexamethasone 4mg Tablet	32	GIVE 2 & 1/2 TABS BY MOUTH EVERY 24 HOURS FOR 10 DAYS (UNTIL 1/26), THEN TAPER AS DIRECTED: 1/27/24: 2 TABLETS. 1/28/24: 2 TABLETS. 1/29/24: 1 TABLET. 1/30/24: 1 TABLET. 1/31/24: 1/2 TABLET. 2/1/24: SKIP. 2/2/24: 1/2 TABLET. 2/3/24: DISCONTINUE RPH:	
01-16-2025 12:11:50am	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	8	CDM Issued user	
01-15-2025 7:59:54pm	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	8	CDM Issued user	
01-15-2025 2:51:41pm	*STOCK* Xylazine 100mg/ml Inj by the ml	1.25		
01-15-2025 2:51:41pm	*STOCK* Detomidine HCL 10mg/ml Inj 1ml	0.15		
01-15-2025 10:01:23am	*OMNI* Buscopan 20mg/ml Injection (N- butylscopolammonium bromide) per mL	2	CDM Issued user	
01-15-2025 10:00:59am	*OMNI* Butorphanol 10mg/ml Injection by the mg (Torbugesic)	5	CDM Issued user	
01-14-2025 10:28:45pm	*OMNI* Flunixin 50mg/ml Inj 1ml (from 250ml)	5	CDM Issued user	
01-14-2025 4:55:49pm	Acetylcysteine 20% Soln 10ml	6	**INPATIENT** NEBULIZE 5 ML QS TO 10 ML WITH 0.9% NS EVERY 6 HOURS. *DISCARD VIAL 96 HOURS AFTER OPENING* RPH:	
01-14-2025 4:52:53pm	Albuterol 0.83mg/ml Inhal Sol 3ml	12	**INPATIENT** NEBULIZE 1.5 ML QS TO 3 ML WITH 0.9% NAACL EVERY 6 HOURS. MUST USE NEW ALIQUOT EACH TIME. RPH:	

01-14-2025 9:52:57am	*OMNI* Dexamethasone 2mg/ml Inj (from 100ml)	10	CDM Issued user
01-14-2025 9:20:39am	*OMNI* Flunixin 50mg/ml Inj 1ml (from 250ml)	5	CDM Issued user
01-14-2025 8:41:55am	*OMNI* Buscopan 20mg/ml Injection (N- butylscopolammonium bromide) per mL	2	CDM Issued user
01-13-2025 4:48:50pm	Fenbendazole Paste 57gm Panacur Powerpac 5pk	0.4	GIVE A 500 LBS DOSE USING THE RED LARVICIDAL LINE BY MOUTH EVERY 24 HOURS FOR 5 DAYS. RPH:
01-13-2025 1:56:01pm	*OMNI* Buscopan 20mg/ml Injection (N- butylscopolammonium bromide) per mL	2	CDM Issued user
01-13-2025 1:55:40pm	*OMNI* Butorphanol 10mg/ml Injection by the mg (Torbugesic)	3	CDM Issued user
01-13-2025 1:10:51pm	*OMNI* Buscopan 20mg/ml Injection (N- butylscopolammonium bromide) per mL	2	CDM Issued user

Refillable Medication

Date/Time	Drug Name	Qty	Instructions	Prescribed By
01-14-2025 4:55:49pm	Acetylcysteine 20% Soln 10ml	6	**INPATIENT** NEBULIZE 5 ML QS TO 10 ML WITH 0.9% NS EVERY 6 HOURS. *DISCARD VIAL 96 HOURS AFTER OPENING* RPH: A. BELL	LIZZIE TREECE - EJTREECE
01-14-2025 4:52:53pm	Albuterol 0.83mg/ml Inhal Sol 3ml	12	**INPATIENT** NEBULIZE 1.5 ML QS TO 3 ML WITH 0.9% NAACL EVERY 6 HOURS. MUST USE NEW ALIQUOT EACH TIME. RPH: A. BELL	LIZZIE TREECE - EJTREECE

Client Communication

01-16-2025 6:33:00pm

System



Thank you for the opportunity to care for Zane. Below is the summary for his visit on 01-13-2025.

Please do not hesitate to contact us with any questions or concerns.

Sincerely,

NCSU Equine Medicine
1060 William Moore Drive
Raleigh, North Carolina, 27607
919-513-6630

01-16-2025 8:33:00am

LIZZIE TREECE - EJTREECE

SWO - told her pick up is still okay this evening. Plan is to send him home on low dose steroids, deworm in about 10 days with something that targets lung worms, and then taper the steroids. Told her everything will be written down for the barn manager.

01-15-2025 9:41:00pm

LIZZIE TREECE - EJTREECE

SWO at visit, told them the remainder of the diagnostics went well, told them we found lung worms in his BAL fluid. Discussed treatment for that is different than the treatment we needed to do for his intestinal parasites. Discussed again the possibility of colic after

deworming if they have a heavy burden. They understood and were glad that we found an answer. talked about plan to check a FEC in a few weeks to see if he will need to be dewormed again. And then plans should be made to do FEC tests on him at least every 6 months and targeted deworming twice a year for the next few years as he's young and has had a previously high burden. They understood and were good with that plan. Talked about making plans for him to go home tomorrow with medications and list of things to monitor for.

01-15-2025 8:53:00am

RACHEL SVENDSEN - RSVENDS

SWO to give morning update on Zane, he is doing well and is super sweet, he had his first treatment with his nebulizer of Albuterol this morning and he did well and seemed to enjoy it a little bit. Owner said she's sorry she missed someones call yesterday she was really worried about zane and that she would like to speak with Dr Treece at some point when she can since she missed her call yesterday

01-14-2025 10:25:00am

LIZZIE TREECE - EJTREECE

SWO - discussed findings yesterday, his history and our top differentials. Discussed that he's a little young to have asthma, but can not rule that out. Very suspicious of lung worms - given that he was housed with donkeys prior to arriving on the farm he's at now. Discussed high intestinal worm burden - attempting to reduce burden without causing colic - but could still occur. Discussed ultrasound and radiology findings from yesterday, and diagnostics we'd still like to perform today (TTW and BAL) but he's been persistently tachypneic and due to the intestinal worms etc I gave him some banamine and dexamethasone to help reduce inflammation. If he seems comfortable and breathing a little better this afternoon then we may go forward with those diagnostics, if not, I may wait until tomorrow so I don't stress him out too much. She understood and was good with any plan. Told her I'd send a consent form to her for electronic signature.

01-13-2025 11:32:00pm

LIZZIE TREECE - EJTREECE

LVM for owner - introduced myself - apologized for missing them at their visit. Discussed what diagnostics we did today (radiographs and ultrasound) waiting on radiology to interpret rads but no glaring changes consistent with pneumonia or obvious nodules/abscesses. Ultrasound fairly unremarkable despite his very dramatic respiratory rate and expiratory wheezes that we can hear. Since he lives with donkeys and has in the past, we did a fecal egg test (two kinds) to assess for intestinal and pulmonary parasites. He has a high intestinal worm burden, so we are starting a power pac to hopefully slowly kill them so he does not colic. Told them I would call to discuss more in the morning - and we would continue with our additional diagnostics (BAL and TTW). Gave them the number to call if they need to get in touch with me sooner, otherwise no news is good news for Zane.

+ Technician Notes

01-16-2025 3:49:16pm

Daily Patient Rounds

1st shift update:

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: no change
4. Initials: LK

2nd shift update

1. Behavior Update: #INPUT#
2. Systemic update:
 - a. #INPUT#[Fecal output: /WNL/increased/decreased]
 - b. #INPUT#[Urine output: /WNL/increased/decreased]
3. Pertinent Update: #INPUT#
4. Initials: #INPUT#

3rd shift update

1. Behavior Update: #INPUT#
2. Systemic update:
 - a. #INPUT#[Fecal output: /WNL/increased/decreased]
 - b. #INPUT#[Urine output: /WNL/increased/decreased]
3. Pertinent Update: #INPUT#
4. Initials: #INPUT#

01-15-2025 2:49:22pm

Daily Patient Rounds

1st shift update:

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: Got his first nebulization treatment this morning and did really well with it. He has been coughing intermittently but stops after 30 seconds-minute. Repirations are still elevated.
4. Initials: KM

2nd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: no change
4. Initials: HF

3rd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: No change.
4. Initials: BB

01-14-2025 10:05:22am

Daily Patient Rounds

1st shift update:

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: was wheezing this AM- got buscopan IV, was acting colicky so got flunixin IV, HO gave steroids this morning as well
4. Initials: SG

2nd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: Has not seemed colicky this shift. Will start nebulizer tomorrow. Getting IV meds but no IVC, not bad for needle pokes but wiggly so have someone hold.
4. Initials: AH

3rd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: noticed when drinking water would cough but otherwise no change
4. Initials: jh

01-13-2025 9:14:34pm

Daily Patient Rounds

2nd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: Was dewormed, increased respiration is expected and okay with HO as long as it doesn't exceed the 80's. Will have coughing fits but remains bright, alert HO if coughing fits are prolonged, worsen, etc. Will wiggle for temps so it may be helpful to have someone hold but has not offered to kick.
4. Initials: AH

3rd shift update

1. Behavior Update: BAR
2. Systemic update:
 - a. Fecal output: WNL
 - b. Urine output: WNL
3. Pertinent Update: no change - only started coughing 1-2 times around 2am & 4am
4. Initials: RS

01-13-2025 2:30:29pm

EFAVC ER Service Rounds

Signalment: 1 yr Arabian gelding

Presenting Complaint: owners bought in sept- had a cough when he got home, randomly coughs when eating or on his own, now in resp distress with 80 RR, got TMS over the weekend, will probably do trach wash tmrw, did x-ray of chest, testing for lungworms- previously lived with donkeys and currently lives with donkeys, only dewormed once, has vaccine history, needs beaver shavings, has owner grain

🚑 Master Problems

01-16-2025: Parasite infestation (unspecified)

Diagnosis

3200 EPG 1/14/25 stongyle-type

01-16-2025: Equine lungworm (*Dictyocaulus arnfieldi*)

Diagnosis

ERIN PEARSON - EKPEARS2
NCSU Equine Medicine
1060 William Moore Drive
Raleigh, North Carolina, 27607
919-513-6630

**NC State Veterinary Hospital
Diagnostic Laboratory System**

Microbiology and Molecular Diagnostics
Bacteriology, Mycology, Parasitology (C262) 919-513-6560
Molecular Diagnostics (C265) 919-513-7422
Virology and Serology (C267) 919-513-6564
1060 William Moore Drive
Raleigh, NC 27607
ncstateclinicalmicro@ncsu.edu; <https://go.ncsu.edu/mmd>



Accession #: MMD25-147013

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age:** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 1/20/2025



Aerobic + anaerobic culture

Culture Header

CLSI VET01S 7th ed interpretations for culture reports are still in progress. Please reference the QR code above and documents for updated interps when making drug choices. For VH clients in need of an Antimicrobial Stewardship Committee Consult, please submit a request by following this link <https://forms.gle/9vkRpA7DWDhHiAML8> .

Source

Body Fluid, transtracheal wash

Site

Lung

Culture Result

<10 colonies *Mammaliicoccus sciuri* (Isolate 1)

Isolate Comment

Organism isolated is not an expected pathogen; antibiotic resistance is not expected. Susceptibility will not be provided. (Isolate 1)

Culture Result

1+ *Streptococcus equi* ssp *zooepidemicus* (Isolate 2)

Culture Result

1+ unidentifiable by MALDI Alpha-*Streptococcus*-like species (Isolate 3)

Isolate Comment

Susceptibility will not be provided. (Isolate 3)

Culture Result

1+ *Streptococcus pluranimalium* (Isolate 4)

Isolate Comment

Organism isolated is not an expected pathogen; antibiotic resistance is not expected. Susceptibility will not be provided. (Isolate 4)

Culture Result

<10 colonies *Bordetella bronchiseptica* (Isolate 5)

Culture Result

Microbiology and Molecular Diagnostic lab hours are M-F 8am-5pm with additional limited and intermittent weekend and holiday hours. ncstateclinicalmicro@ncsu.edu is monitored regularly and our lab supports voice message to email when calling 919-513-6560

Owner: Torres, Emily

Accession Number:MMD25-147013

Species:Equine

Breed: Arabian

Gender: G Age 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN:510470

Aerobic + anaerobic culture (cont'd)

1+ Arcanobacterium haemolyticum (Isolate 6)

Isolate Comment

This organism has unknown significance and should be evaluated on a case specific basis for pathogenic potential. Please contact the laboratory if susceptibility testing is desired. (Isolate 6)

Culture Result

<10 colonies unidentifiable by MALDI gram-negative rods (Isolate 7)

Isolate Comment

Susceptibility will not be provided. (Isolate 7)

Culture Result

1 colony Escherichia coli (Isolate 8)

Culture Result

1+ Neisseria species (Isolate 9)

Isolate Comment

Organism isolated is not an expected pathogen; antibiotic resistance is not expected. Susceptibility will not be provided. (Isolate 9)

Culture Result

1 colony Enterobacter cloacae (Isolate 10)

Culture Result

<10 colonies Streptococcus agalactiae (Isolate 11)

Isolate Comment

Beta-hemolytic streptococci are considered susceptible to penicillins and acquired antimicrobial resistance is not expected. A susceptibility report will not be provided, please contact the laboratory with additional questions or concerns. (Isolate 11)

Culture Result

<10 colonies Bacteroides fragilis (Isolate 12)

Isolate Comment

This organism does not meet the criteria for routine susceptibility, most likely associated with its growth dynamics. Usually acquired antibiotic resistance is not seen in these organisms and empirical therapy for the genus is recommended. Specialized testing may be available at another reference laboratory-please call the lab to inquire. (Isolate 12)

Culture Result

1+ Fusobacterium necrophorum (Isolate 13)

Isolate Comment

This organism does not meet the criteria for routine susceptibility, most likely associated with its growth dynamics. Usually acquired antibiotic resistance is not seen in these

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Owner: Torres, Emily

Accession Number:MMD25-147013

Species:Equine

Breed: Arabian

Gender: G Age 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN:510470

Aerobic + anaerobic culture (cont'd)

with its growth dynamics. Usually acquired antibiotic resistance is not seen in these organisms and empirical therapy for the genus is recommended. Specialized testing may be available at another reference laboratory-please call the lab to inquire. (Isolate 13)

Culture Result

>5 organisms isolated, susceptibility will not be provided. Please contact the laboratory if specific susceptibilities are desired.

**NC State Veterinary Hospital
Diagnostic Laboratory System**

Clinical Pathology; ncstateclinpath@ncsu.edu
Clinical Cytology; ncstatecytology@ncsu.edu
Clinical Immunology; ncstateimmunology@ncsu.edu
1060 William Moore Drive
Raleigh, NC 27607
<https://go.ncsu.edu/cpandilab>



Accession #: CYT25-000285

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 00/00/00

Cytology Record Fee [i]

	1/15/2025	1/15/2025	1/14/2025	1/13/2025	1/13/2025	Ref. Range/--
[i]	2:43 PM	2:42 PM	10:19 AM	3:24 PM	3:24 PM	
fee accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	

Clinical Pathology and Immunology lab hours are M-F 8am-7pm, weekends 8am-12pm, and holidays 8am-12pm.

Our Laboratory email is monitored regularly

Owner: Torres, Emily

Accession Number:CYT25-000285

Species: Equine

Breed: Arabian

Gender: G Age 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN: 510470

TEST NAME	RESULT	UNITS	REFERENCE RANGE
Broncho Alveolar Lavage Clinical Analysis			Result Date/Time: 00/00/00 12:00
C/T: COLORLESS/SLIGHTLY CLOUDY			
BAL-Nucleated Cell Count	594.00	cells/ul	
Slide Prepared ready for interpretation	Slide prepped and labeled		

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END OF REPORT (Prelim)

Page: 2

**NC State Veterinary Hospital
Diagnostic Laboratory System**

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Clinical Immunology; ncstateimmunology@ncsu.edu
1060 William Moore Drive
Raleigh, NC 27607
<https://go.ncsu.edu/cpandilab>



Accession #: CYT25-000285

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 1/15/2025

Final Cytology Report

Specimen:

Broncho-Alveolar Lavage: BAL

Cytology Results:

Broncho Alveolar Lavage Clinical Analysis CYT25-000285 Approved: 01/15/25
BAL-Nucleated Cell Count 594.00 cells/ul

Report

DESCRIPTION: Equine BAL, 4 slides (1 direct, 1 concentrated direct, 2 cytopins). The sample has adequate cellularity on a clear background with occasional pink mucus. A 300 cell differential reveals 60% macrophages, 35% small lymphocytes, 4% eosinophils, and 1% well-differentiated mast cells. Occasional respiratory epithelial cells and goblet cells are present. No overtly neoplastic cells or infectious agents are identified.

INTERPRETATION: Chronic inflammation with eosinophilic component

COMMENT: The increase in small lymphocytes is part of the chronic inflammation. Considerations given the eosinophilic component include hypersensitivity (e.g. inflammatory airway disease, recurrent airway obstruction) and migrating parasite larvae. Please correlate with clinical findings.

Resident: Whitney Chandler, DVM

Devorah Marks Stowe, DVM, DACVP
Final Report Electronically Signed 1/15/2025 4:38 PM

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Our Laboratory email is monitored regularly

Owner: Torres, Emily

Accession Number: CYT25-000285

Species: Equine

Breed: Arabian

Gender: G **Age** 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN: 510470

Cytology Record Fee [i]

[i]	1/15/2025	1/15/2025	1/14/2025	1/13/2025	1/13/2025	Ref. Range/--
	2:43 PM	2:42 PM	10:19 AM	3:24 PM	3:24 PM	
fee accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	

Clinical Pathology and Immunology lab hours are M-F 8am-7pm, weekends 8am-12pm, and holidays 8am-12pm.

[Our Laboratory email is monitored regularly](#)

Owner: Torres, Emily

Accession Number:CYT25-000285

Species:Equine

Breed:Arabian

Gender: G Age 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN:510470

TEST NAME	RESULT	UNITS	REFERENCE RANGE
Broncho Alveolar Lavage Clinical Analysis			Result Date/Time: 1/15/2025 4:38
C/T: COLORLESS/SLIGHTLY CLOUDY			
BAL-Nucleated Cell Count	594.00	cells/ul	
Slide Prepared ready for interpretation	Slide prepped and labeled		

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END OF REPORT (Final)

Page: 3

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1060 William Moore Drive
Raleigh, NC 27607
ncstateclinicalmicro@ncsu.edu; <https://go.ncsu.edu/mmd>



Accession #: MMD25-147009

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age:** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 1/15/2025



TEST NAME	RESULT
-----------	--------

Fecal Baermann

Parasitology Findings

Positive for Dictyocaulus immitis lungworms in BAL and TTW fluids. (Per consult with Dr. James Flowers)

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1060 William Moore Drive
Raleigh, NC 27607
<https://go.ncsu.edu/cpandilab>



Accession #: CYT25-000284

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 00/00/00

Cytology Record Fee [i]

[i]	1/15/2025 2:42 PM	1/14/2025 10:19 AM	1/13/2025 3:24 PM	1/13/2025 3:24 PM	1/13/2025 2:09 PM	Ref. Range/--
fee accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	

Trachael Wash Analysis

C/T: COLORLESS/SLIGHTLY CLOUDY

LPCHAPMA	1/15/2025 2:42 PM	Ref. Range/--
CP_slide	Slide prepped and labeled	

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Clinical Immunology; ncstateimmunology@ncsu.edu
1060 William Moore Drive
Raleigh, NC 27607
<https://go.ncsu.edu/cpandilab>



Accession #: CYT25-000284

MRN: 510470

Owner: Torres, Emily
Veterinarian: Pearson, Erin
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/15/2025
Received: 1/15/2025
Reported: 1/15/2025

Final Cytology Report

Specimen:

Transtracheal Wash: Transtracheal Wash

Cytology Results:

Tracheal Wash Analysis CYT25-000284 Approved: 01/15/25
Slide Prepared ready for interpretation Slide prepped and labeled

Broncho Alveolar Lavage Clinical Analysis CYT25-000285 Approved: 01/15/25
BAL-Nucleated Cell Count 594.00 cells/ul

Report

DESCRIPTION: Equine TTW, 6 slides. The sample has adequate cellularity on a pink background with pink mucus and scattered red blood cells. A 100 cell differential reveals 53% macrophages, 40% eosinophils, and 7% well-differentiated mast cells. Moderate individual and clusters of respiratory epithelial cells are mildly increased. Occasional goblet cells are present. Few lymphocytes are seen. Rare squamous epithelial cells with cocci bacteria adhered to the surface are present (contamination). No overtly neoplastic cells are identified.

INTERPRETATION: Respiratory epithelial hyperplasia with mixed inflammation (eosinophilic mastocytic)

COMMENT: Considerations for mixed inflammation with eosinophilic and mastocytic components include hypersensitivity (e.g. inflammatory airway disease, recurrent airway obstruction) and migrating parasite larvae. Please correlate with clinical findings.

Resident: Whitney Chandler, DVM

Devorah Marks Stowe, DVM, DACVP
Final Report Electronically Signed 1/15/2025 4:30 PM

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Owner: Torres, Emily

Accession Number: CYT25-000284

Species: Equine

Breed: Arabian

Gender: G **Age** 1

Animal Name: Zane

Animal ID:

Clinic Patient ID:

MRN: 510470

Cytology Record Fee [i]

[i]	1/15/2025 2:42 PM	1/14/2025 10:19 AM	1/13/2025 3:24 PM	1/13/2025 3:24 PM	1/13/2025 2:09 PM	Ref. Range/--
fee accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	Fee Accessed	

Trachael Wash Analysis

C/T: COLORLESS/SLIGHTLY CLOUDY

LPCHAPMA	1/15/2025 2:42 PM					Ref. Range/--
CP_slide	Slide prepped and labeled					

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Microbiology and Molecular Diagnostics
Bacteriology, Mycology, Parasitology (C262) 919-513-6560
Molecular Diagnostics (C265) 919-513-7422
Virology and Serology (C267) 919-513-6564
1060 William Moore Drive
Raleigh, NC 27607
ncstateclinicalmicro@ncsu.edu; <https://go.ncsu.edu/mmd>



Accession #: MMD25-146866

MRN: 510470

Owner: Torres, Emily
Veterinarian: Treece, Lizzie
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age:** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/14/2025
Received: 1/14/2025
Reported: 1/14/2025



TEST NAME	RESULT
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Fecal Baermann

Parasitology Findings

No Fluke ova observed

Microbiology and Molecular Diagnostic lab hours are M-F 8am-5pm with additional limited and intermittent weekend and holiday hours. ncstateclinicalmicro@ncsu.edu is monitored regularly and our lab supports voice message to email when calling 919-513-6560

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Virology and Serology (C267) 919-513-6564
1060 William Moore Drive
Raleigh, NC 27607
ncstateclinicalmicro@ncsu.edu; <https://go.ncsu.edu/mmd>



Accession #: MMD25-146795

MRN: 510470

Owner: Torres, Emily
Veterinarian: Treece, Lizzie
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age:** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/13/2025
Received: 1/13/2025
Reported: 1/13/2025



TEST NAME	RESULT
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Fecal Baermann

Parasitology Findings

No larva observed

Microbiology and Molecular Diagnostic lab hours are M-F 8am-5pm with additional limited and intermittent weekend and holiday hours. ncstateclinicalmicro@ncsu.edu is monitored regularly and our lab supports voice message to email when calling 919-513-6560

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Virology and Serology (C267) 919-513-6564
1060 William Moore Drive
Raleigh, NC 27607
ncstateclinicalmicro@ncsu.edu; <https://go.ncsu.edu/mmd>



Accession #: MMD25-146797

MRN: 510470

Owner: Torres, Emily
Veterinarian: Treece, Lizzie
Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age:** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/13/2025
Received: 1/13/2025
Reported: 1/13/2025



TEST NAME	RESULT
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Fecal McMaster

Parasitology Findings

3200 EPG Strongyle ova

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 1060 William Moore Drive
 Raleigh, NC 27607
<https://go.ncsu.edu/cpandilab>



Accession #: CH25-001334

MRN: 510470

Owner: Torres, Emily
Veterinarian: Treece, Lizzie
 Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/13/2025
Received: 1/13/2025
Reported: 1/13/2025

TEST NAME	RESULT	UNITS	REFERENCE RANGE
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EQUINE CHEMISTRY PANEL

Result Date/Time: 1/13/2025 3:10

Glucose	219 H	mg/dL	73-113
Urea Nitrogen	12	mg/dL	7-25
Creatinine	1.0	mg/dL	1.0-1.7
Phosphorus	3.8	mg/dL	2.1-4.1
Calcium	12.3	mg/dL	11.0-13.2
Magnesium	1.9	mg/dL	1.7-2.3
Total Protein	5.8	g/dL	5.5-7.5
Albumin	2.8	g/dL	2.8-3.5
Globulin	3.0	g/dL	2.4-4.4
Albumin/Globulin Ratio	0.93		0.63-1.25
TRIGLYCERIDE	21	mg/dL	12-72
Total Bilirubin	0.7	mg/dL	0.4-2.5
Alkaline Phosphatase	291 H	IU/L	66-181
AST	259	IU/L	202-338
GGT	8	IU/L	5-24
SDH	<0.5 L	IU/L	6.3-13.8
Creatine Kinase	269	IU/L	117-564
Sodium	135	mmol/L	134-144
Potassium	4.3	mmol/L	2.9-4.8
Chloride	94 L	mmol/L	98-103
Bicarbonate	30 H	mmol/L	24-29
Anion Gap	15.1 H		10.2-15.0
Sodium Potassium Ratio	31.5		28.7-50.6
Osmolarity Calculated	275.5	mOsm/Kg	267.4-284.4
Icteric Index	1		
Hemolysis	32		
Lipemia Index	11		

TO SEE WHEN HEMOLYSIS, LIPEMIA, AND ICTERUS INTERFERES WITH RESULTS PLEASE REFER TO INDICES CHART LINK BELOW.

https://docs.google.com/spreadsheets/d/1TzKaM_VmuMNIQHlCpKgUcfj2zZ5bMX8TJu6DKwZ3a5E/edit?usp=drive_link

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Accession #: HEC25-001137

MRN: 510470

Owner: Torres, Emily
Veterinarian: Treece, Lizzie
 Equine Medicine

Species: Equine
Breed: Arabian
Gender: G **Age** 1
Animal Name: Zane
Animal ID:
Clinic Patient ID:

Collected: 1/13/2025
Received: 1/13/2025
Reported: 1/13/2025

TEST NAME	RESULT	UNITS	REFERENCE RANGE
Large Animal CBC Result Date/Time: 1/13/2025 3:53			
White Blood Cell	7.90	10 ³ /uL	4.69-10.36
Red Blood Cell	8.78	10 ⁶ /ul	5.67-9.97
Hemoglobin	12.5	g/dL	10.1-16.4
Hematocrit	35.5	%	26.6-44.2
Mean Corpuscular Volume	40.5 L	fL	41.1-52.1
Mean Corpuscular Hemoglobin	14.2 L	pg	15.0-20.5
Mean Corpuscular Hemoglobin Concentration	35.1 L	g/dL	35.6-39.4
Red Cell Distribution Width	19.8 H	%	16.0-18.6
Mean Platelet Volume	6.6	fL	4.9-9.8
Plateletcrit	0.14	%	0.06-0.25
Platelets	214	10 ³ /uL	99-277

Large Animal Differential		Result Date/Time: 1/13/2025 3:53	
Segmented Neutrophils	4.503	X10 ³ /UL	2.451-6.824
Lymphocytes	3.397	X10 ³ /UL	1.328-4.567
PCV	35	%	28-46
Plasma Protein	6.2	g/dl	5.9-8.0
Fibrinogen Manual	300.00		100.00-400.00
PPFIB Ratio	21		
Poikilocytosis	Mild		
NON-SPECIFIC POIKILOCYTOSIS IS PRESENT AND CONSISTS OF ECHINOCYTE-LIKE CELLS. THE RBC SHAPE CHANGES MAY BE AN ARTIFACT FROM SAMPLE PREPARATION OR STORAGE, BUT CAN ALSO BE SEEN WITH ELECTROLYTE IMBALANCES AND LIPID DISORDERS. THIS CAN ALSO BE A NORMAL FINDING IN GOATS, PIGS, AND SOME DEER			
Platelet number appears	Normal		
Large Platelets	Occasional		
RBC Morphology Scale	Scale		
(RARE=<1/100X FIELD; OCC=1-3/FIELD; FEW=4-10/FIELD; MOD=10-25/FIELD; MANY=>25/FIELD)			

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