

Elephant Profile - Maliha

House Name: Maliha

Common Name: Asian Elephant

STB #: 339

Scientific Name: *Elephas maximus*

Sex: female

DOB: 8/2/2006

Birthplace: Saint Louis Zoo **Sire/Dam:** (name and location) Raja, STB #339, SLZ; Ellie STB #139, SLZ

Currently Managed: In accordance with the Saint Louis Zoo Elephant Management Policy

Transaction History:

Date	Type	To	From
N/A			

Physical Characteristics:

Medical History: See medical records

Reproductive Status: n/a

Temperament/Behavior History: Blood behavior: Collected at the howdy wall.

Maliha's Behavior/Command List:

- Come
- Beak
- Ear
- Many other behaviors in process

Preferred Reinforcers: melon slices

Reviewed/Revised January 2007

Elephant Profile - Jade

House Name: Jade

Common Name: Asian Elephant

STB #:

Scientific Name: *Elephas maximus*

Sex: female

DOB: 2/25/2007

Birthplace: Saint Louis Zoo **Sire/Dam:** (name and location) Raja, STB #339, SLZ; Rani STB #386, SLZ

Currently Managed: In accordance with the Saint Louis Zoo Elephant Management Policy

Transaction History:

Date	Type	To	From
N/A			

Physical Characteristics:

Medical History: See medical records

Reproductive Status: n/a

Temperament/Behavior History:

Jade's Behavior/Command List:

- Come
- Many other behaviors in process

Preferred Reinforcers: bananas

Reviewed/Revised January 2007

Medical History Report - Summary for Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

.....2006....

- 2.Aug Birth.
- 19.Sep Clinical note recorded. (MLK)
- 21.Sep Parasitology examination: (VET. REQUEST-DR.JUNGE) Fecal sample.
NO PARASITES SEEN
Clinical note recorded. (PM)
- 25.Sep PROBLEM: weight loss (onset)
Immobilized: BUTORPHANOL/DETOMIDINE/ATIPAMEZOLE/NALTREXONE
Physical exam, fluid therapy
Blood sample: (EDTA) (17:50.0) Hematology/Chemistry/Serology results.
WBC:12.60 *10³/UL; HCT: 43.2%; BUN:14 MG/DL;
Clinical note recorded. (REJ)
Weight: 143.8 Kg (316.9 Lb)
- 26.Sep Clinical note recorded. (MW)
- 27.Sep PROBLEM: supplemental feeding (onset)
Sedated: DETOMIDINE/BUTORPHANOL/ATIPAMEZOLE/NALTREXONE
Clinical note recorded. (MW)
Weight: 145.6 Kg (320.9 Lb)
- 28.Sep Sedated: DETOMIDINE/BUTORPHANOL/NALTREXONE/ATIPAMEZOLE
Blood sample: (EDTA) Hematology results.
WBC:11.50 *10³/UL; HCT: 37.8%;
Clinical note recorded. (MW)
Clinical note recorded. (REJ)
Weight: 144.3 Kg (318.0 Lb)
- 29.Sep Sedated: DETOMIDINE/BUTORPHANOL/ATIPAMEZOLE/NALTREXONE
Purpose/Problem: weight loss; supplemental feeding
Rx: SULFADIAZINE/TRIMETHOPRIM (5:1) 4.33gm PO SID for 5 days. (30.01 mg/kg)
CEFTIOFUR SODIUM 1000mg IM SID for 5 days. (6.93 mg/kg)
Clinical note recorded. (MW)
- 30.Sep Sedated: DETOMIDINE/BUTORPHANOL/ATIPAMEZOLE/NALTREXONE
Blood sample: (EDTA) Hematology/Chemistry/Serology results.
WBC:6.70 *10³/UL; HCT: 37.0%; BUN:13 MG/DL;
Hemolysis
Clinical note recorded. (MW)
Weight: 144.5 Kg (318.5 Lb)
- 1.Oct Sedated: DETOMIDINE/BUTORPHANOL/NALTREXONE/ATIPAMEZOLE
Purpose/Problem: weight loss; supplemental feeding
Rx: CIMETIDINE HYDROCHLORIDE 1200mg PO SID for 10 days.
Clinical note recorded. (MW)
- 2.Oct Sedated: DETOMIDINE/BUTORPHANOL/ATIPAMEZOLE/NALTREXONE
Sedated for tube feeding. Slightly deeper than necessary.
Blood sample: (EDTA) Hematology/Chemistry/Serology results.

Medical History Report - Summary for Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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ELEPHAS MAXIMUS (no subsp)           Sex: Female           Acc. #: 105008
INDIAN ELEPHANT (E,I)              Age: 8M 9D           Birth: 2.Aug.2006
Name: Maliha
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.....2006....

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2.Oct   WBC:7.30 *10^3/UL;  HCT: 36.5%;  BUN:12 MG/DL;
        Icterus
        Clinical note recorded. (REJ)
                                           Weight: 145.2 Kg (320.0 Lb)
3.Oct   Sedated: BUTORPHANOL/DETOMIDINE/NALTREXONE/ATIPAMEZOLE
        Clinical note recorded. (MW)
        Clinical note recorded. (REJ)
                                           Weight: 145.6 Kg (320.9 Lb)
4.Oct   Clinical note recorded. (MW)
5.Oct   Blood sample: (EDTA) Hematology/Chemistry/Serology results.
        WBC:9.70 *10^3/UL;  HCT: 39.5%;  BUN:13 MG/DL;
        Clinical note recorded. (MJA)
                                           Weight: 144.1 Kg (317.6 Lb)
6.Oct   Clinical note recorded. (MW)
7.Oct   Sedated: BUTORPHANOL/DETOMIDINE/ATIPAMEZOLE/NALTREXONE
        Clinical note recorded. (MW)
                                           Weight: 145 Kg (319.6 Lb)
8.Oct   Clinical note recorded. (MJA)
                                           Weight: 147.5 Kg (325.1 Lb)
9.Oct   PROBLEM: weight loss (resolved)
        supplemental feeding (resolved)
        Clinical note recorded. (REJ)
                                           Weight: 146.6 Kg (323.1 Lb)
10.Oct  Purpose/Problem: weight loss; supplemental feeding
        Rx: SULFADIAZINE/TRIMETHOPRIM (5:1) 4.33gm PO SID for 7 days. (29.54
           mg/kg)
        Clinical note recorded. (MW)
11.Oct  Clinical note recorded. (MW)
                                           Weight: 147.0 Kg (324.0 Lb)
12.Oct                                     Weight: 149.5 Kg (329.5 Lb)
14.Oct  Clinical note recorded. (MJA)
                                           Weight: 149.0 Kg (328.4 Lb)
15.Oct  Clinical note recorded. (MJA)
                                           Weight: 149.3 Kg (329.1 Lb)
18.Oct                                     Weight: 150.9 Kg (332.6 Lb)
24.Oct  Clinical note recorded. (MW)
                                           Weight: 157.9 Kg (348.0 Lb)

10.Nov  Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
        NO PARASITES SEEN
        Clinical note recorded. (JM)

10.Dec  Clinical note recorded. (REJ)
                                           Weight: 179.2 Kg (395.0 Lb)

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Medical History Report - Summary for Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

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.....2006....

30.Dec Weight: 184.9 Kg (407.5 Lb)

.....2007....

3.Jan Clinical note recorded. (MW) Weight: 183.3 Kg (404.0 Lb)

4.Jan Weight: 184.2 Kg (406.0 Lb)

5.Jan Blood sample: Chemistry results.
BUN:11 MG/DL;

6.Jan Blood sample: (EDTA) Hematology results.
WBC:14.90 *10³/UL; HCT: 34.3%;

7.Jan Purpose/Problem: leukocytosis; slow weight gain
Rx: SULFADIAZINE/TRIMETHOPRIM (5:1) 5.28gm PO SID for 10 days. (28.81 mg/kg)
Clinical note recorded. (MJA)

8.Jan Weight: 186.7 Kg (411.5 Lb)

9.Jan PROBLEM: routine examination
Clinical note recorded. (MJA)

11.Jan Clinical note recorded. (REJ) Weight: 189.7 Kg (418.1 Lb)

14.Jan Weight: 193.7 Kg (426.9 Lb)

16.Jan Clinical note recorded. (MLK)

18.Jan Weight: 195.6 Kg (431.1 Lb)

20.Jan Clinical note recorded. (MW)

21.Jan Weight: 198.3 Kg (437.1 Lb)

25.Jan Clinical note recorded. (MW)

29.Jan Weight: 196.0 Kg (432.0 Lb)

1.Feb Weight: 201.0 Kg (443.0 Lb)

4.Feb Weight: 200.5 Kg (441.9 Lb)

22.Feb Weight: 212.3 Kg (467.9 Lb)

19.Mar Weight: 226.6 Kg (499.4 Lb)

26.Mar Clinical note recorded. (REJ) Weight: 230.9 Kg (508.9 Lb)

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

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Clinical Note:

19.Sep.2006

In house U/A:
pH:6.5
Protein: Neg
Glucose: Neg
Ketones: Neg
Bilirubin: Neg
Blood: Neg
Urobilinogen:Normal
Color: deep yellow
Transp: Cloudy
Sp. Grav: 1.342
Bacteria: Cocci +2 (MLK)

Clinical Note:

21.Sep.2006

Fecal floatation-negative (PM)

Submission Data >>

Type: Fecal sample
Purpose: VET. REQUEST-DR.JUNGE

Sample id.: 2006-0666
Date collected: 21.Sep.2006
Time collected: 9:30
Collected by: SW

Collected from:

From an individual specimen.

Enclosure: RIVERSED

Examination Data >>

Storage: room temperature
Consistency: formed
Gross appearance: Typical

Date examined: 21.Sep.2006
at: 16:00
by: PM

Tests & Results >>

FLOATATION - NA NITRATE

NO PARASITES SEEN

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ELEPHAS MAXIMUS (no subsp)

Sex: Female

Acc. #: 105008

INDIAN ELEPHANT (E,I)

Age: 8M 9D

Birth: 2.Aug.2006

Name: Maliha

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Clinical Note:

25.Sep.2006

Problem: weight loss (Confirmed)

Calf has been experiencing weight loss since birth, from 341# at birth (2 Aug) to current 317# at 56 days. In the last 2 days moderate decrease in activity has also been noted. Due to inability to physically restrain the calf, she was sedated via blowdart with 5 mg butorphanol and 5 mg detomidine. This provided excellent smooth anesthesia within 10 minutes, lasting the 85 minutes for diagnostics and treatment. HR 46/min, respr 24 /min, temp 96.5 F, O2 sat 95 %. Dropped to 92% at one point, so nasal O2 added, bringing level to 100%. Blood collected for CBC, chem profile, blood culture, trace mineral and selenium panel, iron analyte panel, fat soluble vitamin panel, and ISTAT panel (glu 116 mg/dl, Na 127 mmol/l, K 4.5 mmol/l, TCO2 26 mmol/l, iCa below analyzer range, HCT 47%, Hb 16.0 g/dl, pH 7.43, PCO237.4 mmHg, PO2 62 mmHg, HCOs 24.8 mmol/l, BE 1 mmol/l, sO2 92%). Indwelling catheter (16 ga) placed in right auricular vein, given 3 liters LRS with Ca added and 2 liters equine hyperimmune plasma. Given ceftriaxone IV (3000 mg), enrofloxacin IM (720 mg), ceftiofur CFA IM (300 mg), 5 cc B complex vitamin IM, 5 cc vitamin E IM. Oral examination : mucus membranes pink, no erythema or ulcers, 2 molars on each archade erupted. Conjunctiva normal and pink. Abdominal ultrasound did not reveal any fluid accumulation or abnormal bowel loops.

STAT CBC / Chem results - WBC = 12,600, 30% segs, 24% lymphs, 46% monos; chem panel glu = 101 mg/dl, Ph 5.5 mg/dl, TP = 8.3 g/dl, Ca 10.3 mg/dl, BUN = 14 mg/dl, creat 1.7 mg/dl.

Suspect moderate dehydration, moderate nutritional deficiency, no evidence of sepsis or localized infection. (REJ)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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ELEPHAS MAXIMUS (no subsp)           Sex: Female           Acc. #: 105008
INDIAN ELEPHANT (E,I)               Age: 1M 24D          Birth: 2.Aug.2006
Name: Maliha
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Baseline Data >>

Date of anesthesia: 25.Sep.2006
Environmental temp: 21.1C (70.0F)

Health: Abnormal - class II
 Preanesthetic Fasting: < 8 hours
 Activity: active and alert
 Immobilized in small enclosure (as an isolated animal).
 Body weight: 143.8 Kg (317 Lb)
 Body condition: good / normal

Veterinarian: REJ
Recorded by: REJ

Immobilization Data >>

Initial dose given at 17:26
 Showed initial drug effects at 3 min (17:29)
 Recumbent at 6 min (17:32)
 No anesthetic complications.
 Anesthetic induction was excellent
 Muscle relaxation was excellent
 Overall rating for anesthesia: excellent

Recovery Data >>

Recovery was normal
 Recovered to normal by 19:10

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
BUTORPHANOL 69.541mcg/kg	10 mg blowdart - i.m.	17:26	surgical anesthesia @12 min	
DETOMIDINE 69.541mcg/kg	10 mg blowdart - i.m.	17:26	surgical anesthesia @12 min	
ATIPAMEZOLE 0.000mcg/kg	mg handsyringe - i.m.	84 min	mild sedation @2 min	
NALTREXONE 1.74 mg/kg	250 mg handsyringe - i.m.	84 min	mild sedation @2 min	

Physiological Data >>

Time	Body Temperature	Heart rate	Resp. rate
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Blood Sample Data >>

Time	Sample type(s)
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17:50 EDTA, Serum

Comments >>

Physical exam, fluid therapy

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Collection Information >>

Health Status: Abnormal	Date of Collection: 25.Sep.2006
Fasting Time: < 8 hours	Time of Collection: 17:50.0
Activity: Active	Collected by: JM
Weight: 143.8 Kg on 25.Sep.2006	Sample Collection Site: EAR VEIN
Restraint was with the following drugs:	
BUTORPHANOL, DETOMIDINE, ATIPAMEZOLE, NALTREXONE	

Hematology >>

Analysis Information >>

Anticoagulant: EDTA	Laboratory: ADV. VET LG MAM
Storage: Fresh	Date of Analysis: 25.Sep.2006
Sample Quality: No quality problems.	Time of Analysis:
	Analysis by:
	Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	12.6		*10 ³ /UL
RED BLOOD CELL COUNT	3.59		*10 ⁶ /UL
HEMOGLOBIN	15.2		GM/DL
HEMATOCRIT	43.2		%
MCV	120		fL
MCH	42.3		uug
MCHC	35.2		gm/dL
SEGMENTED NEUTROPHILS	30	(3.780)	% (*10 ³ /UL)
LYMPHOCYTES	24	(3.024)	% (*10 ³ /UL)
MONOCYTES	46	(5.796)	% (*10 ³ /UL)
PLATELET COUNT	499		*10 ³ /UL

Morphology Results >>

ANISOCYTOSIS 1+, TARGET CELLS 1+

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Active
Weight: 143.8 Kg on 25.Sep.2006

Date of Collection: 25.Sep.2006
Time of Collection: 17:50.0
Collected by: JM
Sample Collection Site: EAR VEIN

Restraint was with the following drugs:
BUTORPHANOL, DETOMIDINE, ATIPAMEZOLE, NALTREXONE

Chemistry >>

Analysis Information >>

Chemistry Sample: Serum
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 25.Sep.2006
Time of Analysis:
Analysis by:
Automated analysis.

Tests and Results >>

GLUCOSE	101	MG/DL
BLOOD UREA NITROGEN	14	MG/DL
CREATININE	1.7	MG/DL
BUN/creatinine ratio	8.24	
CALCIUM	10.3	MG/DL
PHOSPHORUS	5.5	MG/DL
calcium/phosphorus ratio	1.87	
SODIUM >	138	MEQ/L
POTASSIUM >	5.3	MEQ/L
sodium/potassium ratio	26.0	
CHLORIDE >>	106	MEQ/L
MAGNESIUM	1.9	MG/DL
TOTAL PROTEIN (COLORIMETRY)	8.3	GM/DL
ALBUMIN (COLORIMETRY)	3.2	GM/DL
ASPARTATE AMINOTRANSFERASE	13	IU/L
ALANINE AMINOTRANSFERASE	14	IU/L
TOTAL BILIRUBIN >>	0.7	MG/DL
ALKALINE PHOSPHATASE >>	312	IU/L
CREATINE PHOSPHOKINASE	142	IU/L
GAMMA GLUTAMYLTRANSFERASE	10	IU/L

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

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Clinical Note:

26.Sep.2006

Problem: weight loss (Confirmed)
CC: Continued weight loss, change in attitude/activity
S: Animal observed this am during husbandry work. Calf pulling on dam's teat but no swallowing observed, no milk around mouth. Activity remains low. Email discussion with curator - we suggested sedation and tube feeding of calf to provide caloric support (animal refuses to take a bottle) as well as a rectal enema to help maintain hydration. Will aim to provide 50-100% of calories initially in a concentrated solution using milk replacer. By monitoring calf's weight we can adjust volume, concentration, and frequency of feedings.

Addendum: calf scheduled for sedation this afternoon but keepers were unable to separate calf from dam. Will attempt again tomorrow morning. (MW)

Clinical Note:

27.Sep.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Weight loss, change in attitude/activity
S: No obvious changes overnight.
Proc:

1. Restraint: calf separated from dam. Darted with 4.5 mg detomidine and 4.5 mg butorphanol IM. Good effect within 10 minutes. Animal remained standing throughout procedure although some support from keepers was necessary to keep it on its feet. Reversed with naltrexone and atipamezole IM, returned to dam 5 minutes after reversal.

2. Lubricated tube introduced into mouth and passed down to level of the stomach. 2 liters of formula instilled into stomach through tube. No reflux during or after treatment.

3. Lubricated tube introduced into rectum. 3 liters warm tap water instilled into rectum to help with hydration.

A: Successful fluid and caloric supplementation.

P: Repeat treatments in am and collect blood to monitor animal's condition. ZM to weigh calf this afternoon. (MW)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp) Sex: Female Acc. #: 105008
INDIAN ELEPHANT (E,I) Age: 1M 26D Birth: 2.Aug.2006
Name: Maliha

Baseline Data >> Date of anesthesia: 27.Sep.2006

Health: Abnormal - class II
Preanesthetic Fasting: < 8 hours
Activity: excited and alert
Immobilized in large enclosure (as an isolated animal).
Body weight: Kg (0.00 Lb) Est.
Body condition: fair / thin

Immobilization Data >>
Initial dose given at 9:42

Recovery Data >>

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
DETOMIDINE	4.5 mg	9:30	Non-metal Dart - i.m. ** none delivered **	
DETOMIDINE	4.5 mg	9:42	sedation	
	Non-metal Dart - i.m.			
BUTORPHANOL	4.5 mg	9:42	sedation	
	Non-metal Dart - i.m.			
ATIPAMEZOLE	22.5 mg	28 min	fully recovered @10 min	
	handsyringe - i.m.			
NALTREXONE	450 mg	28 min	fully recovered @10 min	
	handsyringe - i.m.			

Comments >>

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 1M 26D

Acc. #: 105008
Birth: 2.Aug.2006

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Clinical Note:

28.Sep.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Weight loss, supplemental feeding
Proc

1. Restraint: calf separated from dam. Darted with 4.5 mg detomidine and 4.0 mg butorphanol. Effect seen within 10 minutes but animal not as sedate as yesterday. Gave an additional 1 mg of butorphanol IM by hand injection at 15 minutes. Reversed with 500 mg naltrexone IM and 22.5 mg atipamezole IM

2. Tube passed down esophagus and 2 liters of milk replacer instilled through tube.

3. Blood collected for CBC from ear vein

4. Tube placed in rectum and approximately 2 liters of warm water instilled into rectum. Animal passed much of this fluid shortly after drug reversal.

5. Keeper attempted to bottle feed animal both before and after reversal.

A/P: No substantial change in condition noted. Animal's weight was up 5 kg at yesterday's weigh-in, some of which may be due to fluid load given. Requested that animal be weighed at the same time daily so that influence from am treatments is accounted for. (MW)

Clinical Note:

28.Sep.2006

Problem: weight loss (Confirmed); supplemental feeding
Iron 54 micrograms/dl (KSU). ISIS reference 69 +/- 20 mcg/dl. (REJ)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 1M 27D

Acc. #: 105008
Birth: 2.Aug.2006

Baseline Data >>

Date of anesthesia: 28.Sep.2006

Health: Abnormal - class II
Preanesthetic Fasting: < 8 hours
Activity: excited and alert
Immobilized in large enclosure (as an isolated animal).
Body weight: 144.3 Kg (318 Lb)
Body condition: fair / thin

Veterinarian: MW

Immobilization Data >>

Initial dose given at 10:19
Showed initial drug effects at 5 min (10:24)
No anesthetic complications.
Anesthetic induction was good
Muscle relaxation was good
Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
DETOMIDINE 31.185mcg/kg	4.5 mg Non-metal Dart - i.m.	10:19	sedation	
BUTORPHANOL 27.720mcg/kg	4.0 mg Non-metal Dart - i.m.	10:19	sedation	
BUTORPHANOL 6.930mcg/kg	1.0 mg handsyringe - i.m.	15 min	sedation	
NALTREXONE 3.47 mg/kg	500 mg handsyringe - i.m.	46 min	fully recovered @10 min	
ATIPAMEZOLE 0.156 mg/kg	22.5 mg handsyringe - i.m.	46 min	fully recovered @10 min	

Comments >>

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Excited
Weight: 144.3 Kg on 28.Sep.2006

Date of Collection: 28.Sep.2006
Time of Collection:
Collected by: MW
Sample Collection Site: EAR VEIN

Restraint was with the following drugs:
DETOMIDINE, BUTORPHANOL, NALTREXONE, ATIPAMEZOLE

Hematology >>

Analysis Information >>

Anticoagulant: EDTA
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 28.Sep.2006
Time of Analysis: 18:30
Analysis by:
Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	11.5		*10 ³ /UL
RED BLOOD CELL COUNT	3.28		*10 ⁶ /UL
HEMOGLOBIN	13.4		GM/DL
HEMATOCRIT	37.8		%
MCV	115		fL
MCH	40.9		uug
MCHC	35.4		gm/dL
SEGMENTED NEUTROPHILS	21	(2.415)	% (*10 ³ /UL)
LYMPHOCYTES	63	(7.245)	% (*10 ³ /UL)
MONOCYTES	16	(1.840)	% (*10 ³ /UL)
PLATELET COUNT	< 314		*10 ³ /UL

Morphology Results >>

ANISOCYTOSIS +

Chemistry >>

Analysis Information >>

Chemistry Sample: Plasma (EDTA)
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 28.Sep.2006
Time of Analysis:
Analysis by:
Automated analysis.

Tests and Results >>

FIBRINOGEN >> 875 MG/DL

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Clinical Note:

29.Sep.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Poor weight gains; supplemental feeding
O: Calf weight yesterday was 144 kg, no weight loss since treatment first initiated.

CBC results from 28 Sept - hct 37.8%, WBC 11,500 21% neuts, 63% lymphs, 16% monos. Fibrinogen 875 mg/dl.

Proc:

1. Restraint: calf darted with 4.5 mg butorphanol/4.5 mg detomidine IM. Very good sedation at 15 minutes.
2. Oral exam - no obvious herpes lesions seen
3. Calf tubed with 3 liters of formula, concentrated to 1.5 times normal strength.
4. Rectal enema with 3 liters of warm water.
5. Rx: TMS 4.3 grams PO
ceftiofur (naxcel) 1 gram IM

A/P: No significant changes in appearance or weight. No significant change in white blood cell count although differential is notably different than on 25 Sept. Suspect this may be a lab error but animal is to be bled again tomorrow for monitoring. Ringling's veterinarian notes that calves often do not produce a notable white cell response to infection until late in the course of an infectious process. Elevated fibrinogen suggests that this animal does have an active infectious or inflammatory process occurring. Ringling's vet also notes that failure to gain weight, in her experience, is often due to illness in the calf rather than failure of milk production in the dam although she can not rule out poor production by Ellie at this time. TMS and ceftiofur added to treatment protocols today. Pending this afternoon's weight check.

Rx: CEFTIOFUR SODIUM 1000 mg IM SID for 5 days. (MW)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 1M 28D

Acc. #: 105008
Birth: 2.Aug.2006

Baseline Data >>

Date of anesthesia: 29.Sep.2006

Health: Abnormal - class II

Preanesthetic Fasting: < 8 hours

Activity: excited and alert

Immobilized in small enclosure (as an isolated animal).

Body weight: 144 Kg (317 Lb) Est.

Veterinarian: MW

Body condition: fair / thin

Immobilization Data >>

Initial dose given at 10:50

Showed initial drug effects at 7 min (10:57)

No anesthetic complications.

Anesthetic induction was good

Muscle relaxation was good

Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
DETOMIDINE 31.250mcg/kg	4.5 mg Non-metal Dart - i.m.	10:50	sedation	
BUTORPHANOL 31.250mcg/kg	4.5 mg Non-metal Dart - i.m.	10:50	sedation	
ATIPAMEZOLE 0.156 mg/kg	22.5 mg handsyringe - i.m.	37 min	fully recovered @18 min	
NALTREXONE 3.13 mg/kg	450 mg handsyringe - i.m.	37 min	fully recovered @18 min	

Comments >>

Medical History Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Purpose: weight loss
supplemental feeding

Prescription Data >> Starting date: 29.Sep.2006
Drug: SULFADIAZINE/TRIMETHOPRIM (5:1) 4.33 gm PO SID for 5 days
Formulation: 400 MG/G powder
Prescribed by: (29.Sep.2006) Filled by: (29.Sep.2006)
Drug dosage: 30.01 mg/kg Treatment weight: 144.3 kg

Purpose: weight loss
supplemental feeding

Prescription Data >> Starting date: 29.Sep.2006
Drug: CEFTIOFUR SODIUM 1000 mg IM SID for 5 days
Formulation: injectable
Prescribed by: MW (29.Sep.2006) Filled by: MW (29.Sep.2006)
Drug dosage: 6.93 mg/kg Treatment weight: 144.3 kg

=====

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:

30.Sep.2006

Problem: weight loss (Confirmed); supplemental feeding

CC: Poor weight gains; supplemental feeding

O: Calf weight 144 kg

Proc:

1. Restraint: calf darted with 4.5 mg butorphanol/4.5 mg detomidine IM. Reversed with 450 mg naltrexone IM and 22.5 mg atipamezole IM

2. Blood collected for CBC/chem panel

3. Lateral thoracic films taken with portable unit. Quality not optimal. Increased interstitial pattern seen but this may be normal for elephant lungs - ask Ringling's veterinarian if she has films from a similarly aged animal? Will repeat films in a few days and try to tweak technique a bit.

4. Tube fed 3 liters of formula concentrated 1.5x normal.

5. Rx: TMS 4.3 g PO
ceftiofur 1000 mg IM
cimetidine 1200 mg PO

A/P: No significant changes. Continue with supportive care. (MW)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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=====
ELEPHAS MAXIMUS (no subsp)           Sex: Female           Acc. #: 105008
INDIAN ELEPHANT (E,I)                Age: 1M 29D          Birth: 2.Aug.2006
Name: Maliha
=====

```

Baseline Data >>

Date of anesthesia: 30.Sep.2006

Health: Abnormal - class II
 Preanesthetic Fasting: < 8 hours
 Activity: excited and alert
 Immobilized in large enclosure (as an isolated animal).
 Body weight: 144.5 Kg (319 Lb)
 Body condition: fair / thin

Veterinarian: MW
Recorded by: MW

Immobilization Data >>

Initial dose given at 9:31
 Showed initial drug effects at 5 min (9:36)
 No anesthetic complications.
 Anesthetic induction was good
 Muscle relaxation was good
 Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
DETOMIDINE 31.142mcg/kg	4.5 mg Non-metal Dart - i.m.	9:31	sedation	
BUTORPHANOL 31.142mcg/kg	4.5 mg Non-metal Dart - i.m.	9:31	sedation	
ATIPAMEZOLE 0.156 mg/kg	22.5 mg handsyringe - i.m.	40 min	fully recovered @9 min	
NALTREXONE 3.11 mg/kg	450 mg handsyringe - i.m.	40 min	fully recovered @9 min	

Comments >>

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Excited
Weight: 144.5 Kg on 30.Sep.2006
Restraint was with the following drugs:
DETOMIDINE, BUTORPHANOL

Date of Collection: 30.Sep.2006
Time of Collection:
Collected by: REJ
Sample Collection Site: EAR VEIN

Hematology >>

Analysis Information >>

Anticoagulant: EDTA
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 30.Sep.2006
Time of Analysis: 16:27
Analysis by:
Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	<	6.7		*10 ³ /UL
RED BLOOD CELL COUNT		3.10		*10 ⁶ /UL
HEMOGLOBIN		12.8		GM/DL
HEMATOCRIT		37		%
MCV		119		fL
MCH		41.3		uug
MCHC		34.6		gm/dL
SEGMENTED NEUTROPHILS		49	(3.283)	% (*10 ³ /UL)
NEUTROPHILIC BANDS		3	(0.201)	% (*10 ³ /UL)
LYMPHOCYTES	<	17	(1.139)	% (*10 ³ /UL)
MONOCYTES		31	(2.077)	% (*10 ³ /UL)
PLATELET COUNT	<	378		*10 ³ /UL

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Excited
Weight: 144.5 Kg on 30.Sep.2006
Restraint was with the following drugs:
DETOMIDINE, BUTORPHANOL

Date of Collection: 30.Sep.2006
Time of Collection:
Collected by: REJ
Sample Collection Site: EAR VEIN

Chemistry >>

Analysis Information >>

Chemistry Sample: Plasma (EDTA)
Storage: Fresh
Sample Quality: hemolysis

Laboratory: ADV. VET LG MAM
Date of Analysis: 30.Sep.2006
Time of Analysis: 17:21
Analysis by:
Automated analysis.

Tests and Results >>

GLUCOSE	<	66	MG/DL
BLOOD UREA NITROGEN		13	MG/DL
CREATININE		2.0	MG/DL
BUN/creatinine ratio		6.50	
PHOSPHORUS		4.1	MG/DL
SODIUM	<<	117	MEQ/L
CHLORIDE	>>	101	MEQ/L
TOTAL PROTEIN (COLORIMETRY)	>	9.0	GM/DL
ALBUMIN (COLORIMETRY)		3.2	GM/DL
ASPARTATE AMINOTRANSFERASE	>	41	IU/L
ALANINE AMINOTRANSFERASE	>	22	IU/L
CREATINE PHOSPHOKINASE	>	521	IU/L
GAMMA GLUTAMYLTRANSFERASE		9	IU/L

Comments >>

Sample run on EDTA plasma - lab not certain that results are valid

=====

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:

1.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding

CC: Poor weight gains; supplemental feeding

O: CBC results - hct 37%, WBC 6,700 49% neuts, 3% bands, 17% lymphs, 31% monos.

Chem panel results - BUN 13 mg/dl, creat 2.0 mg/dl, Na 117 meq/L, TP 9.0 g/dl, albumin 3.2 g/dl

Proc:

1. Restraint: 4.5 mg detomidine/4.5 mg butorphanol IM via dart. Reversed with 450 mg naltrexone/22.5 mg atipamezole IM.

2. Stomach tube placed, animal given 3 liters 1.5x concentrated milk replacer.

3. Rx: TMS 4.3 g PO
ceftiofur 1000 mg IM
cimetidine 1200 mg PO

A/P: ZM reports that animal's attitude does seem to have picked up a bit since 26 Sept. Adequate hydration suggested by hematocrit, albumin, BUN, and creatinine. Suspect that tap water used for enemas may have resulted in low sodium (or may be an artefact of EDTA plasma used for testing). Band neutrophils and elevated globulins suggest inflammatory process. Plan to repeat blood collection on 2 October.

Rx: CIMETIDINE HYDROCHLORIDE 1200 mg PO SID for 10 days. (MW)

=====

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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=====
ELEPHAS MAXIMUS (no subsp)           Sex: Female           Acc. #: 105008
INDIAN ELEPHANT (E,I)               Age: 1M 30D          Birth: 2.Aug.2006
Name: Maliha
=====

```

Baseline Data >>

Date of anesthesia: 1.Oct.2006

Health: Abnormal - class II
 Preanesthetic Fasting: < 8 hours
 Activity: excited and alert
 Immobilized in large enclosure (as an isolated animal).
 Body weight: 144.5 Kg (319 Lb) Est.
 Body condition: fair / thin

Veterinarian: MW
 Recorded by: MW

Immobilization Data >>

Initial dose given at 9:16
 Showed initial drug effects at 5 min (9:21)
 No anesthetic complications.
 Anesthetic induction was good
 Muscle relaxation was good
 Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
DETOMIDINE 31.142mcg/kg	4.5 mg Non-metal Dart - i.m.	9:16	sedation	
BUTORPHANOL 31.142mcg/kg	4.5 mg Non-metal Dart - i.m.	9:16	sedation	
NALTREXONE 3.11 mg/kg	450 mg handsyringe - i.m.	18 min	fully recovered @11 min	
ATIPAMEZOLE 0.156 mg/kg	22.5 mg handsyringe - i.m.	18 min	fully recovered @11 min	

Comments >>

Medical History Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Purpose: weight loss
supplemental feeding

Prescription Data >> Starting date: 1.Oct.2006
Drug: CIMETIDINE HYDROCHLORIDE 1200 mg PO SID for 10 days
Formulation: tablet
Prescribed by: MW (1.Oct.2006) Filled by: MW (1.Oct.2006)
Treatment weight: 144.5 kg

Clinical Note: 2.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
Sedated with 4.5 mg detomidine and 4.5 mg butorphanol IM via blowdart. Excellent sedation. Tube fed with 3 liters milk replacer, given 10 g TMS and 1200 mg cimetidine PO, 1000 mg ceftiofur IM. Right ear warmed with warm water - soaked towel to facilitate phlebotomy, 10 ml blood collected for CBC and chem profile. Level of sedation was deeper than previously achieved, requiring keepers to support the animal's weight. Reversed with 300 mg naltrexone and 15 mg atipamizole IM. Reversal slower but complete.

Blood culture results: no growth on aerobic or anaerobic medium.
Fecal culture results: E. coli moderate growth.
Serum vit E: 3.36 ug/ml (elephant range 0.75 - 1.3 ug/ml)
Serum vit A: 108 ng/ml (horse range 175 - 300 ng/ml)
Serum 25 - OHD: 16 nmol/l ('similar to other elephants')
Serum selenium: 161 ng/ml (horse range 120 - 250 mg/ml)

Trace minerals: boron 6.31 ppm, calcium 127 ppm, chromium <0.1 ppm, copper 1.04 ppm, iron 0.86 ppm, Mg 0.86 ppm, phosphorus 56 ppm, potassium 157 ppm, sodium 3220 ppm, zinc 0.54 ppm (Michigan State University Diagnostic Center for Population and Animal Health). These values fall within MSU normal ranges for elephants. (REJ)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 2M 0D	Birth: 2.Aug.2006
Name: Maliha		

Baseline Data >>

Health: Abnormal - class II
 Preanesthetic Fasting: < 8 hours
 Activity: excited and apprehensive
 Immobilized in small enclosure (as an isolated animal).
 Body weight: 145.2 Kg (320 Lb)
 Body condition: fair / thin

Date of anesthesia: **2.Oct.2006**
 Environmental temp: 29.4C (84.9F)

Veterinarian: REJ
 Recorded by: REJ

Immobilization Data >>

Initial dose given at 13:34
 Showed initial drug effects at 2 min (13:36)
 No anesthetic complications.
 Anesthetic induction was excellent
 Muscle relaxation was excellent
 Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal
 Recovered to normal by 14:00

Drug Data >>

Drugs given <i>dosage</i>	Amount <i>Route</i>	Time	Effect produced	Bottle #
DETOMIDINE 30.992mcg/kg	4.5 mg blowdart - i.m.	13:34	sedation @4 min	
BUTORPHANOL 30.992mcg/kg	4.5 mg blowdart - i.m.	13:34	sedation @4 min	
ATIPAMEZOLE 0.103 mg/kg	15 mg handsyringe - i.m.	14 min	fully recovered @18 min	
NALTREXONE 2.07 mg/kg	300 mg handsyringe - i.m.	14 min	fully recovered @18 min	

Physiological Data >>

Time	Body Temperature	Heart rate	Resp. rate
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Blood Sample Data >>

Time	Sample type(s)
13:45	EDTA, Serum

Comments >>

Sedated for tube feeding. Slightly deeper than necessary.

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Collection Information >>

Health Status: Abnormal
 Fasting Time: < 8 hours
 Activity: Calm
 Weight: 145.2 Kg on 2.Oct.2006
 Restraint was with the following drugs:
 BUTORPHANOL

Date of Collection: 2.Oct.2006
 Time of Collection:
 Collected by: JM
 Sample Collection Site: EAR VEIN

Hematology >>

Analysis Information >>

Anticoagulant: EDTA
 Storage: Fresh
 Sample Quality: icterus

Laboratory: ADV. VET LG MAM
 Date of Analysis: 2.Oct.2006
 Time of Analysis:
 Analysis by:
 Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	<	7.3		*10 ³ /UL
RED BLOOD CELL COUNT		3.19		*10 ⁶ /UL
HEMOGLOBIN		13.4		GM/DL
HEMATOCRIT		36.5		%
MCV		114		fL
MCH		42.0		uug
MCHC		36.7		gm/dL
SEGMENTED NEUTROPHILS		44	(3.212)	% (*10 ³ /UL)
NEUTROPHILIC BANDS		1	(0.073)	% (*10 ³ /UL)
LYMPHOCYTES	<	22	(1.606)	% (*10 ³ /UL)
MONOCYTES		33	(2.409)	% (*10 ³ /UL)
PLATELET COUNT	<<	280		*10 ³ /UL

Morphology Results >>

ANISOCYTOSIS 1, REAC LYMPHS OCC, TARGET CELLS 1-2

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Calm
Weight: 145.2 Kg on 2.Oct.2006
Restraint was with the following drugs:
BUTORPHANOL

Date of Collection: 2.Oct.2006
Time of Collection:
Collected by: JM
Sample Collection Site: EAR VEIN

Chemistry >>

Analysis Information >>
Chemistry Sample: Serum
Storage: Fresh
Sample Quality: icterus

Laboratory: ADV. VET LG MAM
Date of Analysis: 2.Oct.2006
Time of Analysis:
Analysis by:
Automated analysis.

Tests and Results >>

GLUCOSE	106	MG/DL
BLOOD UREA NITROGEN	12	MG/DL
CREATININE >	2.1	MG/DL
BUN/creatinine ratio	5.71	
CALCIUM	10.4	MG/DL
PHOSPHORUS	5.2	MG/DL
calcium/phosphorus ratio	2.00	
SODIUM	129	MEQ/L
POTASSIUM	4.1	MEQ/L
sodium/potassium ratio	31.5	
CHLORIDE >>	101	MEQ/L
MAGNESIUM	1.7	MG/DL
TOTAL PROTEIN (COLORIMETRY)	8.0	GM/DL
ALBUMIN (COLORIMETRY)	3.0	GM/DL
ASPARTATE AMINOTRANSFERASE	34	IU/L
ALANINE AMINOTRANSFERASE	13	IU/L
TOTAL BILIRUBIN >>	1.8	MG/DL
ALKALINE PHOSPHATASE >	255	IU/L
CREATINE PHOSPHOKINASE >	512	IU/L
FIBRINOGEN >>	1000	MG/DL
GAMMA GLUTAMYLTRANSFERASE	10	IU/L

=====

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:

3.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Poor weight gain; supplemental feeding.

Proc:

1. Restraint: darted with 4.5 mg detomidine/4.5 mg butorphanol IM.
 2. Tube fed 2 liters formula concentrated 1.5 x. Animal refluxed at the end of feeding so this volume is probably too much.
 3. Rx: TMS 4.3 g PO
cimetidine 1200 mg PO
ceftiofur 1000 mg IM
 4. wt=145 kg. (MW)
-

Clinical Note:

3.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
Results of bloodwork: WBC 7300, 1% bands, 44% segs, 22% lymphs, 33% monos, PCV 36.5%, fib 1000 mg/dl, CK 512 u/l, glu 106 mg/dl, TP 8 g/dl, alb 3 g/dl, bun 12 mg/dl, creat 2.1 mg/dl. (REJ)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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=====
ELEPHAS MAXIMUS (no subsp)           Sex: Female           Acc. #: 105008
INDIAN ELEPHANT (E,I)                Age: 2M 1D           Birth: 2.Aug.2006
Name: Maliha
=====

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Baseline Data >>                               Date of anesthesia: 3.Oct.2006
Health: Abnormal
Preanesthetic Fasting: < 8 hours
Activity: excited
Immobilized in large enclosure (as an isolated animal).
Body weight: Kg (0.00 Lb) Est.

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Immobilization Data >>
Initial dose given at 11:35

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Recovery Data >>

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Drug Data >>

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Drugs given <i>dosage</i>	Amount <i>Route</i>	Time	Effect produced	Bottle #
BUTORPHANOL	4 mg <i>blowdart - i.m.</i>	11:35	mild sedation @10 min	
DETOMIDINE	4 mg <i>blowdart - i.m.</i>	11:35	mild sedation @10 min	
BUTORPHANOL	5 mg <i>handsyringe - i.m.</i>	13 min	mild sedation @11:45	
NALTREXONE	400 mg <i>handsyringe - i.m.</i>	25 min	mild sedation	
ATIPAMEZOLE	22.5 mg <i>handsyringe - i.m.</i>	25 min	mild sedation	

Comments >>

=====

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 2M 1D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:

4.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Poor weight gains; supplemental feeding
Obs: Elephant team unsuccessful in separating calf from dam today. (MW)

Clinical Note:

5.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
RECHECK: Poor weight gains; supplemental feeding
S: Animal is BAR, taking some food from keepers (cooked rice/cooked sweet potato), continuing to nurse from dam. Soft tannish brown feces.
O: Pink MM, CRT N. No abnormalities on PE. Weight=144kg. PCV=43%, TP=9.0g/dl

RESTRAINT: 4.5mg detomidine and 4.5mg butorphanol IM. Heavy sedation in 5 minutes, partial reversal after 5 minutes to lighten sedation. Full reversal at 10 minutes. Full recovery within 2 minutes.

PROCEDURES:

- 1) Supplemental tube feeding: 1.5L formula at 1.5x concentration
- 2) Enema - approx 2 L warm water
- 3) Rx: 4.3g TMS PO
Rx: 1.2g cimetidine PO
Rx: 1g ceftiofur IM

A/P: Reassess in AM and determine plan based on AM weight. Continue on current rx. (MJA)

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Calm
Weight: 144.1 Kg on 5.Oct.2006

Date of Collection: 5.Oct.2006

Time of Collection:

Collected by:

Sample Collection Site: EAR VEIN

Restraint was with the following drugs:

BUTORPHANOL, DETOMIDINE, ATIPAMEZOLE, NALTREXONE

Hematology >>

Analysis Information >>

Anticoagulant: EDTA
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 5.Oct.2006
Time of Analysis: 18:12
Analysis by:
Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	<	9.7		*10 ³ /UL
RED BLOOD CELL COUNT		3.47		*10 ⁶ /UL
HEMOGLOBIN		14.3		GM/DL
HEMATOCRIT		39.5		%
MCV		114		fL
MCH		41.2		uug
MCHC		36.2		gm/dL
SEGMENTED NEUTROPHILS		24	(2.328)	% (*10 ³ /UL)
NEUTROPHILIC BANDS		1	(0.097)	% (*10 ³ /UL)
LYMPHOCYTES		29	(2.813)	% (*10 ³ /UL)
MONOCYTES		46	(4.462)	% (*10 ³ /UL)
PLATELET COUNT	<<	238		*10 ³ /UL

Chemistry >>

Analysis Information >>

Chemistry Sample: Serum
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
Date of Analysis: 5.Oct.2006
Time of Analysis: 18:52
Analysis by:
Automated analysis.

Tests and Results >>

BLOOD UREA NITROGEN	13	MG/DL
CREATININE	1.7	MG/DL
BUN/creatinine ratio	7.65	

=====

ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:

6.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
O: CBC results - hct 39.5%, WBC 9,700 24% neuts, 1% bands, 29%
lymphs, 46% monos.

Chem panel results - BUN 13 mg/dl, creat 1.7 mg/dl.
A: Differential is closer to expected elephant normals than previous
results which is encouraging. Animal appeared clinically dehydrated
yesterday but BUN and creatinine levels are within normal limits
suggesting hydration status may be adequate. (MW)

Clinical Note:

7.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
CC: Poor weight gains; supplemental feeding
Obs: Keeper reports animal defecated the loose "oatmeal consistency"
feces and boluses today. Animal is receiving melons, cooked sweet
potato, grain pellets, and rice as supplemental items.

Proc:

1. Restraint: darted with 4.5 mg detomidine/4.5 mg butorphanol IM.
Good sedation, animal buckled at the knees a few times so perhaps try
a lower dose at next restraint. Reversed with 450 mg naltrexone IM
and 22.5 mg atipamezole IM

2. Tubed with 3 liters of normally concentrated formula

3. Approximately 3 liters of warm water given as enema

4. wt=145.2 kg

5. Rx: TMS 4.3 g PO
cimetidine 1200 mg PO
naxcel 1000 mg IM

A: Animal maintained weight over 48 hours without supplemental
feeding.

P: Animal to be weighed first thing in am tomorrow, decision about
sedation/feeding/meds to be made after weight obtained. (MW)

Anesthesia Records Report - Individual Specimen
ST. LOUIS ZOOLOGICAL PARK

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=====
ELEPHAS MAXIMUS (no subsp)                Sex: Female                Acc. #: 105008
INDIAN ELEPHANT (E,I)                     Age: 2M 5D                Birth: 2.Aug.2006
Name: Maliha
=====

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Baseline Data >>

Date of anesthesia: 7.Oct.2006

Health: Abnormal - class II
 Preanesthetic Fasting: < 8 hours
 Activity: calm and alert
 Immobilized in large enclosure (as an isolated animal).
 Body weight: 145 Kg (320 Lb)
 Body condition: fair / thin

Veterinarian: MW
Recorded by: MW

Immobilization Data >>

Initial dose given at 15:30
 Showed initial drug effects at 5 min (15:35)
 No anesthetic complications.
 Anesthetic induction was good
 Muscle relaxation was good
 Overall rating for anesthesia: good

Recovery Data >>

Recovery was normal

Drug Data >>

Drugs given dosage	Amount Route	Time	Effect produced	Bottle #
BUTORPHANOL 31.034mcg/kg	4.5 mg Non-metal Dart	15:20	- i.m. ** none delivered **	
DETOMIDINE 31.034mcg/kg	4.5 mg Non-metal Dart	15:20	- i.m. ** none delivered **	
BUTORPHANOL 31.034mcg/kg	4.5 mg Non-metal Dart	15:30	sedation - i.m.	
DETOMIDINE 31.034mcg/kg	4.5 mg Non-metal Dart	15:30	sedation - i.m.	
ATIPAMEZOLE 0.155 mg/kg	22.5 mg handsyringe	25 min	fully recovered @5 min - i.m.	
NALTREXONE 3.10 mg/kg	450 mg handsyringe	25 min	fully recovered @5 min - i.m.	

Comments >>

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 2M 5D

Acc. #: 105008
Birth: 2.Aug.2006

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Clinical Note:

8.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
RECHECK: Poor weight gains; supplemental feeding
S: Animal is BAR. Continues to nurse from dam. Continues to take some food items from keepers. Animal very responsive to keepers; keepers able to give PO meds by squirting them into animal's mouth.
O: Weight=147.5kg

RESTRAINT: No restraint, animal treated while standing near howdy wall.

PROCEDURES:

- 1) Rx: 1g ceftiofur IM via handsyringe
- 2) Rx: 4.3g TMS PO
Rx: 1.2g cimetidine PO

A/P: Reassess in AM and determine plan based on AM weight. (MJA)

Clinical Note:

9.Oct.2006

Problem: weight loss (Confirmed); supplemental feeding
Weight today 146.6 kg. treated with oral cimetidine and TMS. Unable to get injectable ceftiofur administered. No sedation today, will allow another day without manipulation. (REJ)

Clinical Note:

10.Oct.2006

Obs: Animal maintained weight today. To be treated with oral TMS only. No sedation today, monitor only. (MW)

Purpose: weight loss
supplemental feeding

Prescription Data >>

Starting date: 10.Oct.2006

Drug: SULFADIAZINE/TRIMETHOPRIM (5:1) 4.33 gm PO SID for 7 days

Formulation: 400 mg/kg powder

Prescribed by: (10.Oct.2006)

Drug dosage: 29.54 mg/kg

Filled by: (10.Oct.2006)

Treatment weight: 146.6 kg

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

=====

Clinical Note:
Weight 395#. (REJ)

10.Dec.2006

Clinical Note:

3.Jan.2007

Obs: Veterinarians notified today by curator that animal's weight gains over the past two months have been less than expected based on average Asian elephant growth charts. Exam and blood collection (under sedation) scheduled for 8 January. (MW)

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Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

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<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

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Collection Information >>

Health Status: Abnormal
Fasting Time: < 8 hours
Activity: Calm
Weight: 184.2 Kg on 4.Jan.2007
Manual restraint used.

Date of Collection: **5.Jan.2007**
Time of Collection:
Collected by:
Sample Collection Site: EAR VEIN

Chemistry >>

Analysis Information >>

Chemistry Sample: Serum
Storage: Fresh
Sample Quality: No quality problems.

Laboratory: **ADV. VET LG MAM**
Date of Analysis: **5.Jan.2007**
Time of Analysis: 22:02
Analysis by:
Automated analysis.

Tests and Results >>

GLUCOSE	>	109	MG/DL
BLOOD UREA NITROGEN		11	MG/DL
CREATININE		1.8	MG/DL
BUN/creatinine ratio		6.11	
CALCIUM		10.3	MG/DL
PHOSPHORUS	>	6.1	MG/DL
calcium/phosphorus ratio		1.69	
SODIUM		127	MEQ/L
POTASSIUM		4.4	MEQ/L
sodium/potassium ratio		28.9	
CHLORIDE	>	94	MEQ/L
MAGNESIUM		2.1	MG/DL
TOTAL PROTEIN (COLORIMETRY)	<	7.0	GM/DL
ALBUMIN (COLORIMETRY)		3.2	GM/DL
ASPARTATE AMINOTRANSFERASE		11	IU/L
ALANINE AMINOTRANSFERASE		10	IU/L
TOTAL BILIRUBIN	>	0.4	MG/DL
ALKALINE PHOSPHATASE	>>	447	IU/L
CREATINE PHOSPHOKINASE		67	IU/L
GAMMA GLUTAMYLTRANSFERASE		7	IU/L

Clinical Pathology Records - Specimen Report
ST. LOUIS ZOOLOGICAL PARK

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Collection Information >>

Health Status: Abnormal
 Fasting Time: < 8 hours
 Activity: Calm
 Weight: 184.2 Kg on 4.Jan.2007
 Manual restraint used.

Date of Collection: 6.Jan.2007
 Time of Collection:
 Collected by:
 Sample Collection Site: EAR VEIN

Hematology >>

Analysis Information >>

Anticoagulant: EDTA
 Storage: Fresh
 Sample Quality: No quality problems.

Laboratory: ADV. VET LG MAM
 Date of Analysis: 6.Jan.2007
 Time of Analysis:
 Analysis by:
 Automated analysis.

Tests and Results >>

WHITE BLOOD CELL COUNT	14.9		*10 ³ /UL
RED BLOOD CELL COUNT	2.93		*10 ⁶ /UL
HEMOGLOBIN	12.2		GM/DL
HEMATOCRIT	34.3		%
MCV	117		fL
MCH	41.6		uug
MCHC	35.6		gm/dL
SEGMENTED NEUTROPHILS	30	(4.470)	% (*10 ³ /UL)
NEUTROPHILIC BANDS	1	(0.149)	% (*10 ³ /UL)
LYMPHOCYTES	37	(5.513)	% (*10 ³ /UL)
MONOCYTES	32	(4.768)	% (*10 ³ /UL)
PLATELET COUNT	532		*10 ³ /UL

Morphology Results >>

TARGET CELLS 2

<i>ELEPHAS MAXIMUS</i> (no subsp)	Sex: Female	Acc. #: 105008
INDIAN ELEPHANT (E,I)	Age: 8M 9D	Birth: 2.Aug.2006
Name: Maliha		

Clinical Note: 7.Jan.2007

BLOODWORK RESULTS:

CBC: WBC=14.9K (1% band, 30% seg, 37% lymph, 32% mono); Hct=34.4%,
Plt=532K

A: Mild leukocytosis with normal diff consistent with previous diffs.

P: Will place on course of abx on account of mild increase in total count.

Rx: SULFADIAZINE/TRIMETHOPRIM (5:1) 5.28 gm PO SID for 10 days. (MJA)

Purpose: leukocytosis
slow weight gain

Prescription Data >>

Starting date: 7.Jan.2007

Drug: SULFADIAZINE/TRIMETHOPRIM (5:1) 5.28 gm PO SID for 10 days

Formulation: 960 mg tablet

Prescribed by: MJA (7.Jan.2007)

Filled by: MJA (7.Jan.2007)

Drug dosage: 28.81 mg/kg

Treatment weight: 183.3 kg

Clinical Note: 9.Jan.2007

Problem: routine examination

ROUTINE EXAMINATION: Annual exams

RESTRAINT: None, behavioral training to station

PHYSICAL EXAMINATION: Pink MM, CRT N. Good BCS. EENT: Corneal surface normal OU, anterior chamber clear OU; oral mucosa is normal, teeth not visible. H/L: NE. LYMPH: NE. INTEG: WNL. M/S: WNL.

NERV: WNL. G/I: NE. G/U: WNL.

A/P: PE reveals no abnormal findings. (MJA)

Clinical Note: 11.Jan.2007

Vaccinated against tetanus with 1 ml equine tetanus toxoid (SuperTet, Intevet Co, SN 06964902) by intramuscular injection over the right shoulder. (REJ)

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ELEPHAS MAXIMUS (no subsp)
INDIAN ELEPHANT (E,I)
Name: Maliha

Sex: Female
Age: 8M 9D

Acc. #: 105008
Birth: 2.Aug.2006

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Clinical Note:

16.Jan.2007

In house U/A:
pH:7
Protein:trace
Glucose: Neg
Ketones: Neg
Bilirubin: Neg
Blood: Neg
Urobilinogen: Neg
Color: Dk Yellow
Transp: Turbid
Sp. Grav: 1.026 (MLK)

Clinical Note:

20.Jan.2007

Obs: Curator reports that animal has regressed slightly in blood collection training so team is unable to get a recheck CBC/chem on animal at this time. They will continue working with this animal for sample collection. (MW)

Clinical Note:

25.Jan.2007

Obs: Curator provided weight charts for the last three weeks. Before antibiotics were started animal had gained 4 lbs in one week. After antibiotics animal gained approximately 16 lbs/week for the next two weeks. (MW)

Clinical Note:

26.Mar.2007

509.5# (REJ)

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Clinical Pathology Records Report - ISIS/In-House Reference Values
ST. LOUIS ZOOLOGICAL PARK

Scientific name: *ELEPHAS MAXIMUS*
Common Name: INDIAN ELEPHANT (E,I)

		ISIS Values			In-House Values				
		Mean	S.D.	(N)	Mean	S.D.	Min.	Max.	(N)
WBC	*10 ³ /UL	14.41 ±	4.418	(920)	12.04 ±	4.20	5.800	24.00	(100)
RBC	*10 ⁶ /UL	3.11 ±	0.55	(778)	2.765 ±	0.339	2.140	3.990	(98)
HGB	GM/DL	13.3 ±	2.1	(814)	12.27 ±	1.30	9.600	15.70	(100)
HCT	%	37.7 ±	5.8	(987)	34.46 ±	3.55	26.90	43.20	(98)
MCH	MG/DL	43.4 ±	4.9	(752)	45.60 ±	11.13	30.91	153.0	(100)
MCHC	uug	35.4 ±	3.7	(808)	35.60 ±	1.47	28.07	39.02	(100)
MCV	fL	122.4 ±	15.6	(773)	128.6 ±	31.1	110.3	430.1	(99)
SEGS	*10 ³ /UL	4.927 ±	2.953	(704)	4.208 ±	1.890	0.000	12.38	(95)
BANDS	*10 ³ /UL	0.431 ±	0.660	(124)	0.127 ±	0.501	0.000	2.940	(42)
LYMPHOCYTES	*10 ³ /UL	5.635 ±	3.373	(705)	5.335 ±	2.944	1.680	15.43	(97)
MONOCYTES	*10 ³ /UL	3.517 ±	2.925	(567)	1.594 ±	1.524	0.000	5.880	(90)
EOSINOPHILS	*10 ³ /UL	0.483 ±	0.540	(529)	0.281 ±	0.277	0.000	1.533	(85)
BASOPHILS	*10 ³ /UL	0.124 ±	0.088	(66)	0.045 ±	0.077	0.000	0.292	(63)
NRBC	/100 WBC	0 ±	1	(47)	0.333 ±	0.577	0.000	1.000	(3)
PLATE. CNT.	*10 ³ /UL	549 ±	132	(161)	386.0 ±	144.7	75.00	713.0	(56)
RETICS	%	0.0 ±	0.1	(6)	0.000 ±	0.000	0.000	0.000	(2)
GLUCOSE	MG/DL	88 ±	20	(630)	83.97 ±	19.16	29.00	141.0	(86)
BUN	MG/DL	12 ±	4	(635)	13.78 ±	3.03	6.000	20.00	(88)
CREAT.	MG/DL	1.6 ±	0.4	(599)	1.407 ±	0.216	0.900	1.900	(85)
URIC ACID	MG/DL	0.2 ±	0.2	(249)	0.079 ±	0.142	0.000	0.400	(14)
CA	MG/DL	10.7 ±	0.7	(579)	10.70 ±	0.53	9.500	12.10	(87)
PHOS	MG/DL	5.0 ±	1.0	(461)	5.332 ±	0.773	4.000	7.600	(34)
NA	MEQ/L	130 ±	5	(481)	131.3 ±	3.4	124.0	140.0	(86)
K	MEQ/L	4.6 ±	0.5	(491)	4.628 ±	0.389	3.700	6.100	(83)
CL	MEQ/L	89 ±	4	(460)	87.98 ±	2.92	82.00	95.00	(85)
IRON	MCG/DL	69 ±	23	(60)					
MG	MG/DL	2.00 ±	0.51	(33)	1.818 ±	0.140	1.600	2.000	(11)
HCO3	MMOL/L	25.2 ±	2.8	(25)					
CHOL	MG/DL	45 ±	11	(400)	42.29 ±	8.07	20.00	59.00	(31)
TRIG	MG/DL	50 ±	29	(346)	57.79 ±	32.12	15.00	145.0	(29)
T.PROT. (C)	GM/DL	8.1 ±	0.8	(598)	8.016 ±	0.605	6.600	9.600	(83)
T.PROT. (R)	GM/DL	8.4 ±	0.4	(23)					
ALBUMIN (C)	GM/DL	3.3 ±	0.4	(316)	3.054 ±	0.746	1.800	4.400	(82)
GLOBULIN (C)	GM/DL	5.0 ±	0.9	(312)	5.440 ±	0.865	3.500	8.000	(48)
AST (SGOT)	IU/L	21 ±	13	(607)	16.70 ±	5.05	5.000	40.00	(84)
ALT (SGPT)	IU/L	7 ±	8	(457)	5.511 ±	3.833	0.000	20.00	(47)
T. BILI.	MG/DL	0.2 ±	0.1	(447)	0.244 ±	0.111	0.000	0.500	(84)
D. BILI	MG/DL	0.1 ±	0.1	(164)	0.050 ±	0.071	0.000	0.100	(2)
I. BILI.	MG/DL	0.1 ±	0.1	(157)	0.050 ±	0.071	0.000	0.100	(2)
AMYLASE	U/L	3600 ±	2366	(70)	5221 ±	391	4633	5855	(13)
ALK.PHOS.	IU/L	139 ±	73	(576)	116.7 ±	53.8	57.00	265.0	(84)
LDH	IU/L	471 ±	357	(352)	499.2 ±	208.0	230.0	1092	(17)

Clinical Pathology Records Report - ISIS/In-House Reference Values
ST. LOUIS ZOOLOGICAL PARK

Scientific name: *ELEPHAS MAXIMUS*
Common Name: INDIAN ELEPHANT (E,I)

		ISIS Values			In-House Values				
		Mean	S.D.	(N)	Mean	S.D.	Min.	Max.	(N)
CPK	IU/L	223 ±	165	(287)	222.5 ±	126.7	61.00	518.0	(19)
OSMOLARITY	MOSMOL/L	234 ±	96	(8)	263.1 ±	6.3	251.0	274.0	(44)
ALPHA GLOB.	MG/DL	250.4 ±	353.1	(2)	500.0 ±	0.0	500.0	500.0	(1)
ALPHA-1 GLOB	GM/DL	1.0 ±	0.0	(1)					
ALPHA-2 GLOB	GM/DL	0.7 ±	0.0	(1)					
BETA GLOB.	GM/DL	1.0 ±	0.6	(2)	0.600 ±	0.000	0.600	0.600	(1)
Body Temperature:		36.3 ±	0.5	(4)					
CO2	MMOL/L	24.7 ±	3.6	(99)	26.27 ±	1.48	22.00	28.00	(26)
CORTISOL	UG/DL	1.8 ±	0.5	(3)					
ESR	MM/HR	98 ±	32	(7)	108.5 ±	11.1	81.00	135.0	(26)
FIBRINOGEN	MG/DL	387 ±	223	(56)	315.9 ±	58.1	210.0	403.0	(25)
GGT	IU/L	7 ±	5	(139)	5.615 ±	3.097	1.000	12.00	(13)
CA++					4.267 ±	0.116	4.200	4.400	(3)
LEPTO. CANI.					400.0 ±	0.0	400.0	400.0	(1)
LEPTO. ICT.					1600 ±	0	1600	1600	(1)
LEPTO. POM.					200.0 ±	0.0	200.0	200.0	(1)
LIPASE	U/L	17 ±	28	(22)	25.00 ±	0.00	25.00	25.00	(13)
MEAN PLATELET VOLUME					4.367 ±	0.392	3.500	5.100	(15)
OSMOLALITY	MOSMOL/KG				268.6 ±	6.4	259.0	279.0	(14)
PROGESTERONE	NG/DL	8.785 ±	38.20	(299)	0.800 ±	0.000	0.800	0.800	(1)
RED CELL DISTRIBUTION WI					15.63 ±	0.91	13.70	17.70	(25)
TESTOSTERONE	NG/ML	40.10 ±	0.000	(1)					
VITAMIN E	UG/ML	0 ±	0	(2)					
TOTAL T4	MCG/DL	10.5 ±	2.0	(6)					
T3 UPTAKE	%	28 ±	2	(2)					
ALBUMIN (E)	GM/DL	3.7 ±	0.2	(2)	3.800 ±	0.000	3.800	3.800	(1)
GAMMA GLOB	GM/DL	3.1 ±	3.2	(9)	1.800 ±	0.000	1.800	1.800	(1)