



# ADVANCES IN GIRAFFE CARE

Trained Medical Behaviors



Featured Case:

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**T**RADITIONALLY, giraffe in human care have been considered to be challenging patients, partly due to their tall stature, unique anatomy, and neophobic nature. However, zookeepers and veterinary staff at Cheyenne Mountain Zoo are challenging these assumptions by incorporating operant conditioning methods for medical behaviors. By using positive reinforcement procedures to shape medical behaviors, we are able to do an increasingly wide range of diagnostics and treatments. This allows our 17 reticulated giraffe to be active participants in their own medical care.

CONTRIBUTING AUTHORS FEATURED CASE



## Diagnostic Procedures

With the help of target training, we perform a wide range of diagnostic procedures on our giraffe. This includes venipuncture for routine CBC/Chem monitoring, ophthalmic exams, trans-abdominal pregnancy ultrasounds, and skull radiographs. Additionally, using a series of trained behaviors and a restricted contact set-up, the entire giraffe herd is trained for voluntary front foot radiographs.

## Medical Treatments

Operant training also facilitates husbandry care and medical treatments. The giraffe get front hoof farrier trims every 6-12 weeks. Annually, they get vaccine booster injections and other injections if needed. After a neck injury to our breeding bull giraffe five years ago, he was trained for range of motion neck exercises, chiropractic adjustments, and cold laser therapy treatments; with these, he's made a full clinical recovery and has since fathered two calves.

## Wild Giraffe and Their Silent Crisis

In 1998, the IUCN estimated that there were over 140,000 wild giraffe in Africa. In 2012, follow-up population studies indicate that fewer than 80,000 wild giraffe remain. Despite the decline, there has been relatively little global attention surrounding giraffe conservation. Cheyenne Mountain Zoo helps support the Giraffe Conservation Foundation's conservation fieldwork with our Quarters for Conservation program. For more info about how you can help support giraffe conservation, please see [www.cmzoo.org/q4c](http://www.cmzoo.org/q4c).

## Acknowledgments

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Using a restricted contact set-up and extensive safety training protocols, the giraffe herd is trained for voluntary front foot radiographs.



*Msitu positions for a voluntary phlebotomy. Bloodwork was run on an in-house Abaxis VS2 serum chemistry analyzer and VetScan HM5 CBC machine, and Msitu was given a clean bill of health.*

*Msichana, giraffe, positions for a skull radiograph.*

## VetScan VS2 Large Animal Profile

Patient	ALB g/dL	ALP U/L	AST U/L	BUN mg/dL	Ca mg/dL	CK U/L	GGT U/L	Glob g/dL	Mg mg/dL	Phos mg/dL	TP g/dL
Msitu	4.1	366	95	17	9.2	433	20	4.9	2.6	6.3	9.0
ISIS Reference Values	1.7-4.1	67- 1512	31- 163	7-34	7.1-12.9	90-3144	9-84	1.7-6.8	1.14-3.13	3.2-13.9	4.5-10.0

## VetScan HM5 CBC

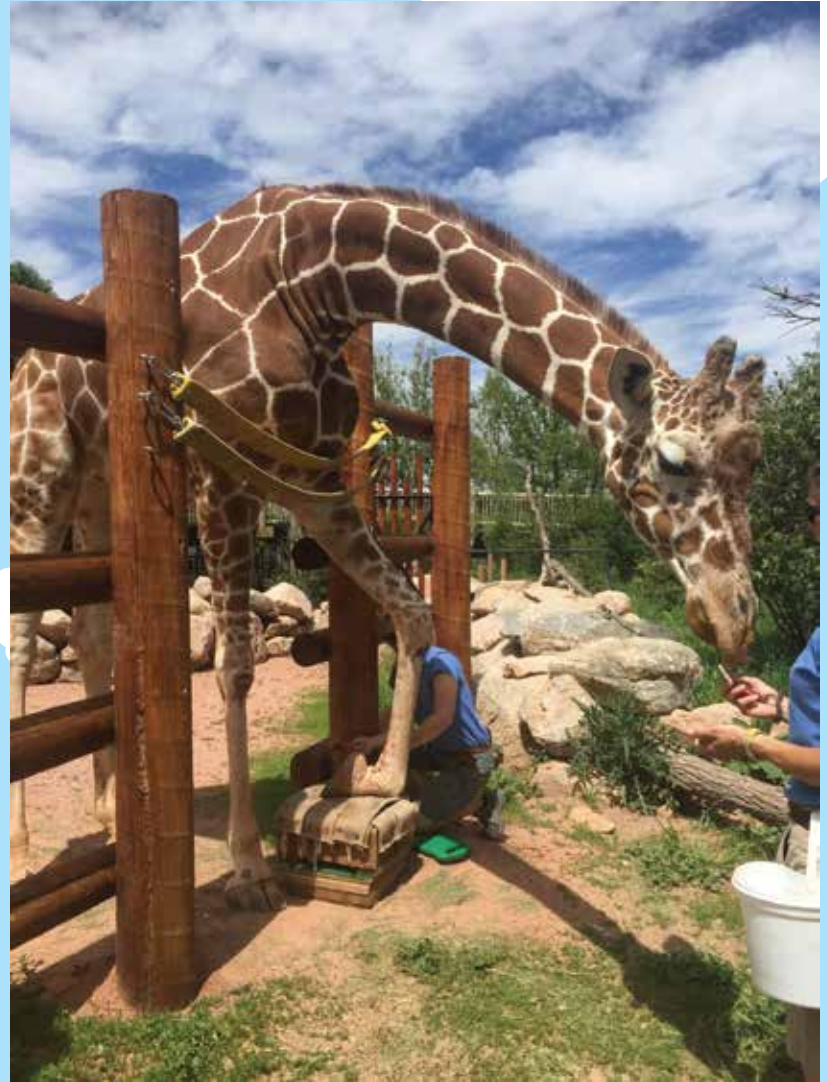
Patient	WBCC 10 <sup>9</sup> cells/μL	Neut 10 <sup>9</sup> cells/μL	Lymph 10 <sup>9</sup> cells/μL	Mono 10 <sup>9</sup> cells/μL	Eos 10 <sup>9</sup> cells/μL	Baso 10 <sup>9</sup> cells/μL	RBC 10 <sup>12</sup> cells/μL	Hgb g/dL	Hct %	PLT 10 <sup>9</sup> cells/μL
Msitu	11.53	8.35	2.82	0.11	0.22	0.03	9.92	12.3	36.87	126
ISIS Reference Range	3.38-21.91	1.58-17.40	0.46-5.30	61-1110	< 0.953	< 0.570	5.15-15.44	6.9-15.6	19.6-46.9	94-1041







*Khalid, bull giraffe, injured his neck five years ago. Part of his treatment includes a physical therapy exercise routine. He is cued to touch his nose to each hip to stretch out his neck muscles. Since starting his treatments, Khalid has made a full clinical recovery. (For more details on this case, see the *Journal of Zoo and Wildlife Medicine*, 4(1): 181-185, 2013.)*



*Mshichana, giraffe, positions for hoof care in the outdoor restricted contact paddock.*