

Bracing for her future: Human medicine rescues giraffe

May 12 2022, by Julie Watson



This Feb. 10, 2022, image released by the San Diego Zoo Wildlife Alliance shows Msituni, a giraffe calf born with an unusual disorder that caused her legs to bend the wrong way, at the San Diego Zoo Safari Park in Escondido, north of San Diego. Credit: San Diego Zoo Wildlife Alliance via AP

Over the past three decades Ara Mirzaian has fitted braces for everyone

from Paralympians to children with scoliosis. But Msituni was a patient like none other—a newborn giraffe.

The calf was born Feb. 1 at the San Diego Zoo Safari Park in Escondido, north of San Diego, with her front limb bending the wrong way. Zoo staff feared she could die if they didn't immediately correct the condition, which could prevent her from nursing and walking around the habitat.

But they had no experience with fitting a baby [giraffe](#) in a [brace](#). That proved especially challenging given she was a 5-foot-10-inch-tall (178-centimeter) newborn and growing taller every day. So, they reached out to experts in orthotics at the Hanger Clinic, where Mirzaian landed his very first animal patient.

"It was pretty surreal when I first heard about it," Mirzaian told The Associated Press this week during a tour to meet Msituni, who was strutting alongside the other giraffes with no troubles. "Of course, all I did was go online and study giraffes for like 24/7 until we got out here."

Zoos increasingly are turning to [medical professionals](#) who treat people to find solutions for ailing animals. The collaboration has been especially helpful in the field of prosthetics and orthotics. Earlier this year, ZooTampa in Florida teamed up with similar experts to successfully replace the beak of a cancer-stricken great hornbill bird with a 3D-printed prosthetic.



This Feb. 18, 2022, image released by the San Diego Zoo Wildlife Alliance shows Msituni, a giraffe calf born with an unusual disorder that caused her legs to bend the wrong way, at the San Diego Zoo Safari Park in Escondido, north of San Diego. Using cast moldings of the giraffe's legs, a carbon graphite brace features the animal's distinct pattern of crooked spots to match her fur. In the end, Msituni only needed one brace; and the other leg corrected itself with the medical grade brace. Credit: San Diego Zoo Wildlife Alliance via AP

The Hanger team in California had fit orthotics for a cyclist and kayaker who both went on to win medals at the 2016 Paralympics in Brazil and customized a brace for a marathoner with multiple sclerosis who raced in seven continents.

And in 2006, a Hanger team in Florida created a prosthetic for a

bottlenose dolphin that had lost its tail after becoming tangled in ropes from a crab trap. Their story inspired the 2011 movie "Dolphin Tale."

But this was a definite learning curve for all, including Matt Kinney, a senior veterinarian for the San Diego Zoo Wildlife Alliance in charge of Msituni's case.

"We commonly put on casts and bandages and stuff. But something that extensive, like this brace that she was provided, that's something we really had to turn to our human (medicine) colleagues for," Kinney said.



This Feb. 10, 2022, image released by the San Diego Zoo Wildlife Alliance shows Msituni, a giraffe calf born with an unusual disorder that caused her legs to bend the wrong way, in San Diego Zoo Safari Park in Escondido, north of San Diego. Msituni was fitted with custom-molded carbon graphite orthotic braces

by using cast moldings of the calf's legs that were crafted by Hanger Clinic at the zoo. Credit: San Diego Zoo Wildlife Alliance via AP

Msituni suffered from hyperextended carpi—wrist joint bones in giraffes' front limbs, which are more like arms. As she overcompensated, the second front limb started to hyperextend as well. Her back leg joints also were weak but were able to be corrected with specialized hoof extenders.

And given that she weighed more than 100 pounds (55 kilos) at birth, the abnormality was already taking its toll on her joints and bones.

While the custom [braces](#) were being built, Kinney first bought post-surgery knee braces at Target that he cut up and re-sewed, but they kept slipping off. Then Msituni wore medical grade braces for humans that were modified for her long legs. But eventually Msituni broke one.

For the custom braces to work, they would need to have a range of motion but be durable, so Hanger worked with a company that makes horse braces.



This March 22, 2022, image released by the San Diego Zoo Wildlife Alliance shows Msituni, a giraffe calf born with an unusual disorder that caused her legs to bend the wrong way, at the San Diego Zoo Safari Park in Escondido, north of San Diego. Zoo staff feared she could die if they didn't immediately correct the condition, which could prevent her from nursing and walking around the habitat. Credit: San Diego Zoo Wildlife Alliance via AP

Using cast moldings of the giraffe's legs, it took eight days to make the carbon graphite braces that featured the animal's distinct pattern of crooked spots to match her fur.

"We put on the giraffe pattern just to make it fun," Mirzaian said. "We do this with kids all the time. They get to pick super-heroes, or their favorite team and we imprint it on their bracing. So why not do it with a

giraffe?"



This April 8, 2022, image released by the San Diego Zoo Wildlife Alliance shows Msituni, a baby giraffe calf with an unusual disorder that caused her legs to bend the wrong way, at the San Diego Zoo Safari Park in Escondido, north of San Diego. Zoo staff feared she could die if they didn't immediately correct the condition, which could prevent her from nursing and walking around the habitat. Credit: San Diego Zoo Wildlife Alliance via AP

In the end, Msituni only needed one brace. The other leg corrected itself with the medical grade brace.

When they put her under to fit the custom brace, Mirzaian was so moved

by the animal's beauty, he gave her a hug.

"It was just amazing seeing such a big, beautiful creature just laying there in front of me," he said.

After 10 days in the custom brace, the problem was corrected.

All told, she was in braces for 39 days from the day she was born. She stayed in the animal hospital the entire time. After that, she was slowly introduced to her mom and others in the herd. Her mom never took her back, but another female giraffe has adopted her, so to speak, and she now runs along like the other giraffes.



This Feb. 10, 2022, image released by the San Diego Zoo Wildlife Alliance shows Zoo veterinarians and experts in orthotics at the Hanger Clinic fitting

braces to Msituni, a giraffe calf born with an unusual disorder that caused her legs to bend the wrong way, at the San Diego Zoo Safari Park in Escondido, north of San Diego. Credit: San Diego Zoo Wildlife Alliance via AP

Mirzaian hopes to hang up a picture of the baby giraffe in her patterned brace so the kids he treats will be inspired to wear theirs.

"It was the coolest thing to see an animal like that walk in a brace," he said. "It feels good to know we saved a giraffe's life."

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