

3-legged donkey Emma: A lesson for veterinarians

18 July 2013, by Jay Reeves



Emma the three-legged donkey looks on as veterinary equine expert Jim Brendemuehl works with his horse Tank in a corral in Auburn, Ala., on Thursday, July 11, 2013. Emma's right hindleg had to be removed shortly after birth because of a congenital defect, and she was outfitted with a prosthetic limb at Auburn University. Experts and students hope their experience treating Emma will allow vets to save more horses and other four-legged animals that would otherwise be euthanized. (AP Photo/Jay Reeves)

(AP)—Emma the miniature donkey runs around the barnyard and kicks playfully like most any animal her size. But she lacks one thing: A right hind leg.

Outfitted with a [prosthetic limb](#) shortly after birth, Emma has become a test case for veterinarians hoping to save the lives of horses, donkeys and similar animals that are typically euthanized because of leg deformities or fractures.

Born in April 2012 with a right rear hoof that wouldn't extend, Emma underwent surgery to amputate the limb at Auburn University when she was just a foal.

Today she's a healthy, active donkey with a

1,600-pound (725-kilogram) best friend—a horse named "Tank"—and a talent for kicking visitors with her pink [prosthetic leg](#).

"That's how she plays. She does what any other donkey would do," said Dr. Jim Brendemuehl, a [veterinarian](#) who helps care for Emma at Auburn and owns her buddy Tank.

Emma has outgrown several prosthetic legs as she has grown.

The limbs are a combination of heavy-duty, molded plastic impregnated with [carbon fiber](#) for strength. To put the prosthetic on the donkey, handlers must fit Emma's stump with a sock and a rubbery sleeve before putting her leg back into the device. Then she can go for a walk.

Veterinary experts and students alike have learned important lessons from Emma, like how to place the sleeve in a way that her stump isn't irritated by sand when she lays down in the corral and rolls around while wearing the prosthetic.

Then there's the problem of finding a buckle that a curious donkey won't peel open with her teeth.

Dr. Fred Caldwell, who has been involved with Emma's treatment from the start, said the team caring for the 175-pound (80-kilogram) donkey hopes to transfer the lessons learned to larger animals such as horses, which are much more difficult to equip with prosthetics because of their weight and size.

He said a handful of attempts have been made in larger animals, some more successful than others.

"I think every case that we achieve success in we get a little closer for this being something that we can offer as a potential routine therapy down the road," said Caldwell, an associate professor at Auburn.

Sally Baker, a spokeswoman with the American Association of Equine Practitioners in Lexington, Kentucky, said there aren't any statistics to show how many animals are euthanized annually because of leg injuries or deformities.

The problem is serious enough that a few researchers are doing prosthetics research similar to that performed on Emma, she said. But not many.

"It doesn't happen very often," she said. "I'm glad to hear they are doing it at Auburn."

Emma was only 2 days old when she arrived at Auburn's large animal clinic. Doctors determined the only way to save her life was to amputate the lower portion of her right rear leg and fit the animal with a prosthetic limb.

Hanger Clinic Inc., which makes medical products including prosthetics for people and animals, made one limb for Emma, then another and another, as the little donkey matured past her first birthday.

"Emma's design has changed through the time since she first was fit," said Kent Wiggins, an area clinic manager for Hanger. "Part of the reason is that she's grown. Another part of the reason is that as she's changed her activities she gets different pressure points, different problems, and we have to react and make changes in order to keep her going."

Emma's current prosthetic doesn't bend and has a rubber tip rather than a hoof. Caldwell, students and the [prosthetics](#) company are trying to figure how to make an artificial limb that would both flex like a real hoof and support the [donkey's](#) weight.

"I've learned a lot," said Caldwell. "The students and surgery residents that have worked with her have learned a lot about just what it takes to achieve this in an animal. We've had a lot of complications, a lot of issues that we've had to overcome."

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APA citation: 3-legged donkey Emma: A lesson for veterinarians (2013, July 18) retrieved 12 October 2022 from <https://medicalxpress.com/news/2013-07-legged-donkey-emma-lesson-veterinarians.html>

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