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# How Do You Do Eye Surgery on a Bengal Tiger?

Very carefully, of course. Thanks to intrepid vets, a beloved tiger in Australia can now see her food again.

Indira the tiger having CAT scan at University Veterinary Teaching Hospital. Photo by Vivienne Reiner, University of Sydney

PHOTOGRAPH BY VIVIENNE REINER, UNIVERSITY OF SYDNEY

By **Laura Parker**

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**Dr. Cameron Whittaker** is a veterinarian in Sydney, Australia, who specializes in eye care for animals. Most of his regular patients have names like Fluffy or Buddy. Then there is **Indira**, a 220-pound Bengal tiger, whose failing vision, along with Whittaker's efforts to save it, became a challenging nine-month quest Down Under. She faced a delicate surgery, during with multiple

possibilities for things to go wrong.

Indira is a bit of a local celebrity: She grew up on Warner Brother's Australian movie lot, and her movie credits include "Anacondas: Hunt for the Blood Orchid," "George of the Jungle 2," and a slew of television shows and commercials. Now 16, Indira lives in quiet retirement with other big cats at the Zambi Wildlife Retreat in Sydney. She remains a splendid beast.

Last year, Donna Wilson, Zambi's manager, noticed that Indira was eating less of her food, apparently because she couldn't see it. She bumped into things. Other cats began to pester her.

Whittaker, who operates at the Sydney University Veterinary Teaching Hospital, conducted an unusual arm's-length eye exam. "She's on one side of the fence and I'm on the other side," he recalls. "We have to coax her up to the fence to get a good look. But obviously we have to be super-duper careful."

Indira the tiger close-up. Credit Zambi Wildlife Retreat

PHOTOGRAPH COURTESY ZAMBI WILDLIFE RETREAT

Whittaker found that Indira had moderately crossed eyes, the beginnings of retinal degeneration, and thick, rock-hard cataracts on both eyes. Without surgery, she would go blind.

## EYE OF NEWT GINGRICH

The eye of the tiger has long been a symbol of strength and survival, particularly in Asia. The “Eye of the Tiger” by the rock band Survivor drew on those themes, albeit incoherently, and became the Oscar-nominated theme song for the movie, Rocky III. In more recent years it has been a favorite at rallies of several Republican presidential candidates.

Actual tiger eyes are among the most highly-evolved in the animal

kingdom. Tigers find prey by glimpsing movement; often the slightest flick of a tiny paw is enough. Like humans, tigers have binocular vision, meaning they can judge distances with amazing precision. Their lenses are huge—four times the size of a human lens, allowing maximum light to enter the eye. As a result, tigers see six times as well as humans in twilight or darkness.

To see is to eat, even for tigers in captivity. If Indira's vision could not be saved, she would have to be euthanized.

Veterinary eye care dates to ancient Egypt (hieroglyphics in pharaohs' tombs shows horses being treated for the common disease known as moon blindness), but in the last half-century it has become extremely sophisticated. Cataract surgery has become common in pets, and ailments like glaucoma are easily treated. More advanced procedures, such as retinal reattachments and corneal transplants, are no longer rare.

“As a rule of thumb, whatever happens in human medicine happens in veterinary care 20 years later,” Whittaker says. “It's not that we weren't doing cataract surgeries 20 years ago, it's that the techniques have improved and mirror what's happening in human medicine.”

Mahindra and Indira play-fighting. Play fighting simulates real fighting to prepare cubs for when they grow to adulthood.

PHOTOGRAPH BY JOHN VARTY

**Seth Koch**, a veterinarian in Washington, D.C. who also provided eye care for exotics and large animals at the Smithsonian's National Zoo for more than 40 years, was among the first veterinarians trained in vision care. The group took classes in human ophthalmology in the morning and attended regular veterinary classes in the afternoon. Koch became the first veterinarian to perform cataract surgery on a komodo dragon -- at the National Zoo.

"It was a scene-and-a-half," he says, leaving the details to the imagination. Human eye care is so much simpler.

“With humans, you’re only dealing with one species,” Koch says. “In veterinary care, a dog has a different eye than a cat. Which are both different than a horse. It’s all about taking the basics and transferring that knowledge to other species. And it wasn’t easy, you had to make decisions that had never been made before in ophthalmology.”

## BIG CATS HOLD A GRUDGE

As eye surgery patients, big cats present special challenges.

“It’s difficult to do the treatment and follow-up that’s necessary,” says Tammy Miller, a veterinarian at BluePearl Veterinary Partners in Tampa, Florida, who treats lions and tigers at the [Big Cat Rescue](#) animal sanctuary. “They hold a grudge. One lion whose lens I removed used to let me get close to him and look at him. After that whole surgical episode, he has never forgiven me. He rushes the cage at me. I saved his eye, but he has not appreciated that in any way.”

Whittaker trained in Florida, and spent time in the 1990s performing retinal tests on alligators at the University of Florida in Gainesville. “The challenges back then were how do you anesthetize an alligator and the practicality of trying to do the various tests we needed to do,” he says.

At the time, the only equipment to be had was human equipment, which was available at the university hospital. On more than one occasion Whittaker found himself carrying a four-foot-long alligator with a pillowcase over its head and its tail flapping back and forth through the hospital’s hallways, past rows of human patients awaiting appointments. In those only-in-Florida moments, he says, no one so much as raised an eyebrow.

Tiger Canyons, near Philippolis, South Africa: Indira has a lazy left eye.

PHOTOGRAPH BY JOHN VARTY

In the years since, he has done eye surgery on giraffes, kangaroos, koalas, wallabies, a rare white rhinoceros with a ruptured eye, an endangered condor, a komodo dragon named Ken, and thousands of domestic pets . He also has assisted in a research project aimed at developing a “bionic eye,” for blind people, and implanted a tiny camera on the back of a sheep’s eye.

Even with all that experience, Indira was a stretch.

## IN TIGER SURGERY, PREPPING IS KEY

After the through-the-fence eye exam, Indira was transported to the

University Veterinary Teaching Hospital in New South Wales in July and anesthetized for a battery of tests, including a CAT scan, MRI, and an ultrasound biomicroscopy. Because it's never safe to anesthetize a big cat, veterinarians prepare for every potential diagnosis.

The same rule applies for surgery.

“You bring in everything to the operating room,” says Miller, who has done eye surgeries on 50 tigers. “You bring in the kitchen sink, just in case.”

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Whittaker and his wife, Kelly Caruso, who is also a veterinary ophthalmologist, planned two surgeries for Indira, one for the cross eyes and other for the cataracts. In November, Indira was again anesthetized while a team of veterinarians and human ophthalmologists gathered to fix the cross eyes. They made a surprise discovery. She had been treated for a parasite several months earlier, and by the time she arrived on the operating table, the cross-eye condition was less pronounced. The doctors concluded the parasite had inflamed the eye muscles and the treatment had eased the inflammation—and with it, the cross eyes.

That left the cataract surgery. Artificial lenses were manufactured by a German firm and shipped to Sydney. In late April, Indira underwent the knife in a four-hour procedure Whittaker calls “the most difficult cataract surgery I have

done.”

A cataract is a clouding of the lens inside the eye. It is the most common causes of blindness in both humans and animals. Treatment involves surgically removing the lens and replacing it with an artificial one. Although cataract surgeries are commonplace in animals and humans, there is something profoundly nerve-wracking about operating on a Bengal, lying cold-cocked on the operating table, her limbs secured in leg hobbles.

“Let’s be honest, prior to surgery, you are somewhat nervous purely because there are so many elements to get right for the surgery to work,” Whittaker says. “There are also the unknown variables which can be hard to always predict. So this keeps your mind spinning a bit. Once you are in the surgery, it’s all technical.”

Typically in a cataract surgery, the lens is similar to jelly and the doctors use an ultrasonic probe to shatter the lens and suck it out. Indira’s lenses were “very large and like rocks.”

“The right eye had a weakness in the lens capsule, the clear outer membrane, and so we weren’t able to put in a lens to the right.”

For the left eye, Kelly tried a different approach and successfully removed the lens and installed the artificial one.

Within a few weeks, Indira’s vision had improved. She was moving around easier back at Sambu, and Wilson, the animal manager, says “she’s back to her happy, playful self.”

This story has been corrected to reflect Indira's accurate weight; she weighs 220 pounds.

**Laura Parker** is a staff writer who specializes in covering climate change and marine environments.

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