

Brave Ava Overcomes Hip Replacement Hurdles

From adoption to undergoing multiple complex surgeries, Ava's journey is a heartwarming tale of resilience, effective veterinary care and the unbreakable spirit of a loving Labrador mix.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- Ava, a black Labrador Retriever, was found to have hips that were “basically out of their sockets” when she was a young pup, and in a few years, she required two total hip replacements
- Fast forward to 2020 and one, then the other of her replacement hips wore out, necessitating the use of 3D printing technology and extraordinarily complex surgery to replace the replacements and get Ava back on her paws
- Today, 12-year-old Ava continues to live her best life, zipping around and even jumping over the couch with her second set of replacement hips, thanks to her incredibly dedicated foster-to-adopter parents and a talented team of orthopedic specialists at Texas A&M Veterinary Medical Teaching Hospital

As a puppy, lovely Labrador Retriever Ava (who looks by her **photo** to be perhaps a Lab and **German Shepherd** mix) had both hips replaced.

“Ava came to us at about 6 months old, back when we were dog foster parents living in Illinois,” says Ava’s owner, Janet Dieter. “After caring for more than 40 dogs, she was our first ‘foster failure’ that we ended up adopting. At the time, we had another black Labrador named Roscoe who was usually standoffish with the foster puppies, but he fell in love with Ava immediately and we knew she had to stay.”¹

It was during obedience class that Janet and her husband, Ken, realized there was something different about Ava. When the topic of how to keep your dog from jumping on you arose, they realized Ava never jumped on them. Being very knowledgeable foster parents, the Dieters took Ava to their veterinarian. The X-ray showed the poor pup’s hips were “**basically out of their sockets**,” according to Janet.

In 2013 and 2014, Ava underwent **two total hip replacements** (THR^s). According to VCA Animal Hospitals:

“The hip joint is a ball and socket joint. The ball is at the top of the thigh bone and the socket is in the pelvis. Total hip replacement surgery removes and replaces both the ball and socket with prostheses. Most canine hip replacement prostheses have a metal ball at the top of the femur that fits into a dense plastic socket. The prostheses are generally held in place using special bone cement.”²

Irrepressible Ava took the whole thing in stride (pun intended).

“She was incredibly resilient,” Janet said. “She walked out of the hospital like nothing happened.”

Replacement Hip Needs Replacing

For the next several years, Ava lived happily with the Dieters, playing host to the foster puppies who came and went from the household. When the family moved from Illinois to Texas, Ava didn't miss a beat. Unfortunately, in 2020, one of her replacement hips wore out.

*"Over many years, the artificial ball had worn away the plastic liner protecting the metal wall of the artificial joint," explained Dr. Brian Saunders, a professor of small animal orthopedics and Small Animal Orthopedics Service chief at the Texas A&M Veterinary Medical Teaching Hospital (VMTH). "The artificial ball then wore through the metal backing, causing a complete dislocation."*³

It isn't common for replacement hips in dogs to wear out, however, most dogs aren't youngsters when they receive them. In addition, back in 2013-14, the liners in the replacement joints weren't as advanced as they are today, according to Saunders.

"Technology has improved now to where it's less likely for that problem to happen," he said. "Complications like Ava's aren't terribly common, but when they do happen, they require advanced techniques to achieve a successful outcome."

Unfortunately for Ava, not only was there dislocation, but the erosion of the metal wall in her hip had caused tiny metal particles to build up around both the joint and in the pelvic canal, forming a granuloma.

"A granuloma is basically a sack of soft tissue that's trying to contain the metal debris," Saunders explained. "Ava had a large metal granuloma that was blocking access to the hip joint and affecting her internal organs. There was also a chance that it could cause her body to reject any THR revision implants."

Metallosis — the erosion process that causes the metal debris to build up into a granuloma — can trigger cellular changes, leading to resorption or dissolution of bone around the new hip. It's like putting the body in a defensive mode against outside objects."

A Complex Surgery Requires Precision Tools

The surgery needed to remove the granuloma and replace Ava's hip would be quite complex, so to ensure success, Saunders used advanced CT-guided surgical planning and VMTH's 3D-printing technology.

"We used computer-assisted 3D modeling to determine revision implant size and position," Saunders said. "Basically, we printed a replica of Ava's dislocated hip joint and planned exactly how to perform the revision operation using the 3D bone models. In fact, we sterilized the plastic models and used them in the operating room to help guide the revision surgery."

Having a "twin" of Ava's hip was especially helpful considering she had a granuloma complicating things.

"To avoid a THR rejection, we used the CT scan and worked with the Soft Tissue Surgery group to remove as much of the metal granuloma from the pelvic canal before we came back and performed the THR revision," Saunders explained.

“Then, when we did the revision, we were able to finish removing the remainder of the granuloma from the other side. Planning using 3D models and collaborating with the Soft Tissue team were two huge contributing factors to our success.”

Ava’s surgery went very well, but a few weeks later, the replacement liner in her other hip also wore out and dislocated. Thankfully, the second hip wasn’t quite as bad as the first, and Saunders’ team already had her 3D bone models, so the second revision surgery wasn’t as complicated.

Ava, Age 12, Is Still Zipping Around

These days Ava, who is living proof that you can’t keep a good dog down, is a very active senior citizen.

“She still zips all over the backyard and through our exercise course,” Janet said. “She will even jump over the couch. When she started showing signs of her first hip wearing out, we thought it might mean the end, and we were devastated,” Ken said. “But the veterinarians at Texas A&M were able to give her life again.”

Dr. B: It’s rather remarkable to me that a 12-year-old large breed dog, on her second set of replacement hips for crying out loud, is still zipping all over the place and jumping over the couch. I’d be amazed if the Dieters aren’t doing a LOT of other things right, starting with diet, probably. Might be interesting to find out, and if so, maybe do an interview with them?

Sources and References

^{1,3} [Texas A&M Today, November 15, 2023](#)

² [VCA Animal Hospitals](#)
