

Hanna the labrador puppy can eat again thanks to a 3D printed tooth implant

Jul 7, 2016 | By Tess



A team of Brazilian veterinarian specialists calling themselves the “Animal Avengers” have impressed the world with a number of technologically innovative animal surgeries this past year. In February, for instance, the team successfully implanted a Brazilian parrot with the world’s first [3D printed titanium beak prosthetic](#), and in March, they helped a tortoise named Freddy into a new [3D printed shell](#). Now, after much ado, the Animal Avengers are at it again as they’ve helped Hanna, a 15-month-old Labrador puppy to eat again thanks to a custom made 3D printed tooth.

Just months ago, Hanna broke her upper right incisor while chewing on a bone, which made it difficult for the pup to eat anything. Fortunately for her and her owner, real estate agent Jeanne Montenegro, the Animal Avengers were up to the task and found a way to help Hanna eat again. The Sao Paulo based team, made up of four vets, a dental surgeon, and a 3D designer, got to work by first taking a mold of the dog’s upper jaw using a process of photogrammetry. With the mold, Cicero Moraes, the team’s

resident 3D designer, was able to digitally produce a model of the dog's jaw and modeled the broken right tooth after the intact left incisor.





The custom dog tooth implant was then 3D printed out of a chromium and cobalt metal at the Renato Archer Information Technology Centre in Campinas, one of the only metal 3D printing services in Brazil. The metal material that the tooth is 3D printed from is in fact tougher than the original tooth, so should not be at risk of breaking.

With the additive manufacturing done, the tooth was implanted by the team's surgeon Roberty Fecchio, who was able to seamlessly insert the precisely designed and fitted tooth. Fecchio said of the surgery, which took place July 1st, "Hanna's recovery was quick and she has already resumed normal life. However, because the replacement is

an incisor that involved root canal treatment she has to be careful not to put too much pressure on the tooth.”



The procedure, which would typically cost about 5,000 Brazilian Real (\$1500), was offered to Hanna and her owner for free seeing as it was the first procedure of its kind. Dr. Paulo Miamoto, the forensic dentist on the team, explains, “We chose this procedure in order to test new techniques, looking towards the future. We believe that one day, this new technology will become more accessible and widely used, benefitting animals and humans in years to come.”

Since the surgery, Hanna has been a much happier dog, apparently chomping away on apples and carrots her owner gives her as treats. Just to be safe, however, the young

dog will no longer be allowed to chew on bones or to play tug-of-war, keeping all of her organic and 3D printed teeth in tact.

<http://www.3ders.org/articles/20160707-hanna-the-labrador-puppy-can-eat-again-thanks-to-a-3d-printed-tooth-implant.html>



Chi tiết ô tô



* FDM: Fused Deposition Modeling 熔融擠製成型
(Công nghệ tạo hình bởi từng lớp nhựa nóng chảy)



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