Southpaws Speciality Surgery For Animals
3 Roper Street
Moorabbin, VIC 3189
e: info@southpaws.com.au
p: +61 (0)3 9553 1775
f: +61 (0)3 8677 7630

# Southpaws Solves Pet Problems in 3D

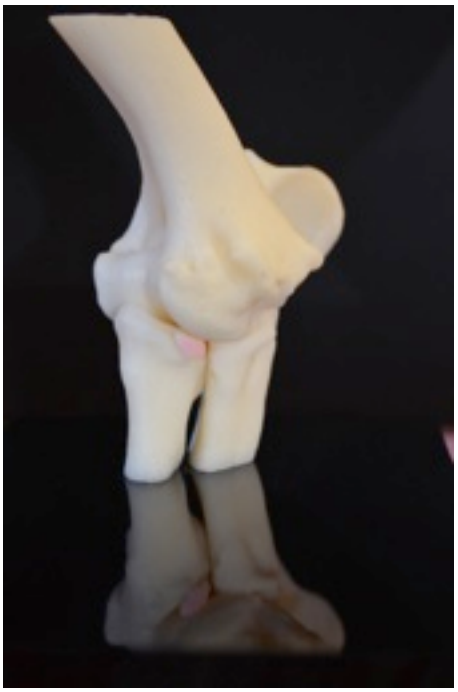
In an Australian first, Southpaws Speciality Surgery for Animals is using 3D printing technology for faster and more accurate diagnosis and surgery, resulting in better outcomes for pets and improving communications with owners and referring veterinarians.

**Opening new avenues**

Southpaws speciality surgery for animals is at the forefront of veterinary practice in Australia. The clinic provides extensive veterinary cancer treatment, orthopaedic surgery, neurosurgery and extensive post-operative care. Clinic founder, Dr Charles Kuntz is quick to admit that he is always on the look-out for new technologies to improve his practice. The recent acquisition in conjunction with Royal Canin pet food company of a uPrint SE Printer has given Dr Kuntz an opportunity to help referring vets make better judgements on the condition of the patient and advise the pet owner on appropriate treatment.

*Dr. Charles Kuntz founder, Southpaws Speciality Surgery for Animals*

The uPrint SE Printer extends existing CT scanning technologies to enable the surgeon to model a critical joint or physiological feature. The printer builds a life-sized three dimensional model from plastic, sprayed repeatedly in microscopic layers in much the same way as an ink-jet printer. The layers are built up from CT images of the patient, into a complete plastic model, which can then be used to guide the intricate surgery faster and more accurately. The modelling allows the surgeon to literally hold the targetted site in their hands and aids communication with referring vets and pet owners.

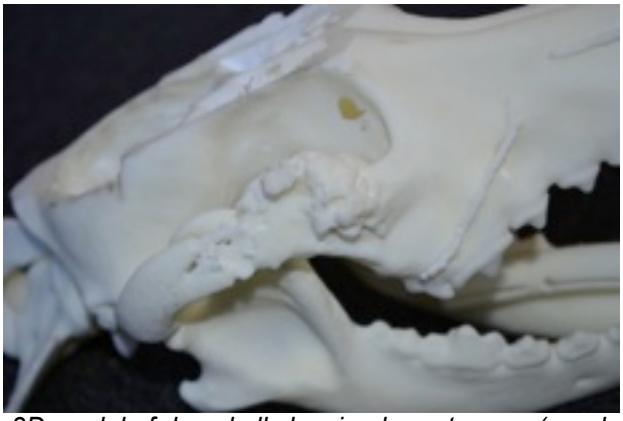


*3D model of dog elbow joint showing bone chip (pink area)*

“Take for example, a dog that has a bone chip in the elbow joint,” explains Dr Kuntz. “The initial CT scan or X-ray will likely show the problem, but it is difficult to explain to the family how it has occurred and what treatment is required. With a model of the joint showing where the damage has occurred, not only can the referring vet make a better judgement on whether specialist surgery is required, but can also show the pet owner how it will be done.”

The 3D printer is proving to be a useful tool for assessment of tumour removal techniques, as a template for surgical incisions on bone and for research into atypical conditions for dogs and cats. Critically, the 3D printer models allow the surgeon to more accurately and quickly plan their surgical approach, identifying and avoiding critical anatomic structures before commencing surgery. The result for patients is more accurate surgery for critical cases - reducing surgical times and blood loss, facilitating faster recovery. In addition, Dr Kuntz is using the printer to design orthopaedic implant devices to assist in the stabilisation and repair of affected bones and joints.

“The more we use the 3D printer, the more uses we find for it,” says Dr Kuntz. “We can now use the models to plan our surgical approach, or use it to make a model for bone replacement out of titanium. We have also used it to make a mould out of putty that we can sterilise and place on the bone as a cutting template.”



*3D model of dog skull showing bone tumour (rough textured area) on the zygomatic arch*

The 3D printer is large enough to produce an animal skull or femur, but also has the capacity to produce a model in two halves that can be accurately joined together on completion. The printer provides an irregular edge to the two halves to ensure that the join is perfectly aligned. The printer is ideal for the surgery as it is compact but provides sufficient capacity to produce the plastic models required. Dr Kuntz connects CT scans and Xray images via the surgery’s network to produce the required drawings for the 3D printer.

Sample models are also sent to referring vets providing an effective communication tool for the co-purchasers with their referring veterinary partners. The ability to physically model injuries or physiology prior to any invasive surgery is a benefit that was limited mainly to humans in state-of-the-art hospitals, but now is available to animals with the investment in 3D Printing technology by Southpaws Speciality Surgery for Animals and Royal Canin.