

**Case Study:**  
**Leg Amputation in a Degu Pup**

July 15, 2011

Dr. Chloe V. Long

On the 9<sup>th</sup> April 2011, a litter (090411-5) of five (3 female, 2 male) healthy pups was produced by an adult female in the Degutopia colonies (group consisted of three lactating adult female sisters and their litters). Pregnancy, parturition, lactation, weaning and growth/development were all normal. Degutopia pups are normally weaned at the age of 6 weeks (typical degu weaning period 4-6 weeks old) when they are separated from the mother. On the 15<sup>th</sup> May 2011, at the age of 5 weeks and 1 day, one of the male pups (TrDi005) was discovered to have had his leg become entangled in the nesting/hammock area, to such an extent that he could not free himself. Closer inspection revealed that his right hind leg, from the knee down, was completely entangled and extensive chewing damage to the entire lower leg and foot had occurred, possibly self-inflicted in attempts to free himself. The fibula was broken and protruding through the skin, and some blood loss had occurred. The pup was carefully freed from the entanglement and despite his injuries seemed alert, bright and responsive, showing a surprising lack of pain and willingness to move about, eat and drink. The pup was taken straight to the emergency vet (Sunday 15<sup>th</sup> AM) with his mother, leaving the rest of the litter with the other two adult females and their pups. He was immediately assessed under careful general anaesthesia. The damage was found to be extensive and the lower leg could not be saved, it was therefore amputated immediately below the patella. The wound was closed with dissolvable stitches. The pup was injected with fluids, NSAIDs and antibiotics and recovered well from the anaesthesia. He was allowed to return home later on the same day. No further medication was prescribed, instead the wound was to be monitored closely for any sign of infection, inflammation, or any indications of pain (in which case further medication would be given).

Because of his stitches (risk of being chewed by adults), and in order to restrict his movements to allow healing, it was decided to separate both the injured pup (TrDi005) and his brother (TrDi004) into a smaller, temporary cage. Weaning two pups early meant that the injured pup would not need to be socially isolated during healing, and also that a direct comparison could be made between the growth and development of the two pups, through regular weighing sessions. The temporary cage was placed directly adjacent to the adult male colony enclosure (3 degus), where both pups would be permanently housed later. This facilitated social interaction between the group and the pups, making the introduction process easier and less stressful.

The injured pup was observed to be bright, extremely mobile and eating and drinking throughout the evening. A heat pad was provided during the night, underneath the cage, as both pups were accustomed to sleeping with the adults and littermates. The following morning, both pups appeared well, alert, were taking food and had put on the expected weight (adjusted for the loss of the limb in the amputee). Figure 1 shows the wound site 24 hours after amputation.



Figure 1- Showing the wound site (shaved) and stitches of the injured pup, 24 hour after amputation.

Both pups were weighed daily to keep a record of their growth and development for the next month and a half (see Figure 3). After a week in the separate cage, the wound was deemed to have healed sufficiently for both pups to be transferred into the adult male colony. This was done on the 22<sup>nd</sup> May 2011 (6 weeks old). The amputee pup was monitored closely to ensure he could get around the new cage OK, that he was getting enough to eat, and that he wasn't being bullied or picked on by the other degus. Initially all the adults were very curious about the amputation and frequently sniffed the site. No immediate attempts were made to chew the stitches. Four days after integrating the pups to the adult male group (26<sup>th</sup> May 2011), the amputee pup was found to have de-gloved the very tip of his tail. There were no obvious signs of bullying or aggression toward the pup and the injury was deemed to have been accidental. No action was taken to separate the pup, the injury healed rapidly (2-3 days) and no further incidents occurred. Figure 2 shows the wound site just over a month after amputation.



Figure 2- Showing the injury site approx. one month after amputation. There is ample hair re-growth, and some stitches still remain (most have been chewed out). Healing of the skin is mainly complete.

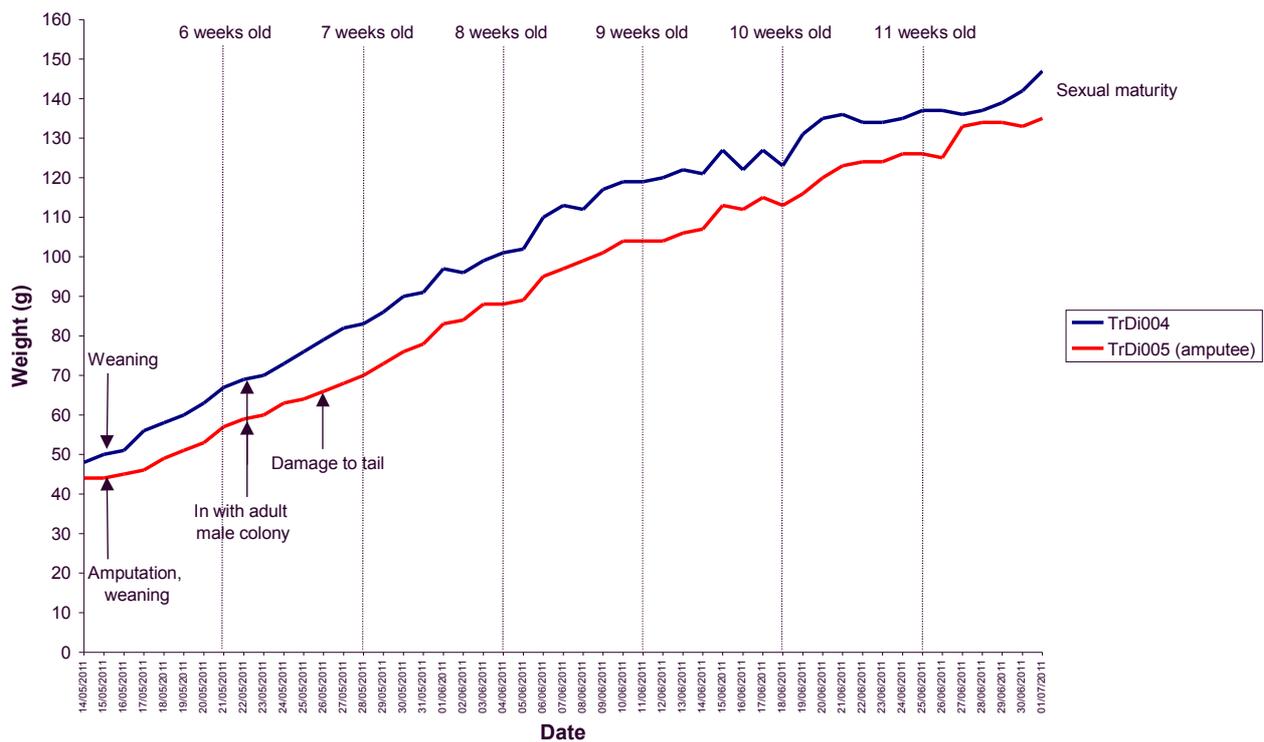


Figure 3- Growth rates for male pups TrDi004 and TrDi005 (amputee), between the ages of 5-12 weeks old. Both pups weighed daily at the same time each day (AM; scales accurate to 1 g).

As demonstrated in Figure 3, both pups showed a very similar growth rate, with the amputee pup having no obvious setbacks to his growth and development. This pup actually had a lower birthweight than the uninjured pup and was expected to maintain that weight difference throughout early development, as is typical for degu pups of that age. The accident, and loss of the limb therefore did not seem to have any marked effects on his growth.

In the following months, TrDi004 continued to develop and behave normally. Fur around the wound site grew back fully within 2 months. He began bearing more weight on the knee area for extra support while getting around, but mostly moves on three legs and can jump, run and climb almost as well as the others. To maintain balance while eating he uses only one forepaw to hold food (rather than both as normal), relying on the other for support. During meal times he holds his own by vocalising more noisily than the others and pushing them aside.

In the long-term, there are slight concerns that his spine could become slightly twisted, however there is as yet no sign of this or any impact on normal movement.

He continues to do excellently, and we're all thrilled to have him around! He has been named Hopper, and his brother (TrDi004) named Skip.

For further information, please contact [chloe@degutopia.co.uk](mailto:chloe@degutopia.co.uk).