The use of tail biopsy is a widely accepted method of sampling tissue for genotype determination of mice. It is often argued that use of anesthesia for this procedure in young mice is either not necessary or may affect the vigor of the mice as they grow. This is a critical issue because for many studies it is required that the mice be genotyped as young as possible. In this study, we evaluated the use of administration of isoflurane anesthesia for tail biopsy in neonatal mice at various time points after birth (1, 3, 5, 7, 9, and 11 days). The 1-day time point was especially important to determine if sufficient DNA could be extracted from the tail biopsy at this early age. Three treatment groups were used; mice biopsied with the use of isoflurane; mice biopsied without the use of isoflurane; and control mice that had underwent neither biopsy nor isoflurane anesthesia. Body weights of the 3 groups were monitored over a 10-week period. There were no statistically significant differences in mean body weights between the treatment groups. Further, we found that sufficient DNA for genotype analysis was procured from tail biopsies in animals as young as 1 day of age. These findings have significant implications as they contend that the determination of the genotype can be undertaken at a very early age of the animal, with no discernible long-term harm to the animal if anesthesia is withheld.

The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The Goldenrod Animal Lancet tip is dipped in the tattoo paste. The animal is restrained to expose the chosen toe or toes for tattooing. The Goldenrod Animal Lancet tip is dipped in the tattoo paste. The animal is restrained to expose the chosen toe or toes for tattooing. The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The spot is then gently blotted on the wipes/towel to remove excess paste. Poke the same spot 3 times to insure proper penetration. The Goldenrod Animal Lancet tip is dipped in the tattoo paste. The animal is restrained to expose the chosen toe or toes for tattooing. The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The spot is then gently blotted on the wipes/towel to remove excess paste.

The spot is then gently blotted on the wipes/towel to remove excess paste. Poke the same spot 3 times to insure proper penetration. The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The spot is then gently blotted on the wipes/towel to remove excess paste.

The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The spot is then gently blotted on the wipes/towel to remove excess paste. Poke the same spot 3 times to insure proper penetration. The Goldenrod Animal Lancet tip is dipped in the tattoo paste. The animal is restrained to expose the chosen toe or toes for tattooing. The desired toe is poked with the Goldenrod lancet. The skin must be punctured to introduce the paste into the skin leaving a mark. The spot is then gently blotted on the wipes/towel to remove excess paste.