

METHODOLOGY FOR INDUCING CICATRICIAL
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Objective: To develop a model of hypertrophic scar formation in experimental animals and to describe the methodology of this cicatricial skin transformation.

Materials and Methods: The experimental study was conducted on outbred adult rabbits of both sexes, weighing 2.0–2.5 kg. The animals were housed in a vivarium equipped in accordance with established standards, with separate facilities for different animal species. The premises were fitted with supply-and-exhaust ventilation and maintained at an ambient temperature of 21–23 °C. Under general anesthesia induced by intramuscular administration of Xyla solution (1.5 ml) and Ketamine (1.5 ml), the rabbit was placed on the operating table. The skin on the outer surface of the auricle was shaved. By injecting 0.5 ml of 0.5% novocaine solution, a subcutaneous “water cushion” was created to separate the skin from the auricular cartilage. A skin injury was inflicted by excising a 7×7 mm skin flap using a scalpel. Hemostasis was achieved, and the wound was treated with Betadine solution. The wound

healing process on the outer surface of the auricle was accompanied by gradual epithelialization with subsequent formation of a dense hypertrophic scar.

Results: By days 21–28 after wound creation, cicatricial replacement of the tissue defect occurred, with formation of a scar measuring up to 7×7 mm and protruding 2–3 mm above the skin surface. Wounds located closer to the base of the auricle were associated with a less pronounced scar reaction and smaller scar area. In contrast, defects created closer to the tip of the ear demonstrated greater severity and larger scar size.

Conclusion: The results of our study demonstrated that the developed model leads to scar formation at the site of skin defects in 100% of cases, with 70% of these scars exhibiting hypertrophic characteristics. The severity of the cicatricial response depended on the localization of the defect: wounds situated closer to the base of the auricle resulted in less pronounced and smaller scars, whereas defects localized near the ear tip were characterized by greater scar area and intensity of scarring. These findings indicate the influence of the anatomical zone on the reparative process and the degree of cicatricial tissue replacement.