

Skin closure in rodents

Suture

Suture material

The suture material¹ should be synthetic, monofilament and non-absorbable.

Monofilament*: Induce less tissue reaction and less risk of infection than multifilament material.

Non-absorbable: Induce less tissue reaction and has a better tensile strength than absorbable material.

Examples: nylon (e.g. Dermalon, Covidien/Ethilon, Ethicon), polypropylene (e.g. Surgipro, Covidien, Prolene, Ethicon).

*Be aware that monofilament sutures compared with multifilament sutures could be more difficult to handle (material memory), could be more easily damaged by instruments and will demand a good knotting technique. If a multifilament/braided suture material is chosen, there are for instance coated sutures that could be an alternative, silk must be avoided. Silk is an example of a multifilament suture material that is easy to handle, but it is tissue reactive and not acceptable for skin closure.

Suture size and suture needle

Mice: 4.0-5.0

Rats: 3.0-4.0

The needle should be curved and cutting/reverse cutting. There are two main types of needles; swaged and eyed. Swaged needles are eyeless needles attached to a suture thread. They induce less tissue damage and are the preferred choice.

Suture removal

Sutures must be removed after 7-10 days to increase healing and animal welfare. If the sutures are placed in an area with little movement, the sutures could be removed within 5-7 days.

Wound clips

The use of stainless steel wound clips might look overwhelming and unprofessional, but it is a good choice for skin closure in rodents. It meets the requirements for a material that induce little tissue reaction, less infection risk, and in addition it is very efficient and fast to apply. The clips are applied by an applier instrument. For adult mice and rats, 9mm clips are suitable. The clips must be removed after 7-10 days, or 5-7 days as described above, using an auto clip remover.

Example: Agnthos auto clip applier, art.nr. 12020-09 (<https://www.agnthos.se/>)

¹Kladakis S. Choosing sutures in small animal surgery. *J Dairy Vet Anim Res.* 2014;1(3):68-71.

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