

# Local anesthesia

Local anesthesia, in a strict sense, is the anesthesia of a small part of the body such as a tooth or an area of skin. Common techniques include topical anesthesia (surface), and local infiltration.

Adverse effects depend on the local anesthetic agent, method, and site of administration and is discussed in depth in the local anesthetic sub-article, but overall, adverse effects can be:

localized prolonged anesthesia or paresthesia due to infection, hematoma, excessive fluid pressure in a confined cavity, and severing of nerves & support tissue during the injection.

systemic reactions such as depressed CNS syndrome, allergic reaction, vasovagal episode, and cyanosis due to local anesthetic toxicity.

lack of anesthetic effect due to infectious pus such as an abscess.

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1. Topical Anesthesia Application: Applied directly to the skin or mucous membranes (e.g., mouth, nose, throat). Uses: Minor procedures like dental work, minor skin surgeries, or for numbing before injections. Examples: Lidocaine gel, benzocaine spray. 2. Infiltration Anesthesia Application: Injected directly into the tissues around the surgical site. Uses: Minor surgeries like mole removal, stitches, or dental procedures. Examples: Lidocaine, bupivacaine. 3. Nerve Block Anesthesia Application: Injected near a major nerve or nerve bundle to block sensation in a larger area of the body. Uses: Surgeries on extremities (e.g., arms, legs, hands), dental procedures, or for pain relief in labor. Examples: Bupivacaine, ropivacaine. 4. Regional Anesthesia Application: Blocks sensation in a specific region of the body by injecting an anesthetic around a major nerve or into the spine. Types: Epidural Anesthesia: Injected into the epidural space of the spine to block sensation, commonly used in childbirth. Spinal Anesthesia: Injected into the cerebrospinal fluid in the lower back, often used for surgeries of the lower body (e.g., hip replacement). Uses: Childbirth, lower body surgeries (e.g., hip or knee replacement), and urologic or gynecologic surgeries. Examples: Bupivacaine, lidocaine. 5. Intravenous (IV) Regional Anesthesia (Bier Block) Application: An anesthetic is injected into a vein while a tourniquet is applied to keep the drug confined to the area. Uses: Short surgical procedures on the arms, hands, legs, or feet. Examples: Lidocaine. 6. Field Block Anesthesia Application: A series of injections around a targeted area to block a wider region than infiltration anesthesia. Uses: Larger surgical areas, such as for hernia repair or vasectomy. Examples: [Lidocaine](#), [bupivacaine](#).

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7. Peripheral Nerve Block Application: A more focused nerve block that targets a specific nerve. Uses: Orthopedic procedures (e.g., shoulder or knee surgeries), often combined with sedation. Examples: [Ropivacaine](#), bupivacaine. Each type of local anesthesia is chosen based on the procedure, the size of the area to be numbed, and the duration of the desired effect.

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