




# Steroids Therapeutic uses

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Steroids are synthetic, man-made drugs designed to mimic natural body hormones, primarily divided into corticosteroids (for reducing inflammation) and anabolic-androgenic steroids (for muscle growth and male traits). They are used medically to treat conditions like asthma, arthritis, or hormone deficiencies, but are often abused to boost athletic performance.



# Key Types of Steroids:

- Corticosteroids (Medicinal)
  - **Tablets/Liquids:** Used for systemic, full-body treatment (e.g., prednisolone).
  - **Inhalers/Nasal Sprays:** Used for asthma and allergies (e.g., beclometasone, fluticasone).
  - **Injections:** Used for acute inflammation in joints, muscles, or blood vessels (e.g., methylprednisolone, hydrocortisone).
  - **Topical (Creams, Gels, Ointments):** Used for skin conditions (e.g., hydrocortisone, betamethasone).



- **Anabolic-Androgenic Steroids:**

- Synthetic derivatives of testosterone used to treat hormonal imbalances, muscle loss, or sometimes misused for performance enhancement.

- **Steroid Hormones (Natural):**

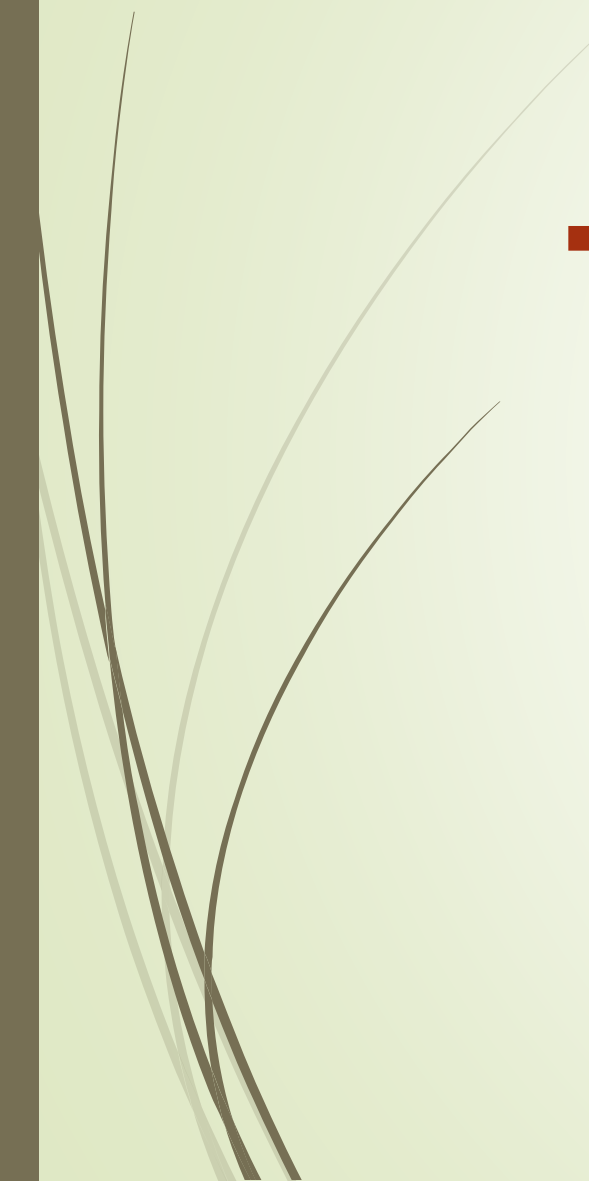
- **Glucocorticoids:** Control metabolism and inflammation (e.g., cortisol).


- **Mineralocorticoids:** Manage salt and water balance (e.g., aldosterone).

- **Sex Steroids:** Influence reproduction and development (e.g., testosterone, estrogen, progesterone)




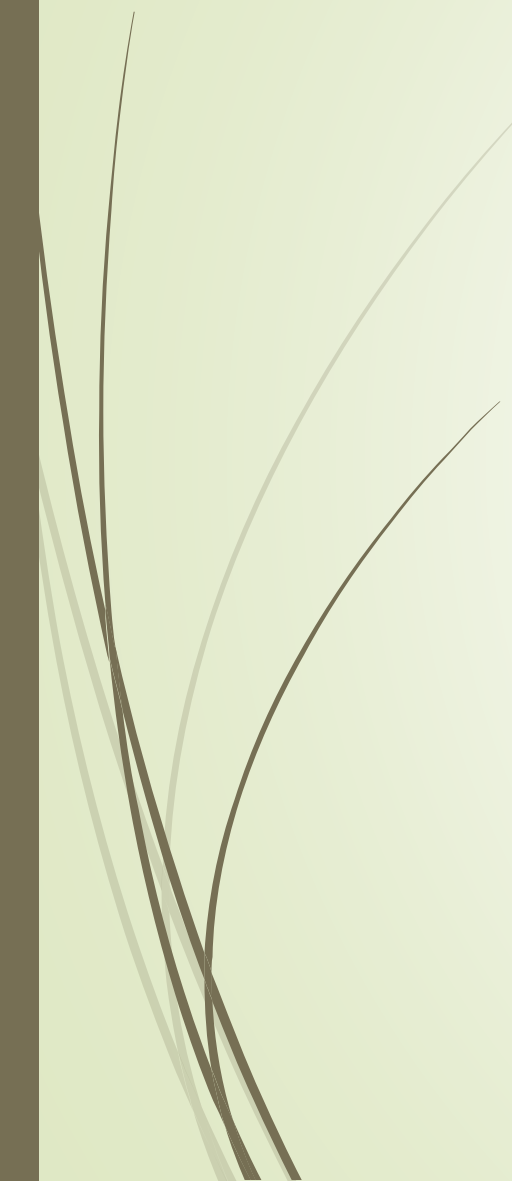
# Therapeutic uses of steroids

- ▶ Therapeutic uses of steroids generally fall into two categories: corticosteroids, used primarily to reduce inflammation and suppress the immune system, and anabolic steroids, used to treat hormonal imbalances and muscle-wasting conditions.
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# 1. Corticosteroids (Glucocorticoids & Mineralocorticoids)

- These are synthetic versions of hormones produced by the adrenal glands. They are the most commonly prescribed therapeutic steroids.
- Anti-Inflammatory Uses: Used to treat chronic conditions like asthma, COPD, and allergic rhinitis. They are also effective for localized inflammation in joints and muscles, such as arthritis, bursitis, and tendinitis.
- Autoimmune Disorders: Corticosteroids suppress the immune system when it mistakenly attacks the body, as seen in lupus, multiple sclerosis, and rheumatoid arthritis.
- Hormone Replacement Therapy: Prescribed for individuals whose bodies do not produce enough natural cortisol, such as those with Addison's disease or congenital adrenal hyperplasia.

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- Skin Conditions: Topical formulations (creams/ointments) treat eczema, psoriasis, and severe allergic rashes.
  - Emergency Medicine: High-dose intravenous steroids are used for life-threatening situations like anaphylactic shock, severe asthma attacks, or cerebral edema (brain swelling).
  - Cancer Support: Used to reduce inflammation, nausea from chemotherapy, and to help kill certain types of cancer cells in leukemia or lymphoma.
  - Transplant Medicine: Administered post-surgery to prevent the immune system from rejecting a new organ.




## 2. Anabolic-Androgenic Steroids (AAS)

- ▶ These are synthetic versions of testosterone primarily used to regulate male development and body tissue.
- ▶ Hormonal Deficiencies: Used to treat male hypogonadism (low testosterone) and delayed puberty in adolescent males.
- ▶ Muscle Wasting: Prescribed to stimulate muscle growth in patients suffering from severe muscle loss due to AIDS or certain types of cancer.
- ▶ Anemia: Sometimes used to stimulate bone marrow in cases of aplastic anemia.
- ▶ Breast Cancer: FDA-approved for treating certain types of estrogen-receptor-positive breast cancer in women by lowering estrogen levels.

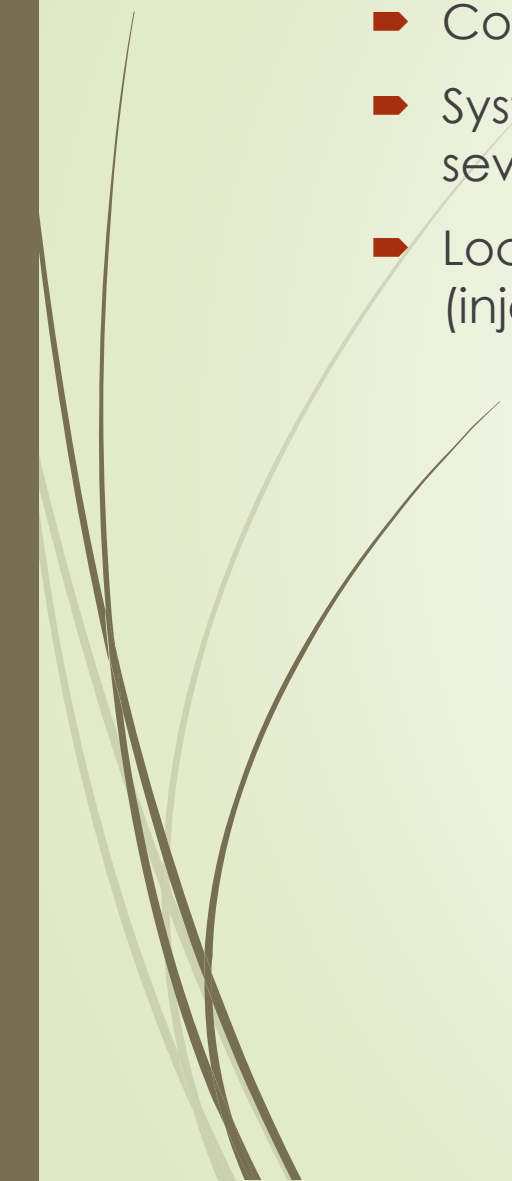



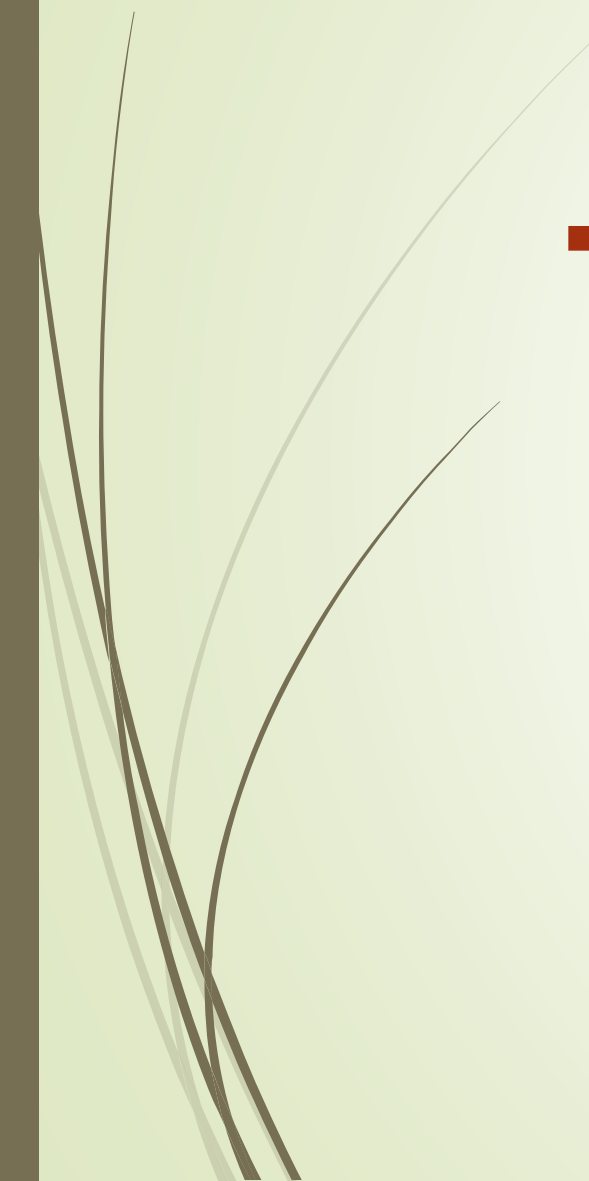
# Common Administration Routes

Route 	Common Uses	Examples
<b>Oral</b> (Tablets/Liquids)	Systemic conditions like lupus or severe asthma flare-ups	Prednisolone, Dexamethasone
<b>Inhaled/Nasal</b>	Asthma, hay fever, and allergies	Fluticasone, Budesonide
<b>Topical</b> (Creams)	Skin conditions like eczema or psoriasis	Hydrocortisone, Betamethasone
<b>Injection</b>	Joint pain, severe allergic reactions, or acute flares	Triamcinolone, Methylprednisolone



## ▶ Administration Methods


- ▶ Corticosteroids are administered in several ways depending on the condition:
  - ▶ Systemic (oral, intravenous, or intramuscular): For systemic diseases like lupus or severe asthma flares.
  - ▶ Local (creams, drops, sprays, injections): For localized inflammation like joint pain (injections), asthma (inhalers), or skin conditions (creams).
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- ▶ Commonly used corticosteroids include prednisolone, prednisone, methylprednisolone, dexamethasone, and hydrocortisone. While effective, they are generally used at the lowest effective dose for the shortest possible time to minimize side effects.



# Common side effects (Short-to-Long Term)

- Metabolic: Increased appetite, weight gain, high blood sugar (hyperglycemia).
- Physical Appearance: "Moon face," fatty deposits in the upper back/abdomen, stretch marks (striae).
- Skin/Wound: Thin skin, easy bruising, slow wound healing.
- Mood/Mental: Mood swings, irritability, anxiety, insomnia.
- Gastrointestinal: Stomach irritation, ulcers, nausea.
- Fluid Balance: Fluid retention, swelling (edema).

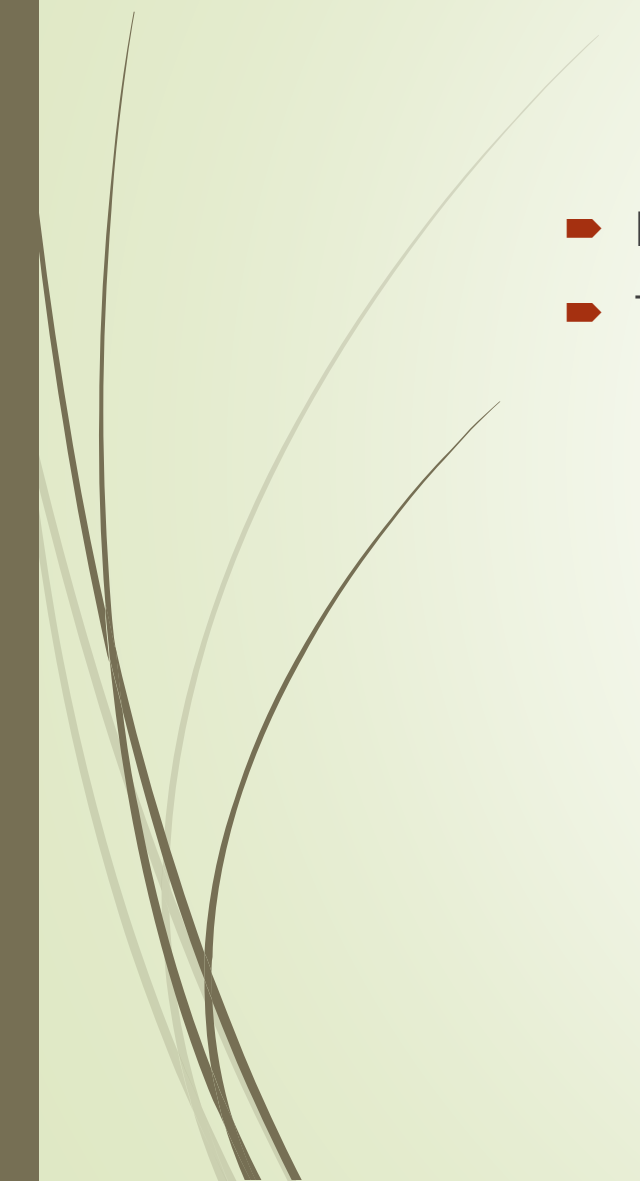


# Serious Side Effects (More Common with Long-Term/High Dose)

- ▶ Bone Health: Osteoporosis (bone thinning), increased fracture risk, avascular necrosis (bone death).
- ▶ Eyes: Cataracts, glaucoma.
- ▶ Endocrine: Adrenal suppression, Cushing's Syndrome.
- ▶ Immune System: Significantly increased risk of infections (bacterial, viral, fungal).
- ▶ Muscles: Muscle weakness (myopathy) and cramps.
- ▶ Growth: Stunted growth in children.



# Side Effects by Delivery Method

- Inhaled: Oral thrush, hoarseness (rinse mouth after use).
  - Topical (Skin): Skin thinning, acne, lesions.
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# Important Considerations

- ▶ Do NOT stop abruptly: Long-term users must taper doses to avoid serious adrenal crisis.
  - ▶ Minimize Risks: Take in the morning after food, rinse mouth after inhalers, eat a balanced diet.
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