

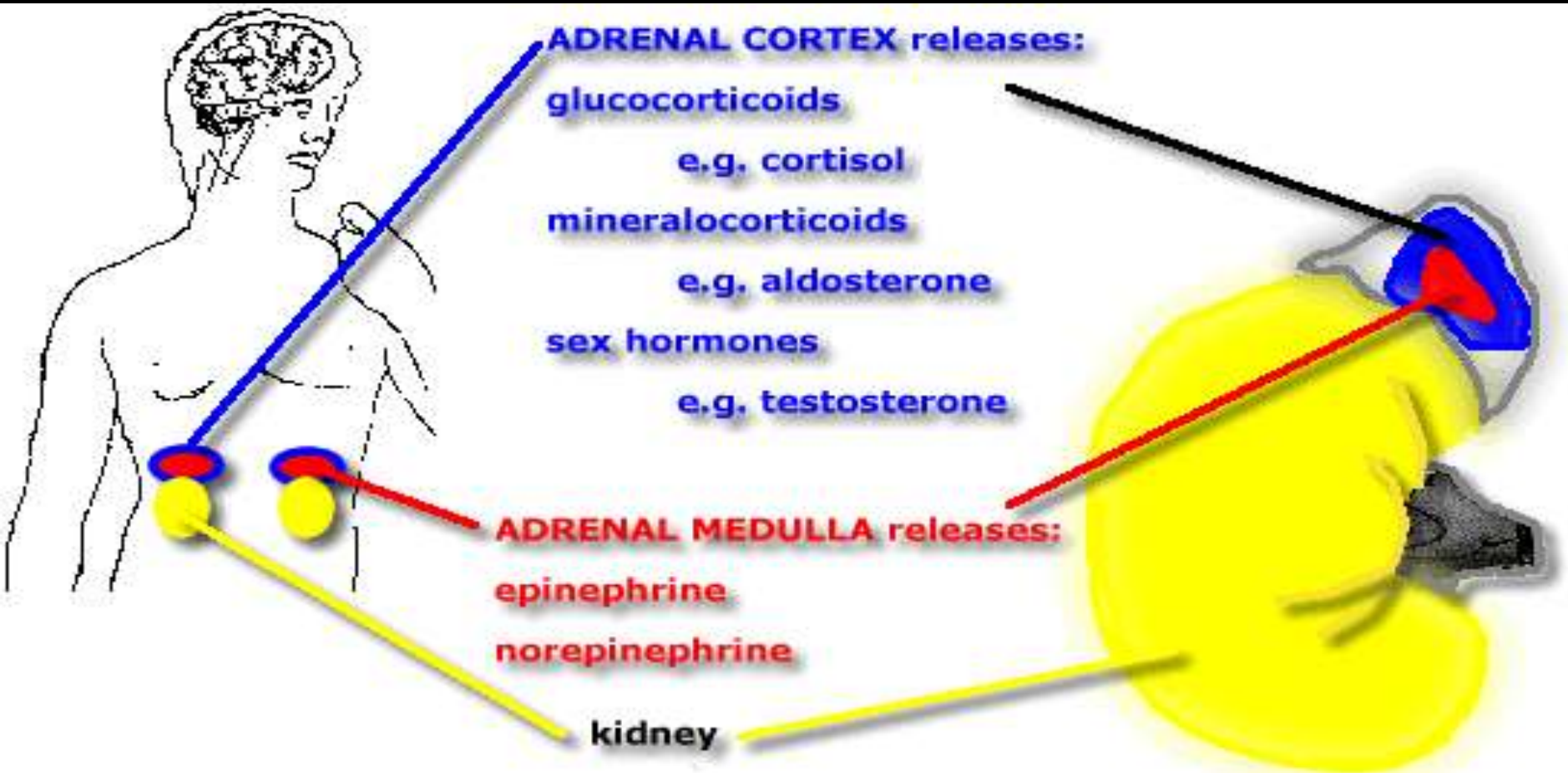
## CORTICOSTEROIDS

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# School of Nursing

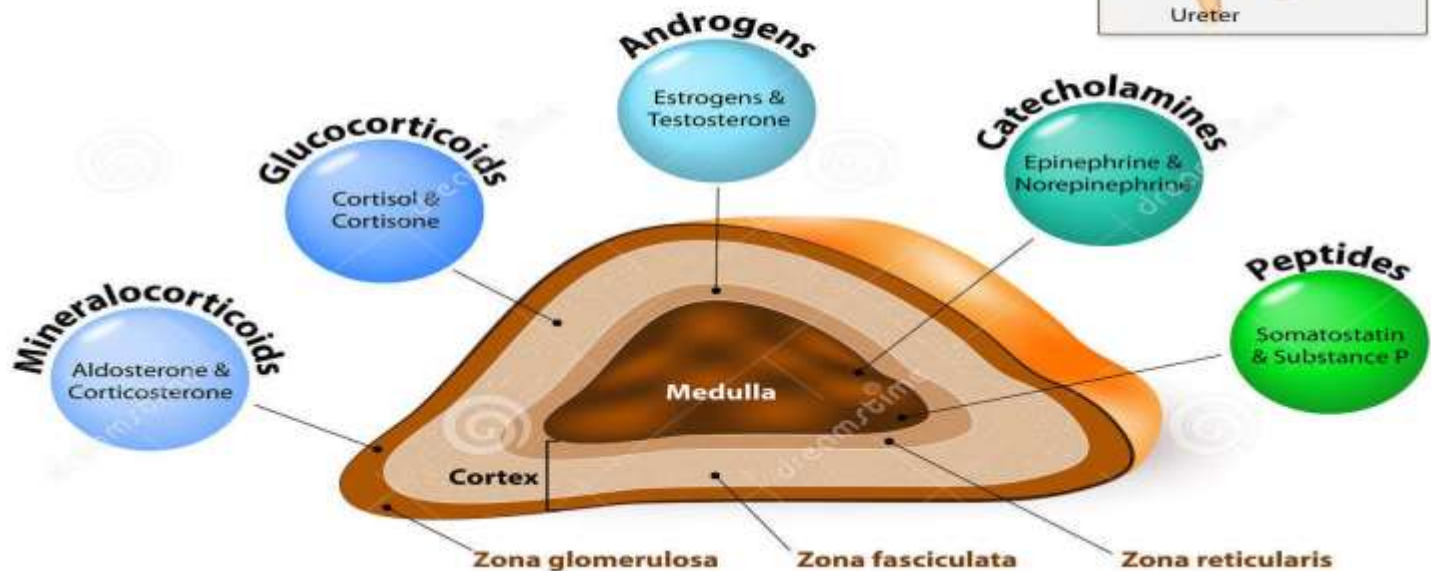
Course Code : BSCN 2002

Course Name: PPG

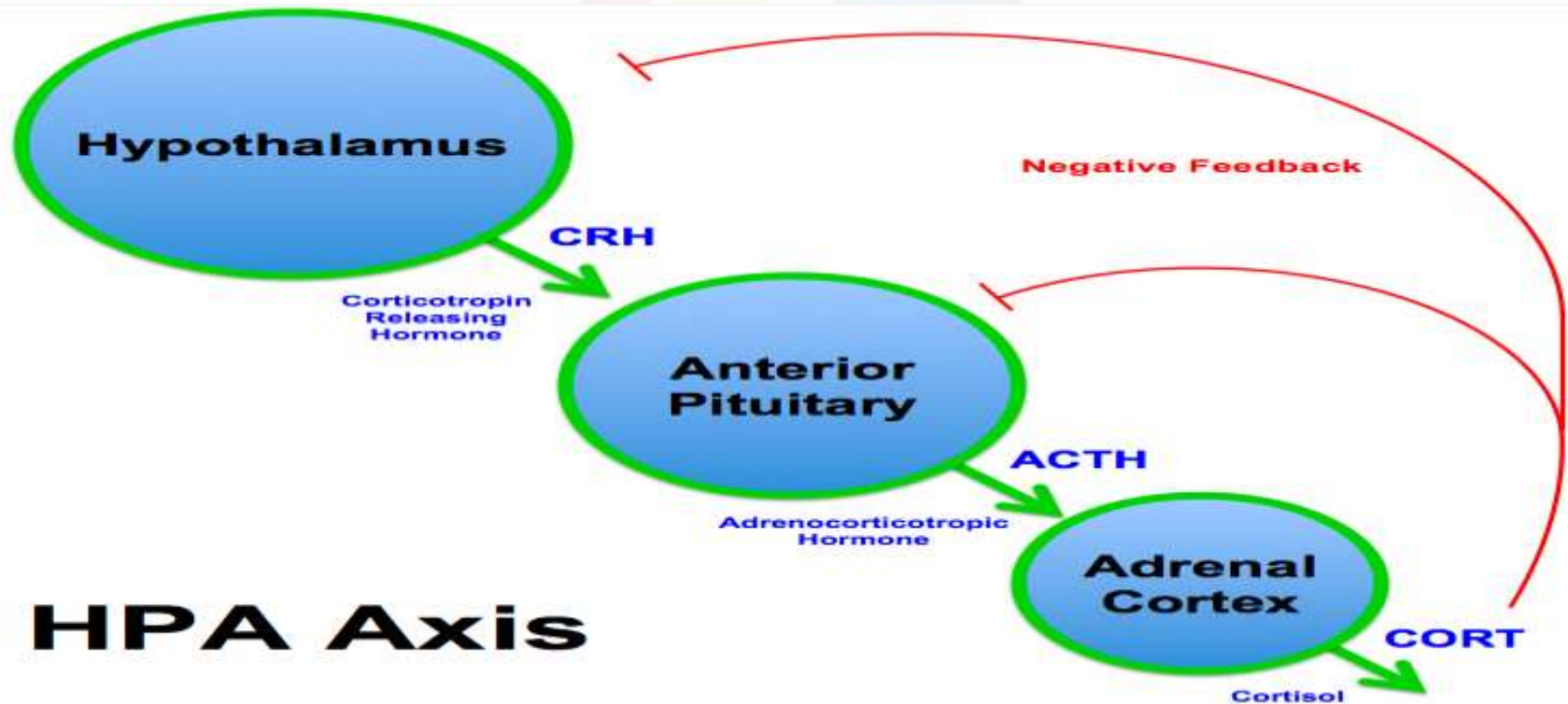


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## ADRENAL GLAND (hormones)



## Hypothalamic Pituitary Adrenal Axis



**HPA Axis**

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## CORTICOSTEROID

- Hormone produced in the cortex of the adrenal gland. They are:
- Glucocorticoid
- Mineralocorticoid
- Small amount of androgens

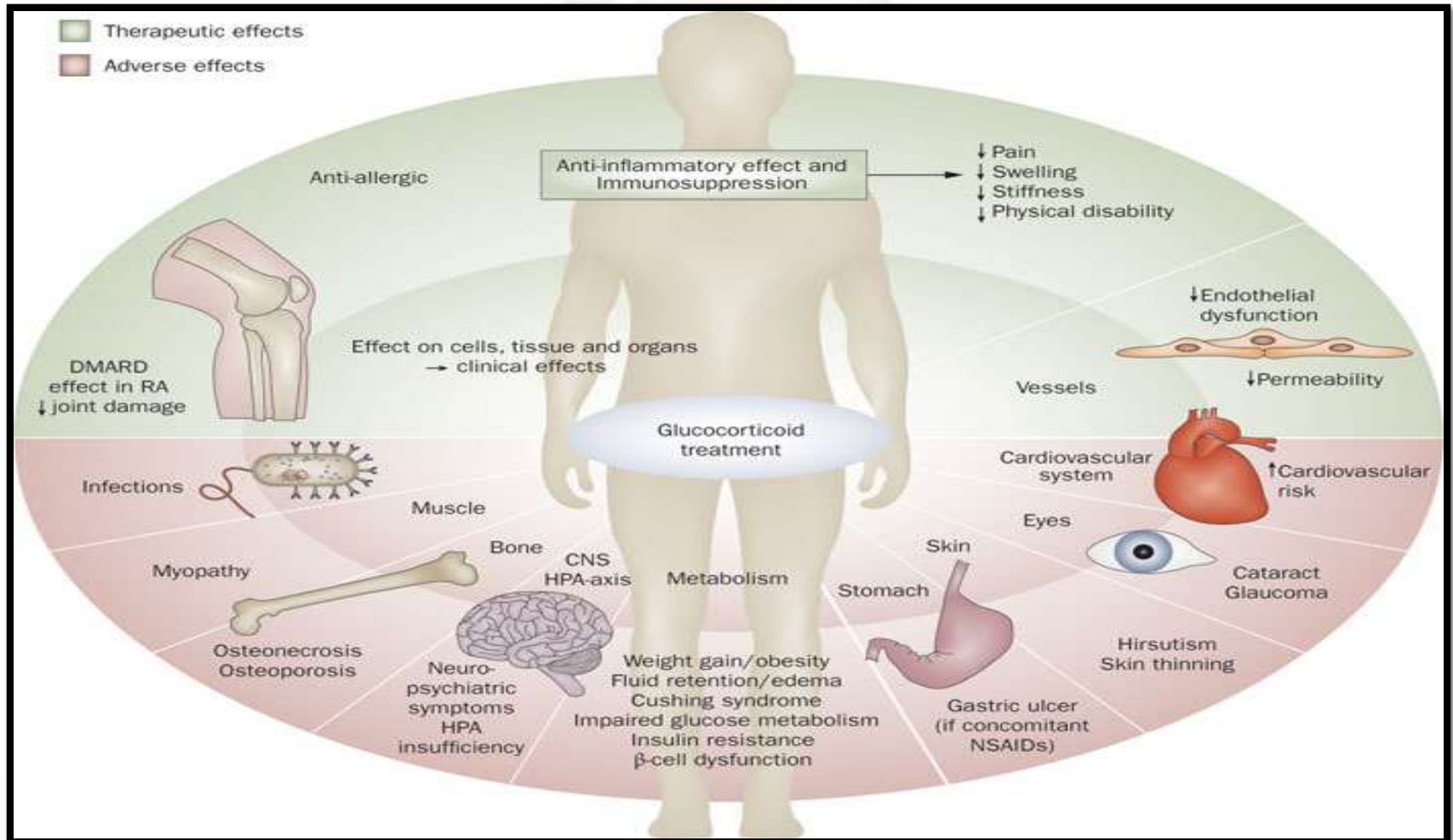
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# School of Nursing

Course Code : BSCN 2002

Course Name: PPG



Name of the Faculty: Nancy Thak

Program Name: B.Sc. Nursing

- Glucocorticoids (anti-inflammatory) which suppress inflammation and immunity and assist in the breakdown of fats, carbohydrates, and proteins metabolism.
- Mineralocorticoids (salt retaining) that regulate the balance of salt and water in the body.

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## CLASSIFICATION

### **SHORT ACTING (8-12HR)**

Hydrocortisone  
cortisone

### **INTERMEDIATE ACTING (18-36HOUR)**

Prednisolone  
Methylprednisolone  
Triamcinolone  
Fludricortisone

## **LONG ACTING (36-54HOUR)**

- Paramethasone
- Dexamethasone
- Betamethasone

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- Fludrocortisone (Florinef), a potent systemic **oral mineralocorticoid corticosteroid** is used to treat Addison's disease (**hypocortisolism** the adrenal glands do not produce enough steroid hormones)
- Diseases that cause salt loss as in congenital adrenal hyperplasia.
- It also is used commonly to treat conditions of low blood pressure

## ACTIONS

- Anti-inflammatory and immunosuppressive effects
- Increase the force of contraction of the heart.
- Also enhance the secretion of gastric acid and pepsin in the stomach.
- Inhibit the absorption and enhance the renal excretion of calcium.
- Maintain the normal GFR.

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## Uses

- **Autoimmune disorders**
  - multiple sclerosis
  - rheumatoid arthritis
  - inflammatory bowel disease
  - ulcerative colitis
  - psoriasis
  - Eczema

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- Allergies and asthma
  - itchy, watery eyes
  - lightheadedness
  - redness, hives, or rash
  - sneezing and stuffy or runny nose
  - swelling of your face, lips, or throat
  - trouble breathing

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## Uses

- Rheumatoid arthritis
- Osteoarthritis
- Carditis
- Acute gout
- Allergic diseases like hay fever (Rhinitis), contact dermatitis, urticaria.
- Bronchial asthma

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## Uses

- Eye diseases like allergic conjunctivitis, uveitis, optic neuritis.
- Gastrointestinal diseases like inflammatory bowel syndrome or ulceratives colitis
- liver disease like hepatitis and alcoholic hepatitis
- hemolytic anemia

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## SIDE EFFECTS

- cause sodium (salt) and fluid to be retained in the body and cause weight gain or swelling of the legs (edema)
- High blood pressure
- Loss of potassium
- Headache
- Muscle weakness
- Puffiness of the face (moon face)
- Facial hair growth

- Thinning and easy bruising of the skin
- Slow wound healing
- Glaucoma
- Cataracts
- Ulcers in the stomach and duodenum
- Loss of diabetes control
- Menstrual irregularity
- "Buffalo hump," a condition described as a rounding of the upper back.

- Steroids can also treat diseases that cause muscle loss, such as cancer and AIDS.



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## Anabolic steroids

- Anabolic steroids are designed to imitate the hormone testosterone.
- Anabolic steroids to treat conditions like hypogonadism, delayed puberty and impotence.
- Anabolic steroids have a high potential for abuse

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- Some athletes and bodybuilders abuse these drugs to boost performance or improve their physical appearance.

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- Anabolic" refers to muscle building, and "androgenic" refers to increased male sex characteristics.

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## RISKS

- Males can get shrunken testicles, develop breasts and lose hair.
- For females, it can stop your menstrual cycle, may cause excessive body and facial hair, leave you with male-pattern baldness and decrease your breast size.

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- Steroids can also make you irritable, hostile and aggressive, and cause you to develop severe acne

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## Long term effect

- Stunting your height permanently
- high blood pressure, an increased risk of blood clotting and increases in LDL (bad cholesterol)—**all three combined are a recipe for heart failure.**

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## Short-Term Effects

- Abuse of anabolic steroids may lead to mental problems, such as:
- paranoid (extreme, unreasonable) jealousy
- extreme irritability
- *delusions*—false beliefs or ideas
- impaired judgment
- Extreme mood swings can also occur, including "roid rage"—angry feelings and behavior that may lead to violence.

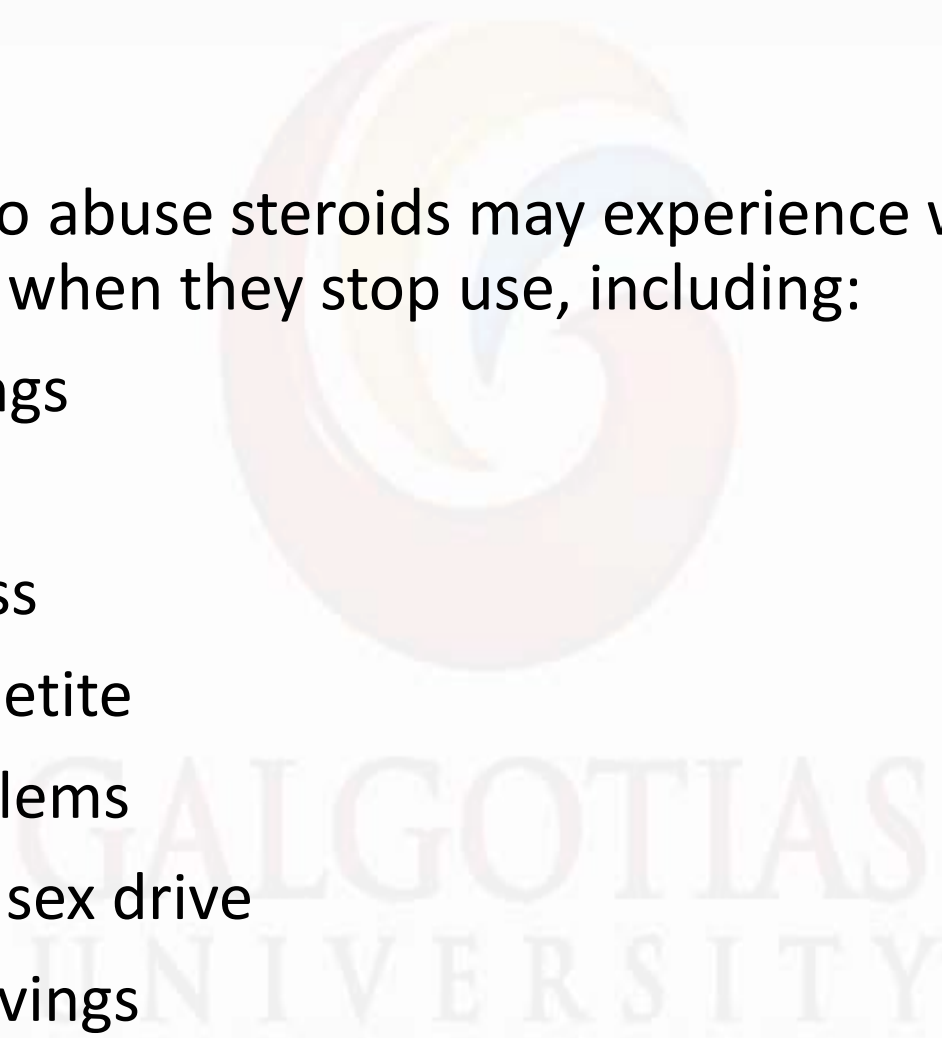
- Anabolic steroid abuse may lead to serious, even permanent, health problems such as:
- kidney problems or failure
- liver damage
- enlarged heart, high blood pressure, and changes in blood cholesterol, all of which increase the risk of stroke and heart attack, even in young people
- Several other effects are gender- and age-specific:

- In men:
  - shrinking testicles
  - decreased sperm count
  - baldness
  - development of breasts
  - increased risk for prostate cancer

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- In women:
  - growth of facial hair or excess body hair
  - male-pattern baldness
  - changes in or stop in the menstrual cycle
  - enlarged clitoris
  - deepened voice
- In teens:
  - stunted growth (when high hormone levels from steroids signal to the body to stop bone growth too early)
  - stunted height (if teens use steroids before their growth spurt)

- People who abuse steroids may experience withdrawal symptoms when they stop use, including:
- mood swings
- fatigue
- restlessness
- loss of appetite
- sleep problems
- decreased sex drive
- steroid cravings



## Androgen

- **Androgen** (from Greek *andro* meaning male human being), also called **androgenic hormone** or **testoid**.
- It is any natural or synthetic compound, usually a steroid hormone that stimulates or controls the development and maintenance of male characteristics.

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- Androgens are produced chiefly in the testis and small amounts in the adrenal cortex.
- In the adult male, 8-10mg of testosterone is produced daily.
- Testosterone promote the bone mass, protein synthesis, positive nitrogen balance.

## Examples

- Methandienone 2-10 mg/day
- Nandrolone phenylpropionate 10-50 mg/week
- Nandrolone decanoate 25-100 mg/3week
- Ethylestrenol 2-4 mg/day
- Noxandrolone 5-10 mg/day
- Stanozolol 2-10 mg/day

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## Uses

- Negative nitrogen balance
- Senile osteoporosis
- Linear growth in prepubertal boys.
- Chronic renal failure (to reduce the nitrogen load on the kidney)
- Improve athletic performance (when combined with adequate exercise).

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## References

- <https://www.versusarthritis.org/about-arthritis/treatments/drugs/steroids/#:~:text=Steroids%20are%20a%20man%2Dmade,used%20by%20bodybuilders%20and%20athletes.>
- <https://www.webmd.com/a-to-z-guides/ss/slideshow-steroids-101>

