

# ANS

## (Anatomy & Physiology)



Website

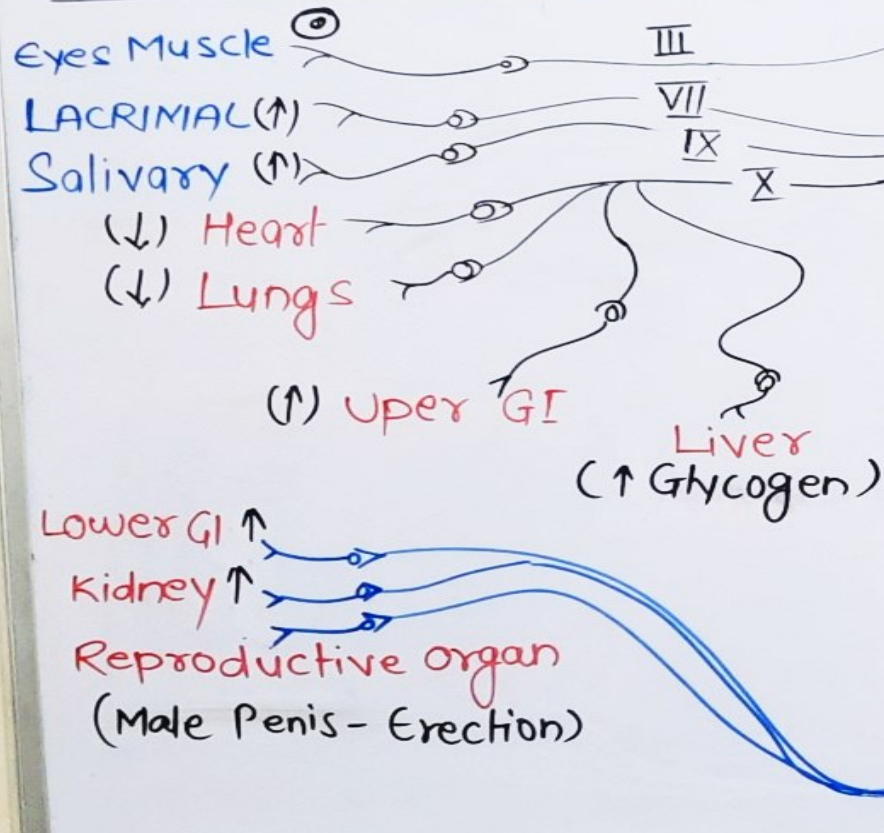


Videos

HAP

# AUTONOMIC NERVOUS SYSTEM

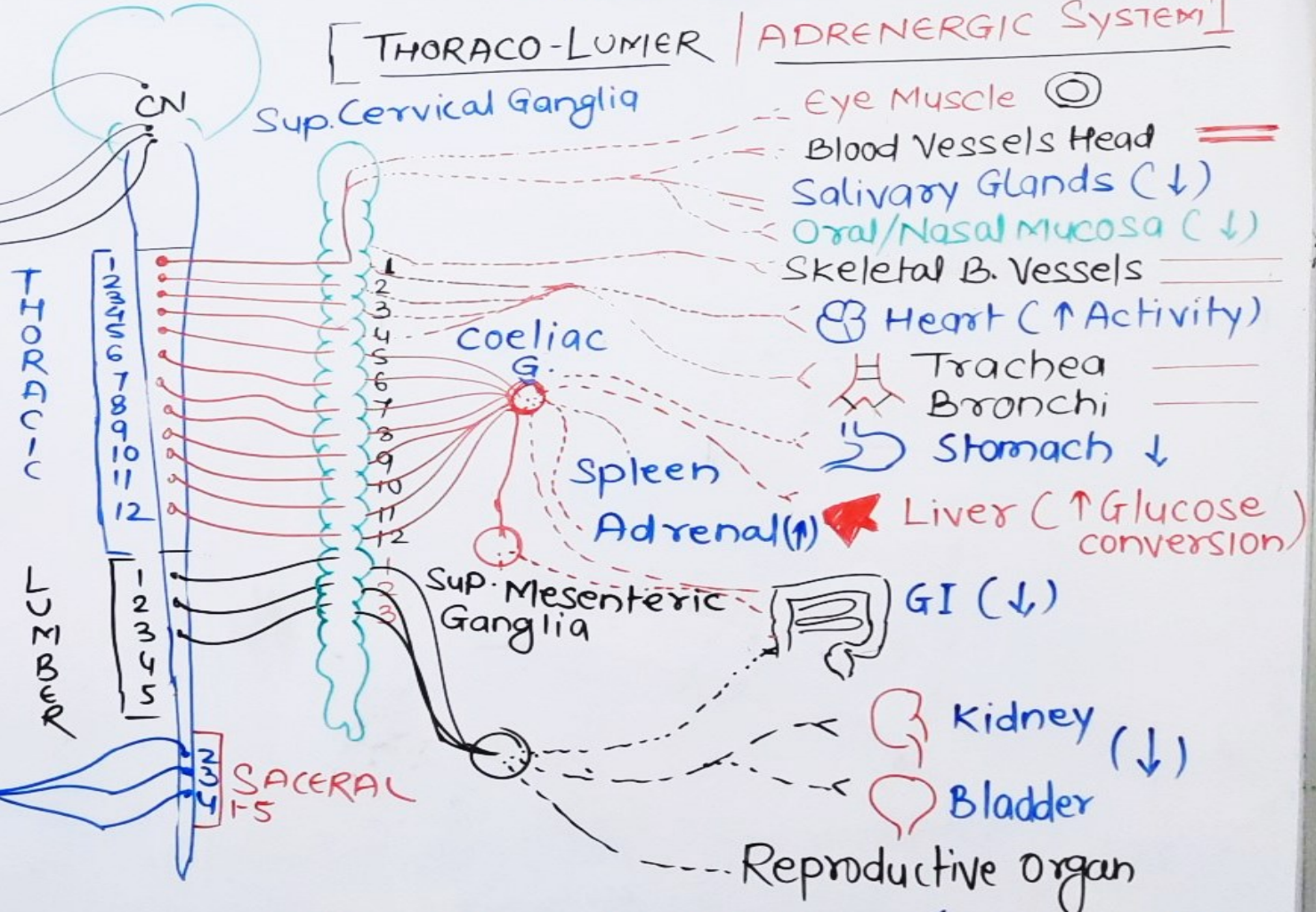
## PARASYMPATHETIC [CRANIO-SACRAL | CHOLINERGIC]



"REST AND DIGEST"  
"CONSERVE ENERGY"

## SYMPATHETIC

## [THORACO-LUMBAR | ADRENERGIC SYSTEM]



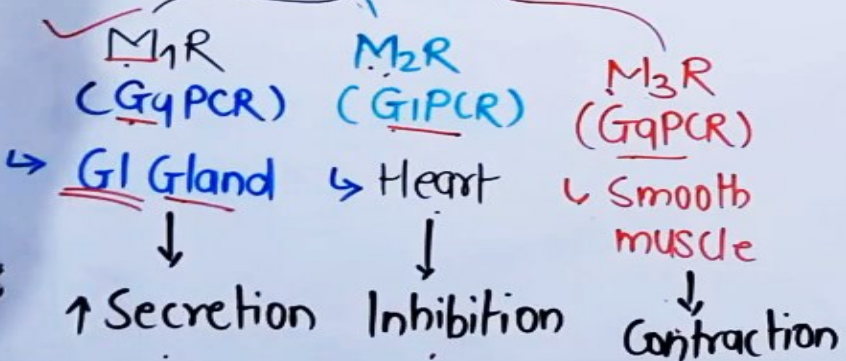
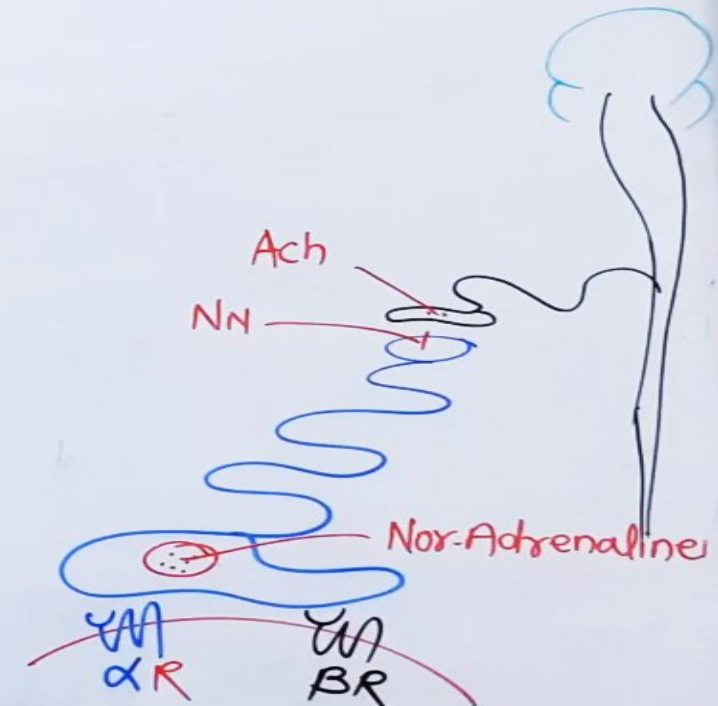
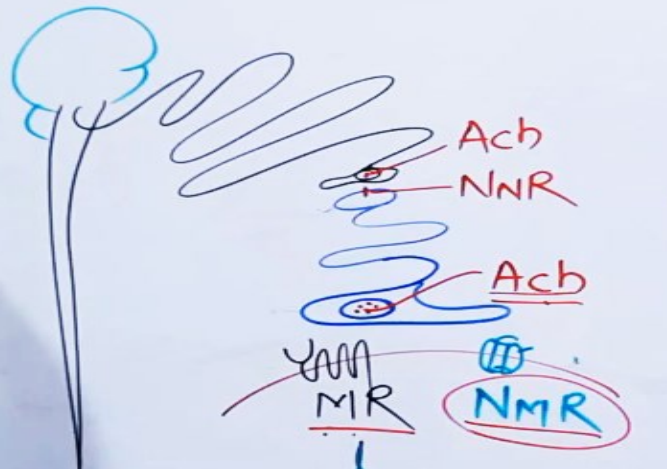
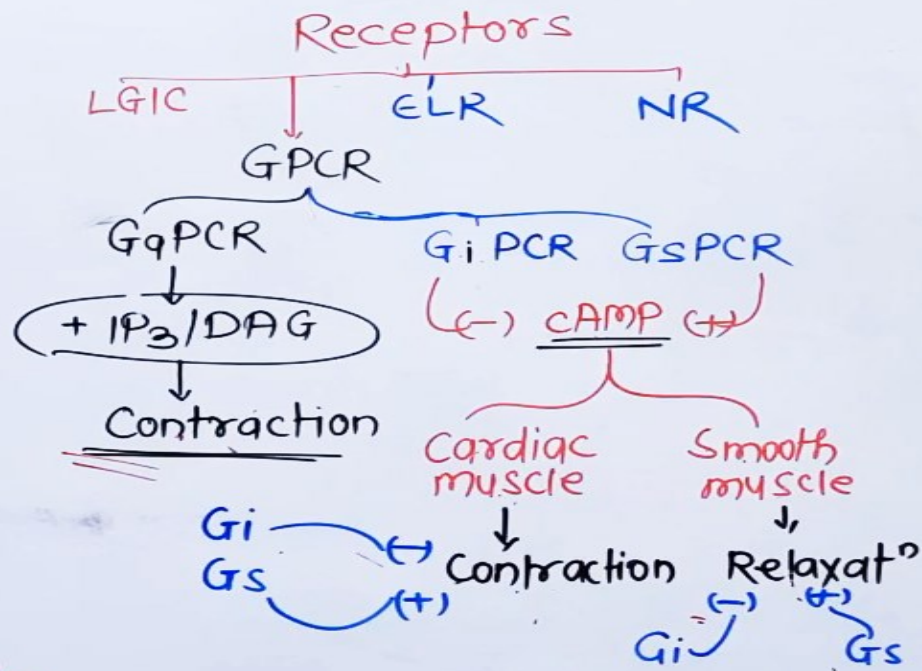
"3 F = Flight, Fight & Fear" (Male → Ejaculation)  
"Expend Energy"



# AUTONOMIC NERVOUS SYSTEM

PARASYMPATHETIC SYSTEM

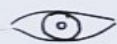
SYMPATHETIC SYSTEM




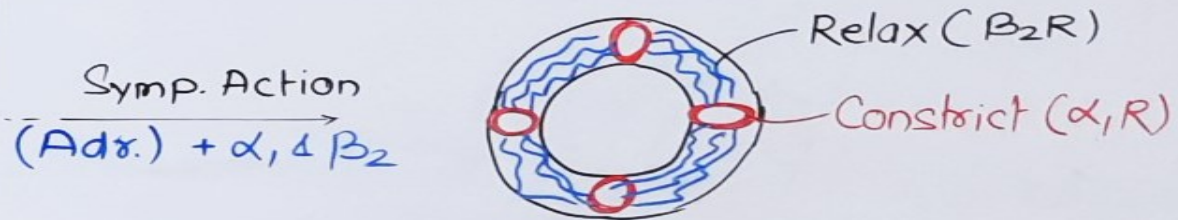
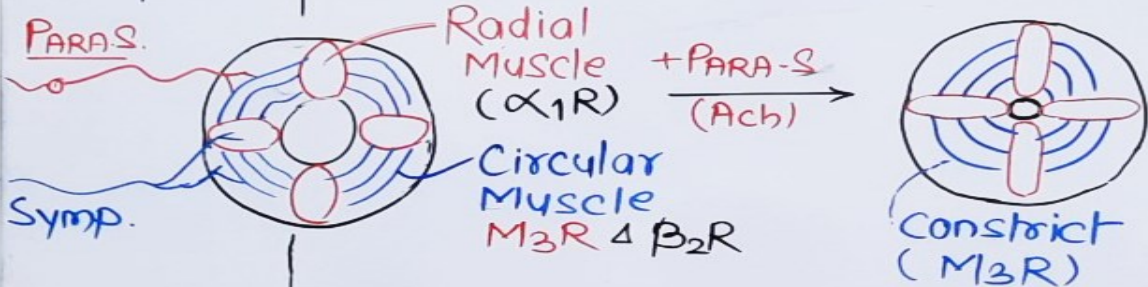
# AUTONOMIC NERVOUS SYSTEM

**PARASYMPATHETIC SYSTEM**  
 Ach → M<sub>1</sub>R (G<sub>q</sub>), M<sub>2</sub>R (G<sub>i</sub>), M<sub>3</sub>R (G<sub>q</sub>)

**SYMPATHETIC SYSTEM**  
 Nor-Ad/Ad. - α<sub>1</sub>R (G<sub>q</sub>), βR (G<sub>s</sub>)

1. Eyes Mus. (Pupil) | # Constriction → Miosis   
 # Accomodate for "Near" Vision

- # Dilatation → Mydriasis   
 # Accomodate for "Far" Vision



2. SMOOTH MUSCLES

1. Bronchi - M<sub>3</sub>R → Constriction

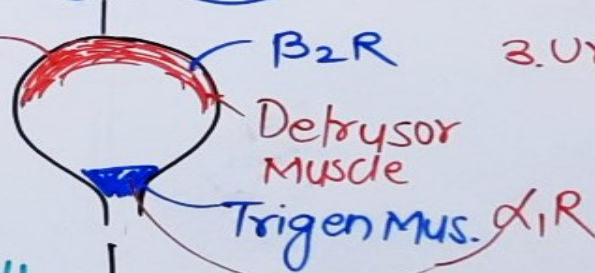
1. Bronchodilatation (β<sub>2</sub>R)

2. GI muscles → M<sub>3</sub>R - Constriction

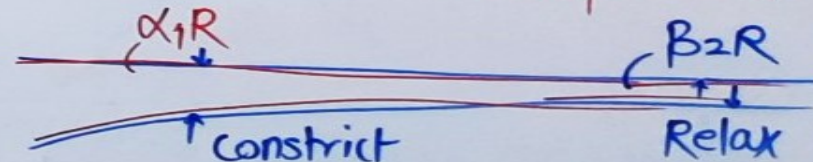
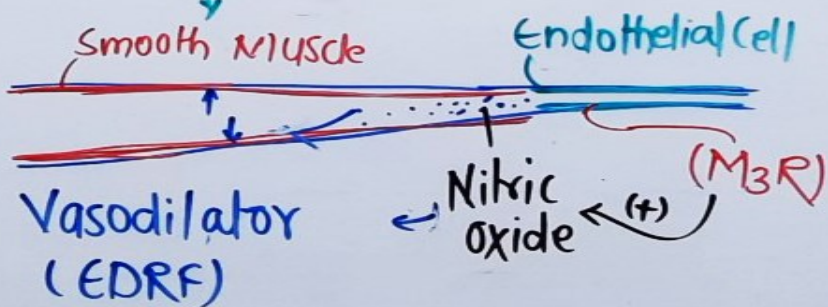
2. GI Muscle - Relaxation

3. Urinary Bladder  
 # ↑ feel of Urination

3. Urinary Bladder  
 # ↓ feel of Urination



3. Blood vessels



# AUTONOMIC NERVOUS SYSTEM

## PARASYMPATHETIC SYSTEM

Ach → M<sub>1</sub>R (G<sub>q</sub>), M<sub>2</sub>R (G<sub>i</sub>), M<sub>3</sub>R (G<sub>q</sub>)



## SYMPATHETIC SYSTEM

Nor-Ad/Ad. - α<sub>1</sub>R (G<sub>q</sub>), βR (G<sub>s</sub>)

### 4. HEART

- # M<sub>2</sub>R (G<sub>i</sub>)
- ↓ Conduction → ↓ HR (- chronotropic)
- ↓ Force of contract<sup>n</sup> (- Inotropic)

- # β<sub>1</sub>R (G<sub>s</sub>PCR)
- # ↑ HR - (+ chronotropic)
- # ↑ FC - (+ Inotropic)

### 5. Gland Secret<sup>n</sup>

- GI Secretion - (M<sub>1</sub>R) - ↑
- Salivary - (M<sub>3</sub>R) - ↑
- Nasal - (M<sub>3</sub>R) - ↑
- Sweat - (M<sub>3</sub>R) - ↑

- # GI Secret<sup>n</sup>
  - # Salivary<sup>##</sup>
  - # Nasal / Mucus
  - # Sweat - (M<sub>3</sub>R) - ↑
- ↓

### 6 Metabolism

- # Restorati<sup>n</sup> of metabolic Reserve
- # Eliminati<sup>n</sup> of waste

- # Glycogenolysis <sup>α<sub>1</sub> & β<sub>2</sub></sup>
  - # Gluconeogenesis <sup>α<sub>1</sub></sup>
  - # Lipolysis <sup>α<sub>1</sub></sup>
  - # Ejaculation <sup>β<sub>3</sub>R</sup>
- } → Glucose - ↑ Energy

### 7. Reproductive

- # Erection