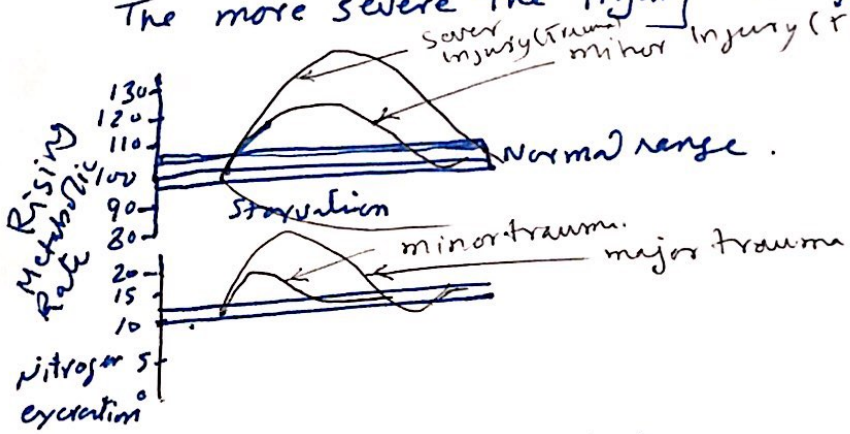
Metabolic Response To Injury

Basic Concepts in homeostasis:

1. Homeostasis is the foundation of normal physiology.
2. As a result of modern understanding of homeostasis minimising the response by minimal access surgery & stress free perioperative care.
3. Resuscitation, surgical intervention and critical care can return the severly injured patient to a situation in which homeostasis becomes possible once again.
4. The graded nature of injury response -
   The more severe the injury the greater the response.



5. Mediators of the metabolic response to injury
   A. Neuroendocrine response to injury / critical illness is biphasic:
      * Acute phase: characterised by actively secreating pituatary & elevated counter-regulatory hormones (cortisol, glucagon, adrenaline).
      * Chronic phase associated by hyothalamic suppression & low serum levels of the respective target organ hormones. Changes contribute to chronic wasting.

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B. Systemic Inflammatory response Syndrome following major Injury:

* Is driven initially by pro inflammatory cytokines (e.g IL-1, IL-6 interleukin-1 & 6 and TNFα tumor necrosis factor alpha)
* Is followed rapidly by increased) plasma levels of cytokines antagonists and soluble receptors (IL-1Rα, TNF-SR (interleukin-1 receptor antagonist & TNF soluble receptors.
* If prolonged or excessive may evolve into a counter-Inflammatory Syndrome.

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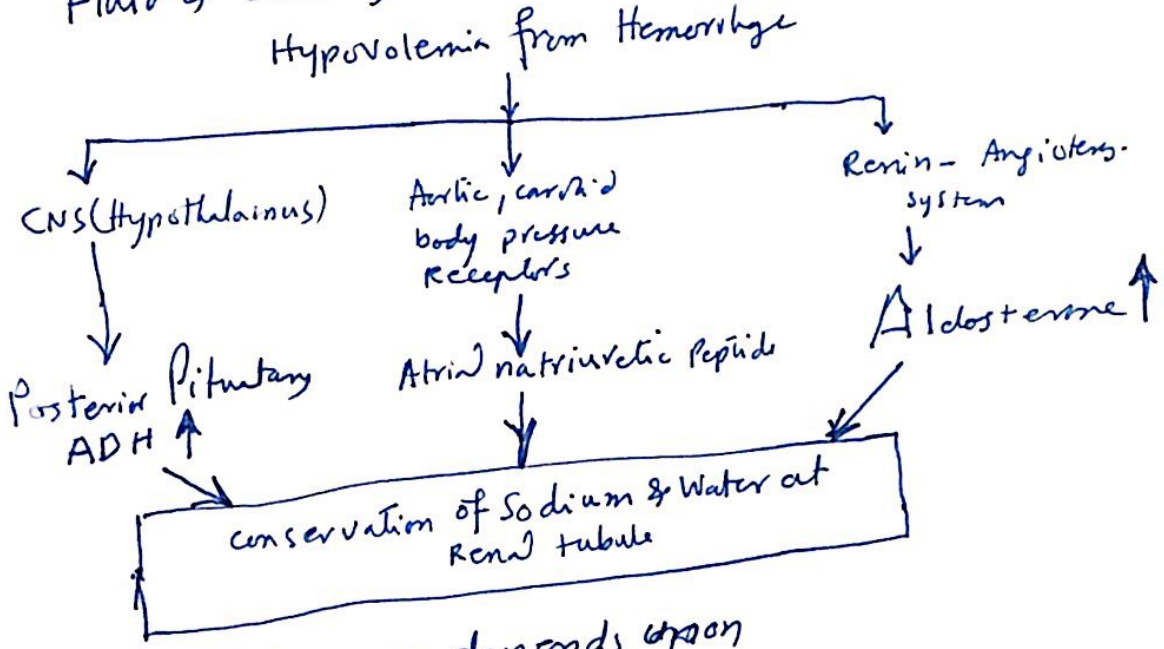
Important Notes On Metabolic Resp. To Trauma

1. Homeostasis : In Emergency surgery causes a marked disturbance in homeostasis

2. Stress Response

Spinal cord, thalamus, hypothalamus & Pituitary all form a part of the neuro endocrine pathway.

3. Fluid & Electrolyte conservation



4. Stress Response depends upon

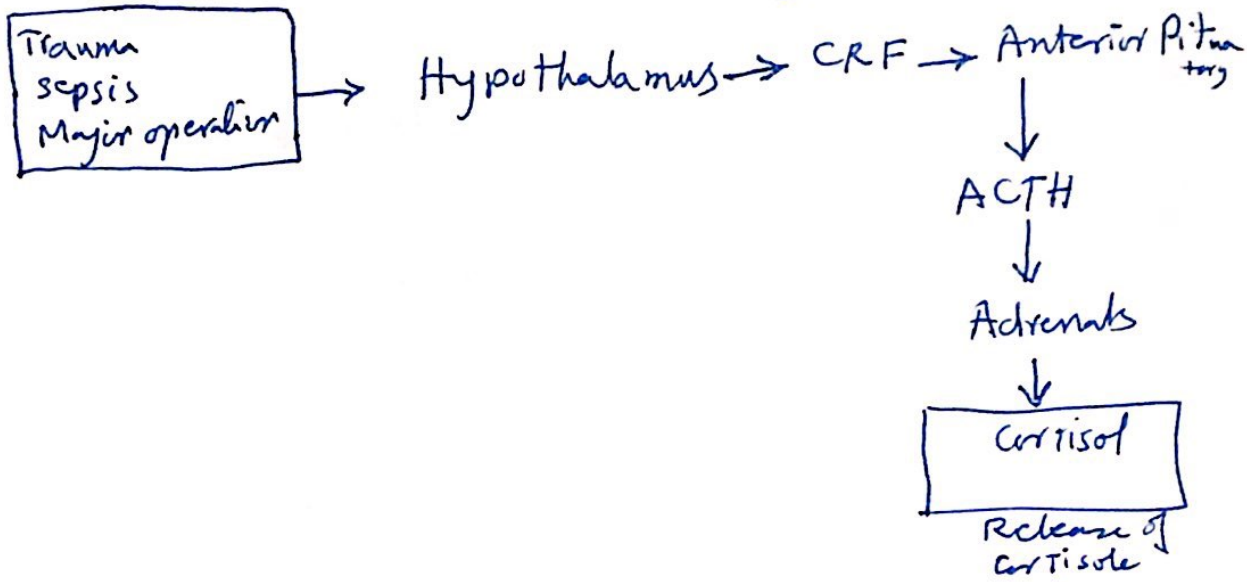
- Severity of Injury
- Type of Injury

To get speedy Resolution avoid

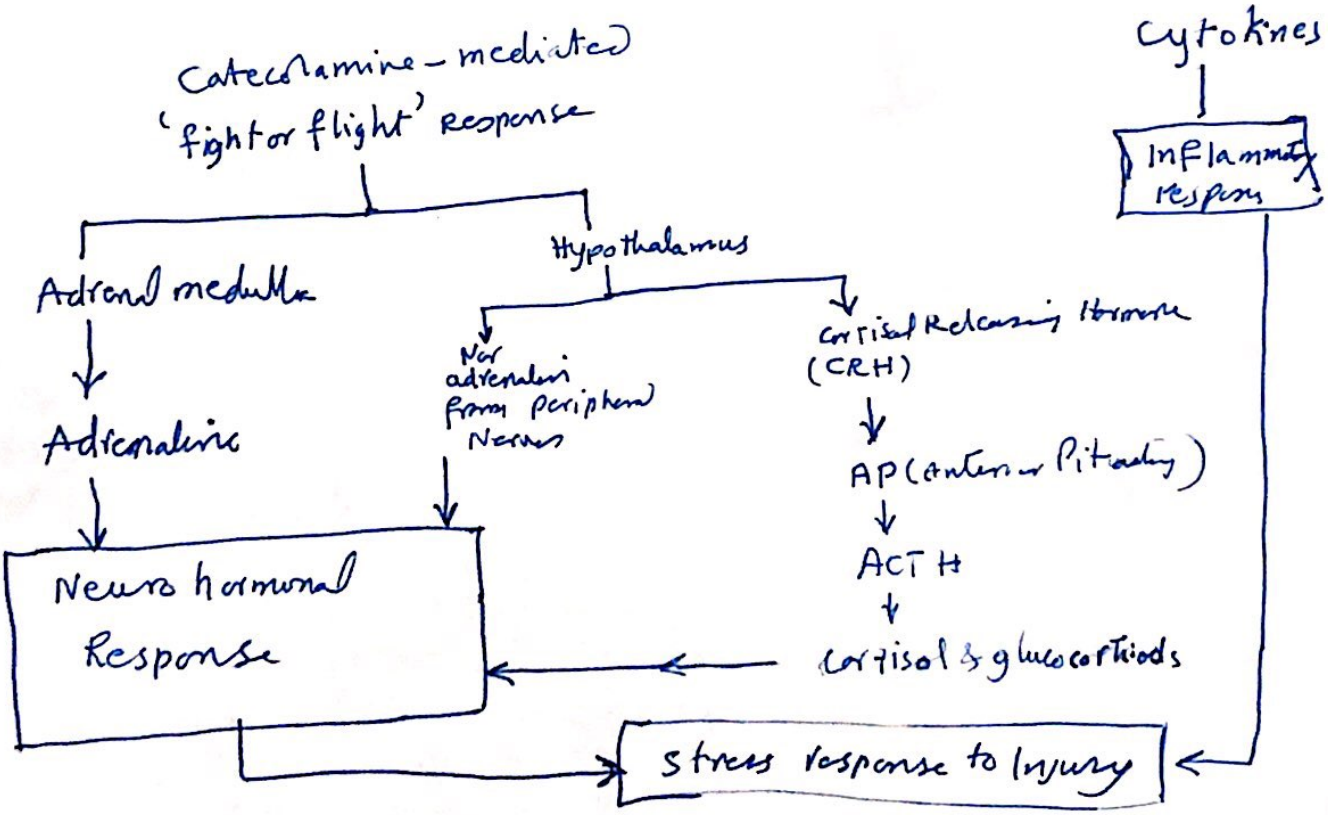
* secondary Insults (3 I's: Ischemia, Infection, Inadequate oxygen (Hypox
* Ongoing trauma e.g; Compartment Syndrome, DVT (deep v. Thrombosis)

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Ongoing complication & secondary insults affecting Recovery:



5. The Interplay of neural, endocrine & Inflammator factors:

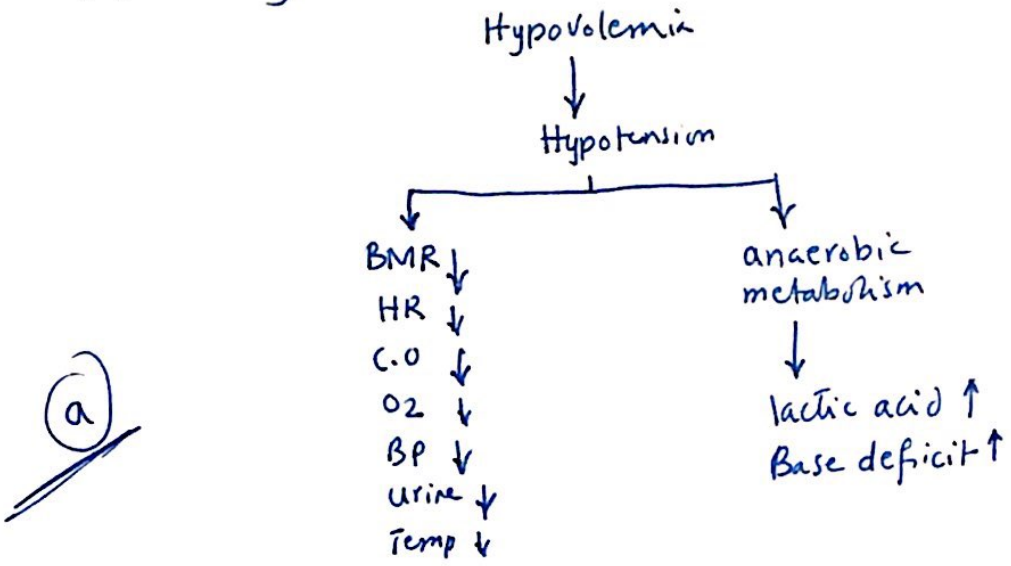


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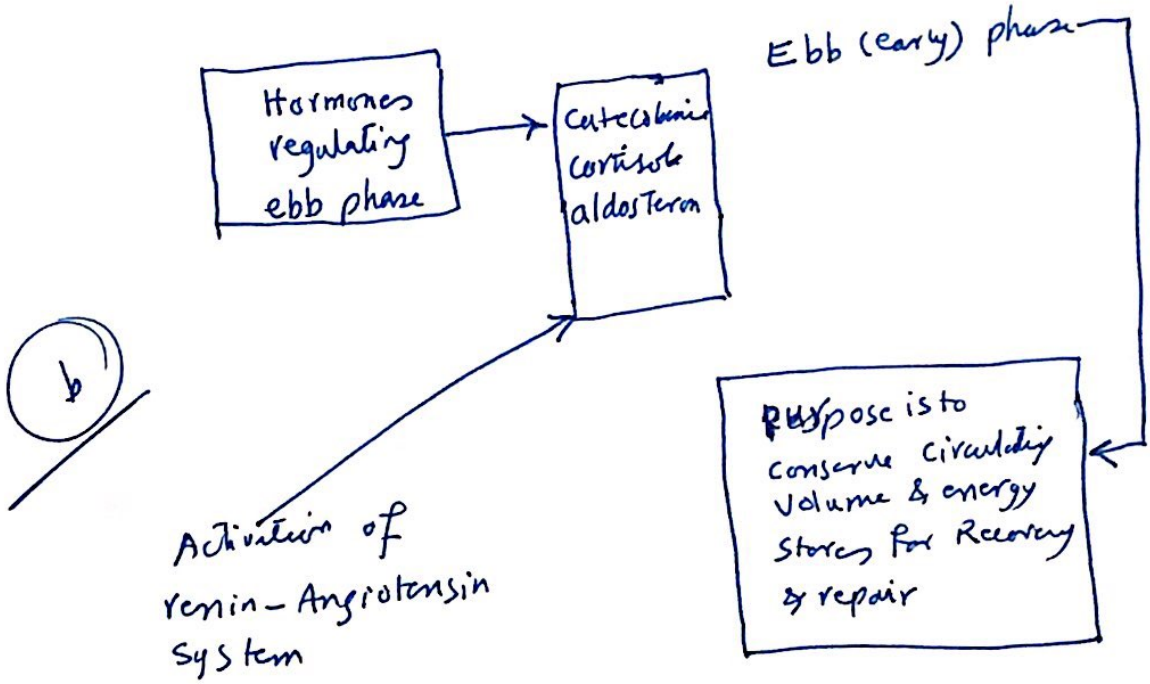
It is Hypeglycemia & not hypoglycemia that occurs in stress Response.

7. In Ebb (early) Phase:

Inflammatory mediators and hormonal mediators accumulate



a



b

The ebb phase (Holding Pattern)

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