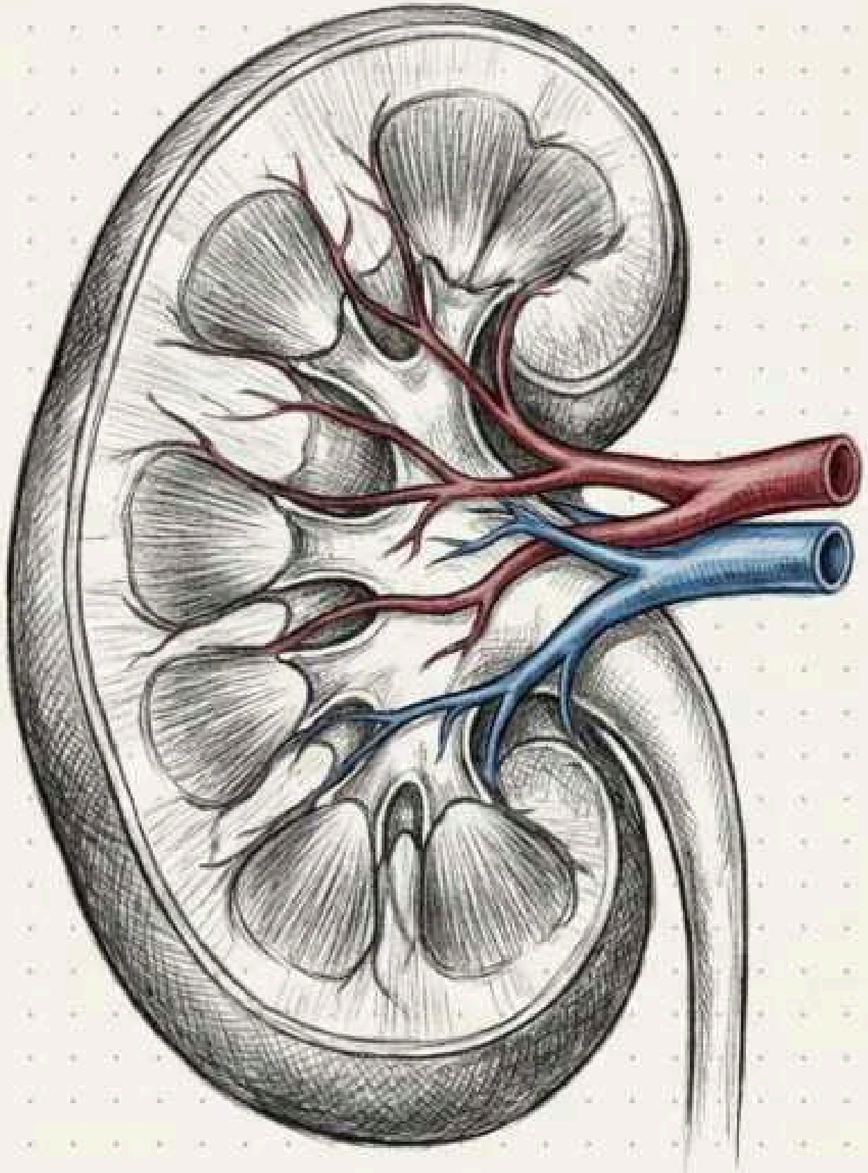


Δ AKI = (↑ Serum Creatinine) OR (↓ Urine Output)

A sudden fall in kidney function.

Clinical Impact

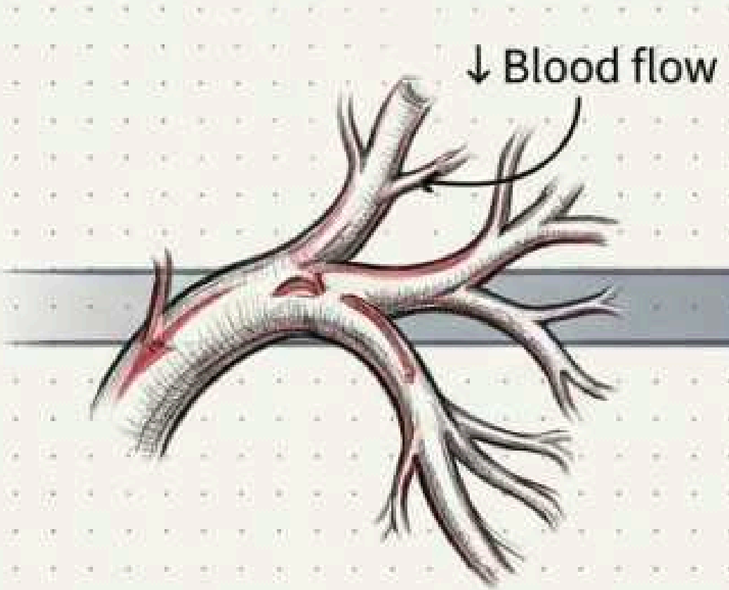
↑	Hospital Stay Length
↑	Mortality Risk
✓	**Highly Preventable**

Gemini Notebook

¶ 4.2

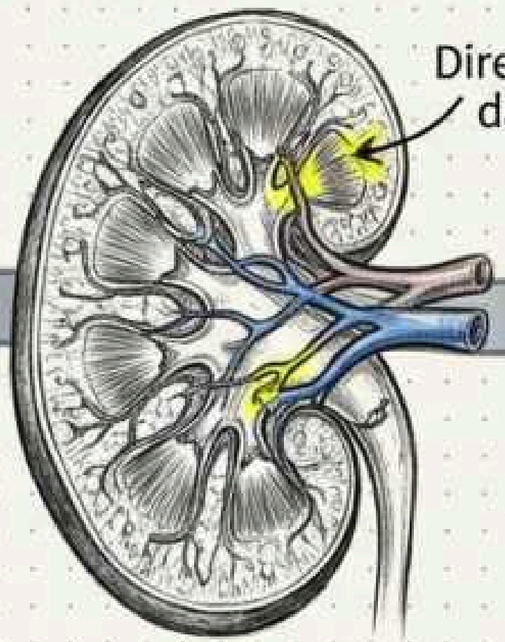
Domains of AKI Causes

Zone 1
Pre-Renal (Before)



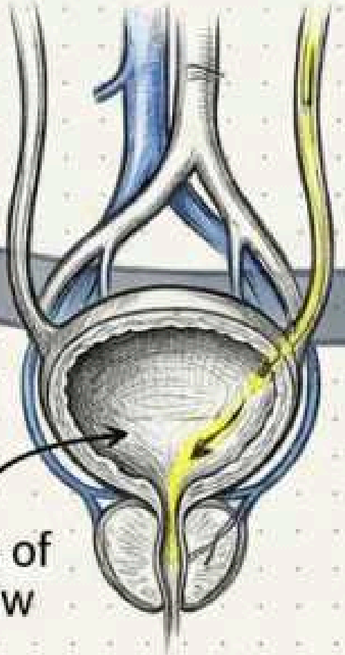
Dehydration
Sepsis
Low Blood Pressure

Zone 2
Intrinsic (In)



Anti-inflammatories
Specific BP tablets
Contrast agents

Zone 3
Post-Renal (After)



Enlarged prostate

Easily Missed, Easily Treated.

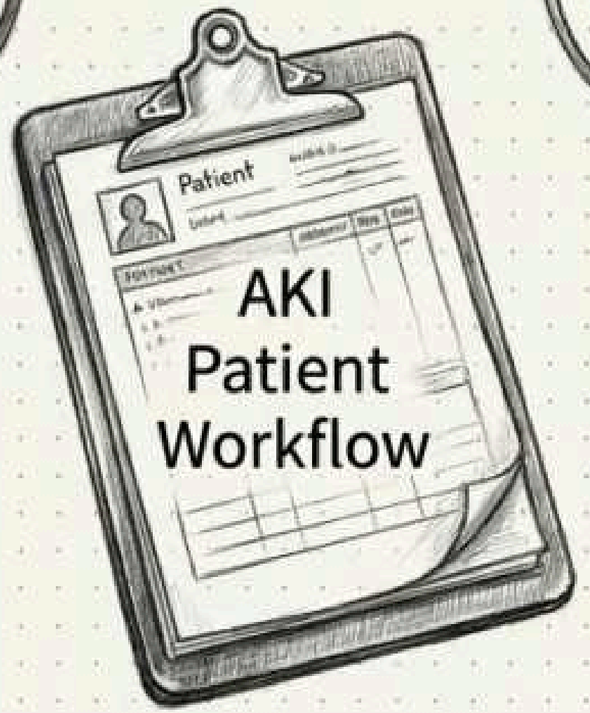
Gemini Notebook

AKI Patient Workflow

Treat & Restore

Address underlying cause + restore fluid balance.

Treat & Restore





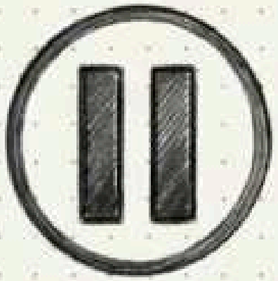
Scan

Ultrasound to check for unseen blockages.

Monitor

Strict tracking of urine output and blood tests.

Sick Day Rules



Pause medicines that harm the kidney or build up during acute illness.

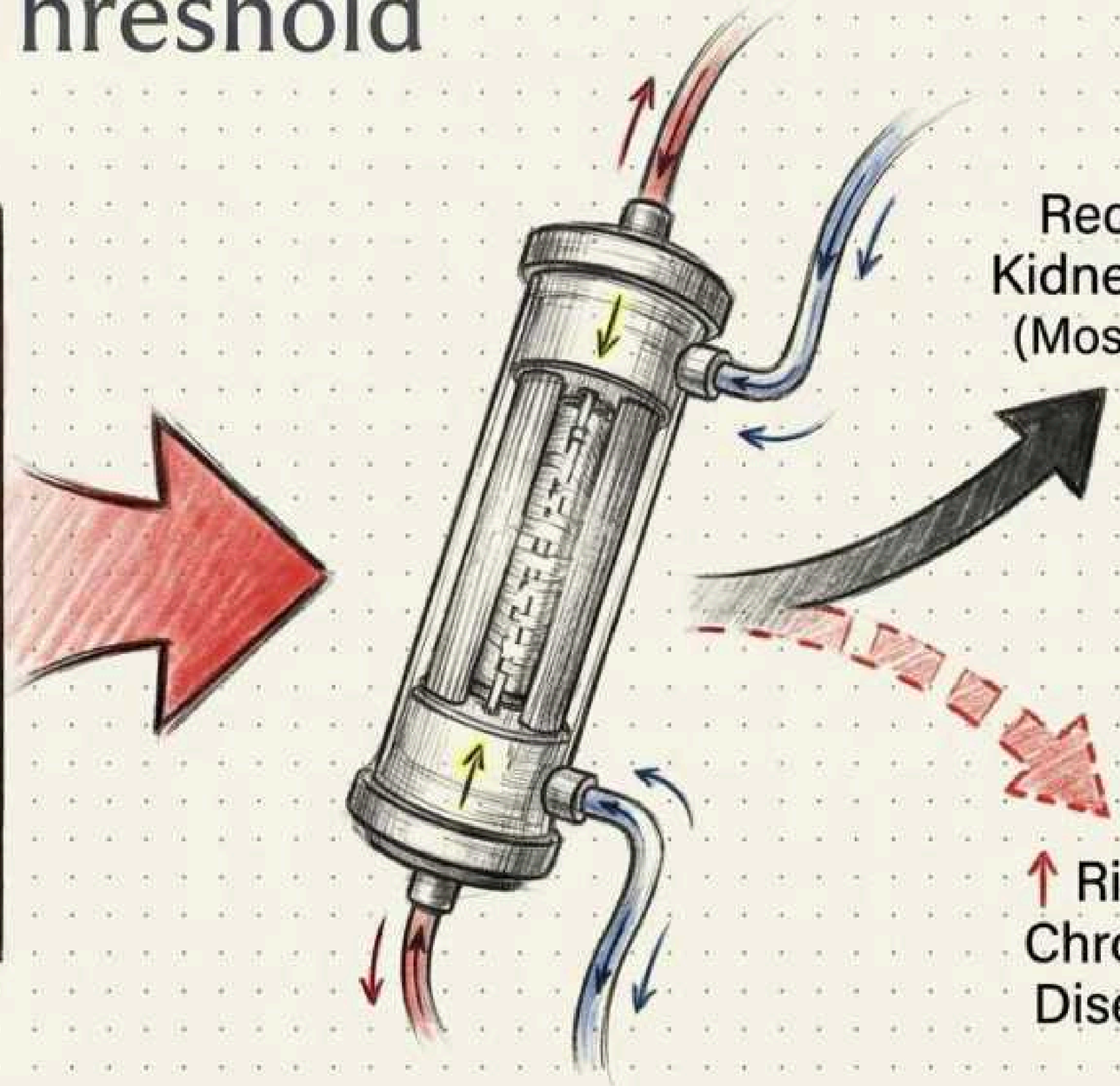
Restart only when the patient recovers.

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The Dialysis Threshold

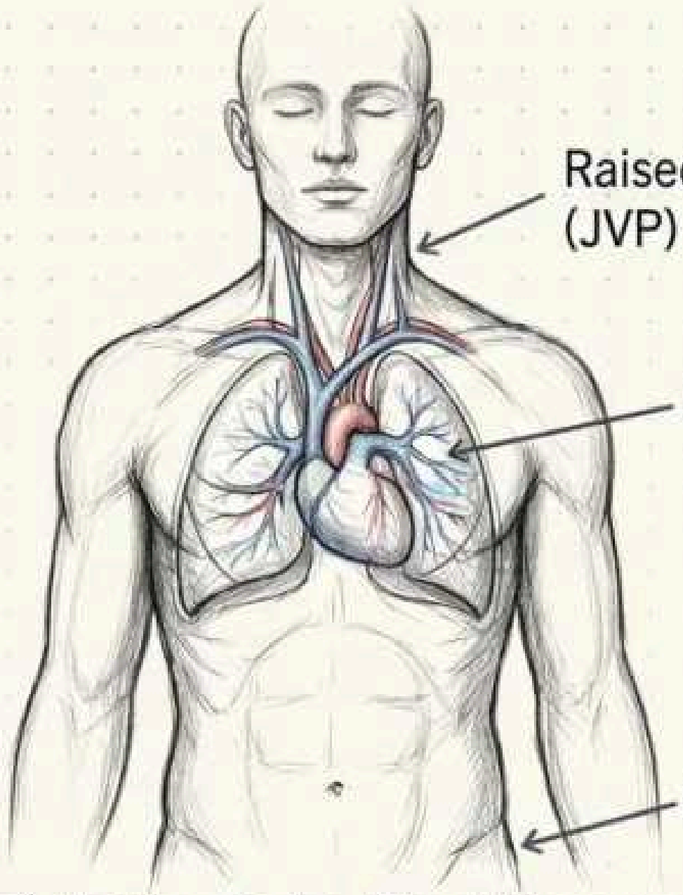
¶ 4.4

Danger Zone	
☑	Dangerously high Potassium (K^+)
☑	Severe Acidosis
☑	Refractory Fluid Overload
☑	Uraemia (build-up of waste)



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Clinical Fluid Assessment



- ☑ Metrics: Pulse, Blood Pressure,
- ☑ Skin/Mucous membranes,
- ☑ Weight, Urine output.

Prescribing Pillars

1. Resuscitation

Emergency volume expansion.

2. Routine Maintenance

When patients cannot drink.

3. Replacement

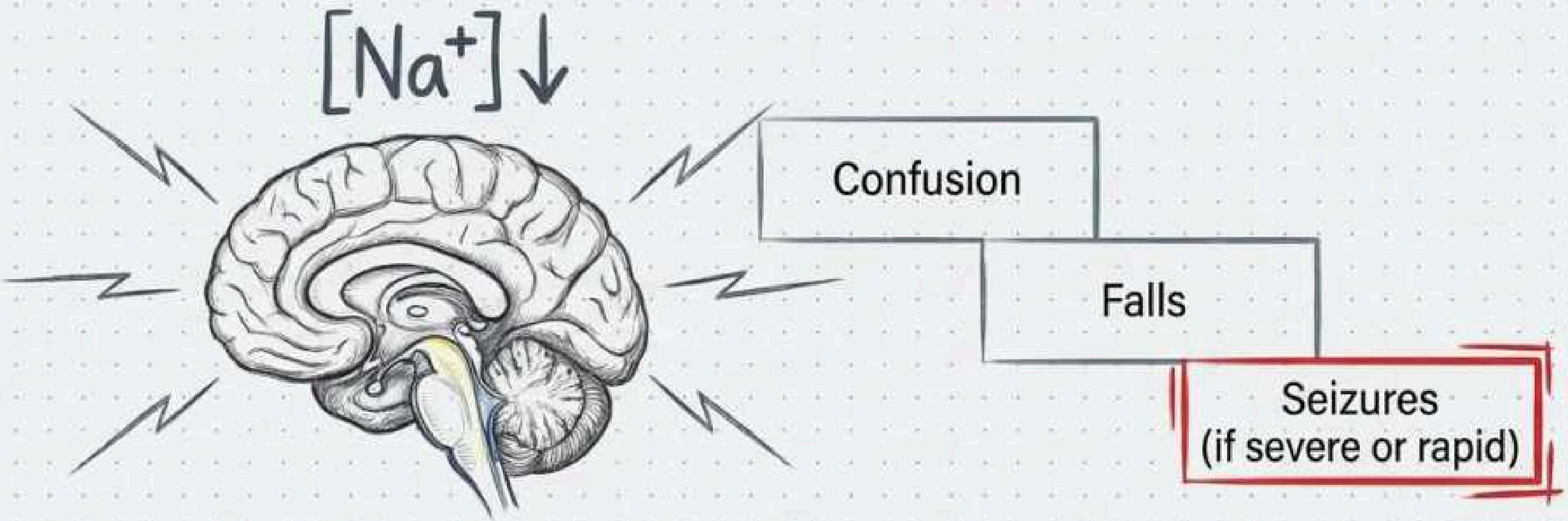
Covering ongoing losses.

Too much fluid is as harmful as too little.

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Hyponatraemia: The commonest electrolyte disorder in hospital.

¶ 4.6



Diagnostic Causes Matrix

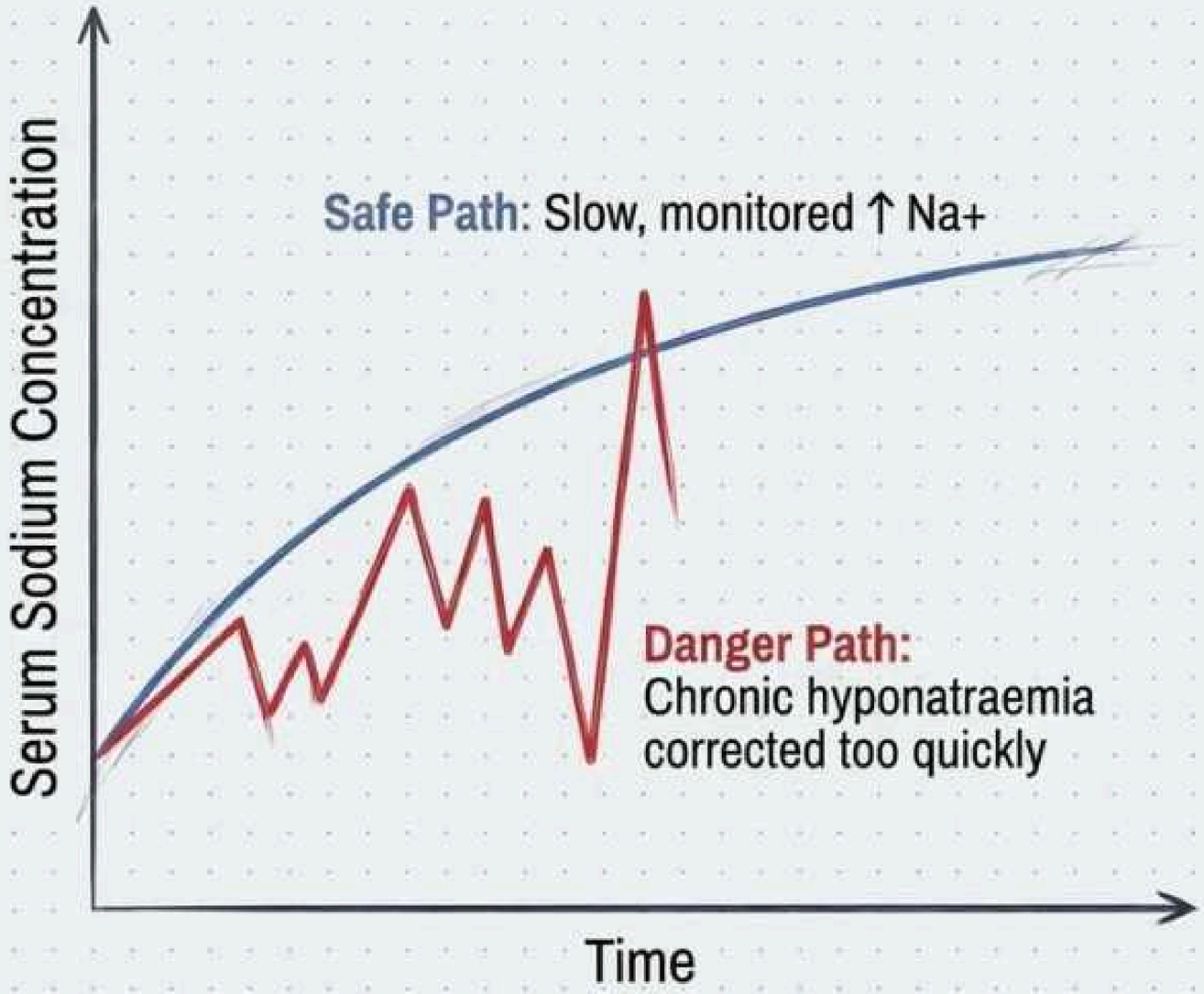
Organ Failure	Fluid Loss	Inappropriate ADH
Heart	Vomiting	Lung disease
Liver	Diuretics	Brain disease
Kidney failure		Specific drugs

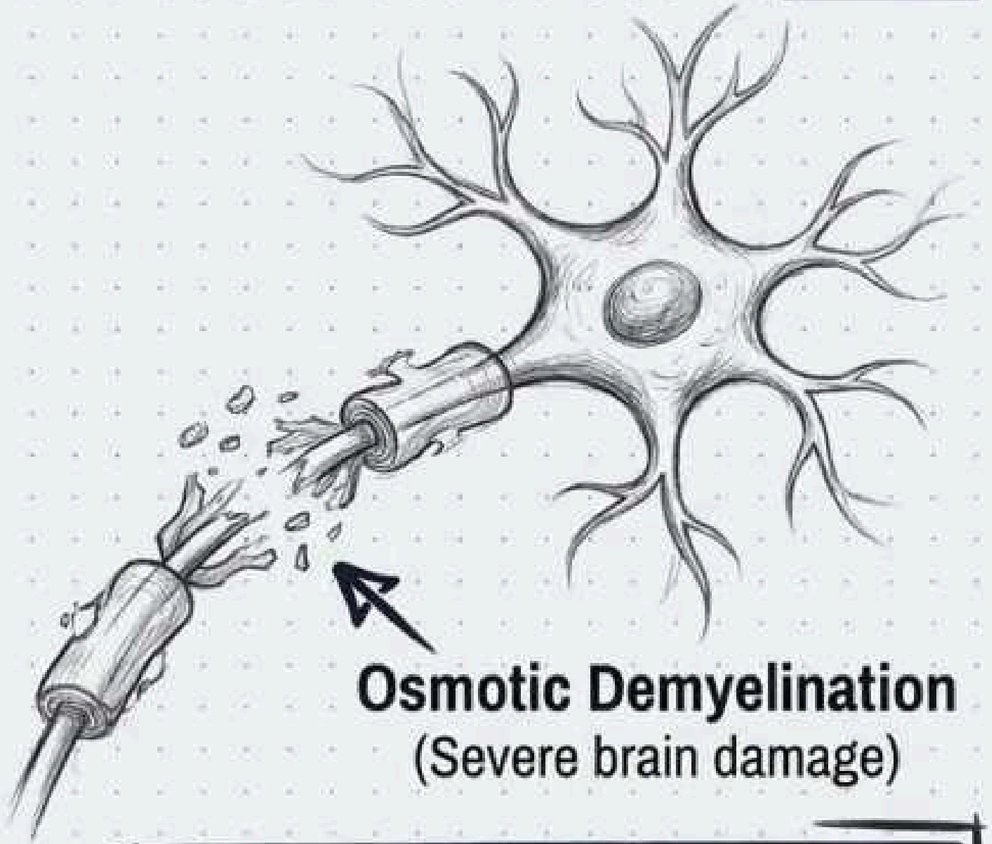
Treatment depends strictly on the cause and the patient's fluid status.

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¶ 4.7

Correction Trajectory



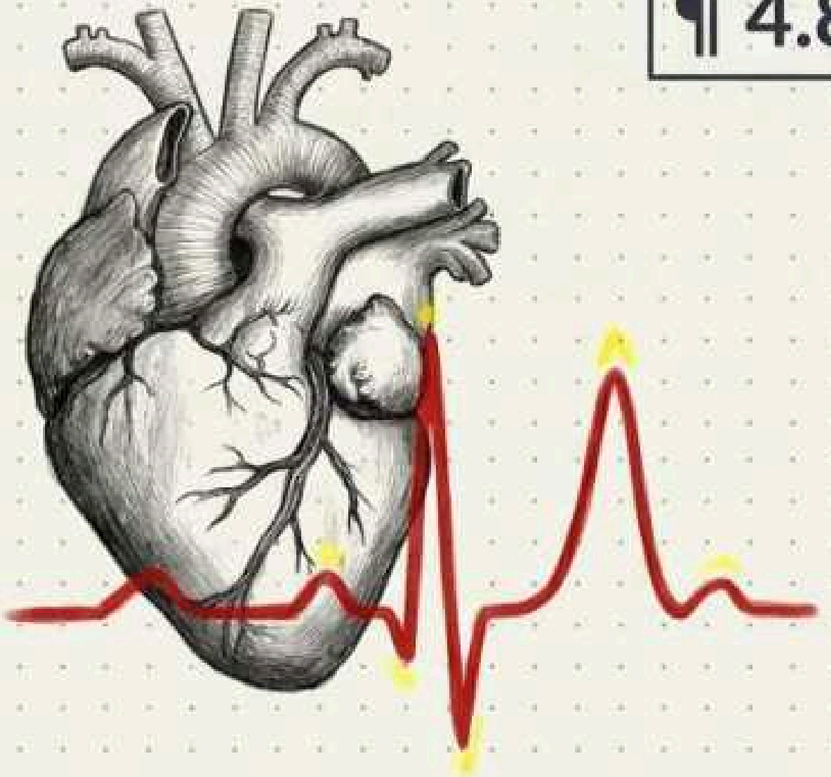


Osmotic Demyelination
(Severe brain damage)

Exception: Patients with severe symptoms (e.g., seizures) require urgent correction under strict specialist guidance.

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Hyperkalaemia Protocol



[K+] ↑ (Danger: Fatal heart rhythms and cardiac arrest)

Causes: Kidney failure, drugs that raise potassium.

1. Protect
Intravenous Calcium (Shields the heart from arrhythmia).

→

2. Shift
Insulin with Glucose (Drives K+ back into the cells).

→

3. Remove
Treat the underlying cause, use dialysis if needed.

Diagnostic Rule: ECG changes indicate severe danger.

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Diabetic Emergencies: Common on Medical Wards

¶ 4.9

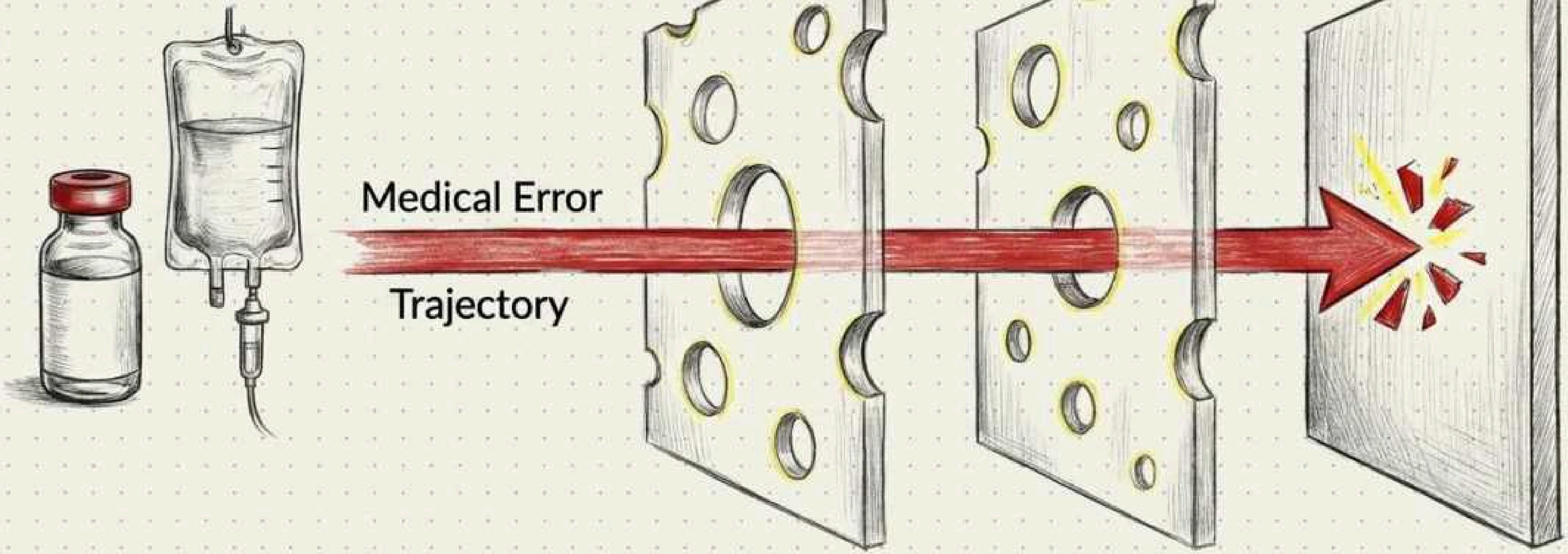
Hypoglycaemia	Diabetic Ketoacidosis (DKA)	Hyperosmolar Hyperglycaemic State (HHS)
Mechanism: Dangerously low blood glucose.	**Note:** Explored in detail in Medicine 531 B.	**Mechanism:** Severe dehydration combined with very high glucose. **Patient Profile:** Occurs in Type 2 Diabetes.

ALL require prompt, strict protocol-based treatment.

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¶4.10

Insulin and IV Fluids are among the most common and dangerous medication errors in hospital.

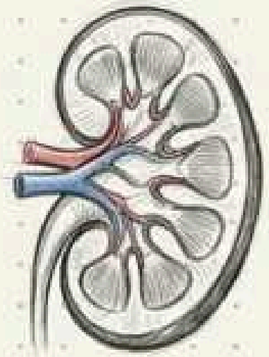


Layer 1:
Clear Prescribing

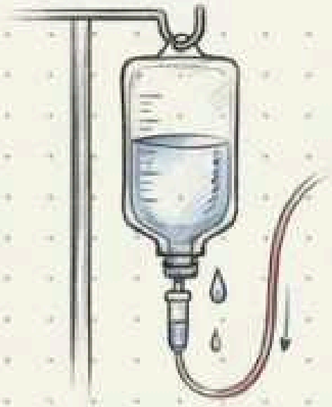
Layer 2:
Double-checks for high-risk drugs

Layer 3:
Electronic prescribing systems

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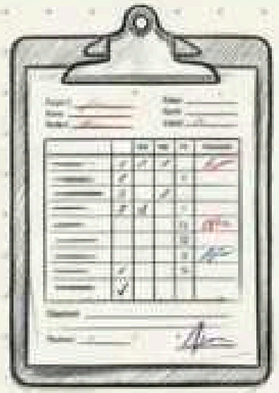
AKI: Acute kidney injury is highly common and often preventable.



Fluids: Fluids must only be prescribed after rigorous clinical assessment.

$$[Na^+]/[K^+]$$

Electrolytes: Sodium and Potassium disorders demand precise, careful management.



Diabetes: Diabetic emergencies must follow strict clinical protocols.

Up Next: The Older Patient with Multimorbidity (Several C

Gemini Notebook