

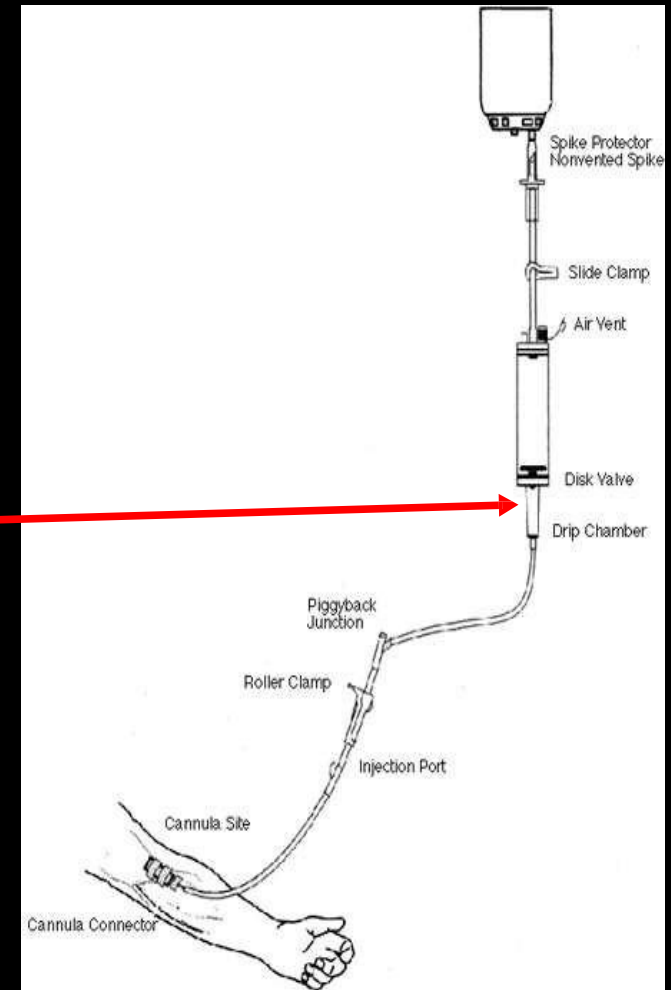
IV THERAPY

LATCHATHIPATHI VIGNESHWARAN

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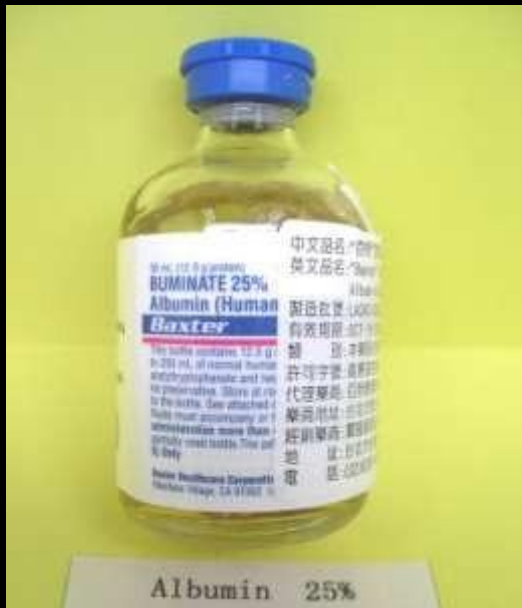
IV THERAPY - AN OVERVIEW

- Intravenous therapy or **IV therapy** is the giving of liquid substances directly into a vein.
- Compared with other routes of administration, the **intravenous** route is the fastest way to deliver fluids and medications throughout the body.
- It is commonly referred to as a **drip** because it employs a drip chamber, which prevents air entering the blood stream (air embolism) and allows an estimate of flow rate.



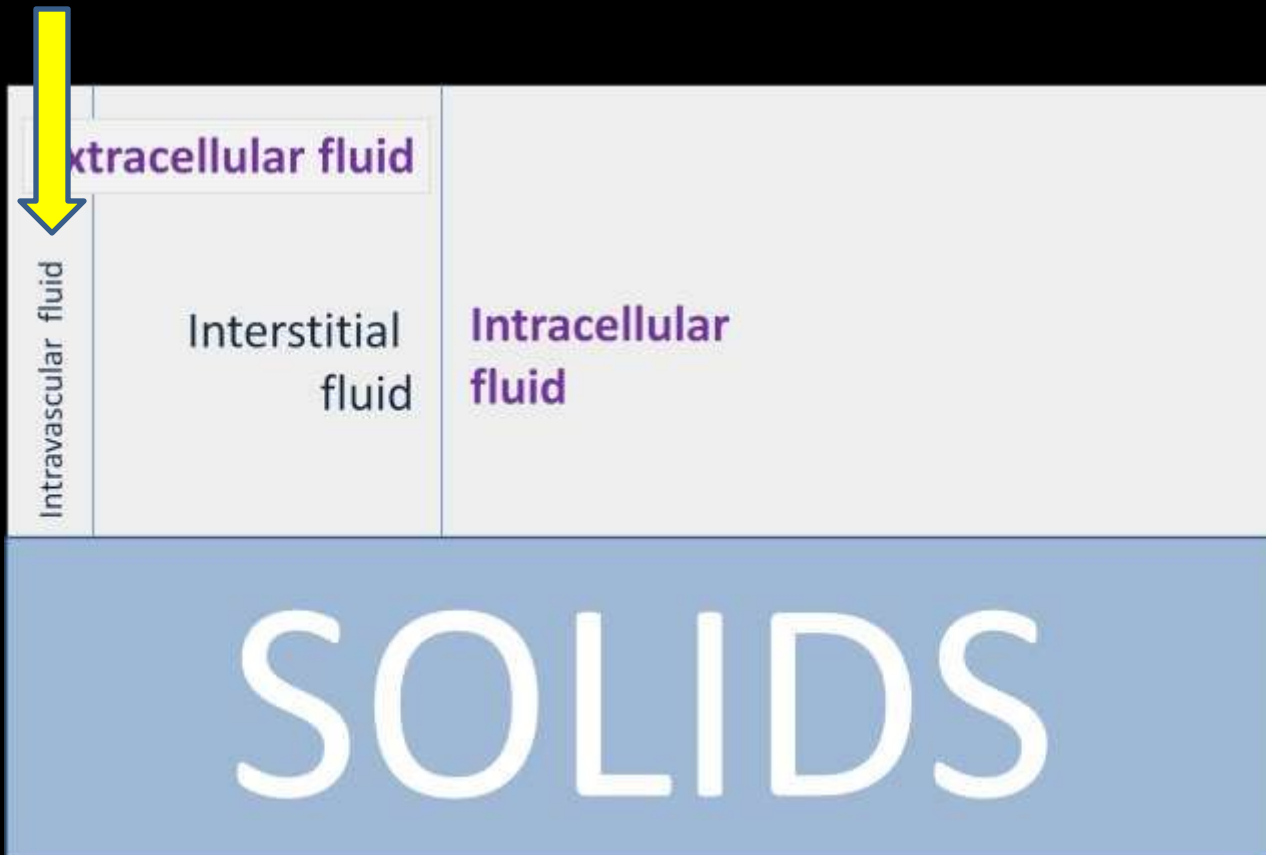
IV Fluids

- Crystalloids
- Colloids



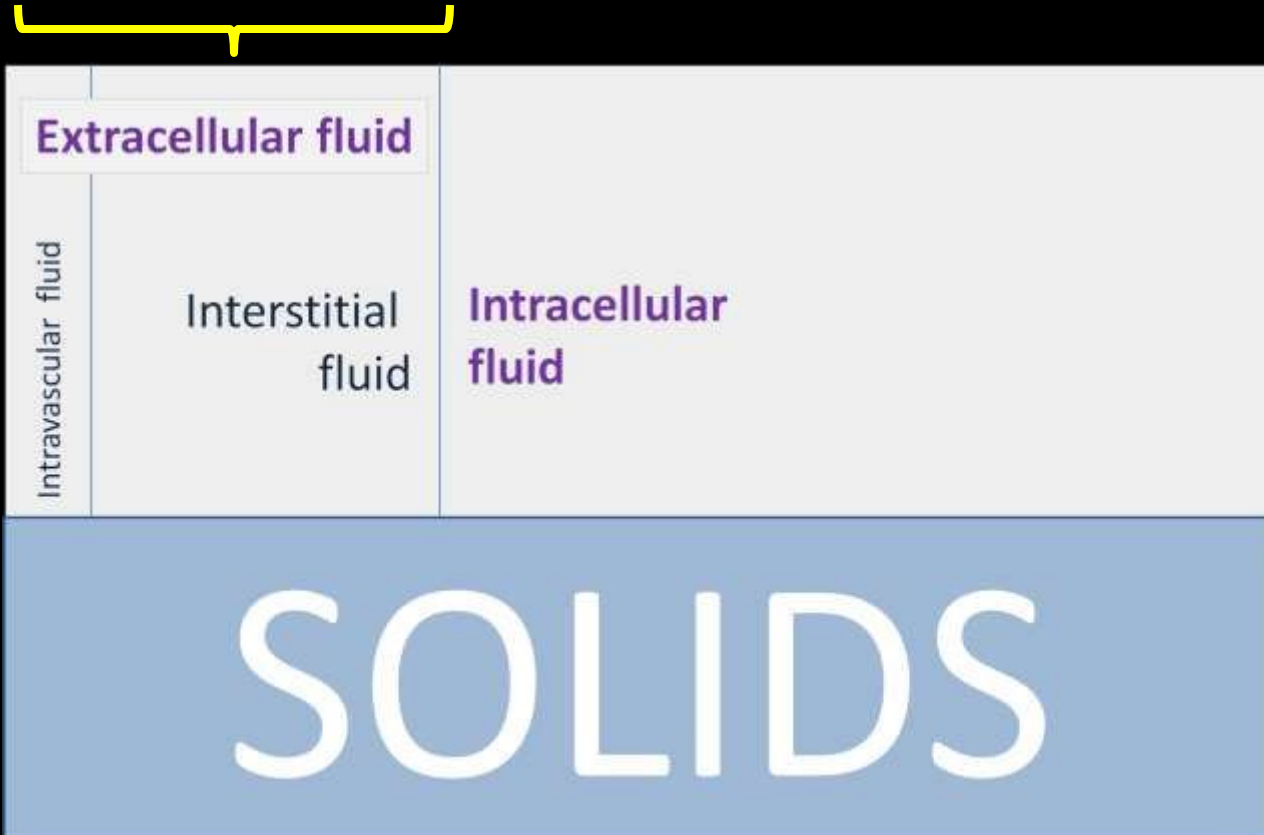
IV Fluids

- Colloids



IV Fluids

- Crystalloids



IV Fluids

- Colloids



- Contain larger insoluble molecules, such as albumen.
- Preserve a high colloid osmotic pressure in the blood
- Blood itself is a colloid.

IV Fluids

- Colloids



IV Fluids

- **Crystalloids**

- Aqueous solutions of water- soluble molecules.
- The most commonly used crystalloid fluid is *normal saline*, a solution of sodium chloride at 0.9% concentration, which is the same as the concentration in the body (isotonic).



- **What is isotonic?**
- **What is Iso-osmolar ?**

IV Fluids

- Crystalloids

Composition of common crystalloid solutions					
Solution	Other Name	[Na ⁺] (mmol/L)	[Cl ⁻] (mmol/L)	[Glucose] (mmol/L)	[Glucose] (mg/dl)
D5W	5% Dextrose	0	0	278	5000
2/3D & 1/3S	3.3% Dextrose / 0.3% saline	51	51	185	3333
Half-normal saline	0.45% NaCl	77	77	0	0
Normal saline	0.9% NaCl	154	154	0	0
Ringer's lactate	Lactated Ringer	130	109	0	0
D5NS	5% Dextrose, Normal Saline	154	154	278	5000

IV Fluids

- Crystalloids

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? Isotonic/ Hypertonic ?

IV Fluids

- Crystalloids

Composition of common crystalloid solutions

Solution	Other Name	[Na ⁺] (mmol/L)	[Cl ⁻] (mmol/L)	[Glucose] (mmol/L)	[Glucose] (mg/dl)
D5W	5% Dextrose	0	0	278	5000
2/3D & 1/3K		51	51		
Half-normal saline		77	77		
Normal saline		154	154		
Ringer's lactate		130	109		
D5NS	Saline	154	154	278	5000

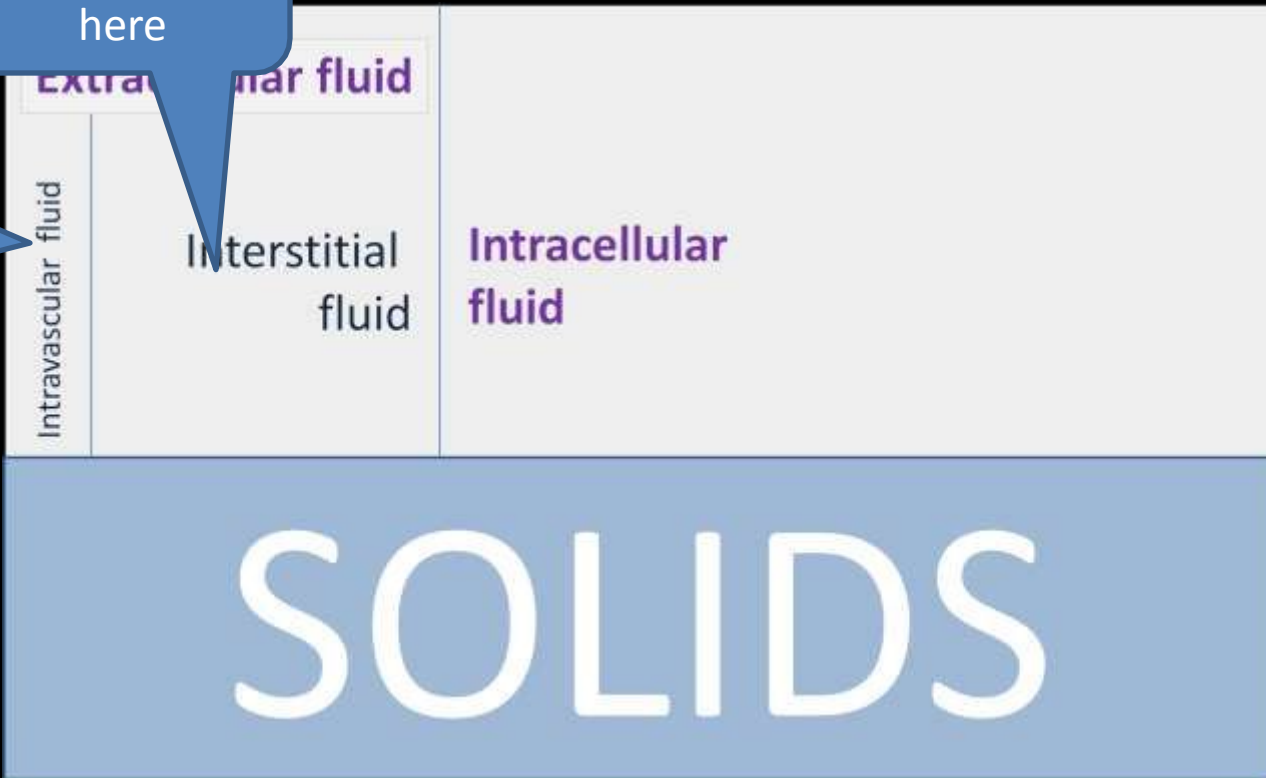
- When giving KCl in the treatment of hypokalemia, don't add it to solutions containing Dextrose.

- When giving Dextrose containing solutions, add KCl to prevent hypokalemia

Distribution of fluid in human body

Crystalloids move up to here

Colloids stay here



Risks and complications of IV THERAPY

1. Infection
2. Phlebitis
3. Infiltration and extravasation
4. Embolism
5. Fluid overload
6. Electrolyte Imbalance

Electrolytes

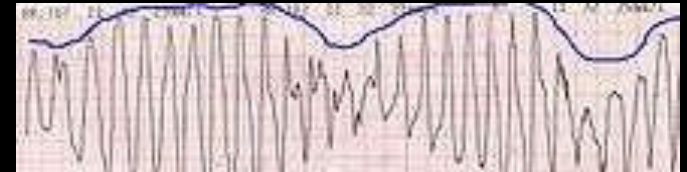
- Sodium 135 – 145 mmol/L
- Potassium 3.5 – 5.0 mmol/L
- Calcium 2.12 – 2.75 mmol/L
(Ionised calcium 1.0-1.3 mmol/L)
- Magnesium 0.75 – 2.2 m Eq/L
- Phosphorous 0.81 – 1.20 mmol/L

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Hypokalemia

Hyperkalemia



THANK YOU