



# Blood Chemistry: Fluids and Electrolytes

Dr. Ritamarie Loscalzo



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## Fluids and Electrolytes

- **Sodium:** One of the major salts in the body fluid, sodium is important in the body's water balance and the electrical activity of nerves and muscles.
- **Chloride, Serum:** Similar to sodium, it helps to maintain the body's electrolyte balance.
- **Potassium:** Helps to control the nerves and muscles.
- **Carbon Dioxide (Bicarbonate):** Ordered as part of an electrolyte panel. The electrolyte panel is used to detect, evaluate, and monitor electrolyte imbalances.





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## Acid Alkaline

Acidosis	Alkalosis
✓ Chloride +	✓ Chloride -
✓ Potassium +	✓ Potassium -
✓ Carbon Dioxide -	✓ Carbon Dioxide +

The PH Scale

Neutral

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## Electrolytes and Adrenals

Adrenal Fatigue	Hyper Adrenal
✓ Potassium +	✓ Potassium -
✓ Sodium -	✓ Sodium +
✓ Glucose -	✓ Glucose +
✓ Triglycerides +	

3 4 CATEGORIES	Units	PATHOLOGICAL RANGE		FUNCTIONAL RANGE		CURRENT	0/12/10
		Min	Max	Min	Max		
14 Sodium, serum	mmol/L	135.0	148.0	135.0	140.0	133	
15 Potassium, serum	mmol/L	3.5	5.5	4.0	4.5	4.7	

3 4 CATEGORIES	Units	PATHOLOGICAL RANGE		FUNCTIONAL RANGE		CURRENT	10/06/09 06/26/08 11/12/06
		Min	Max	Min	Max		
14 Sodium, serum	mmol/L	135.0	148.0	135.0	140.0	139	139 143
15 Potassium, serum	mmol/L	3.5	5.5	4.0	4.5	3.6	4.1 3.9

Hypo Adrenal

Hyper Adrenal

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## Adrenal Fatigue Actions

- ✓ Stress management: meditation, yoga, HeartMath™, appreciation
- ✓ High green, vitamin and mineral rich diet
- ✓ Vitamin C rich foods or supplements: goji, acai, pomegranate, camu concentrates, greens, colorful fruits and veggies
- ✓ Activated forms of B vitamins, i.e. Premier Research Living source liquids
- ✓ Antioxidants
- ✓ Adaptogenic herbs – more later
- ✓ Zinc

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## Fluids and Electrolytes Case Analysis

3	4	CATEGORIES	Units	PATHOLOGICAL RANGE		FUNCTIONAL RANGE		10/06/09
				Min	Max	Min	Max	
14	Sodium, serum		mmol/L	135.0	148.0	135.0	140.0	142
15	Potassium, serum		mmol/L	3.5	5.5	4.0	4.5	3.5
16	Chloride, serum		mmol/L	99.0	111.0	100.0	106.0	105
17	Carbon Dioxide, total		mmol/L	19.0	31.0	25.0	30.0	23
18	Calcium, serum		mg/dL	8.7	10.5	9.2	10.1	10
	Phosphorus, serum		mg/dL	2.3	4.8	3.5	4.0	3.9

- ❖ High sodium, low potassium seen in hyperactive adrenals
- ❖ Low carbon dioxide seen in metabolic acidosis
- ❖ Follow-up: address stress issues
- ❖ Adrenal Stress Test
- ❖ Alkaline diet high in fresh whole fruits and vegetables

