

Effects of Sodium and Potassium on the Body

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Sodium

- ◆ Acid-base balance
- ◆ Water balance
- ◆ Transmission of nerve impulses
- ◆ Muscle contraction

Cellular Biology

- ◆ Sodium is vital in cellular ion exchange - Sodium-Potassium Pump
- ◆ Neuronal conduction
- ◆ Muscle contraction

Sodium in Renal Failure

- ◆ Early CKD, kidney's adapt by increasing sodium excretion
- ◆ Late stage, kidney's not able to excrete as much sodium
- ◆ Leads to fluid related hypertension & edema
- ◆ Dialysis, ultrafiltration and diuretics only way to get rid of sodium.
- ◆ Diet / fluid intake important

Potassium

- ◆ Regulates water and acid-base balance.
- ◆ Muscle contraction
- ◆ Nerve conduction
- ◆ Energy metabolism

Potassium in Renal Failure

- ◆ Excreted by the kidneys when renal function normal.
- ◆ Vomiting, diarrhea, excessive sweating
- ◆ Decreased kidney function means decreased potassium excretion.

Too much

- ◆ Sodium – hypertension, edema, CHF, other cardiac complications
- ◆ Potassium – muscle fatigue, weakness, paralysis, nausea and abnormal heart rhythms.

Too little

- ◆ Sodium – seizures, headache, confusion, nausea and vomiting, muscle weakness or spasm, and irritability.
- ◆ Potassium – weakness, fatigue, constipation, heart arrhythmias, muscle cramping.

Conclusion

- ◆ Both sodium and potassium = important cations
- ◆ Balance is key
- ◆ Remember the role kidney function plays in each

References

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