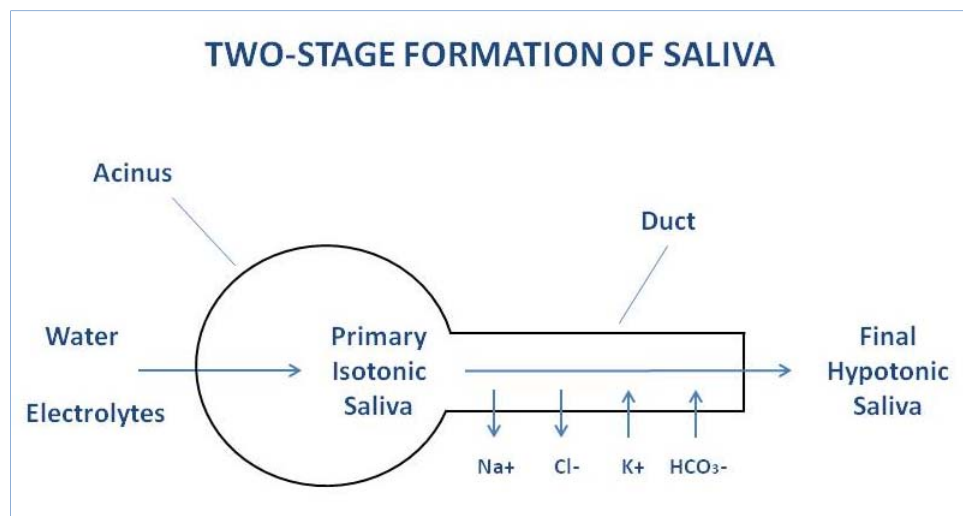


Saliva Flow, Ionic Strength, and pH

Saliva is principally a mixture of water and electrolytes; both pass into the acini from a dense network of capillaries that surround the salivary glands. The production of saliva is generally agreed to be a two-step process. The coordinated activity of ion channels, water channels, pumps, cotransporters and exchangers results in the primary saliva formation. The initial product secreted by the acinar cells into the lumen is nearly isotonic to plasma. As the initial product passes through the ductal regions of the glands, sodium and chloride ions are absorbed and additional potassium and bicarbonate ions are secreted, producing a final hypotonic fluid that enters the mouth. (Catalan et al., 2009; Turner & Sugiya, 2002)



As saliva production is stimulated, concentrations of sodium, chloride, and bicarbonate ions in the final product all increase with accelerated flow. (Illustrated in Dawes, 2008.) As bicarbonate levels increase, the pH of saliva changes from slightly acidic (6-7) to slightly basic (7- 8). (Bardow et al., 2000) The rise in pH values as the flow

rate increases has been reported in both whole and pure parotid saliva. (Parvinen & Larmas, 1981; Parvinen & Larmas, 1982; Dawes & Jenkins, 1964)

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