

Abstract Submitted  
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**Sticky Saliva** LOUISE MCCARROLL, MICHAEL SOLOMON, WILLIAM SCHULTZ, University of Michigan — Oral and even systemic health begins with healthy saliva by maintaining antibacterial activity, lubricating hard and soft oral tissues, healing, tasting, chewing, and swallowing. Saliva functionality is intimately linked to its rheology. Alterations in saliva rheology may indicate or cause unhealthy biological function. One imprecise pathological designation is sticky saliva, usually self-reported or qualitatively described by health professionals. Saliva is 99% water and therefore behaves like water in shear. Saliva also contains mucins, electrolytes, enzymes, hormones, and antibodies. These additional constituents enable saliva to form a long-lasting filament with a beads-on-a-string morphology in extension. Therefore, the main kinematic feature that distinguishes the coupling between the oral cavity and saliva elongational mechanics. We investigate the effect of pH and salinity on saliva filament formation with preliminary experiments and compare to 1D unsteady viscoelastic models. We discuss the results in the context of saliva functionality and in generating more satisfactory saliva substitutes for those suffering from xerostomia. We will discuss when beads-on-a-string are likely to occur.

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