

Abstract Submitted
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Rheology and lubricity of hyaluronic acid JING LIANG, WENDY E. KRAUSE, North Carolina State University — The polyelectrolyte hyaluronic acid (HA, hyaluronan) is an important component in synovial fluid (*i.e.*, the fluid that lubricates our freely moving joints). Its presence results in highly viscoelastic solutions. In comparison to healthy synovial fluid, diseased fluid has a reduced viscosity and loss of lubricity. In osteoarthritis the reduction in viscosity results from a decline in both the molecular weight and concentration of HA. In our investigation, we attempt to correlate the rheological properties of HA solutions to changes in lubrication and wear. A nanoindenter will be used to evaluate the coefficient of friction and wear properties between the nanoindenter tip and ultrahigh molecular weight polyethylene in both the presence and absence of a thin film of HA solution.

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