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Swimming in Complex Fluids THOMAS POWERS, HENRY FU, Brown University, CHARLES WOLGEMUTH, University of Connecticut Health Center — Many flagella-propelled microorganisms swim through gels and non-Newtonian fluids. We address how swimming velocities are affected in nonlinearly viscoelastic fluids. Working to leading order in the deflection of the swimmer, we find that swimming velocities are diminished by nonlinear viscoelastic effects. The implications of our results for Purcell's "scallop theorem" are examined.

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