Medium modifications from ^{4}He(e,e'p)^{3}H

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Polarization transfer in quasi-elastic nucleon knockout is sensitive to the properties of the nucleon in the nuclear medium, including possible modification of the nucleon form factor and/or spinor. In our recently completed experiment E03-104 at Jefferson Lab we measured the proton recoil polarization in the ^{4}He(e,e'p)^{3}H reaction at a Q^2 of 0.8 $(GeV/c)^2$ and 1.3 $(GeV/c)^2$ with unprecedented precision. These data complement earlier data between 0.4 and 2.6 $(GeV/c)^2$ from both Mainz and Jefferson Lab. The measured ratio of polarization-transfer coefficients differs from a fully relativistic calculation, favoring either the inclusion of a medium modification of the proton form factors predicted by a quark-meson coupling model or strong charge-exchange final-state interactions. The measured induced polarizations agree well with the fully relativistic calculation and indicate that these strong final-state interactions may not be applicable.