The quantity d_2, known as the twist-three matrix element, is a measure of the average restoring Lorentz color force experienced by a quark inside a polarized nucleon after it is struck by a virtual photon in electron Deep Inelastic Scattering (DIS). With its information encoded in both spin structure functions g_1 and g_2 in the quark valence region at large Bjorken x, this confining local force is a result of the remnant di-quark system attracting the struck quark. While bag- and chiral soliton-model calculations for the neutron d_2 are consistent with those of lattice QCD, current experimental data differ by approximately two standard deviations from those theoretical results.

To address this issue, the experiment E06-014 was carried out from February to March of 2009 at Jefferson Lab. It consisted of measuring double-spin asymmetries and the total cross section via scattering a longitudinally polarized electron beam off of a longitudinally or transversely polarized He-3 target, allowing for the construction of the neutron d_2. The experiment covered excitation energies in the resonance and DIS valence quark regions.

Preliminary results concerning the asymmetries and cross sections will be presented.