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An overview of recent nucleon spin structure measurements at Jefferson Lab

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Our understanding of nucleon spin structure is still far from complete. Experiments conducted at Jefferson Lab have made significant contributions to improve our knowledge of the longitudinal spin structure by measuring polarized structure functions, g_1 and g_2 , down to $Q^2 = 0.02 \text{ GeV}^2$. The low Q^2 data is especially useful in testing the Chiral Perturbation theory (ChiPT) calculations. The spin-dependent sum rules and the spin polarizabilities, constructed from the moments of g_1 and g_2 , provide an important tool to study the longitudinal spin structure. We will present an overview of the experimental program to measure these structure functions at Jefferson Lab, and present some recent results on the neutron polarizabilities, proton g_1 at low Q^2 , and proton and neutron d_2 measurements. In addition to this, we will discuss the transverse spin structure of the nucleon which can be accessed using chiral-odd transversity distribution (h_1), and show our results from measurements done on polarized ^3He target in Hall A.

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