In magnetic resonance imaging (MRI) and nuclear magnetic resonance spectroscopy (NMR spectroscopy), the term relaxation describes how signals change with time. In general signals deteriorate with time, becoming weaker and broader. The deterioration reflects the fact that the NMR signal, which results from nuclear magnetization, arises from the over-population of an excited state. Relaxation is the conversion of this non-equilibrium population to a normal population. In other words, relaxation describes how quickly spins “forget” the direction in which they are oriented. The rates of this spin relaxation can be measured in both spectroscopy and imaging applications.