Dysfunction of the visual system and of eye movements during neurodegenerative diseases have never been the focus of early / differential diagnosis and rarely been used as an approach to investigate the pathophysiology, although involvement of the visual system e.g. in sporadic Parkinson’s disease has been reported for more than 40 years. In a clinical context, it is currently possible to test the involvement of the respective functional systems by means of optical coherence tomography and video oculography. These deficits of the visual and oculomotor systems could prove to be suitable candidates for early diagnostic procedures or for monitoring disease progression. This talk is intended to provide an overview of the fundamental patho-physiological principles and clinical aspects of visual system involvement in neurodegenerative conditions, with a focus on Parkinsonian syndromes, together with currently available differential diagnostic options.