Frederick W Albrecht Von Graefe was the son of the well known physician, Carl Ferdinand Von Graefe. Born in an affluent family of social standing, he was endowed with a fine intellect. He received his medical education at the University of Berlin, which claimed a remarkable faculty of teachers like Virchow, Traub, and Rhomberg. He graduated in 1847, and gained his P.G. education from medical elite of Europe in mid 19th century, like Arlt, Claude Bernard, Rokitansky Hebra, and Bowman.

Back home, he was determined to specialise in ophthalmology. Without the benefit of University affiliation, he began a small clinic, which was soon expanded to accommodate the clinic and the hospital. Within a decade it grew in to an international centre for clinical ophthalmology and research. He joined as associate surgeon at the University of Berlin and became head of the ophthalmology department in 1866. He founded the Archive for Ophthalmology as an outlet for his contributions, which attracted students and patients, from diverse areas of the world. Von Graefe enhanced the knowledge of physiology of eye, making full use of Helmholtz's ophthalmoscope. He correlated optic nerve inflammation with its paralysis, and recognised the choked disc in raised intracranial tension caused by brain tumours.

His most important work was introducing iridectomy for glaucoma, suggesting that symptoms occurred due to increased intraocular pressure. He reported it in the journal in 1857, and the monogram was translated by the New Sydenham Society in 1859. The same year, he presented an account of central retinal artery embolism, describing its pathogenesis in a patient following chest trauma. His observation of ophthalmoplegia, led him to appreciate the significance of upper lid lag (Von Graefe's sign), as a finding distinct from the exophthalmos, of Basedow's disease (thyrotoxicosis). This was reported in 1864 in Deutsche Klinik. He also described diphtheritic conjunctivitis, choroids tubercles, sympathetic ophthalmia, retinal detachment, keratoconus and intraocular tumours, thus achieving international fame.

Von Graefe worked hard and required less sleep than others. He went to bed late at night and rose early. His time was spent in various clinical activities, surgery, teaching, research, reading and preparing scientific communications. His numerous operations were carried out leisurely, teaching many students in attendance. His work habits may have contributed to his early death from pulmonary tuberculosis.