

Allvar Gullstrand Biography

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Biography

Gullstrand conducted studies in ophthalmology and optics that contributed greatly to our understanding of the mechanisms of vision and disorders of the eye. The son of a prominent physician, Gullstrand was born in Landskrona, Sweden, and studied medicine in Uppsala, Vienna, and in Stockholm. He earned his medical degree in 1884 and his doctorate in 1890.

In 1892 Gullstrand became a lecturer at the Royal Caroline Institute and worked as head of the ophthalmological clinic in Stockholm. Two years later, he became professor at the University of Uppsala and in 1913, the university created a chair in his honor so that he could concentrate on his research in ophthalmological optics, the study of the optical system of the human eye.

Gullstrand's first contribution to the field was his study of astigmatism of the cornea. His findings on **astigmatism** led to the design of more effective corrective lenses for the condition. He then turned his attention to the role of the lens in accommodation. His detailed mathematical approach went beyond the findings of Hermann von Helmholtz, the German physicist who had published the *Handbook of Physiological Optics*, which Gullstrand edited. Gullstrand wrote many of his own papers on mathematical optics and, with his typical mathematical rigor, discovered inaccuracies in the traditional treatment of optical disorders.

Gullstrand also invented a slit lamp, which was used with a microscope to locate a foreign body in the eye with complete accuracy, and designed aspheric lenses that gave vision to patients whose lenses had been removed because of cataracts. In addition, he devised several other optical instruments including an ophthalmoscope, used to examine the interior of the eye.

Gullstrand received honorary degrees from the University of Uppsala, the University of Jena, and the University of Dublin. In 1911 he was awarded the Nobel Prize in physiology and medicine. Highly respected for his integrity and his exacting research, he was later appointed president of the Nobel Prize committee. He died in 1930 in Uppsala, Sweden.