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Pioneers of Phototherapy

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Abstract

Phototherapy or sunlight therapy mean exposure of person to daylight or to specific wavelengths of light. This sunlight is a free source of curative form of method in many disorders now a day. Common use of this is done with the treatment of acne vulgaris, eczema and neonatal jaundice also used in acceleration of wound healing, improvement in blood properties and blood circulation and sinus-related diseases and disorders. In neonatology, its use is very common in the treatment of neonatal hyperbilirubinemia through the isomerization of the bilirubin and consequently transformation into compounds that the newborn can excrete via urine and stools. There are so many inventions going on regarding sunlight use in medical and surgical field.

Keywords: Pioneer; Phototherapy; Niles Ryberg Finsen; Sister Jean E Ward; Neonatal jaundice.

Father of Phototherapy: Niels Ryberg Finsen

He was born on 15 December 1860, at Torshavn in the Faroe Islands.[1] His father, Hannes Steingrim Finsen, belonged to an Icelandic family with traditions reaching back to the 10th century and occupied top positions in the administration of the Faroe Islands.[2]

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He received his early education in schools at Thorshavn and then at Herlufsholm in Denmark, where it was claimed that "Niels was a very nice boy, but he was quite devoid of energy". In 1882 Finsen went to Copenhagen to study medicine, taking his final examination in 1890. He joined in the department of anatomy at the University of Copenhagen, but he left the post in 1893 in order to be able to devote more time to his scientific work. He was also taking private tution of medical students.[3]

In 1896, he founded, "Finsen Institute", where he served as its first director. It was later merged into Copenhagen University Hospital and currently it is a cancer research laboratory.

In 1883, Niels Ryberg Finsen suffered from Pick's disease - characterized by progressive thickening of the connective tissue of certain membranes in the liver, the heart and the spleen. This results in impairment of the functions of these organs. For treatment of this disease he came to know that, light and heat occupy important portions of the electromagnetic spectrum. In the wavelength range, radiation passes from ultraviolet to visible to infrared light. If the irradiation is too strong, it may give rise to tissue damage, but this be prevented by pigmentation of the skin.

He discovered curative properties by this

mechanism in diseases like small pox, *Lupus Vulgaris* and Neonatal Jaundice. By this way Finsen has contributed in the field of neonatology and pediatrics and that's why he is called as, "Father of phototherapy."[4]

He was member or honorary member of numerous societies in Scandinavia, in Iceland, Russia, and Germany etc. He received a Danish gold medal for merit. In 1904 the Cameron Prize was given him from the University of Edinburgh.

Finsen won the Nobel Prize in Physiology in 1903 for his work on phototherapy. He was the first Scandinavian to win the prize and is the only Faroese Nobel Laureate to date.

Publications

- *1893:* On the effects of light on the skin.
- *1896:* The use of concentrated chemical light rays in medicine.

Memorials

- The Finsen Laboratory at Copenhagen University Hospital is named in his honor
- In Torshavn, one of the city's main streets bears his name.
- His monument is installed in Copenhagen in 1909.[5]

Niels Ryberg Finsen died in Copenhagen on 24 September 1904.

Mother of Phototherapy: Sister Jean E Ward

She was born on 05 January 1922 and resided in San Rafael. She was the daughter of the late Walter J. McElroy, Sr. and the late Alice M. McElroy, long time residents of St. Cecilia's Parish. She was married with late Thomas E. Ward.

She was active in and supported Little Children's Aid Junior Auxiliary, USF – Loyola Guild, St. Ignatius College Prep - Loyola Guild and Mothers Club, St. Stephen's School Mothers Club.

Rochford Hospital is a maternity hospital situated in Essex, England. In this hospital Sister J. Ward was sister in-charge of the Premature Unit, firmly believed that the infants under her care benefited from fresh air and sunlight in the courtyard. This led to the first noticing of jaundice being improved with sunlight.

Further studies only progressed when a vial of blood sent for bilirubin measurement sat on a windowsill in the laboratory for several hours. The results indicated a much lower level of bilirubin (13-14 mg/100 ml.) than expected based on the patient's visible jaundice. When repeat sample was sent for bilirubin estimation for same patient the result gone up to 24 mg/100 ml. While first sample which was still at windowsill in direct sunlight tested now read only 9 instead of 14 mg/100 ml

For her great observation she is known as *'Mother of Phototherapy'*

She died on 06 August 2012.

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