

# The Past, Present, and Future of ENT

Otorhinolaryngology is a product of the early 20<sup>th</sup> century, when the disciplines of otology and laryngology were joined together. Otolologists were surgeons and laryngologists were physicians dealing with throat and chest problems. The first clinic was established in 1870 in Vienna. Rhinology became part of the discipline during the early 1900's

## Worldwide milestones in ENT

### Important dates – Otology

- 500 BC – Hippocrates refers to the tympanic membrane as a “thin web”
- 1649 – Mastoidectomy
- 1724 – Eustachian tube dilatation
- 1860 – Mumps association with deafness
- 1861 – Meniere's syndrome
- 1867 – Myringotomy – Politzer
- 1878 – Stapes mobilization – Kessel
- 1900 – First hearing aid
- 1901 – Vestibular nerve sectioning – Perry
- 1912 – Tympanoplasty
- 1920 – Otoplasty
- 1921 – Monocular microscope
- 1932 – Facial nerve decompression
- 1940 – Electrical burr
- 1953 – Microscope – Zeiss
- 1954 – Grommet
- 1960's – Stapedectomy
- 1967 – ABR
- 1977 – First cochlear implant - Brazil
- 1978 – OAE's

### Important dates – Laryngology

- 3600 BC – Tracheostomy
- 350 BC – Aristotle – Larynx and the windmill
- 350 BC – Alexander the great – tracheotomy
- 240 – Tonsillectomy / Quincy – Cornelius Celsus
- 1854 – Mirror laryngoscopy – Manuel Garcia
- 1860 – Laryngeal fissure
- 1873 – Laryngectomy – Billroth
- 1906 – Thompson – association between laryngeal cancer and smoking
- 1900's – Guillotine tonsillectomy
- 1954 – Fibre optic scope – Hopkins
- 1998 – Laryngeal transplant

### Important dates – Rhinology

- 3500 BC – Sekheténach – King Sahura – Made his nostrils well
- 3000 BC – Egyptians – removing the brain through the nose as part of mummification

- 600 BC – Hindus – nasal reconstruction
- 500 BC – Hippocrates – detailed description of nasal trauma and remedies. Also the first to remove polyps transorally
- 1489 – Da Vinci – detailed drawings
- 1597 – Treaty of Rhinoplasty – Tagliacozzi
- 1765 – attempt at a maxillary antrostomy
- 1768 – opening of the maxillary sinus through the oral cavity or tooth socket
- 1886 – opening of the maxillary sinus through the inferior meatus
- 1893 – through the canine fossa
- 1900's – decline in rhinology surgery due to antibiotics
- 1912 – trans sphenoid approach – Harvey Cushing
- 1950's – Messerklinger / Stammberger – endoscopic nasal surgery
- 1969 – CT scan

#### Important dates – Other

- 1846 – Anaesthesia
- 1867 – Antisepsis
- 1879 – Thomas Edison – light
- 1903 – Radiation
- 1950's – Chemotherapy

#### In general, ENT was

- First to use local anaesthesia
- First to use microscopes and endoscopes
- Pioneer in using prosthesis

#### ENT mentioned in

- Conception of Virgin Mary arose from the breath of the Holy Ghost in her ear
- 3 Feb – Benediction of the throat in memory of St. Blaise
  - “Piece of bone or thorn, whatever thou are, just as Jesus Christ caused Lazarus to come forth from the tomb and Jonah from the belly of the whale (patient should be seized by the throat) in the name of St. Blaise, martyr and servant of Christ, I order thee to come up or go down.”
- Folklore
  - Size of the ears / nose
  - Tingling of the ears
  - Shakespeare believed that one can be poisoned through the ear
- Fabricius - 1560
  - “Of all the surgical operations which are performed on man for the preservation of his life by the physician, I have always judged to be the foremost that by which man is recalled from a quick death to a sudden repossession of life, a feat which raises the surgeon nearest to the level of Æsculapius; the operation is the opening of the aspera arteria, by which patients, from a condition of almost suffocating obstruction to respiration, suddenly regain consciousness, and draw again into their heart and lungs that vital ether, the air, so necessary to life, and again resume an existence which had been all but annihilated.”

Presently, otorhinolaryngology has met other disciplines as it expands into “other territories”, leading to subspecialties such as:

- Neuro-otology

- Skull base surgery
  - Lateral
  - Anterior
- Facial plastics
- Head and neck surgery – cancer (robotics included)
- Paediatric ENT
- Aesthetic surgery
- Immunology
- Reconstructive surgery (flaps)

Therefore, ENT as a speciality is certainly expanding its boundaries. Studies have also proven that 30-40% of GP consultations are ENT related. ENT knowledge and training is of vital importance. Despite this, ENT remains one of the smaller blocks taught at undergraduate level. Furthermore, opportunities to upskill in ENT are limited with most referral / draining hospital not having dedicated ENT divisions.

The future of ENT will see the incorporation of AI models to more accurately predict nodal metastases, hearing restoration using DNA / RNA vector viruses, and more use of robotics such as in cochlear implants.

### **ENT at Stellenbosch University / Tygerberg Hospital**

The Division of Otorhinolaryngology was established in 1956 in the hospital named after Dr Karl Bremer, who was himself an ear, nose and throat specialist who had formerly practiced in Cape Town.

As was the case with all the other divisions, the ENT division had quite humble beginnings with part-time staff as its only resource. The first head, Dr Harry Wykerd, was a part-timer who practiced in Cape Town and he was assisted in the beginning by Dr Jack de Villiers, another private specialist from Cape Town.

Professor Carel du Toit was the first full-time head of the division. He was appointed in 1973 and retired from the post in 1981. The first Registrar in the Division, Dr P. Olivier, later settled in Port Elizabeth and he was followed in 1961 by Dr PK de Villiers. Dr de Villiers later became the head of ENT at the State Hospital in Windhoek, Namibia. The third Registrar was Dr Johnny Nell who completed his training under Prof Carel du Toit and later joined the practice of Prof Du Toit which, interestingly, was also the former practice of Dr Karl Bremer. Dr Nell was the first ENT specialist in the Northern suburbs of Cape Town.

#### *Prof Carl du Toit, first Head, 1973 – 1981*

Ahead of his time, Professor Carel du Toit had the vision to start a programme for hearing impaired children to develop their residual hearing to enable them to develop spoken language and enter mainstream education. He undertook several study trips overseas to acquire information to develop a model for such a programme. He was influenced by the work of Edith Whetnall in the UK, Dr Roskjawer in Denmark and especially by the Central Institute for the Deaf in Missouri, USA. In order to achieve this, he had special training organized overseas for three individuals, viz. Lida Müller, Frikkie van Zyl and Izelle Heunis. Together they started the Hearing and Speech Clinic at Tygerberg Hospital where hearing impaired children and adults were seen. The Paedo-Audiology Unit was developed under Mr Frikkie Van Zyl as part of this Clinic, and it established an early screening programme in the Cape Province that was conducted by public health nurses. Most significantly, Professor Du Toit started the pre-school for hearing impaired children at Tygerberg Hospital, which was later, in 1986, was named after him. The children at the school were trained in the auditory-oral method to facilitate spoken language development. Izelle Heunis was the first teacher, and she set up a parent guidance programme. The posts for the teachers at this school were jointly funded by the Health and Education Departments. Prof Du Toit was also instrumental in setting up the Acoustic Laboratory, under Prof Guelke, and this laboratory focused on research into the physiology of hearing and in fitting and maintaining hearing aids.

Prof Derrick Wagenfeld (1982 - 1987) was the next head and he had the foresight to establish, in association with Mrs Lida Müller, the First Cochlear Implant Programme in South Africa in the Dept of Otorhinolaryngology at

Tygerberg Hospital. This programme has gained international recognition. Its first multi-channel cochlear implant was done in 1986 and since then 264 adults and children have received a cochlear implant. Prof Wagenfeld continues to be involved in this Programme. Prof Wagenfeld was a charismatic and astute Head of department with a sharp intellect and skills in all three ENT disciplines, including Head and Neck.

Prof Johan (Zan) Reyneke, Head of the ENT division from 1988 to 1994, continued the interest in Otology, and he focused particularly on the teaching of both undergraduate and postgraduate students. He proved to be a fine educator and led many a young colleague to discover his/her full potential. His efforts ensured that the teaching of undergraduate ENT in the final clinical year, came to full fruition. Prof Reyneke was beloved by all his students and by his registrars. His dedication to education is appropriately symbolized in the special seminar room he established for academic meetings in the Department. He successfully negotiated for the establishment of a single G5 ward in place of the separate West ("White") and East ("Non- White") wards in 1990.

Prof R T (Theo) Gregor, the fourth Head, was appointed in 1995 and retired in 2000. He had a special interest special in Head and Neck Surgery. With his excellent surgical skills and insight into cancer of the head and neck, as well as an outgoing personality and international connections, Prof Gregor significantly advanced the reputation of the Division. Under his leadership, the scientific publications of the Division flourished.

Prof James Loock was the Head from 2001 to 2022. He first joined the Division under Professor Reyneke and has interests in Otology, hearing and paediatric airway surgery. He runs an annual Cape Temporal Bone Course in association with Professor George Browning of Scotland, who has become a good friend to the Department.

The current Head is Dr J Grobbelaar.