

Father of modern dental implant leaves a valuable legacy

*Brånemark's discovery began a new cycle in Dentistry.
Thanks to his revolutionary finding, millions
of people had their smile recovered.*

By Adriana Santos

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A distinguished personality in the universe of dental knowledge due to dozens of books published and international awards received, **Per-Ingvar Brånemark**, a Swedish orthopedic surgeon and professor, left a significant legacy of research in his professional field. Known as the father of modern dental implant, the revolutionary physician was at the age of 85 and did not resist the complications of a heart attack suffered right before Christmas, in Gothenburg, Sweden, his hometown.

Brånemark's international notoriety arose with the serendipitous finding of a phenomenon. This is because, at the start of his career, he was conducting studies with rabbits in order to investigate how blood flow affects bone healing. To this end, he used titanium

optic chambers placed into the tibia of rabbits. When the study period came to an end, titanium had fused to bone and could not be removed. That was how the world was acknowledged of a new technique that transformed people's smile, and which the researcher termed "osseointegration". This procedure allows titanium components and bone to integrate, and makes orthopedic as well as oral and maxillofacial surgeries possible, thereby rehabilitating patients with missing teeth or who have lost part of the face or other body parts due to malformation and/or mutilation as a result of accidents or cancer.

At first, life was not a bed of roses for the father of modern dental implant. Long-term trials and experiments were necessary to prove that titanium could, in fact, integrate to living tissue without causing rejection. Even though, at that time, the procedures recommended by Brånemark had not yet been accepted by dental surgeons and

How to cite this section: Santos A. Homage: Per-Ingvar Brånemark. Father of modern dental implant leaves a valuable legacy. *Dental Press Implantol.* 2015 Jan-Mar;9(1):8-15. DOI: <http://dx.doi.org/10.14436/2237-650X.9.1.008-015.int>

Per-Ingvar Brånemark

* May 3rd, 1929 † December 20th, 2014

Gothenburg, Sweden.

orthopedists, Gösta Larsson, who was seriously affected by cleft lip and palate, defects in the maxilla and missing mandibular teeth, volunteered to receive, in 1965, four maxillary implants used to support a fixed denture. After the procedure, Larsson was able to chew, eat and speak, and lived a healthy life until he passed away in 2006. According to specialists, the fact that the first case involved a dental patient was positive because, of all sites where titanium is placed in the human body, the mouth presents the highest chances of success.

Brånemark's first publications, in 1969 and 1977, led him to the Toronto Conference where he was widely recognized

by the scientific community in 1982. This event took the surgeon and professor's life to the next level, as it did to the lives of thousands of people who still benefit from his outstanding finding.

His wanderings all over the world led the Swedish professor to establish a strong emotional bond with Brazil where he went several times. He first went to Brazil in 1988 to attend the congress held by *Associação Paulista de Cirurgiões-Dentistas* (APCD). In the 90s, he spent a long time in the city of Bauru, São Paulo, to perform surgeries in patients treated at Centrinho Hospital for Rehabilitation of Craniofacial Anomalies (HRAC/USP) and



Dr. Laércio Wonhrath Vasconcelos, head of Brånemark Osseointegration Center, São Paulo.

Universidade Sagrado Coração (USC). In 2005, he founded P-I Brånemark Institute Bauru, following Gothenburg's example. In that same year, when he celebrated 40 years of osseointegration, Brånemark received love and affection from thousands of Brazilians.

TESTIMONIES

Dr. Laércio Wonhrath Vasconcelos

Head of Brånemark Osseointegration Center, São Paulo, Brazil.

"Dr. Brånemark was an innate scientist. As any other renowned researcher, he only believed in findings with long-term follow-ups, and that is how he worked throughout his life. However, P-I's geniality went even further: he was not satisfied with developing a technique he knew would be groundbreaking to humanity, he needed to work out methods to disclose it, given that at first, 50 years ago, Implantodontics was frowned upon in Sweden.

Brånemark began to spread his technique by means of contributors from all over the globe, making clinical research possible, which led the technique and protocol advocated by him to become procedures with great prognosis, thus benefiting thousands of patients from all around the globe.

I first met Dr. Brånemark three years after my first contact with osseointegration. Despite undergoing initial implant training in

Sweden, I did not meet him at first. During a congress held in Spain, he invited me for a conversation, as he became aware that I performed surgeries at Centrinho Bauru (HRAC/USP), one of the greatest centers treating patients with deformities, particularly cleft lip and palate.

He was direct and straightforward, and told me he would like to go to Bauru to solve problems we were not able to solve, that is, significant oral and extraoral defects.

From that point onwards, he nourished a passion for Brazil and began to travel there twice a year. For two weeks straight, we performed surgeries on grafted and extraoral defect patients, among others. We faced eight hours of surgery a day, a pace hard to follow. He enjoyed Brazil and the reception so much that he decided to move there and set up Brånemark Institute in Bauru. The world was shocked with his decision, as Brånemark traveled to various countries and had followers all over the world. He settled in Bauru where he spent a long time with us.

Having a close relationship with him allowed me to understand better the personality of a man who changed the lives of thousands of patients and dentists. Whenever he arrived in Brazil, I was always there at the airport to welcome him. What I first envision is a man with a broad smile who, with a firm handshake, asked: "How are your family and patients?" Throughout the trip to Bauru,

he always came up with new ideas and discussed new projects, thinking about the future and how we could improve treatment to patients.

In addition to his scientific contribution, he showed us that science must be shared in order to benefit as many patients as possible. The Brazilian people were privileged to have a close relationship with Brånemark more than any other country. He was believed in our potential. He decided to celebrate 40 years of osseointegration in Brazil to where he brought funds and, above all, never charged patients. When a true master passes away, he certainly leaves his lessons behind. We no longer have Dr. Brånemark with us, but his lessons are eternal. Even those

who have not been born will benefit from this great master's discovery."

Prof. Dr. Carlos Eduardo Francischone

Full professor, Universidade de São Paulo (USP), School of Dentistry, Department of Orthodontics, Bauru, São Paulo, Brazil.

"In recognition of Prof. P-I Brånemark, we should not define him with only a few words. His brilliant career, restless geniality and persevering scientific inventiveness provided humanity with groundbreaking studies that transformed thinking, approach and treatment of mutilated patients.

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Prof. Dr. Carlos Eduardo Francischone, Queen Sílvia of Sweden (spouse of King Carl XVI of Sweden), and Prof. Per-Ingvar Brånemark.

Worldwide Dentistry, in particular, applauds the osseointegration phenomenon – without early registers in history – and acknowledges the irreversible and positive transformation occurring in the lives of millions of patients and professionals involved and benefited by this technique in the last 50 years.”

He was a tough, reliable, compromised, tireless physician who contributed immensely to Dentistry and resigned from his position as an ordinary man to become an eternal icon. Perhaps by irony, he returned Horace Wells’ (dentist) importance to Medicine, since, as a physician, he transformed the field of Dentistry.

Prof. Brånemark, immortal in history, not only left a number of followers who were privileged to have a close relationship with a unique human being, but also a positive message: ‘It could have been worse.’”

Prof. Dr. Hugo Nary Filho

Adjunct professor, Universidade Sagrado Coração (USC), Bauru, São Paulo, Brazil.

“On the last 20th of December, Dentistry lost one of its most renowned icons: Prof. Dr. P-I Brånemark. Without a doubt, the technological development we currently envisage was grounded by osseointegration. It is unnecessary to discuss the impact Brånemark’s work had on the quality of life of people affected by dental and facial mutilation, hoping for full rehabilitation in terms of esthetics, function and senses. What can we say about a man who sought to spread what he believed in, who was overwhelmed by the technical aspect of his finding, but never ceased to assess the impact treatment had on his patients’ soul?”

Those who had the valuable opportunity to have a close relationship with such a unique human figure were able to realize the importance of a gesture, hand-touching, a word of encouragement, cooperation, team work, the desperate fight for survival and the search to relieve the soul.

Prof. Dr. Waldemar Daudt Polido

Editor-in-chief of Dental Press Implantology.

“A few people in the world have the power to cause a radical change as a result of their action. At the present time, we are lucky to witness one of the greatest, if not the greatest, revolution in Dentistry: the finding and development of osseointegration, primarily achieved by professor Per-Ingvar Brånemark.

Prof. Brånemark has always been described as a visionary who always looked ahead to the future. Hence, he left an immeasurable legacy to the Dentistry field, which is highly beneficial to our patients.

Brånemark’s approach towards research consisted in testing his theory by means of laboratory trials, followed by animal studies and evolving to research in

human beings. All results were carefully controlled with special attention given to minor details in all aspects of research and development.

I had the opportunity to meet Prof. Brånemark several times, and even assist him during surgical procedures, thanks to Profs. Carlos Eduardo Francischone and Laércio Vasconcelos who introduced us during one of our trips abroad and also in Brazil. Prof. P-I always attracted our attention to the need for team work and ongoing dental education and training so as to yield the best treatment outcomes.

Professor Brånemark not only touched many of his patients' lives as a result of his determination, imagination and energy, but also the lives of several colleagues. This was evinced by the number of articles published and the followers he had all over the world.

One of his unforgettable lessons was his view towards osseointegration: as a philosophy of work, rather than a mere treatment technique; which led him to treat patients as humanly and correctly as possible. It did not mean "placing implants" only, but rehabilitating a human being to live a normal and healthy life.



Profs. Drs. Carlos Eduardo Francischone, Laércio Wonhrath Vasconcelos, Per-Ingvar Brånemark and Waldemar Daudt Polido.

Unfortunately, at present, implant treatment sometimes ends up being wrongly performed, thereby yielding disastrous results that negatively affect patients' lives. In this scenario, it is worth recalling Prof. Brånemark's basic lessons: ongoing education and

improvement, attention and human care towards patients.

We humbly hope to pass his lessons on, paying ongoing homage to this great man who left a valuable legacy to our profession."

