For the last 50 years Sensodyne has been at the forefront of scientific innovation into the etiology, treatment and prevention of dentine hypersensitivity and erosive tooth wear. In January 2011, GlaxoSmithKline celebrated 50 years of Sensodyne innovation by hosting a 50th anniversary symposium in Madrid in Spain. Experts in the field of dentistry and dental research discussed the past, present and most importantly the future of oral health, each presenting a prospective from their own field of specialization.

The principal speakers at the symposium included Prof. Francis Hughes, Prof. J.M. ten Cate, Prof. David Bartlett and Prof. Martin Addy.

All speakers agreed that dentistry had come a long way in 50 years, however, good oral health for all is a challenge and can only be achieved by linking treatment to patient needs. “Research into genetic profiling holds many possibilities,” Prof. Francis Hughes.

Oral health prevention, a relatively neglected area of global health, is now key and cost saving is needed by policy makers to prevent chronic diseases. “The effectiveness and contribution of fluoride toothpastes are undisputed, however, in the future priority should include ‘better’ or ‘ smarter’ products that improve compliance, availability and affordability. Every one can learn to brush however a paradigm shift in prevention needs to occur, as caries prevention is very dependent on fluoride,” Prof. J.M. (‘bob’) ten Cate.

“In the future, there will be reduced government funding for dentistry practice and research, therefore, there is a need for industry and university collaboration with research focused on clinical needs and realistic outcomes in dental research. New treatments need to focus on dental wear which actively protect enamel and dentine from acids,” Prof. David Bartlett.

“Traditionally, there has been a lack of understanding of the etiology of hypersensitivity and clinical regression.” For dentists to offer advice they need to be educated and Industry has a role,” Prof. Martin Addy. Prof. Addy called for further research that is fully scientifically founded. “Many clinical trials on treatments for dentine hypersensitivity belong in the realms of testimonials. Areas for improvement include Objective Evaluation Criteria, better controls and evidence of stimulus response and therapeutic action. There is a need to be able to really magnify and visualise dentine either as a replica or in-situ.”

The speakers all agreed that industry has a key role to play in continuing research and development of preventative dental care.

Through collaboration with the dental health care professional and by researching patient’s needs, truly significant advances have been made. Sensodyne was first made available in 1961 by Block Drug. Since GlaxoSmithKline’s acquisition of the brand, it has rapidly grown globally and become the dentists’ sensitivity toothpaste of choice in many markets.

GlaxoSmithKline’s significant investment in Sensodyne measure for pain using FMRI (functional Magnetic Resonance Imaging) to map brain activity was presented by Dr Ashley Barlow. GSK Principal Clinical Scientist, in collaboration with the University of Zurich using a multi-discipline team including experts in medical, clinical, engineering, psychology, statistics and data management. Future GSK investment into pain measurement will bring advances into understanding dentine hypersensitivity and hence more targeted modes of treatment and prevention.

In early 2011, GlaxoSmithKline will be launching the world’s first daily fluoride toothpaste with Novamin, SensoSolve Protect, and a development that clearly illustrates why Sensodyne has become synonymous with dentine hypersensitivity.

Novamin, advanced calcium phosphate technology, employs the same patented bioactive material used in advanced bone regeneration techniques. It acts as a reservoir to build a new regenerative layer over exposed dentine and within the tubules. This layer has a similar chemical composition to hydroxyapatite mimicking the tooth’s natural composition and strongly binding to the collagen in dentine. 

Dr Jonathan Earl, Principal Scientist Sensodyne, using his expertise in material science and engineering has applied optical microscopy techniques to the visualisation & characterisation of the tooth structure and how treatments work in vitro. This work was carried out in conjunction with UK universities Cambridge, Leeds and Manchester, and uses various methods including Scanning Transmission Electron Microscopy (STEM), Environmental Scanning Electron Microscopy (ESEM) and focused ion beam Scanning Electron Microscopy (FIB-SEM).

The research shows the transformation of Novamin in saliva-changes are not only seen in structure but can also be measured in changes in chemical composition. This dynamic reparative layer is harder than natural dentin, it is able to withstand daily oral challenges such as tooth brush abrasion, and last 50 years both internally and externally. “The next 50 years will be even more exciting for GSK Sensodyne with continued investment into leadership in oral care through science. We are living in exponential times,” Teresa Lauer.

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