DMG (Dental Material Gesellschaft mbH), from Hamburg in Germany organised an international scientific symposium on micro-invasive caries management. The event took place in Hamburg, April 15-16, 2010. A group of 20 researchers and key opinion leaders from all over the world were invited to take part, share their opinions and discuss further projects.

Presentations about clinical studies and in-vitro projects were given by: PD Dr Hendrik Meyer-Lückel and Dr Sebastian Paris (Kiel, Germany), Dr Marcio Garcia dos Santos (São Paulo, Brazil), Dr David Manton and Dr Joseph Palamara (Melbourne, Australia), Dr Hervé Tassery (Marseille, France), Dr Suchit Poolthong (Bangkok, Thailand), Dr Ferranti Wong (London, UK), Dr Chris Deery (Sheffield, UK), Dr Lyndie Foster-Page (Dundee, New Zealand) and Dr Oksana Denga (Odesa, Ukraine). Based on the current paradigms and scientific knowledge, new developments in caries management on all intervention levels were discussed, with a particular focus on micro-invasive caries management.

Over the last 10 years the caries infiltration approach was developed and researched at the Charité University of Berlin and the University of Kiel by Dr Hendrik Meyer-Lückel and Dr Sebastian Paris. Upon having clinical evidence of the efficacy and reaching clinical applicability of the new technique, a product for daily practice was launched in 2009 in cooperation with DMG, Hamburg, Germany as their industrial partner. Caries infiltration with Icon® (DMG, Hamburg, Germany) is a novel micro-invasive treatment procedure closing the gap between non-invasive and minimally invasive treatment options, aiming to preserve as much healthy tooth structure as possible and thus offering a possibility to treat early non-cavitated lesions without drilling. It is an easy to follow three-step-clinical procedure to treat lesions on proximal and vestibular surfaces in both, the primary and permanent dentition. The basic principle is to seal early caries with a specially designed low viscous resin material that penetrates into the porous structure of the lesion by means of capillary forces using the remaining structures in the lesion as a scaffold. The pore volume of the lesion is made accessible removing the pseudo-intact surface layer using a 15 per cent HCl etching gel (Icon® Etch) for two minutes. After this period, the remaining water in the lesion is removed using 99 per cent ethanol (Icon® Dry). Subsequently, within a three minutes application time, the infiltrating resin (Icon® Infiltrant) penetrates the caries up to several hundred micrometers. The ability to penetrate into the pore system of the lesion is driven by capillary forces and determined by the physical and chemical properties of the infiltrant.

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