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Clinical Oral Investigations

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GENERAL INFORMATION springer.com ELECTRONIC CONTENT springerlink.com OP 047. The influence of matrix type on the proximal contact in Class II resin composite restorations. In vitro study

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Matrix system	Tightness (N)	LCA (mm)	PCP (%)
A	18.0 ± 2.0	$3,2\pm 0,3$	72.2 ± 5.3
В	18.4±1.2	$3,9{\pm}0,5$	78.8 ± 4.4
С	16.5 ± 1.3	$3,0\pm0,4$	63.8 ± 6.8
D	32.2±5.0	$4,6\pm0,4$	45.8 ± 5.8
intact molar	$17.1\pm2,1$	$3,4\pm0,4$	$76.1 \pm 5,9$

Introduction and objectives: The aim of this in vitro study was to evaluate several types of matrices in terms of proximal contact area formation in Class II resin composite restorations.

Materials and methods: Standardized MO cavities were prepared in artificial molars of a manikin model. Resin composite (Tetric TPH-Dentsply) restorations were placed using the matrices (n=10): (a) circumferential straight metal matrix with Tofflemire retainer-A, (b) circumferential precontoured metal matrix system-B (Adapt SuperCap-Kerr), (c) the same as b with transparent matrix-C, and (d) sectional pre-contoured metal matrix system-D (Palodent-Dentsply). Each restoration being completed, the manikin model was fixed on a tension-meter apparatus and an orthodontic wire (0.012 inch) was used to assess the tightness, length of contact arc (LCA) and position of contact point/LCA% (PCP). The same measurements were performed with an intact molar (control). The results were subjected statistical analysis by one-way ANOVA and unpaired t-test ($\alpha = 0.05$).

Results and discussion: Matrix D provided the highest tightness value, with the highest length arc and with statistical differences relative to the intact molar surface. No differences were revealed among the other matrices and of each one with the control. Contact point was located more cervical and more occlusal (PCP) than the analog of the intact molar for D and C matrices, accordingly.

Conclusions: In contrast with the sectional matrix system tested, all the circumferential pre-contoured matrices can adequately reconstruct the proximal contact area.

MAT 048. A controlled evaluation of the exothermic properties of a new silorane based composite: A preliminary study

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Introduction and objectives: A temperature rise of 5.5°C within the pulp chamber has been shown to cause irreversible pulpitis. Exothermic effects of traditional resin based composites (RBC) have been shown to be of little concern to the pulp. Newer materials have recently been released utilising Silorane chemistry. The aim of this study was to evaluate the exothermic properties of a silorane composite compared with a traditional RBC.

Materials and methods: A standardised cavity was prepared in a dentine substitute and restored with either a conventional RBC or a silorane based composite. Thermocouples were placed above, below and within the samples. Exothermic output was measured when the samples were cured using a QTH light for a standardised time and distance. Results were compared for statistical difference.

Results and discussion: The exotherm of a Silorane composite (15°C) is higher than that of conventional composite (7.1°C). Lower shrinkage of Silorane may tempt some practitioners to bulk fill their Silorane restorations. This is not recommended.

Conclusions: The silorane based material has a significantly greater exotherm than the conventional RBC tested. It is recommended that low power LCUs are used to cure the material until further research is carried out. Silorane composite should be cured using incremental placement as with conventional RBCs.

Acknowledgements: 3M ESPE

CLIN 049. Minimum Intervention Treatment Plan -Putting MI into practice. Part 1 - MI Identify: diagnose your patient's susceptibility

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Introduction and objectives: The Minimum Intervention (MI) concept is well described in the literature and summarizes the clinical rationale for the preventive and cause related approach in cariology. Many studies showed that treatment decisions in cariology varied markedly among general practitioners (GPs) and that the GPs still wonders "how do I integrate MI in my daily practice?" The aim of the Pan-European group of academics and GPs - the GC Europe MI Advisory Board – was to present an

evidence based treatment approach for the clinical practice. Materials and methods: Evidence based literature review. Results and discussion: According to the clinical steps four parts are used: identify, prevent, restore and recall. Identify encompasses more than looking for caries. The clinical signs of caries are described according to modified ICDAS criteria in addition to similar radiological criteria for bitewings. This is added by plaque and/ or gingival index, salivary factors and possibly other technical data. All this information is than evaluated to assess the patient's susceptibility and set up a preventive treatment plan.

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CLIN 050. Minimum Intervention Treatment Plan - Putting MI into practice. Part 2 - MI Prevent: Stop caries and prevent it from progressing

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Introduction and objectives: The Minimum Intervention (MI) concept is well described in the literature and summarizes the clinical rationale for the preventive and cause-related approach in cariology. The aim of the Pan-European group of academics and GPs - the GC Europe MI Advisory Board – is to present an evidence-based treatment approach for the clinical dental practice.

Materials and methods: Evidence-based literature review. Results and discussion: MI Prevent deals with "preventive care" and "dental recall frequency". Depending on the susceptibility and the risk factors of the patient, preventive treatment regimens are instituted. The standard approach for all includes oral hygiene recommendations, dietary advice, patient motivation and maintenance. This standard approach is not sufficient alone to control caries for patients with a high susceptibility. Those patients with more risk factors need active preventive care. This includes decontamination (professional mechanical tooth cleaning, antimicrobial gels and rinses, transitional restoration placement), remineralisation (fluoride, casein-phosphopeptide amorphous calcium phosphate), xylitol and salivary stimulation, dental sealants (composite or glass ionomer cement). Repeated diagnosis of the risk factors will be used to assess the need for the precise level of preventive measures and the amount of recall sessions individualised for each patient.

Acknowledgements: This work was kindly supported by GC Europe

CLIN 051. Minimum Intervention Treatment Plan -Putting MI into practice. Part 3 - MI Restore and MI Recall: Maintain oral health and maximize tooth structure

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Introduction and objectives: The Minimum Intervention (MI) concept is well described in the literature and summarizes the clinical rationale for the preventive and cause related approach in cariology. The aim of the Pan-European group of academics and GPs - the GC Europe MI Advisory Board – was to present an evidence based treatment approach for the clinical practice.

Materials and methods: Evidence based literature review. Results and discussion: MI Restore presents techniques for conservation of tooth structure when restorations have to be placed. Distinctions are made between non-invasive and invasive techniques. Adhesive materials are nowadays available for both indications and the non-invasive or sometimes "repair approach" is shown to be successful in many indications. MI Recall: To maintain oral health the patient most often needs professional support life, to compensate his inabilities and control changes in risk factors throughout life. Despite the lack of scientific evidence regarding optimal recall intervals, there is the need for scheduling recall period according to the patient's susceptibility in order to prevent oral disease and to control the effectiveness of the preventive regimen. Information will be given to remind the audience of the relevance of customizing the recall period according to the dynamic of the carious process, the patient demand and some cultural aspects related to national health services context in the different European countries.

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OP 052. Microleakage of different bonding systems in Class V composite resin restorations prepared with Er:YAG laser and diamond bur

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