Minimum Intervention Treatment Plan: Putting MI into practice

Part 1 - MI Identify: Diagnose your patient's susceptibility

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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: Minimum Intervention Treatment Plan (MTP).

The IDENTIFY part is the first step of the treatment plan.

MTP sequence is the framework (Fig. 1-2):
1. Identify causes and risk factors of the disease
2. Prevent the disease
3. Restore the lesions if necessary
4. Control the risk factors in an efficient recall program

Figure 1: To be successful in practice the continuous cycle has to be maintained

Figure 2: The Minimum Intervention Treatment Plan flow chart

1. Diagnosis, Identify
The goal of a medical diagnosis is to select the best possible treatment. The crude way caries have been diagnosed for years, i.e. to use an explorer and look for cavities is not a diagnosis for a preventive approach.

Clinical signs
The clinical and radiographic signs and symptoms of caries are the starting point. But today the diagnostic threshold must be low, in order to differentiate between caries and non-cavitated forms of caries as well (Fig 3). These latter forms can be prevented from progressing, cavitated lesions still must be drilled and filled.

Clinical and radiographic signs and symptoms of caries are:
- No or slight change in enamel translucency after prolonged air drying (>5 s).
- No enamel demineralisation or a narrow surface zone of opacity.
- Opacity or discolouration hardly visible on a wet surface, but distinctly visible after air drying.
- Enamel demineralisation limited to the outer 50% of the enamel layer.
- Opacity or discolouration distinctly visible without air drying. No clinical cavitation detectable. Demineralisation involving between 50% of the enamel and the outer third of dentine.
- Localised enamel breakdown in opaque or discoloured enamel
- +/- greyish discolouration from underlying dentine.
- Demineralisation involving the middle third of dentine.
- CAVITATION in opaque or discoloured enamel exposing the underlying dentine.
- Demineralisation involving the inner third of dentine

Figure 3: Modified ICDAS scale of visual assessment relating the clinical appearance of the lesion to its histological status: score 0 to 4

2. Diagnosis, Establish patient susceptibility
The individual susceptibility is the outcome of the diagnosis and gives an indication for the treatment plan. The preventive approach in practice is directed towards the reduction of the risk-factors. Depending on the motivation and cooperation of the patient more or less intensive professional preventive approaches are necessary.

Factors affecting the susceptibility (Table 1)
General: diet, fluorides, health, medications, social, age,....
Oral: saliva, OH, plaque, bacterial balance,....

Table 1: Diagnosis and assessment of the patient susceptibility

<table>
<thead>
<tr>
<th>Lesions</th>
<th>Yes_answer</th>
<th>UNFAVOURABLE</th>
<th>No_answer</th>
<th>FAVOURABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. New or progressing /restored lesions in the last 2-3 years?</td>
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<tr>
<td>General factors</td>
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<tr>
<td>Diet</td>
<td>Frequent snacks between meals? Acidic and carbohydrate-rich diet? SODA consumption? Anorexia, bulimia?</td>
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<tr>
<td>Fluoride</td>
<td>No fluoride (toothpaste/rinse/water)?</td>
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<tr>
<td>Health</td>
<td>Oral, disease, Chemotherapy, Radiation to head and neck?</td>
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<td></td>
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<tr>
<td>Medications</td>
<td>Hypothyroid medication?</td>
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<tr>
<td>Social</td>
<td>Low socio-economic status?</td>
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<tr>
<td>Age</td>
<td>Adolescent? Elderly?</td>
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<tr>
<td>Oral factors</td>
<td>OHI</td>
<td>Less than 2 brushings per day?</td>
<td></td>
<td></td>
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<tr>
<td>Saliva</td>
<td>Stimulated saliva flow &lt;0.7 ml/min? Low buffer capacity? Acidic saliva pH?</td>
<td></td>
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<td></td>
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<tr>
<td>Plaque</td>
<td>Healthy/visible heavy plaque?</td>
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<tr>
<td>Bacterial balance</td>
<td>Mutans Streptococci &amp; Lactobacilli &gt; 10°?</td>
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</tbody>
</table>

3. The practice mission statement
We are a dental team who IDENTIFY & DIAGNOSE individual patients risk of getting dental disease i.e. cavities, tooth loss etc, we then give PREVENTION advice to reduce this risk helping patients to pay less for future dental work and the last resort is that we have to RESTORE your teeth for function and aesthetics.

Reference
Mount, G. L. and H. Ngo, Minimal intervention: a new concept for operative treatment, Operative Dentistry 17(4) 2002, 1180 - 1187