



White spots? Yes, but
not on teeth!

Icon Smooth Surface
Infiltration treatment



Transillumination
as a diagnostic aid



BEFORE



AFTER



Preserving healthy tooth structure with infiltration treatment

Infiltration treatment with the Icon Caries Infiltrant is a simple and effective way to treat caries-related white spots and enamel opacities like fluorosis. The advantages for the patient? Healthy tooth structure remains intact and dental health is restored. Icon is micro-invasive and can be applied in just one patient visit. Plus, it's a treatment method that's ideally suited to young patients.



Why you should opt for the infiltration method:

- Clinically proven success for more than 15 years⁹
- One of the best-researched methods with over 400 studies
- Backed by science and verified in several studies
- Recipient of awards and accolades
- Micro-invasive treatment and lasting results
- Preserves healthy tooth structure
- Increases patients' quality of life^{3,5}



Icon Smooth Surface—because tooth substance is worth protecting

How do you treat caries-related white spots and enamel opacities with lasting effectiveness and efficiency, in a way that's pleasant for the patient? Usually, bleaching alone will not achieve a consistently convincing result.

Invasive treatments like veneers are not only time-consuming and costly, they also always come at the expense of healthy tooth substance.

Infiltration treatment with Icon Smooth Surface is a minimally invasive yet highly effective solution for

treating enamel opacities while preserving tooth substance.

Enamel opacities stem from various structural disorders that differ from each other in terms of their topography and composition.

Thankfully, infiltration treatment with Icon Smooth Surface offers the ideal treatment solution for a range of enamel opacities.



Scientifically
proven.

“Resin infiltration achieves the best esthetic outcomes compared with microabrasion and remineralization therapy.”

Ibrahim DFA, Venkiteswaran A, Hasmun NN. Esthetic Effects and Color Stability of Resin Infiltration on Demineralized Enamel Lesions: A Systematic Review. J Int Soc Prev Community Dent. 2023 Aug 30;13(4):273-286.



Fig. 1: Teeth before infiltration



Fig. 2: Teeth after infiltration

Infiltration treatment: an ingeniously simple principle

Back to a natural smile in just three steps! With the infiltration treatment, enamel opacities are easily treated by etching, drying and infiltration so that they are no longer visible and blend seamlessly into the individual tooth profile.

After pretreatment with an etching gel, the "infiltrant", a highly liquid resin is applied to the affected area.

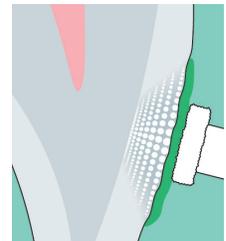
Through capillary action, the infiltrant penetrates deep into the porous tooth enamel where it is then light-cured. This allows enamel opacities to be masked, as the infiltrated area resembles the appearance of the natural enamel, and healthy tooth substance remains intact.

The three package components for treatment with Icon:

1. Etching with Icon Etch



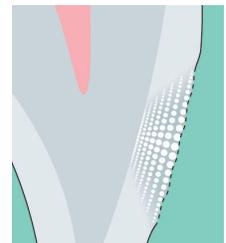
Icon Etch is used to prepare the tooth for infiltration. The HCl Gel is applied to the treatment area using special applicators, thereby removing the pseudo-intact surface layer. This enables the infiltrant to later penetrate the pore system.



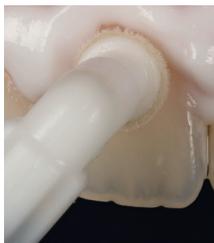
2. Drying with Icon Dry



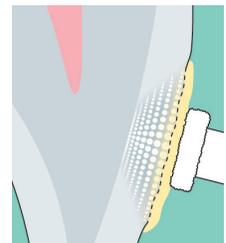
A dry environment is required for the subsequent step of actual infiltration. For this purpose, the lesion is dried with Icon Dry and air.



3. Infiltration with Icon Infiltrant



A low viscosity resin (the infiltrant) is applied, penetrates deep into the enamel through capillary action and fills the lesion. It is then light-cured. The infiltrated lesion has similar optical characteristics to those of the healthy tooth enamel.

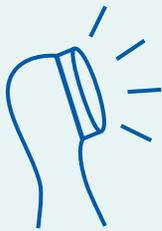


Planning for treatment

The high variability of the clinical appearance of smooth surface enamel defects means that an individual approach is required when planning for effective infiltration treatment.

Especially for younger patients with enamel opacities, minimally invasive treatment can make all the difference.

Being able to accurately assess the location of the lesion in the enamel is essential for treatment planning and contributes to an optimal infiltration result. This minimizes the risk of misdiagnosis and unnecessarily invasive treatments.



Transillumination: the key to successful infiltration

First, the lesion topography is assessed with the help of transillumination. A suitable light source is positioned palatally and the light-optical properties of the transilluminated teeth are evaluated from the

smooth surface angle. **Transillumination lets you observe lesions in greater detail and makes areas visible that are difficult to see with the naked eye.**



Fig. 1: Initial situation without transillumination



Fig. 3: Outcome without transillumination

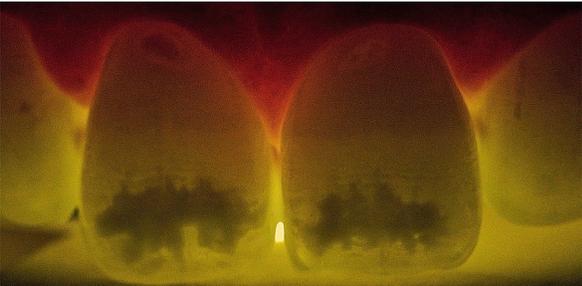


Fig. 2: Initial situation with transillumination



Fig. 4: Outcome with transillumination

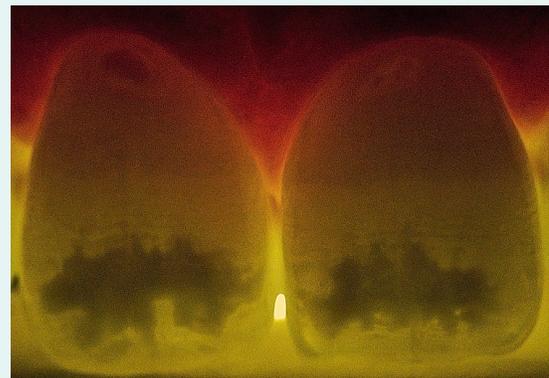
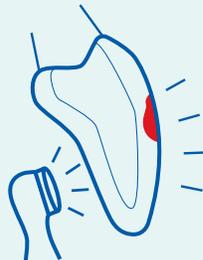
Bringing light to the darkness: transillumination for more in-depth diagnosis

It all depends on the surface. How deep is the lesion located in the enamel and how strong is the intact enamel layer above the lesion? Being able to assess this is crucial for establishing the right treatment procedure. Transilluminating the enamel provides information about the position of the lesion in the

enamel. This allows the thickness of the intact surface above the opacity to be estimated and a suitable method for removing this surface layer to be selected.

Example 1: Distinct margins

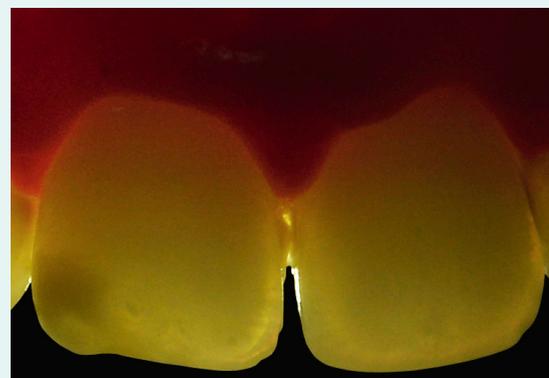
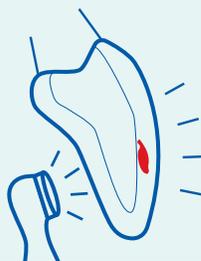
Distinct margins indicate superficial opacities without a thick surface layer. In this case, less invasive treatment is required and the use of Icon Etch alone is sufficient to establish access to the lesion.



Diagnosis of the depth of the lesion:
surface lesion

Example 2: Vague margins

Vague opacity margins indicate opacities that lie deeper in the enamel and have a thicker surface layer. To ensure access to the opacity for infiltration, more extensive surface removal is required.



Diagnosis of the depth of the lesion:
deep lesion

Position of the lesion in the enamel: treatment of surface lesions

DIAGNOSIS

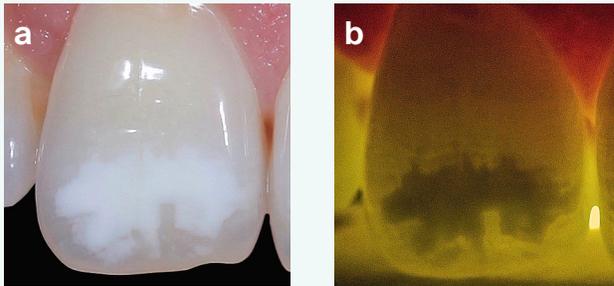


Fig. 1 a + b show initial images of a surface lesion in reflected **(a)** and transilluminated light **(b)**. During transillumination, the surface lesion exhibits very distinct margins. Since these lesions are located close to the surface of the enamel, a few etching sessions with Icon Etch are generally sufficient to provide access to the lesion.

Fig. 1 a + b: Diagnosis of the depth of the lesion: surface lesion

TRANSFORMATION

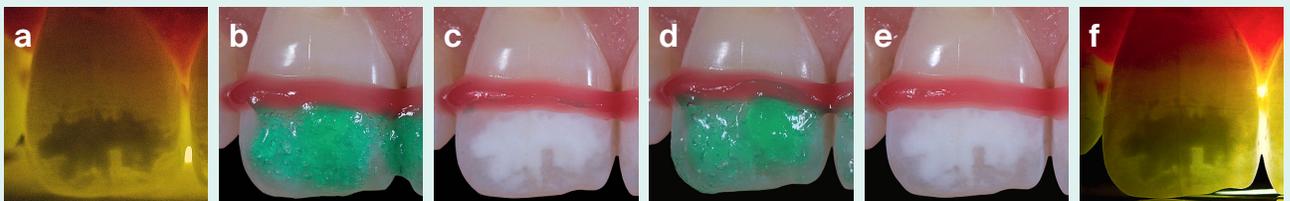


Fig. 2 a - f

In the surface lesion **(Fig. 2 a - f)** in this specific case only two etching steps were necessary to remove the thin surface layer covering the lesion. The lesion was etched twice for 2 minutes each, with Icon Etch

(15% HCl) **(Fig. 2 b + 2 d)**. Since it is a surface lesion, the transilluminated lesion looks similar before and after the erosive steps **(Fig. 2 a + 2 f)**.

RESULT

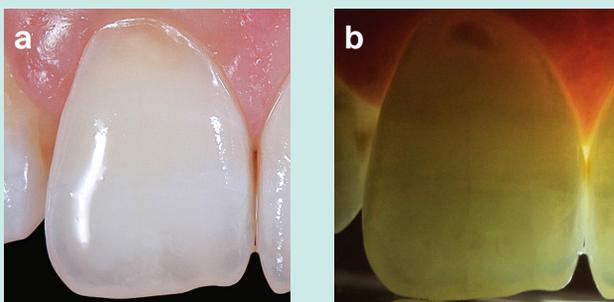


Fig. 3 a + b: Surface lesion after completed infiltration treatment in direct **(a)** and transilluminated light **(b)**.

Treatment of deep lesions

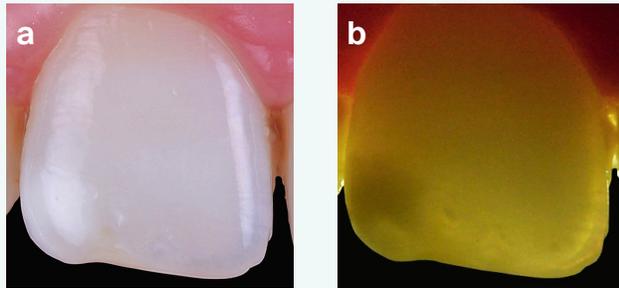


Fig. 4 a + b show initial images of a deep lesion in reflected **(a)** and transilluminated light **(b)**. When transilluminated, the deep lesion exhibits vague margins, indicating a thick surface layer covering the lesion that needs to be removed to make the lesion accessible.

Fig. 4 a + b: Diagnosis of the depth of the lesion: deep lesion

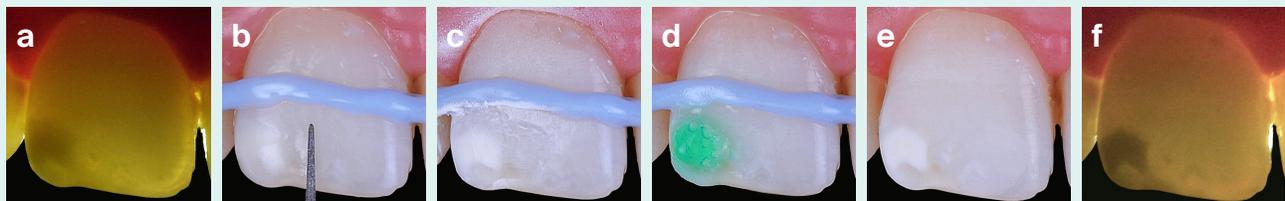


Fig. 5 a - f

Different abrasive methods can be selected to remove the surface layer covering the lesion which renders it inaccessible for infiltration. Suitable abrasion methods might for example include microabrasion, blasting or even the partial use of a diamond drill. The use of a diamond drill was opted for in this specific application case **(Fig. 5 a - f)** since this enables a controlled and precise removal of the surface layer **(Fig. 5 b)**. This step was checked under transillumination until a clearly defined interface could be seen as a feature of a surface lesion.

The exposed hypomineralized enamel was then etched for 2 minutes using Icon Etch **(Fig. 5 d)**. When transilluminated, the lesion margins are now well defined following the abrasive and erosive steps **(Fig. 5 f)**, indicating that the lesion has been transformed from a deep lesion into a surface lesion.

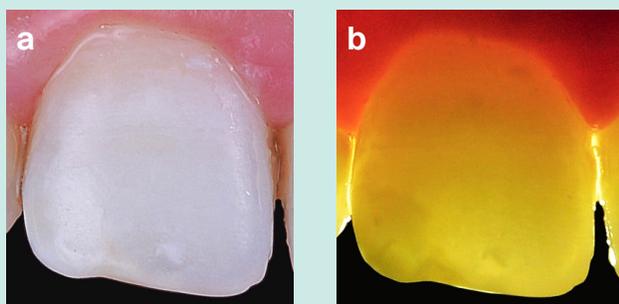


Fig. 6 a + b: Deep lesion after infiltration in direct **(a)** and transilluminated light **(b)**

Source of user images **(Fig. 1 a to 6 b)** and case documentation: Dr Omar Marouane, Tunisia

Infiltration and bleaching: a perfect team

Application example

Dr. Erik-Jan Muts (Netherlands):

“To obtain a better color for the hypomineralizations, bleaching using 10% carbamide peroxide was performed for ten days for just two hours per day.”

In addition to the whitening effect, the deproteinising effect of carbamide peroxide (CP) can lead to an improved infiltration result.

Schoppenmeier et al. (2018) show in their study that bleaching before infiltration treatment leads to significantly better masking after six months compared to infiltration treatment alone. Bleaching prior to infiltration treatment resulted in significantly higher patient satisfaction after three months compared with infiltration treatment alone.⁶

List of references: See page 12.

Good reasons to opt for bleaching before Icon:

- Reduces differences in color between healthy and affected enamel
- Better results after infiltration when using combination of infiltration and bleaching⁶
- Mitigates patient dissatisfaction due to darker appearance of the teeth after treatment
- In the case of yellowish or brownish discoloration, a bleaching treatment is strongly recommended prior to infiltration to improve the overall result



Before



After bleaching using Flairesse Bleaching Gel CP 10%

Source of user images case documentation: Dr. Clement

Flairesse Bleaching Gel: gentle and non-invasive for a carefree smile

Coming soon!

Thanks in part to its mild CP concentrations, **DMG Flairesse Bleaching Gel 5% and 10%** are medically indicated to achieve gentle, effective whitening. It can be used in combination with Icon Smooth Surface to treat the symptoms of enamel opacities while preserving as much of the tooth substance as possible.

When used in conjunction with the DentaMile bleaching tray, its gel reservoir prevents the bleaching gel from leaking into the sensitive gum area, for better patient acceptance.

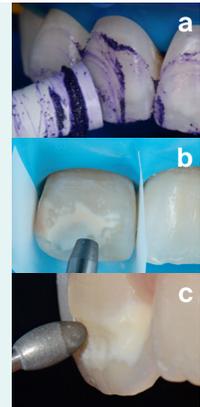


Tips for successful infiltration

1 Different options for removing the surface layer of deep opacities:

For the successful aesthetic treatment of white spots, the lesion must be fully accessible for infiltration. For lesions that are located deep in the enamel and have a thicker surface layer, Icon Etch alone may not be enough to guarantee sufficient access to the lesion.

Alternatively, in such cases the lesion can be prepared for infiltration by microabrasion (a), blasting (b) or the partial use of a diamond drill (c).



2 Transillumination during treatment

Transillumination is also a useful tool **during infiltration** for monitoring the success of the infiltration process. This makes transillumination a useful tool for quality assurance as well as for diagnosis.

Important!

Do not use a curing light for this.

3 Transillumination during drying

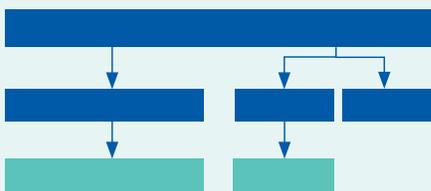
Transillumination can also be used during the application of Icon Dry to enable a better assessment at the drying stage.

4 Before/after documentation

Optimize your patient communication by taking before and after photographs. These photos give your patients definitive proof of the success of the treatment.

5 Waiting period

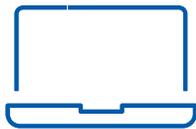
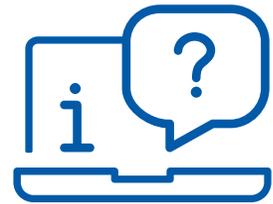
For a combined treatment of bleaching and infiltration, ensure a minimum waiting period of two weeks between treatments.



Support for your patients and treatment planning:
Icon resources



Our support for you and your patients



The Icon website for patients

The Icon Dentist Finder and infiltration treatments, clearly illustrated. Why not take a look?

www.drilling-no-thanks.info



The material collection

Whether it's a casebook, compendium or the Icon Smooth Surface decision tree - find tips, examples, report and support in the material collection.

www.dmg-america.com/icon



Product Information

Icon Smooth Surface

1 Treatment unit contains

- 1 Syringe @ 0.45 ml Icon Etch
- 1 Syringe @ 0.45 ml Icon Prime
- 1 Syringe @ 0.45 ml Icon Infiltrant
- 6 Icon Smooth Surface Tips + 1 Icon Capillary Tip

Icon Smooth Surface Mini Kit

2 Treatment units REF 220402

Icon Smooth Surface Cube

7 Treatment units REF 220403

Icon Smooth Surface Etch Refill Pack:

3 Syringe @ 0.45 ml Icon Etch REF 220385
15 Icon Smooth Surface Tips

References:

- ¹Akin A., Uysal S., Cehreli Z.C. Segmental Alveolar Process Fracture Involving Primary Incisors: Treatment and 24-Month Follow Up. Dent. Traumatol. 2011;27:63-66.
- ²Athayde GDS, Reis PPGD, Jorge RC, Americano GCA, Fidalgo TKDS, Soviero VM. Impact of masking hypomineralization opacities in anterior teeth on the esthetic perception of children and parents: A randomized controlled clinical trial. J Dent. (2022)
- ³Hasmun N, Vettore MV, Lawson JA, Elcock C, Zaitoun H, Rodd HD. Determinants of children's oral health-related quality of life following aesthetic treatment of enamel opacities. J Dent. (2020)
- ⁴Momeni A, Neuhauser A, Renner N, Heinzl-Gutenbrunner M, Abou-Fidah J, Rasch K, et al. Prevalence of dental fluorosis in German schoolchildren in areas with different preventive programmes. Caries Res. 2007; 41 (6) :437-44.
- ⁵Murri Dello Diago A, Cadenaro M, Ricchiuto R, Banchelli F, Spinasi E, Checchi V, Giannetti L. Hypersensitivity in Molar Incisor Hypomineralization: Superficial Infiltration Treatment. Applied Sciences (2021)
- ⁶Schoppmeier CM, Derman SHM, Noack MJ, Wicht MJ. Power bleaching enhances resin infiltration masking effect of dental fluorosis: A randomized clinical trial. J Dent. (2018)
- ⁷DONGDONG Z, BAO D, DANDAN Y, QIONGQIONG R, YEYUAN S. The prevalence of molar incisor hypomineralization: evidence from 70 studies. Int J Paediatr Dent 2018; 28(2): 170-179.
- ⁸Tufekci E, Dixon JS, Gunsolley JC, Lindauer SJ. Prevalence of white spot lesions during orthodontic treatment with fixed appliances. Angle Orthod. 2011 Mar;81(2):206-10.
- ⁹Ibrahim DFA, Venkiteswaran A, Hasmun NN. Esthetic Effects and Color Stability of Resin Infiltration on Demineralized Enamel Lesions: A Systematic Review. J Int Soc Prev Community Dent. 2023 Aug 30;13(4):273-286.
- ¹⁰Farah RA, Monk BC, Swain MV, Drummond BK. Protein content of molar-incisor Hypomineralization enamel. J Dent. 2010; 38(7):591-6