

# Article: Treatment By Whitening Discoloured Vital Teeth

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*Lecturer in the Faculty of Odontology, University of Toulouse, France, describes the research behind tooth whitening, and his personal experiences using a combined treatment of Illuminé Office and Illuminé Home.*

## Introduction

The purpose of this article is to answer some questions that might arise for both practitioners and patients regarding the efficacy of whitening treatments with a review of recent bibliography, and briefly show some clinical results achieved with DENTSPLY Illuminé, a simple, reliable and reproducible whitening system.



The whiteness of our teeth has become an essential element of our personal appearance, and is reinforced by the publicity images that invade our daily life. This media pressure lies behind the increasing demands of patients seeking simple, low-cost aesthetic treatments. Our patients are more and more concerned about their physical appearance and the image that they project. The image of health is given by physical appearance, and good health must be clearly visible! Therefore, discolouration of anterior teeth, whatever the cause, has become a social and psychological disadvantage that is less and less tolerated by our patients (Ref 1).

## Published Studies

Niederman has made a collection of several studies that demonstrate the effectiveness of treatments using 10% carbamide peroxide (Ref 2). On average, an improvement of 6.4 shades (using the rearranged Vita shade guide shown in the table) is obtained. In 50% of patients, the teeth remain whitened for 6.5 months. The other half experienced a recurrence and needed further treatment.

Kihn showed that in patients treated with 10% carbamide peroxide, the average improvement is 6.7 shades, while if they are treated with 15% carbamide peroxide, the average improvement is 9.4 shades (Vita shade guide) (Ref 3). Additionally, Swift has shown that in 50% of patients treated with 10% carbamide peroxide, the improvement is from 7 to 8 shades and in 25% it is from 9 to 10 shades (Ref 4).



Incorporating chairside systems, Papathanasiou has shown that 15% hydrogen peroxide used in the chair together with 10% carbamide peroxide application at home gave an average improvement of more than 8 shades (Ref 5). In my experience I have found no difference in whitening if 15% hydrogen peroxide is used for 30 minutes, 45 minutes or 1 hour.

All these studies show that these treatments are really effective and enable us, thanks to more than 10 years of clinical experience, to agree on a reasonable objective with our patients.

### **Clinical Cases**

**Case 1:** A young girl of 23 wished to have her teeth whitened for a job interview. Her bucco-dental state was excellent and she presented a uniform discolouration. The treatment started with a 1 hour session with Illuminé Office in the chair followed by home treatment with Illuminé Home for 12 days. Her shade before treatment was A2 which changed to B1 after treatment.



**Case 2:** A young man of 25 had his two upper central incisors broken in a car accident. His practitioner had built up an emergency partial prosthesis, but while waiting for a permanent implanted solution, he wished to whiten his teeth and was no longer satisfied with his prosthesis. We offered him an Illuminé treatment over 10 days, starting with a session in the chair. We remade him a temporary partial prosthesis with a shade close to that of the whitened teeth. His shade before treatment was A3, and after treatment, B1.



It must be stressed that bleaching is never a permanent solution. The patient must be warned that recurrence is frequent after 18 months or more, but without a return to the original shade. We have two methods for treating this recurrence; either a session in the chair or a home treatment of 2 or 3 days.

Dental whitening is a beneficial treatment, the limits of which must be fixed by the practitioner. The dentist's task is to inform their patient of the indications, contra-indications, risks and recurrence of this procedure that responds to the same therapeutic demands as other techniques in modern dentistry.

**Vita Shade Guide by Whiteness**

B1	A1	B2	D2	A2	C1	C2	D4	A3	D3	B3	A3.5	B4	C3	A4	C4
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Classification from lightest to darkest of the sixteen shades of the VITA Lumin shade guide (Vita Zahnfabrik, Bad Säckingen, Germany) according to Swift (Ref 4).

**References:**

1. Rotstein I *et al.* Mercury release from dental amalgam after treatment with 10% carbamide peroxide in vitro. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000 Feb;89(2): 216-9.
2. Niederman R *et al.* Effectiveness of dentist-prescribed, home-applied tooth whitening. A meta analysis. *J Contemp Dent Pract* 2000 Nov 15;1(4): 20-36.
3. Kihn P *et al.* A clinical evaluation of 10 percent vs 15 percent carbamide peroxide tooth whitening agents. *JADA* 2000;131: 1478-84.
4. Swift EJ *et al.* Six month clinical evaluation of tooth whitening system using an innovative experimental design. *J Esthet Dent* 1997;9(5): 265-74.
5. Papathanasiou A *et al.* A clinical study evaluating a new chairside and take-home whitening system. *Compend Contin Educ Dent* 2001 Apr;22(4):289-94, 296, 298; quiz 300.

Full instructions for Illuminé Office and Illuminé Home can be found in the package Directions For Use.