

# PHILIPS ZOOM! WORLD'S #1 TOOTH WHITENING SYSTEM



## Why Philips zoom ?

### Understanding the Philips Zoom science and Advantage.

#### Introduction

In-office whitening is done with the simply objective of instant gratification. It keeps most of the controls in the hands of the dentist and increases patient compliance. Home bleaching tends to be slow and dramatic effects are not seen, making the patient un-sure of the result .

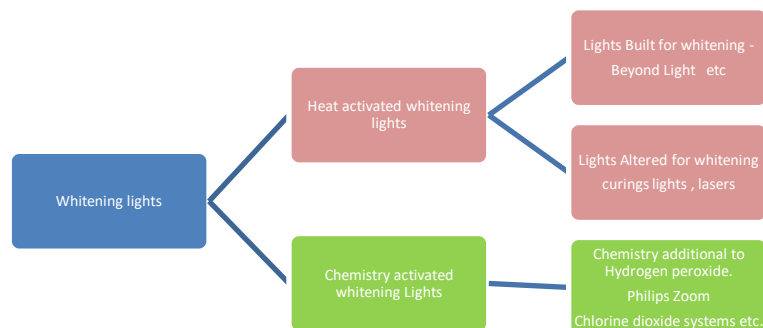
In-office whitening is done without light or with light .

In-office whitening without the light uses higher concentration of hydrogen peroxide results in greater production of 'free radical oxygen' to increase the number of stain receptors they will attach to and oxidize to give results faster than home bleaching which use lower concentration of hydrogen peroxide and carbamide peroxide. THE KEY INGREDIENT –HIGH CONCENTRATION PEROXIDE .

**Lets understand the lights used today in dental practices for tooth whitening , categorise different lights as per their mode of action and then we would be able to uncover the myth - to prove how whitening lights work and which light works best for Professional Dental Practices.**

**CATEGORISATION OF TOOTH WHITENING LIGHTS BASED ON THEIR LIGHT TECHNOLOGY , SCIENCE WITH THE GEL AND RESULTS EXPECTED.**

Light Assisted whitening categories :



Category is based on the mode of action and not only on the fact that it uses a light source .

### 1. Heat Assisted Whitening :

They react by hastening the breakdown of hydrogen peroxide to quicken oxygenation and bleaching . They use **only hydrogen peroxide as the whitening or oxygenation source.** Whatever the light technology , LED curing or cool blue light, laser, plasma arc etc. heat is required to hasten peroxide breakdown . **They have to use higher concentrations of hydrogen peroxide ( above 30% ) so that get more oxygenation radicals for whitening .** They use **heat to ensure faster** breakdown of peroxide.

#### Systems built for Whitening :

THE LIGHT IS BUILT FOR HYDROGEN PEROXIDE REACTION ONLY.

They have Research backing for the specific advanced lights. They are LED , IR and UV based lights . They use various wavelengths of light with filters to help breakdown hydrogen peroxide faster .

These are safer systems with better results. System of sensitivity management is found to be average as they use only fluoride to manage the sensitivity generated by light and high concentration gel. Danger of nerve necrosis incase if cracked tooth is high . The safety of the system is better than curing lights due to Exposure time being regulated with settings for alteration of cycle .

#### System altered for Whitening : LED curing Lights & Lasers .

THE LIGHT IS ALTERED IN A DUAL ARCH SETTING FOR ACTING ON HYDROGEN PEROXIDE GELS.

These systems employ whitening arches to the curing lights, Lasers used in dentistry .

The safety of these systems is compromised due to the use of high wavelength lights with very high concentration gels. These systems maintain no protocols on use of the light or concentration of the gel required to be used with the light.

There is little done for management as fluoride content is gel specific and these systems can use any gels available in the market. They have limited settings for whitening.

Danger of nerve necrosis is highest with these systems. Reliability of results is lowest as it depends on too many variable factors as type of gel used, concentration and stability of material etc. ANY LIGHT WITH ANY GEL PRODUCES ANY RESULTS.

## 2. Chemistry Assisted whitening :

They have a chemistry with the gel that is unique to the light. ie they have **chemical receptors other than hydrogen peroxide in the gel that aid in oxygenation.** Therefore the dependency on hydrogen peroxide for whitening is reduced. **They can produce greater oxygen radicals with lower concentrations of hydrogen peroxide. They do not use heat as medium for enhancing oxygenation.**

*Light System built for whitening with a special chemistry that's different from hydrogen peroxide oxygenation.*

These systems are very well researched to bring in additional elements to enhance results, have a better protocol for reliability and better manage the side effects of hydrogen peroxide to have least sensitivity with optimal results.

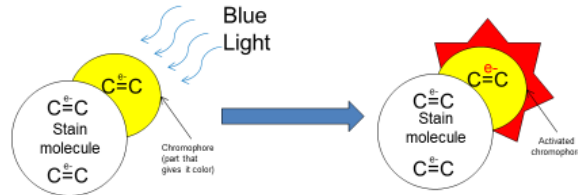
**AS of now the Zoom system exists in a class of its own with unique patented chemistry.**

Zoom blue LED Light with a specific wavelength and intensity, uses the science of Photospectrometry to de-stabilise the CC double bonds so that they easily bond with the nascent oxygen to get bleached.

## Science of LED Light Activate Whitening

- Principle: If electrons are excited, it takes less energy to break the bonds they create
- Stain molecules are made up of two parts – the “body” of the molecule and the chromophore, which is the part that gives the stain its (yellow) color
- Blue light is readily absorbed by the electrons in the double carbon bond in the chromophore and electrons within the stain molecule are excited by the photons of light

NOTE: A chromophore is yellow because it absorbs light other than yellow, especially BLUE!



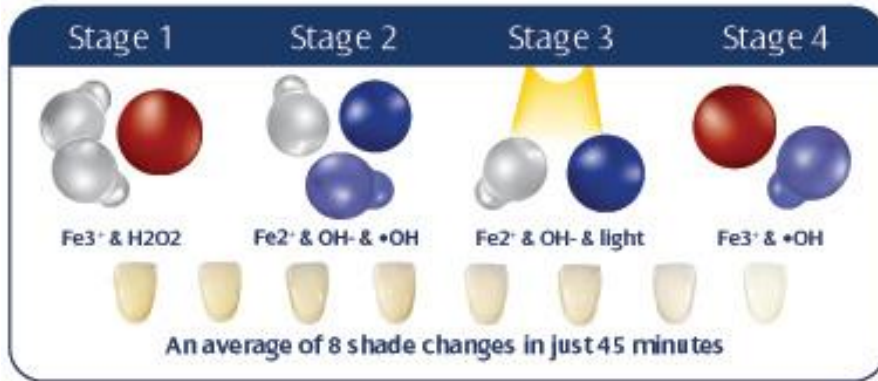
Zoom WhiteSpeed utilizes an LED accelerator to help boost the stain-removing power of hydrogen peroxide.

When used together, the lamp and hydrogen peroxide gel remove stains more effectively than hydrogen peroxide alone.\*

<p>chromophore</p> <p>molecule</p>	<p>chromophore</p> <p>molecule</p>	<p>accelerator color</p> <p>stain color</p>	
<p>Molecules are given their color by something called a chromophore. Most stain chromophores are yellow.</p>	<p>Applying hydrogen peroxide breaks double carbon bonds within the chromophore. When this happens, the chromophore appears colorless.</p>	<p>Here's where the blue light of the Zoom WhiteSpeed accelerator comes in. Because yellow and blue are opposite on the color spectrum, yellow absorbs blue.</p>	<p>Both theoretical and empirical work suggest that when the yellow stain chromophore absorbs the blue light of the WhiteSpeed accelerator, it energizes electrons, making the carbon bond much easier to break than using hydrogen peroxide alone. Therefore more yellow stain is eliminated.</p>

THE LIGHT IS BUILT TO INITIATE A PHOTO-PHENON CHEMISTRY ( PATENTED –CANNOT BE COPIED OR CLAIMED BY COMPETITORS ) IN THE GEL .

The Research behind advanced Bleaching which Results in avg 8.5 shade Jump.



The “photo-fenton” reaction of peroxide and iron produces hydroxyl radicals, a.k.a. “stain terminators.”

This light reaction cyclically renews the iron, so it continues to produce hydroxyl radicals, significantly enhancing whitening results by 3 times that achieved by peroxide alone.

The light and gel work in synergy to produce maximum oxygenation which results in superior whitening and deep stain removal.

PROVEN WITH STUDIES AND TRIALS.

Research proves that light has a positive effect on the whitening process

**New clinical studies prove the lamp works:**

**1. Loma Linda University, CA 2007**

**“Effect of Light Treatment on In vitro Tooth Bleaching Efficacy”**

Clinical results presented at the AADR by Dr. Mingxiu concluded that, “under conditions of the study, Zoom light exposure significantly enhances the efficacy of Zoom gel in reducing the O<sub>2</sub> and increasing the pH.”

• 40% whiter immediately, than with gel alone

**2. University of Texas, Dental Branch at Houston 2008**

**“Clinical Evaluation of a Chairside Whitening Lamp and Bleaching Efficacy”**

Clinical study presented at the AADR by Dr. Joe Cristoforo concluded that treatment with the Zoom lamp improved significantly higher whitening color changes 7 days after the procedure when compared to treatment without the light using both a spectrophotometer VITA Easyshade and visual Biology Vita Bleach-Guide 3D-Master.

• 35% whiter after 1 week, than with gel alone

**3. The Dental Advisor 2007**

**“Zoom Advanced Power Chairside Whitening System Effect of Zoom Advanced Power Lamp on Whitening”**

The report concluded that, “Whitening with use of the high-output, sodium-blue, short-arc bulb lamp resulted in a greater shade change compared to whitening without the lamp immediately after treatment, after 7-10 days, and after 30 days. Results immediately after whitening and at 30 days with the use of the high-output, sodium-blue, short-arc bulb lamp showed that shade change on average were 1.9 shades lighter and transorbital teeth were 0.7 shades lighter in comparison to whitening without the lamp.”

• 42% whiter after 30 days, than with gel alone

Studies available at [dentaladvisor.com](http://dentaladvisor.com)



**PHILIPS**  
**ZOOM!**

Philips Zoom WhiteSpeed is now better than ever with the new Whitening LED Accelerator



**Variable Light Intensity**  
ensures all patients receive a more comfortable procedure<sup>1</sup>



**Light Source Longevity** at 50,000 hours reduces operating costs and downtime



**Greater Light Intensity**  
100% greater light intensity<sup>2</sup>, with no compromise of safety



**Improved Ergonomics**  
Power cord wrap and larger casters provide easier storage and mobility

<sup>1</sup>compared to Zoom Advanced Power Plus; <sup>2</sup>Compared to Beyond Polus

**PHILIPS**  
**ZOOM!**

Zoom WhiteSpeed has a 96% patient satisfaction rate<sup>1</sup>



- Variable light intensity allows use of lower settings for sensitive patients, ensuring all patients receive a more comfortable procedure
  - 91% of patients experienced little to no sensitivity during the procedure
  - 95% of patients agree Zoom WhiteSpeed produces excellent results



- 40% better whitening results than a professional non-light whitening system<sup>2</sup>



- Advanced Philips blue LEDs reduce operating costs and emit 100% greater light intensity than the closest competitive professional whitening lamp (Beyond Polus)



- More environmentally friendly with 41% less energy consumption than Zoom AP+

<sup>1</sup>Results based upon 500 person study in the US; <sup>2</sup>As compared to Philips Dash

The PHILIPS ZOOM System

- Unique Gel : Lowest concentration hydrogen peroxide ( 25% ) , Photophenton receptors , surfactants , fluoride , ACP (Amourphous Calcium phosphate ) and potassium nitrate.
- Unique Retraction : Lip and tongue protection with complete arch easy whitening .

**PHILIPS**  
**ZOOM!**



WOW effect :

**PHILIPS**

**A3**

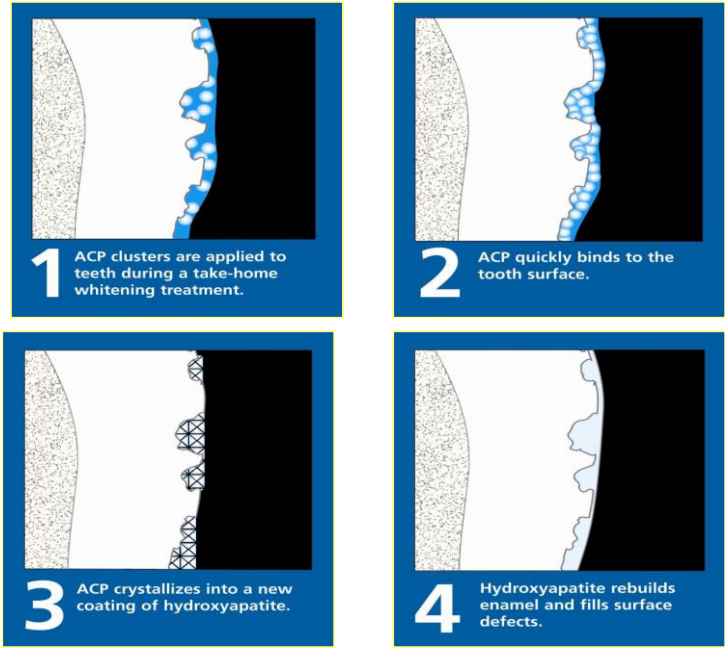


**B1**



- Advantage Science with Multipronged action : Light + gel + surfactant + ACP Enamel care( amorphous Calcium phosphate )

# REBUILDING SCIENCE





-Multi-tasking : 3 treatments in one appointment – Whitening , Fluoride proactive and abticularies Care and ACP enamel remineralisation and repair.

-Complete 'at-home' Management with same philosophy of ACP whitening – Daywhite / Nitewhite ACP Tray assisted home bleaching

-Extensive worldwide patient awareness and education WITH the PHILIPS brand promise.

## Conclusion :

YES, THE LIGHT DOES ASSIST TO HASTEN THE WHITENING REACTION and the RESULT.

HEAT PRODUCED BY LIGHTS LIKE LASERS AND CURING LIGHTS MAY NOT BE DESIREABLE FOR WHITENING DUE TO THE ACCENTUATED SIDE EFFECT OF DEHYDRATION AND SENSITIVITY, ESPECIALLY WHEN THE SYSTEMS ARE USING HIGH CONCENTRATION PEROXIDES. 'IR' LIGHTS ALSO PRODUCE HEAT THAT AIDS WHITENING. UV LIGHTS PROVIDE GOOD RESULTS BUT ARE NOT AS DESIREABLE FROM A SAFETY POINT OF VIEW. COOL LED LIGHTS ARE MOST POPULAR.

ITS NOT JUST THE LIGHT , BUT THE ENTIRE ( PROCESS , PROTOCOL , EQUIPMENT AND MATERIAL )SYSTEM THAT SHOULD BE IN THE LIMELIGHT.

ZOOM PHILIPS IS THE WORLDS NO 1 LIGHT ACTIVATED WHITENING SYSTEM BECAUSE IT WAS CREATED BY A DENTIST AND ENSURED WITH A BRILLIANT PATENTED SCIENCE TO BACK ITS RESULTS AND RELIABILITY. IT USES A LOW CONCENTRATION OF PEROXIDE 20-25% ONLY AND PROVIDES BRILLIANT RESULTS BEYOND B1 IN 45 MINS WITH NO- NEGLIGIBLE SENSITIVITY AND LEAST FADEBACK. EVERYTHING A PROFESSIONAL DENTAL CLINIC INTUNE WITH WORLD WIDE STANDARDS OF EXCELLENCE IS PROVIDED FOR IN PHILIPS ZOOM. IT'S THE MOST SHOWCASED SYSTEM ON WORLDWIDE MEDIA , PRINT AND TV.

IF PHILIPS ZOOM LIGHT DOES NOT WORK THEN HOW CAN IT PRODUCE BEYOND B1 RESULT IN 45 MINUTES WITH ONLY 25% HYDROGEN PEROXIDE ACROSS ALL STUDIES, TRIALS AND LIVE ON REALITY TV.

ALTERNATIVELY , WHY WOULD YOU USE 40% HYDROGEN PEROXIDE IF YOU CAN GET OPTIMAL RESULTS IN 45 MINS WITH 25% HYDROGEN PEROXIDE .

**Food for thought :** Whitening systems should be checked on the following parameters and not just on the fact that there is a light in the process of whitening.

1. Protocols – ensure same method of use as in trials/ claims –
2. Concentration of hydrogen peroxide -
3. Heat producing capability of the system : MOD ( Mode of action ) & light source :
4. Chemistry beyond hydrogen peroxide -
5. Stability of Gel -
6. Consistant Reliability of results - ( independent ratings )
7. Pulpal activity of the system ( cause nerve necrosis )
8. Sensitivity Management & proactive care
9. Does it do more than whitening to the Enamel : Improve Oral Health and Protection.
10. Safety protocol : Limit light exposure and time
11. Company and country of Manufacture
12. Patient awareness and brand recall
13. Worldwide presence of product . WHITENING EXPERIENCE .

The big question still is ,  
Are you providing the best results with the best protocols .... Not once  
...not twice but consistently everytime .... For all cases.... with the system  
you are using and is the system an extension of the quality standards that  
your Professional Practice stands for.

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