



Tooth Whitening Article.

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By Eddie Goggins

Have you seen a rise in the number of people getting their teeth whitened?

I have been a dentist for 24 years and I have seen a steady increase in the number of people having their teeth whitened. It is a very simple but effective method to enhance your smile. Irish people particularly in the past 2 decades have become much more aware about just how important an attractive smile is to their overall appearance. We have found that there has been an increasing demand for all types of cosmetic dental procedures at our clinic in Cabinteely but tooth whitening is by far the most sought after service.

What's the gender breakdown?

In my practice, I would estimate $\frac{3}{4}$ are women. It is interesting that the women are of from all age groups but the men are generally 18 to 30s with a few a bit older. Additionally women often come in with a friend or as a group of friends / wedding party etc. Women are much more open about their cosmetic endeavours.

Why are more people getting their teeth whitened?

Sociology research illuminates that one of the most important aspects of rated attractiveness is an attractive smile. Additionally people who are proud of their pearly whites simply smile a lot more! Tooth whitening boosts people's confidence and self-esteem. And the more often you flash a smile, the more often the world will smile back at you. Irish people are more conscious of these facts and there is an increased awareness of just how simple and effective tooth whitening can be. Having a clean and bright smile is high on the priority list for more and more Irish adults.

Procedures- prices- etc!!!

The natural colour of a tooth is dictated by the shade and translucency of the outer layer of enamel and by the underlying shade of the dentine layer. A persons enamel may be opaque (not see through) or alternatively, it may be more translucent and in these cases, the underlying colour of the dentine will play a significant role in the overall tooth shading. The enamel is the portion of the tooth that has the most whitening potential and people who have a thicker and less translucent enamel layer will often achieve the best results.

Exposure to food colouring/ tea/ coffee/ wine/ tobacco will cause both extrinsic surface staining and intrinsic (deep) staining. Additionally, as we age, the underlying dentine layers can become darker due to sclerosis especially if there are other untreated dental problems.

Extrinsic surface stains must first be cleaned away for the whitening process to be most effective. Whitening products will not remove surface plaque and tartar. A professional tooth cleaning is recommended.

Then, in order to remove the intrinsic stains and discoloured molecules that are deep in the enamel micro cracks, between the enamel prisms and within the dentine layers, a whitening gel is used. The only proven and research supported whitening products that work all contain either hydrogen peroxide or carbamide peroxide. Studies show that the results are equally good for both products. They release oxygen which break the carbon bonds in the staining agents deep within the tooth. Hydrogen peroxide releases oxygen more quickly and treatment applications are generally just 30 to 60 minutes. Carbamide peroxide is more gradual and needs several hours but is associated with less reported tooth sensitivity. The most effective way for these gels to work is by having custom fitted whitening trays made. This insures that the minimal amount of gel is needed and the risk of swallowing excessive amounts of gel is minimised. Typically, there would be one application each day for 2 weeks but this can vary considerably. The whitening effect can last up to a year depending on dietary habits etc.

Laser lights/ Blue lights/ Ultra Violet lights and LED lights have all been shown to be ineffectual and some types of light can be actually harmful. Years ago, when the tooth whitening revolution started, the manufactures declared that the light energy would accelerate and magnify the whitening effect. Most dental surgeries invested in expensive lights to satisfy the public demand. I now have 3 lights in storage that are redundant. Much independent research has since been carried out in recent years which shows that the light treatment simply caused dehydration of the teeth and this made them temporarily brighter for the initial few hours until the enamel re-established normal moisture levels. However, the media and the marketing machine continued to propagate the misinformation and many patients still demand the light.

Custom made trays with the appropriate peroxide gels is the gold standard in safe and effective tooth whitening.

Since Oct 2012, an EU directive 76/768/EEC ruled that the maximum concentrations allowed in Tooth whitening products is 6% of hydrogen peroxide which is equivalent to 17% carbamide peroxide. These strengths are only approved when prescribed or dispensed by a dentist. Products with higher concentrations are now illegal and their sale is prohibited, additionally tooth whitening is restricted to those over 18 years of age.

Finally, consumers may only be sold over the counter products in shops and on-line containing a limit of 0.1% hydrogen peroxide.

Tooth whitening is very safe as long as there are no underlying dental problems. This is why the regulations dictate that a dentist needs to assess each patient before dispensing these more effective gels. There have been reported cases of irreversible pulpitis and tooth pulp death following inappropriate whitening treatments by those outside of the dental profession. Chemical burns of the lips and gums have also been an issue.

Botched jobs from Abroad?

Well if you were asking me this question about general dentistry I could speak about this topic for hours- But I don't know of many people travelling abroad for teeth whitening as it is widely available in Ireland at competitive prices.

Before the EU directive, many business in Ireland got involved in tooth whitening. Beauty salons/ Whitening suites/ walk in whitening stalls at shopping centres etc. At that time it was easy for anyone to import the products and in most cases the treatments were carried out by non-dentally trained people. Horror stories about poor cross infection control, lip burns and dissatisfied customers were quite common. The Irish dental council at that time had no power to intervene as there was no European ruling as to whether this was a cosmetic procedure or a clinical procedure. Similar problem stories were becoming commonplace throughout Europe. The Oct 2012, an EU directive 76/768/EEC clarified this matter and there have been an increasing number of prosecutions throughout Europe for inappropriate and negligent whitening procedures carried out by non-dental professionals. It also makes it illegal to import these controlled products.

In Ireland, there are still a number of businesses that had blossomed before the 2012 ruling that are still trying to survive by offering whitening treatments using alternative methods. However, there is no clinical research to support the use of anything other than the hydrogen peroxide/ carbamide peroxide gels.

Patient safety is paramount so the Advice to the public is;

1. Only go to regulated professionals, i.e. dentists
2. If in doubt ask for the Dental Council Registration Number
3. Ask for the product used and its concentration
4. If a light is being used ask why - it has no effect
5. Any concerns: contact the Irish Medicines Board

At our clinic, we provide a full dental health check before recommending any new patients to go ahead with tooth whitening. If there are other dental issues that may compromise the perfect white smile result then we will discuss the options for addressing these. Included in the treatment is a session of extensive cleaning with our hygienist as I feel that whitening on its own is often not effective if the surface cleaning and gum health is not sorted out beforehand. Then we provide lab made custom fitted whitening trays and you are instructed on how to get the best result from your whitening procedure. All of this at a very competitive price!

How do you feel about over the counter methods?

There are a variety of over the counter products from whitening toothpaste/ mouthwashes to whitening pens. These products do work but their effects are very limited. Only products with 0.1% Hydrogen peroxide are approved so they are weak. Some products also have abrasives to remove the surface extrinsic stains. However if you already have sensitive teeth then such abrasive toothpastes may make things worse.

There is also a large number of products available on line. Many of these are illegal and can range from being useless to being outright dangerous.