

“Aesthetic dentistry in itself means nothing”

An interview with Dr Pascal Magne, USA



Dr Pascal Magne

Success in aesthetic dentistry depends on biology, function and mechanics; aesthetic dentistry cannot exist independently. **cosmetic dentistry** had the opportunity to speak with Dr Pascal Magne, a specialist in aesthetic dentistry, lecturer, author of many clinical and research articles and the well-known book *Bonded Porcelain Restorations*, and associate professor at the University of Southern California in Los Angeles, where he holds the Don and Sybil Harrington Foundation Chair in Esthetic Dentistry, about the latest trends in modern restorative dentistry at the 12th Annual Scientific Conference of the Polish Academy of Esthetic Dentistry and Art Oral, which was held in June 2013 in Sopot, Poland.

cosmetic dentistry: *Dr Magne, you created an impressive training programme on aesthetic restorative dentistry and have become one of the most reputable lecturers on this topic. What is the philosophy underlying your success?*

Dr Pascal Magne: I believe that success needs to be defined first. Success at work, success in life, personal success? Often, professional success has been obtained by sacrifice of a personal nature. Can it then still be considered success? I strongly believe in what I call “balanced success”, meaning that the most important values, such as spirituality and family, are preserved. I also believe in mentorship.

My advice to young colleagues is to choose one mentor (or several), a kind of dental parent. I know it is not easy to find such a person but

it is worth the search. I have been blessed in my career to have three mentors, my clinical mentor, Prof. Urs Belser (University of Geneva); my research mentor, Prof. William Douglas (University of Minnesota); and my dental technique mentor, my brother Michel (university of „life“).

Of course, none of this would have been possible without my mentor above all, my Lord Jesus, and I pray to receive his inspiration every day. One of my favourite quotes is Proverbs 16:9: “In his heart a man plans his course, but the Lord determines his steps.”

What are current concepts in aesthetic restorative dentistry? In which direction is aesthetic dentistry developing?

Aesthetic dentistry in itself means nothing; it is contingent on biology, function and mechanics. Aesthetic dentistry is the cherry on the cake for those who follow sound biomimetic concepts in restorative dentistry. Above all, as described by Rev. W. John Murray in his book *The Realm of Reality*, “the aesthetic is itself nothing more than a beautiful symbol of the spiritual, without which spiritual, the aesthetic is a shadow without substance”.¹

I like to remind my patients that they can always have internal beauty, the beauty of the heart, which surpasses physical aesthetics. That said, if we look at your question from a more technical perspective, the answer lies in the biomimetic approach to restorative sciences, which in turn is dependent on adhesive dentistry

and minimally invasive approaches—no post, no crown dentistry.

Restorative dentistry is likely to evolve in a manner similar to technological advancements in general. If you have a smartphone, you know what I mean. CAD/CAM and technology will be used increasingly, and I hope for the best, meaning just as an additional tool in our armamentarium and not as an excuse to treat more patients.

I believe we will stop using posts, crowns and metal alloys, and stop performing intentional endodontics eventually—this has already happened for many of us who believe in the biomimetic approach.

My hope is that technology will make better treatment accessible to more patients, with a reduced need for root-canal treatment and crown lengthening. I see an increase in the diagnosis of diet-related problems and improved differential diagnosis between wear- and erosion-related lesions. Such cases will force us to strive for the solution that will preserve as much of the tooth as possible (keep the pulp alive using non-retentive preparation) that is no-post no-crown restorative dentistry. In summary I would say for the future less is more (minimally invasive). We will learn to think differently, think biomimetically, think bonding.

Technically, good bonding implies some cardinal rules: good isolation (very important; ideally a rubber dam) and knowledge of your materials, products, and procedures. A checklist is the best aid—this is similar to pilots going through a checklist before flying an airplane!

Dentists need to have a look at sound, unbiased literature before choosing products. Manufacturers do not always sell the best product but rather the most convenient one. Many new products today have been developed in response to the pressure of the market; for example, one company starts a new trend and then all the other companies follow with competing products even if this trend does not yield the best performance. It is business driven. It happens a lot.

I would say that dentists need to undergo training and gain as much experience as possible because we know that the operator factor is even more critical than the choice of product and technique. This is why as an academic I want my students to have as much experience as possible with the materials and techniques that are going to represent their daily bread

when they start their practice. Today, we can no longer ignore that adhesive dentistry is this daily bread.

Is it possible to reproduce the original stiffness of a tooth? How can this be achieved?

Absolutely! Much research, starting in the early 1980s, has demonstrated that adhesive forces obtained solely on enamel can restore



the original stiffness of a tooth. Various degrees of stiffness are obtained with a combination of dental adhesives, composite resins and ceramics that simulate dentine and enamel, respectively.

One of the objectives of your courses is to explain a new biomimetic approach to restorative dentistry. What is this concept about?

I can respond in two words: mimicking nature. As said earlier, it implies first respecting biological parameters, such as pulp vitality—once lost, the pulp will not come back and we know that a non-vital tooth has a poor prognosis—then emulating mechanical function as intended by nature. This will ultimately form an aesthetic and pleasing whole with the tooth because dental materials that are able to simulate the mechanical properties of dentine and enamel are also available in tooth colours.

This is the fundamental difference between a filling (old alloy restorations) that only fills a cavity like an obturator and one that rehabilitates the biomechanics of the tooth.

Biomimetic research is changing dentistry using apparently weak materials synergistically to simulate enamel and dentine. After all, enamel is extremely brittle (more brittle than glass)

Fig. 1 Partial bonded restorations teeth 13 to 23 (porcelain by Michel Magne, Oral Design Beverly Hills, on teeth 12–22). (Image courtesy of *European Journal of Esthetic Dentistry*)

and dentine absolutely not wear resistant; yet, together (bonded) they can make a tooth that can withstand stress and function for a lifetime. How do you explain that? That is synergy! What I call the "dental trinity" (enamel, dentine and dentino-enamel junction) should be the model and we can realistically approach this model today with the structured use of porcelain/ceramics, composite resin, and enamel and dentine bonding agents. Adhesive dentistry is the cornerstone of this process. Even endodontically treated teeth can benefit from this approach because the remaining enamel and dentine can be preserved.

Adhesive dentistry today is capable of producing continuity between the ceramic/polymer and the tooth, and above all allows us to save



Fig. 2 Partial bonded restorations teeth 13 to 23 (porcelain by Michel Magne, Oral Design Beverly Hills, on teeth 12-22) in black and white. (Image courtesy of *European Journal of Esthetic Dentistry*)

a great deal of intact tooth structure (adhesion replacing retention and resistance form). It would be foolish to ignore bonding techniques today and remove precious enamel and dentine instead. In summary, it is not about aesthetics but about tooth-conserving dentistry.

I believe biomimetic research will allow us to develop better solutions for tooth replacement. Currently, dental implants are not biomimetic per se because of the lack of periodontal ligament, extreme stiffness, etc. (they are only indirectly biomimetic because they do not require the neighbouring teeth to be altered). We are looking at ways to make them more biomimetic through the use of materials that are more compliant² and even adhesive techniques—bonding to implant abutments can be very useful.³

What is your view of the role of CAD/CAM techniques in modern aesthetic restorative dentistry? Is this the future or just a temporary trend?

It is a growing trend, and it will grow not only as a restorative tool but also as a diagnostic tool through the inclusion of various modules, such as wear/erosion monitoring, caries detection, etc. I strongly believe in CAD/CAM but only as a tool, not a philosophy of work. That means that the operator still needs to have his or her own core values, treatment planning strategies, etc. that are totally independent of the tools that are used to reach the treatment objective.

You have lectured all over the world. What do you think dental education today should entail? What should its main objective be?

I believe that an effective educator should be imbued with passion and knowledge, and must infect others with this passion and knowledge. His or her teaching must be based not only on science, but also on common sense and experience. The educator must not hide anything, especially not his or her failures.

When listening to such a teacher, dentists taking the course should feel empowered with new abilities to provide their patients with durable treatments that are better adapted and more conservative.

Ideally, this kind of teacher should be a model in his or her personal life too. This is the difference between just having success and being a successful human being. I am not saying that I am a successful human being but I strive to be. Albert Einstein once said, "I want to know God's thoughts; the rest are details."

The main objective of dental education should be to establish very strong core values; values that will not age, that will be timeless. We know that ten years from now, most of the materials and tools that we use today will have been supplanted by new ones.

So I always ask my colleagues, "What is it that you would like to be remembered for when you retire?" This question usually calls for a deep reflection about one's values.

Deep respect for God's creation, including teeth, and trying to emulate it—this is the kind of value that I want to pursue.

Thank you very much for the interview; it was very inspiring.

Editorial note: A complete list of references is available from the publisher.