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The Importance of Knowledge

Dear Readers,

Some friends of mine had an excellent idea: as owners of a small company, they decided to give only scientifically based recommendations for the use/application of their dental product. So they put together an advisory board including leaders from universities as well as high-profile general practitioners, all dedicated to excellence in their profession. To start with, they had two projects: one to provide scientifically based preparation guidelines for indirect ceramic restorations and the other to give dentists clear, scientifically based recommendations for the cementation/luting of such restorations.

The first project is still running, because there are currently too few scientifically based systematic studies on the influence of shape and surface conditions of crown or inlay/onlay preparations and thus the shape and thicknesses of ceramic restorations on the longevity. The literature about preparation shapes yields mostly opinions, based on some kind of mechanical knowledge.

In the second project, my colleagues were more successful. Based on the in vitro literature, they were able to come up with reasonable recommendations on how to best treat the tooth and the surfaces of various restorative materials as well. This went well until some combination products to condition the surfaces of restorative materials showed up on the market, which created confusion. The question was: Is the combination of different active ingredients in one bottle as good as the three different active agents each in its own bottle? It has been shown in different in vitro studies that the combination approach works well, but chemical knowledge was necessary to understand the mechanisms of priming the surfaces with a combination product. Now the dentists entered a phase of wild speculation, trying to interpret how such a mix could work, or why it could not work well, and suddenly the recommendations were back to square one again. The problem was only solved after a competent chemist explained how in a mix of ingredients the affinity for an ingredient to a specific substrate determines its reactivity with the given substrate. Then dentists too understood why instructions for use could be simplified.

This true story tells me the following: It is extremely important that we dentists must really understand what we are doing. It's not enough to just know how to do something! Because real life is never a textbook case, good dentistry always consists of the best compromise. However, this compromise can only be found with adequate knowledge. Despite the trend to simpler, easier, and more convenient applications, dentistry per se has not become simpler. On the contrary, it has become more complex. Therefore, dentists have an ever-increasing need to understand the chemical and biological basics of their work, because only then we can understand why we can or cannot perform necessary changes in the specific clinical situation. A profession's body of knowledge must be known by the professionals themselves. Who else should know but the dentists themselves?

The consequences from the things said above are clear: A dentist must be well educated in the scientific basics, not only as a prerequisite for attending a dental school, but constantly thereafter during the whole education process. Furthermore, we need many more systematic studies on the effects of application techniques on the performance of our dental materials, especially in adhesion. Finally, in vitro results are leading us in one direction, which may or may not be correct. Therefore, due to the lack of systematic clinical studies, we need to put much greater effort into clinical research at the universities, but even more importantly under the real conditions of daily practice. The true longevity describing survival and success is the key factor for our decisions. Colleagues, there is much to do and the Journal of Adhesive Dentistry will be more than happy to publish the results.

Sincerely yours,

J.-F. Roulet
Editor-in-Chief