

HARNNESS

THE POWER OF GENETICS

CEREC Biogeneric has revolutionized occlusal surface design by harnessing the power that makes teeth as unique as a human fingerprint or iris – a genetic blueprint.



CEREC Biogeneric software enables dentists to create lifelike reconstructions - even while working with completely damaged occlusal surfaces. On the basis of a single intact tooth, the program extrapolates the natural morphology of that tooth to the patient's damaged tooth structure. With a single mouse click the user is able to create crowns, veneers, inlays and onlays, as well as anatomically sized bridges with up to four units.

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The easy-to-use CEREC Biogeneric software is the result of the findings of a group of researchers led by Professor Dr. Albert Mehl (Zurich University) and Professor Dr. Volker Blanz (Siegen University). The team conducted thousands of measurements of intact teeth and intense research into morphology and function. After years of painstaking research they found the formula for the genetic blueprint of morphology and occlusion. Sirona has harnessed these findings in CEREC Biogeneric.



Michael Skramstad, DDS

Michael Skramstad, DDS, of Orono Dental Care in Orono, Minn., has used the Biogeneric software for several months as a beta tester. A CEREC user since 2003, Dr. Skramstad completes an average of 500 CEREC restorations per year. He believes that CEREC Biogeneric is the most significant software upgrade since the 2003 introduction of CEREC 3D. "It has really been a pleasure seeing the software progress to a point that any dentist or assistant can easily and predictably create natural restorations," said Dr. Skramstad.

We spoke with Dr. Skramstad about his experiences with CEREC Biogeneric, the advantages of the software for both doctors and patients and how the software has greatly simplified the restoration process.

Q. What are the differences between the previous version of CEREC software and the new CEREC Biogeneric software?

A. In previous versions of the software, we would use different databases of teeth to replace missing tooth structure. This worked well, but it was not specific to that particular patient. It was basically a philosophy of morphing a denture tooth to fill a space.

Using Biogenics, the software is analyzing the patient's own teeth and creating occlusal morphology that is perfect for that particular patient. This process is based on mathematical algorithms that are scientifically exact and reproducible.

Think about face recognition software, upon which Biogenics is based. If you've ever watched the television show CSI, sometimes they will be able to generate an entire face based on a few data points on a suspect's ear. Biogenics works on the same concept, except we are constructing teeth based on that patient's genetic makeup. Any software can use a database process – the Biogeneric process is exclusive to Sirona and protected by patent.

Up until CEREC Biogeneric, you were able to construct biogeneric inlays and onlays using the remaining tooth structure as the basis of occlusal surface calculations. In the new software you can now do crowns, veneers and anatomically sized bridges by using the occlusal and lateral surfaces of an intact tooth as a basis. This can be the antagonist, neighboring or contra-lateral tooth.



Q. What are the biggest advancements in CEREC Biogeneric?

A. The general process of using the software has remained the same. However, there are two major advancements in this software with buccal bite and biogeneric crowns, both patented technologies exclusive to Sirona.

No. 1 is the new buccal bite. For the first time we are able to scan the actual opposing dentition and articulate that with the preparation model by means of a buccal bite image in centric occlusion. The accuracy of this articulation is truly astounding and it has made manipulating occlusion in the software a breeze. The introduction of this feature has made Sirona the only chairside system on the market that is now truly impression-free. Getting rid of the bite registration has made occlusion dramatically easier and has almost eliminated post-insertion adjustments of the restoration.

No. 2 is the biogeneric proposals. Using genetic information stored in patients' existing teeth to create natural occlusions has really reduced the need for adjustments. The proposals are almost perfect every time and the occlusion is absolutely spot on.

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Q. How will CEREC Biogeneric decrease the CEREC learning curve?

A. Biogenics will decrease the learning curve in a huge way because it is the closest thing to "complete automation" that we have ever had. In the past, we had to utilize all the different tools to help create a life-like restoration. We still have those tools available, but it's my experience that they are not utilized very much at all in the new software.

What Biogenics has allowed us to do is create software proposals that are clinically and functionally accurate with a single click of a button. These life-like occlusal surfaces need very little adjusting or manipulation in the software or clinically in the mouth.

Another aspect of the Biogeneric software that really helps the learning curve is the consistency of the design process. All restoration types (crowns, inlays, onlays, veneers and bridges) now are created the same way. This minimizes confusion and decreases the time it takes for new users to become adept at using the software. There's less to learn, plus software automation is always going to increase the success rate and doctor satisfaction with technology in general.

Q. What are the advantages of CEREC Biogeneric for both providers and patients?

A. The advantages of the Biogeneric software for the provider are clear and include the ability to create natural restorations with the single click of a button. The decrease in the learning curve for a new user almost doesn't even seem fair for us long-term seasoned users! Existing users will be more than surprised with how easy the entire process has become and how much faster and more accurate the proposals and final restorations actually are.

For the patient, the biggest advantage is using their existing teeth as a genetic reference point to create naturally functioning and feeling restorations. This is nearly impossible for laboratories to do or to accomplish using the old database model. Gone are the days when a patient states, "The crown feels funny."

CEREC[®]
by **Sirona**

