

Gaining bone height

# “Most patients like the idea of getting a customized solution”

Interview with Dr. Isabella Rocchietta and Prof. Bilal Al-Nawas conducted by Dr. Marcelo Calderero and Verena Vermeulen

**Bone block or GBR? Form-stable membrane or customized titanium scaffold? We discussed vertical ridge augmentation treatment options with two experts: Dr. Isabella Rocchietta, London/United Kingdom and Prof. Bilal Al-Nawas, Mainz/Germany.**





Photo: Aileen Hofschlag

**FIG. 1:** Bone block or GBR? Dr. Isabella Rocchietta (left) and Prof. Bilal Al-Nawas (right) discuss the topic.

**What was the first technique you learned and practiced for vertical ridge augmentation?**

Dr. Rocchietta: I began with GBR, and though I have tested other techniques, I will probably stay with that approach.

Prof. Al-Nawas: Maxillofacial surgeons are always trained first with bone blocks, but later I learned about titanium meshes and the GBR concept.

**Two recent reviews compare techniques for vertical ridge augmentation and come to the same conclusion: distraction osteogenesis has the highest bone gain, but also the highest complication rate.<sup>1,2</sup> Is there a trade-off between gain and predictability?**

Prof. Al-Nawas: I wouldn't say so. It is difficult to compare techniques, such as distraction osteogenesis and GBR based only on those two parameters. There are other factors. Undergoing distraction osteogenesis is much more intense and time consuming for the patient than un-

dergoing GBR. Although simple numbers might suggest superiority of one technique over the other, such a conclusion would be an oversimplification.

Dr. Rocchietta: I agree. For example, sometimes systematic reviews can be difficult to interpret, because the numbers shown are the average mean. But every, single surgical procedure is related to the surgeons themselves. Which technique works well depends on the indication and on the surgeon's skills, his or her experience and learning curve.

**Bone blocks are still very common for vertical ridge augmentation. Looking at the data, is this still justified?**

Prof. Al-Nawas: Their resorption pattern and differing quality make blocks unpredictable. We don't know whether they turn into vital bone or not. With the allogenic bone blocks we have further problems. We don't know which patients they come from, which drugs those patients used, and so on. These factors might have an impact on treatment outcome.

**GBR is the more predictable approach?**

Dr. Rocchietta: Definitely. The combination of a particulate material – for example, autologous bone chips mixed with anorganic bovine bone particles plus a form-stable element – makes more sense from a biological perspective.

**Several form-stable elements are currently available – titanium scaffold, e-PTFE membrane, bone shield, etc. Prof. Al-Nawas, you use Yxoss CBR® (customized titanium scaffold) in your daily practice. Do you see an advantage compared to other options?**

Prof. Al-Nawas: Advantage may not be the right word, because there is never one technique that is better than others. It's rather a question of what a surgeon is used to and can handle. But as I treat many patients with complex defects - comprising more than three teeth or a curved area of the alveolar process – I benefit from the fact that Yxoss CBR® is, in those cases, rather straightforward to use.

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## “The preplanning approach allows the patient to be more involved in the decision-making process.”

Prof. Bilal Al-Nawas

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### What feedback do you get from your patients when you use Yxoss CBR®?

Prof. Al-Nawas: There are several aspects that make this approach appealing to them. First, the result of the digital planning I show them to explain the treatment. This is crucial. If patients do not understand the treatment, they do not understand possible complications and cannot help with better healing. Sec-

ond, most patients like the idea of getting a customized solution created especially for them. And third, 3D printing has a modern, impressive appeal.

### As you said, this option involves extensive digital preplanning. Do you see a trend towards more planning and fewer on-site decisions?

Prof. Al-Nawas: Yes. The planning becomes longer, the surgery time shorter. The benefits of this are more precision, fewer complications and more predictability also with regards to cost. Two treatment options, such as placing short implants vs staged augmentation with long implant placement, have different costs, and the decision for one approach or the other should not be made after opening the flap, to be dramatic. The preplanning approach allows the patient to be more involved in the decision-making process.

Dr. Rocchietta: In countries such as the United Kingdom, where I practice, this is also a legal requirement. We must provide proof that we have preplanned a patient's case and have informed him or her accordingly. The preplanning – be it digital or with a plastic model – allows us to better visualize the case and in greater detail than by simply opening a flap and “having a look.”

### Dr. Rocchietta, you primarily work with titanium-reinforced membranes. What are the advantages?

Dr. Rocchietta: These membranes are very straightforward to use. The preplanning might take less time compared to, for example, Yxoss CBR®, because after choosing the appropriate size, dimension and shape, the membrane can be easily adapted on-site. The surgeon does not have to wait for a material that is customized elsewhere.

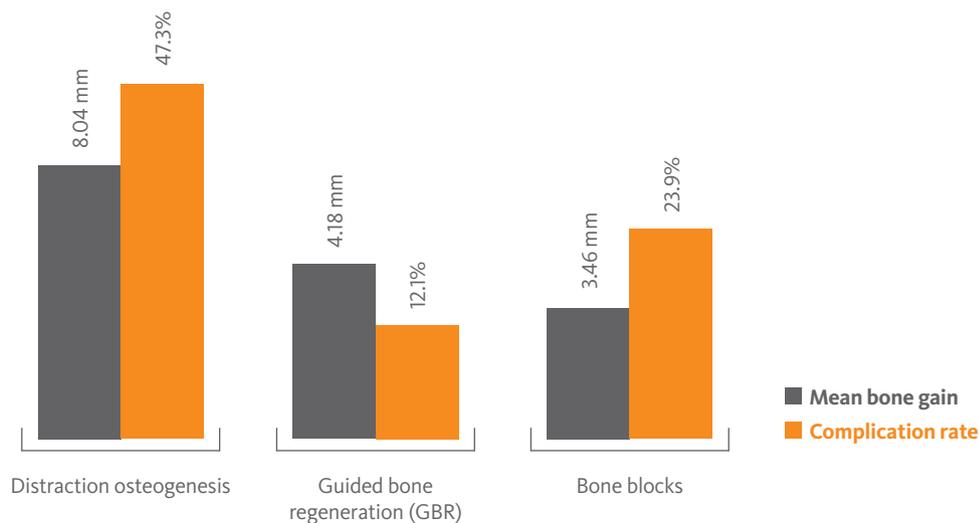


FIG. 2: Mean bone gain and complication rate associated with common procedures for vertical ridge augmentation.<sup>1</sup>



Photo: Aileen Hoffschlag

FIG. 3: Dr. Usabella Rocchietta (left) and Prof. Bilal Al-Nawas (right) during the interview.

**“Several elements are key to vertical ridge augmentation success and they depend on proper training, surgical skills and experience.”**

**Dr. Isabella Rocchietta**



FIG. 4: Yxoss CBR® is the first customized 3-D printed titanium scaffold for bone regeneration of complex bone defects. ReOss® (manufacture) offers the option of integrated prosthesis positioning in the surgical planning.

From my perspective it’s also easy to remove the membrane, easier than removing a titanium grid.

Prof. Al-Nawas: I agree. The PTFE membranes, however, have limitations, for example, for large or complex cases.

Dr. Rocchietta: Very true. When the defect is so large that one membrane is not enough, this concept is no longer straightforward. One needs to combine several membranes, adapt them to one another while avoiding open spaces. In my opinion, here the Yxoss CBR® concept with its prefabricated one-piece titanium scaffold has very clear advantages.

**You are both very experienced surgeons. Is it conceivable we might one day have a technique for vertical bone augmentation that makes the treatment predictable for less experienced surgeons?**

Dr. Rocchietta: This would be a very difficult and risky statement from my per-

spective. There are several elements that are key to vertical ridge augmentation success. One very important factor is soft tissue management. These key elements depend on proper training, surgical skills and experience. The form-stable device is only one part of the treatment. Choosing one device over the other will not make it much simpler *per se*. What we can achieve, however, is shorter surgery time, fewer complications and more predictability.

Prof. Al-Nawas: I absolutely agree.

#### References

- 1 Urban IA, et al.: J Clin Periodontol 2019 Jan 22. [Epub ahead of print]
- 2 Saletta JM, et al.: Int J Oral Maxillofac Surg 2019; 48(3): 364-72.