

[Clinical article on Intralift with Piezotome:](#)

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One-step implant with internal, minimally-invasive sinus lift by the Intralift™ piezoelectric hydrodynamic technique.

Internal sinus lift and bone formation with piezoelectric ultrasonics and the new Intralift:

Your best advertisement for patients with dental anxiety: no swelling, no pain, no bleeding!

A 37-year old patient came to see us. He is a heavy smoker (approx. 30 cigarettes a day), has a phobia of dentists, and his dental prostheses are more than ten years old. The X-rays showed his teeth to be in very poor condition. At first the patient only wanted an implant on 15. However, as the vertical residual bone height was only three millimeters here, the first thing to do was to carry out an internal sinus lift for bone augmentation, in order to develop the anatomical condition needed for an implant placement. For this purpose the new Intralift procedure was used in combination with the Piezotome from Satelec (Acteon Group). This was followed by a one-step implant provision.

The surgical procedure in detail: A biopsy-mucosa-punch was first used to remove the gingival region in which the implant is to be placed (Fig. 1). The diamond **Intralift** instruments **TKW1** to **TKW4** are then used to carry out stepwise pilot drilling (Fig. 3). The **TKW5** is then inserted in the cavity to lift the Schneider

membrane by hydrodynamic effect. Then, as a safeguard and a precautionary measure against rupture of the maxillary sinus membrane, a collagen fleece, which was previously shaped by hand, is placed into the osteotomy (Fig. 5). The plugging instrument **TKW5** is used again to carefully press it into the cavity. When it makes contact with blood, the collagen fleece swells and immediately adapts to the maxillary sinus membrane.

First plugging, then hydrodynamic dispersion

The **TKW5** tip is used in order to carefully lift the Schneider membrane by hydrodynamic effect. This tip is also useful to fill the osteotomy. First, the augmentation material is carefully moved cranially (Fig. 6 and 7). When it has been compacted to its maximum limit, the **TKW5**, in the alveolus or the osteotomy respectively, is activated for a short while with irrigation for cooling and low flow rate (Fig. 9). This step is repeated several times.

If sufficient material has been inserted, the implant bed is prepared with a spear point bur – without irrigation and with a revolution speed of approx. 300 rpm (Fig. 10). This slow procedure is both easy to follow as well as being gentler to the bone substance. At the same time, far more bone chippings will remain in the bur grooves which can then be conveniently removed from the bur and collected. As three millimeters above the sinus are considered enough residual bone height, the implant can be placed immediately (Fig. 11). Finally, the mucosa flap is sutured micro-surgically. Thus, the patient has no wound, and bleeding is also prevented (Fig. 13).

Minimally invasive for bone – comfortable for patients

Conclusion: The special feature about this new **Intralift** procedure for internal sinus lift and bone augmentation is not only the minimally-invasive and gentle nature of the procedure, but also the comfortable and quick treatment for the patient –

without any knocking or tapping. The entire surgical procedure took only 20 minutes and the patient had no pain, swelling or bleeding afterwards. Although we drilled open the maxillary sinus, he had the impression that we had not actually done anything! The patient was absolutely thrilled.

With such a gentle operative procedure, we can now convince any patient with dental anxiety about the advantages of modern dentistry or our own professionalism, and show them that an operation in the oral cavity is actually possible without bleeding, pain or swelling. And that is not only good for all involved, but also serves as an ideal advertisement – not only for anxious patients.

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Fig. 1: The biopsy mucosa punch in situ.



Fig. 2: The extracted mucosa block.



Fig. 3: The **Intralift** instrument **TKW3** with laser markings in the osteotomy.



Fig. 4: Viewed from an occlusal position one can see the glimmering mucosa of the Schneider membrane in the depth of the osteotomy.



Fig. 5: The inserted collagen fleece in the osteotomy.



Fig. 6: The picture shows the situation after the first filling of the osteotomy with bone substitute material.



Fig. 7: The plugging instrument **TKW5** is used to press augmentation material into the osteotomy again.



Fig. 8: The measuring probe shows how far the augmentation material has been inserted into the maxillary sinus. In this case, a 4 x 11.5mm implant was required.



Fig. 9: The osteotomy after insertion of the augmentation material and subsequent irrigation with the **TKW5**.



Fig. 10: Preparation of the implant bed with the spear point bur.



Fig. 11: Insertion of implant.



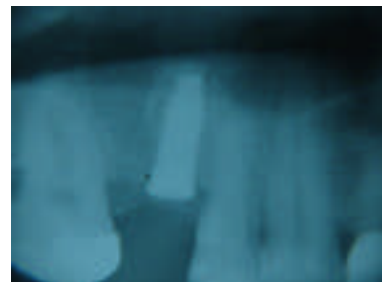
Fig. 12: The implant with cover screw.



Fig. 13: The mucosa flap is micro-surgically repositioned.



Fig. 14: The post-operative x-ray shows the very nicely built-up augmentation area around the implant.



Bibliography is available from:
Dr. Marcel Wainwright, Düsseldorf
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