IV. Osseodensification May Facilitate Vertical Ridge Expansion

A. Maxillary Sinus Autografting - Densah® Lift Protocol I

MINIMUM RESIDUAL BONE HEIGHT ≥ 6 mm  MINIMUM ALVEOLAR WIDTH NEEDED = 4 mm

1. Flap the soft tissue using the instruments and technique normally used.

2. In cases where posterior residual alveolar ridge height is ≥ 6.0 mm and additional vertical depth is desired, drill to the depth determined within an approximate safety zone of 1.0 mm from the sinus floor using a pilot drill (Clockwise drill speed 800-1500 rpm with copious irrigation). Confirm pilot drill position with a radiograph.

3. Depending upon the implant type and diameter selected for the site, begin with the narrowest Densah® Bur (2.0). Change the drill motor to reverse – Densifying Mode (Counterclockwise drill speed 800-1500 rpm with copious irrigation). Begin running the bur to create the osteotomy. Modulate pressure with a pumping motion to reach the sinus floor. When feeling the haptic feedback of the bur reaching the dense sinus floor, stop applying any pressure.

4. A. Use the next wider Densah® Bur (3.0) and advance it into the previously created osteotomy with modulating pressure and a pumping motion. When feeling the haptic feedback of the bur reaching the dense sinus floor, keep modulating pressure with a pumping motion to advance past the sinus floor in 1 mm increments. Maximum possible advancement past the sinus floor at any stage must not exceed 3 mm. Confirm the first Densah® Bur vertical position with a radiograph. Bone will be pushed toward the apical end and will begin to gently lift the membrane and autograft compacted bone.

5. Indications and Contraindications for Use

Scan this QR Code to view our Maxillary Sinus Autografting video
4. B. Use the sequential Densah® Burs in Densifying Mode (Counterclockwise drill speed 800-1500 rpm with copious irrigation) with pumping motion to achieve additional vertical depth and maximum membrane lift of 3 mm (in 1 mm increments) and reach final desired width for implant placement. Densah® Burs must not advance more than 3 mm past the sinus floor at all times regardless of the Densah® bur diameter.

5. Place the implant into the osteotomy. If using the drill motor to tap the implant into place, the unit may stop when reaching the placement torque maximum. Finish placing the implant to depth with a torque indicating wrench.

*Clinician experience and judgement should be used in conjunction with the Densifying Reference Guide recommendation and suggested use protocols.
IV. Osseodensification May Facilitate Vertical Ridge Expansion

B. Maxillary Sinus Autografting - Densah® Lift Protocol II

MINIMUM RESIDUAL BONE HEIGHT = 4-5 mm  MINIMUM ALVEOLAR WIDTH NEEDED = 5 mm

Flap the soft tissue using the instruments and technique normally used. In cases where posterior residual alveolar ridge height is $\geq 4$-5 mm and additional vertical depth is desired. **Avoid using a pilot drill.**

1. Depending upon the implant type and diameter selected for the site, begin with the narrowest Densah® Bur (2.0). Change the drill motor to reverse – Densifying Mode (Counterclockwise drill speed 800-1500 rpm with copious irrigation). Begin running the bur to create the osteotomy. Modulate pressure with a pumping motion to reach the sinus floor. Stop drilling once you feel the haptic feedback of the bur reaching the dense sinus floor. Confirm Bur position with a radiograph.

2. A. Use the next wider Densah® Bur (3.0) and advance it into the previously created osteotomy with modulating pressure and a pumping motion. When feeling the haptic feedback of the bur reaching the dense sinus floor, modulate pressure with a pumping motion to advance past the sinus floor in 1 mm increments. **Maximum possible advancement past the sinus floor at any stage must not exceed 3 mm.** Confirm the first Densah® Bur vertical position with a radiograph. Bone will be pushed toward the apical end and will begin to gently lift the membrane and autograft compacted bone.

B. Use the sequential wider Densah® Burs in Densifying Mode (Counterclockwise drill speed 800-1500 rpm with copious irrigation with pumping motion to achieve additional vertical depth and maximum membrane lift of 3 mm (in 1 mm increments) and reach final desired width for implant placement. **Densah® Burs Must not advance more than 3 mm past the sinus floor at all times** regardless of the Densah® Bur diameter.
3. In cases where additional lift of the membrane (more than 3 mm) is desired, an allograft material can be placed into the final width osteotomy.

4. Use the last Densah® Bur in Densifying Mode (Counterclockwise drill speed 150-200 rpm with no irrigation) to propel the allograft into the sinus. The Densah® Bur must only facilitate the allograft material compaction to lift the sinus membrane further, and not advance beyond the sinus floor. *Repeat steps 3 & 4 to facilitate additional membrane lift.

5. Place the implant into the osteotomy. If using the drill motor to tap the implant into place, the unit may stop when reaching the placement torque maximum. Finish placing the implant to depth with a torque indicating wrench.

*Clinician experience and judgement should be used in conjunction with the Densifying Reference Guide recommendation and suggested use protocols.
IV. Osseodensification Facilitates Vertical Ridge Expansion

C. Maxillary Sinus Autografting - Densah® Protocol III

MINIMUM RESIDUAL BONE HEIGHT = 2-3 mm  MINIMUM ALVEOLAR WIDTH NEEDED  = 7 mm

This protocol will be taught and practiced during Osseodensification hands-on training courses utilizing specially designed simulation clinical models.

Osseodensification training courses are available at:

https://versah.com/training

*Treatment planning and clinical use of the Densah® Burs are the responsibility of each individual clinician. VERSAH® strongly recommends completion of qualified Osseodensification Hands-On Training and ADHERENCE to the established traditional surgical protocols. VERSAH® is not responsible for incidental or consequential damages or liability relating to use of the Densah® Burs alone or in conjunction with other products other than replacement under warranty.