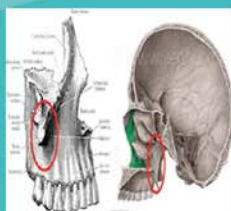


Lab Work



Lab works Video

01 MSE Position: Posterior Palatal Vault Between 1st and 2nd Molars in Order to Direct the Expansion Force Against the Buttress Bones

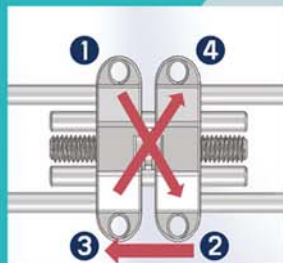
02 MSE Should Be Positioned Slightly Anterior to the Soft Palate



Bi-Cortical Engagement



How to Insert the Implants



Insertion Procedure 1-2-3-4

Manual Insertion is Recommended for Close Assessment of Torque Level

Inventor



Prof. Won Moon D.M.D. M.S.

from UCLA School of Dentistry

UCLA School of Dentistry, Certificate in Orthodontics, 1991
 UCLA School of Dentistry, MS in Oral Biology, 1991
 Harvard School of Dental Medicine, D.M.D., 1989
 University of California, Irvine, BS in Mathematics, 1984

Dr. Won Moon is the Thomas R. Bales Endowed Chair in Orthodontics and serving as the program director for an orthodontic residency program, UCLA School of Dentistry. He has been a Diplomate of the American Board of Orthodontics since 2002. He completed his dental education at Harvard and orthodontic education at UCLA. He studied mathematics prior to dentistry, and his research topics include 3D image analysis utilizing surface mapping functions and Elliptical Fourier's Descriptors, Genomewide Association Study of Craniofacial Phenotypes, Finite Element Model Development and Simulation, Applications of 3D Printing in Orthodontics, Orthopedic Correction, Airway Changes with Orthopedic Corrections, Accelerated Tooth Movement, and Micro-implant (MI) Design study. His work has been published in various journals, not necessarily limited to orthodontics because of his background, and he is a co-author of two textbooks. He is currently working on a textbook, "Midfacial Expansion". He has presented these findings in 17 countries, totaling over 150 presentations. His current focus has been establishing protocols for orthopedic corrections with MI, improving the airway for patients with nasal obstruction, and creating virtual patients utilizing image analysis.

His interest in mid-facial expansion began in 2005 as micro-implant became available in USA, and he is responsible for developing Maxillary Skeletal Expander (MSE), a unique micro-implant assisted rapid palatal expander (MARPE). He has been active in advocating non-surgical skeletal expansion in both children and adult patients, especially for those who may suffer from airway restrictions. His presentation in MSE has been widely accepted internationally, and numerous peer-reviewed publications are available.

2017 CDABO Case Report of the Year Award

It is with great pleasure that I write to inform you that your article, "Micro-implant assisted rapid palatal expansion appliance for orthodontically assisted maxillary skeletal expansion in an adult," has been selected to receive the 2017 CDABO Case Report of the Year Award.

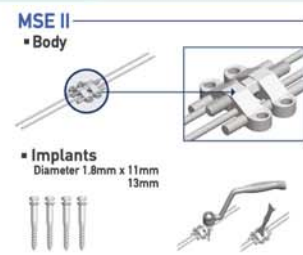
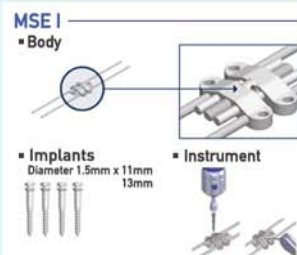
Thank you for your contribution to the field of orthodontics. I look forward to your future work on this subject. Again, I offer my congratulations for receiving this prestigious award.

*Respectfully,
 Dr. G. Behrman, DDB, MEd, PhD
 Director in Chief, ABO*



Article

Components

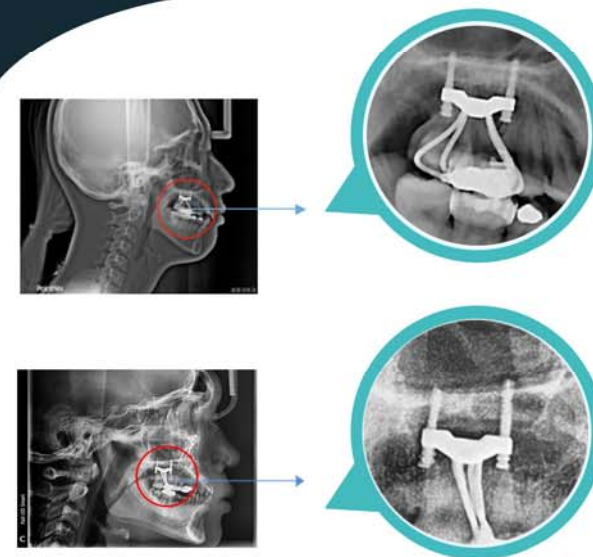


Failed case



• When the implants are not engaged bi-cortically, they may tip laterally during the expansion, causing unwanted tissue impingements and implant failure

Success case



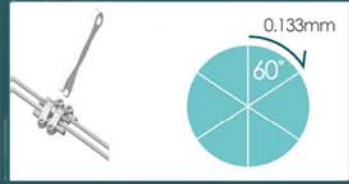
Activation

MSE I - Pin Type



4 turns = 0.8mm
 Ex) Expansion size 8mm:
 40 turns

MSE II - Spanner Type



6 turns = 0.8mm
 Ex) Expansion size 12mm:
 90 turns

MSE Activation Protocol Patient's Biotype Must Be Considered

MSE I	Early teens	: 3x / week (0.60mm/wk)
	Late teens	: 1x / day (0.20mm / day)
	Early to Mid-20's	: 2-3x / day (0.40mm ~ 0.60mm / day)
	Older	: Min. 2-3x / day, assistance PRN
	After Diastema	: 1x / day (0.20mm / day)
MSE II	Early teens	: 6x / week (0.80mm/wk)
	Late teens	: 2x / day (0.27mm / day)
	Early to Mid-20's	: 4-6x / day (0.53mm ~ 0.80mm / day)
	Older:	: Minimum 4-6x / day
	After Diastema	: 2x / day (0.27mm / day)

Precaution for MSE II Activation



- Place the spanner over the hexagon in the center of the jack screw
- A part of MSE can be dislodged by incorrect use of the spanner

- * Contraindications:**
1. Extremely narrow palatal vault
 2. Patients with previous mid-facial trauma
 3. Extremely thick/dense palatal bone and/or dense buttress bone
 4. Extremely thin palate with low bone density

Benefits

- Vertical Control in High Angle Cases
- Significant Increase in Upper Airway Volume: Nasal Obstruction, Sleep Apnea
- Mostly Skeletal Expansion: Less Bone Bending and Dental Tipping Compared to RPE and SARPE
- Less Invasive than SARPE and Orthognathic Surgery
- FM and MSE for Class III Correction
- MSE Causes Expansion of the Surrounding Structures
- MSE Can Be Used for Mature Patients

Critical Points

- Proper Implant Insertion and Precise Lab works
- Vertical Insertion / Bi-Cortical Engagement
- MSE Position: Posterior Palatal Vault Between 1st and 2nd Molars



MSE Related Articles

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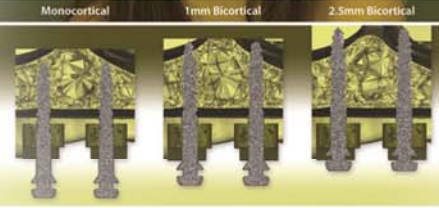
MSE

Maxillary Skeletal Expander

Invented by Prof. Won Moon
 UCLA School of Dentistry



AJO-DO
 American Journal of Orthodontics
 & Dentofacial Orthopedics



Effects of monocortical and bicortical mini-implant anchorage on bone-borne palatal expansion

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