



AIRWAY CENTRIC DENTISTRY™ –

*A New Paradigm
in Dentistry*

By Dr. Michael L. Gelb



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Dr. Michael L. Gelb

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Dr. Michael L. Gelb is an innovator in sleep apnea, painful TMJ disorders, and other head and neck pain conditions.

Dr. Gelb has created the vision and is the holder of the patents which are the foundation of Gelb Technologies, LLC.

Dr. Gelb has studied breathing related sleep disorders (BRSD), specializing in how they relate to fatigue, focus and pain, and the effects all of these can have on a person's life. He received his D.D.S. degree from Columbia University School of Dental and Oral Surgery in 1982, and his M.S. degree from SUNY at Buffalo School of Dental Medicine. He is the former Director of the TMJ and Orofacial Pain Program at the NYU College of Dentistry and is also Clinical Professor in the Department of Oral Medicine and Pathology at the NYU College of Dentistry, Division of Basic Science. He is a Clinical Assistant Professor at Tufts University in Boston. He was awarded Diplomate of the American Board of Orofacial Pain in 1995.

Dr. Gelb is a co-inventor of the NORAD, or Nocturnal Oral Airway Dilator appliance that reduces snoring by positioning the patient's tongue and jaw so that airways stay open. He has also updated the Gelb or MORA appliance - named after his father - and has 3 patents pending for appliances in sleep and pain management.

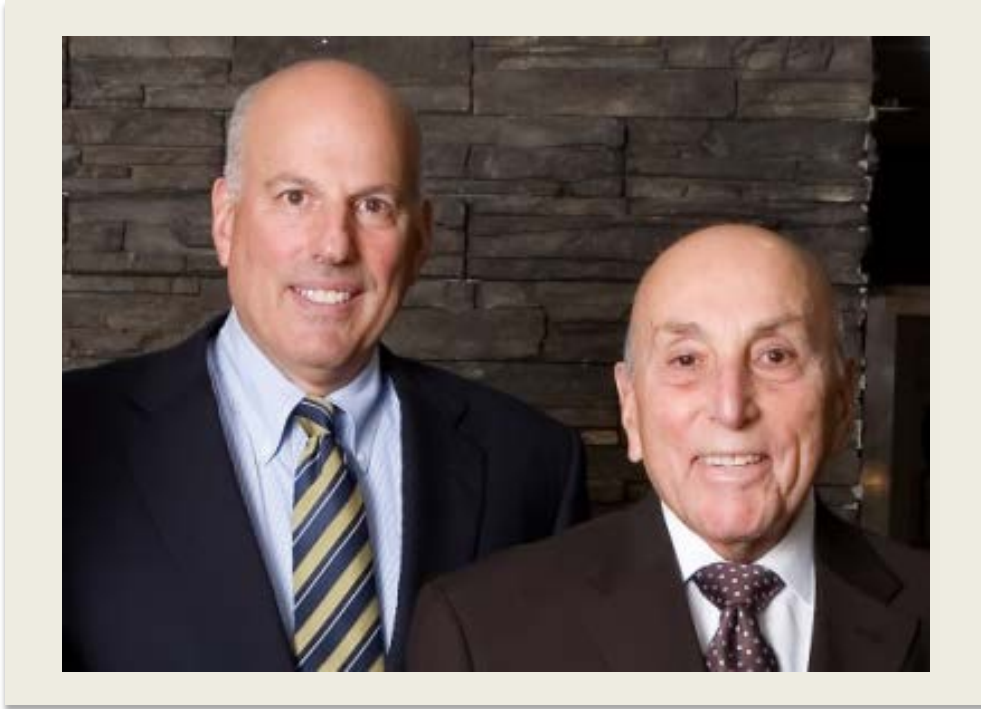
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CHAPTER 1:

Introduction



My introduction to centric relation and the temporomandibular joint dates back to about 1965 when projected onto my living room wall were images emanating from 2 Kodak carousel projectors, as I sat and watched my father, Dr. Harold Gelb prepare for his next lecture. It is now 2012, 47 years later and the Gelb 4/7 (*Figure 1*) has serendipitously evolved into AIRWAY CENTRIC or the Gelb 4/7 Bite, Balance, Breathing method.

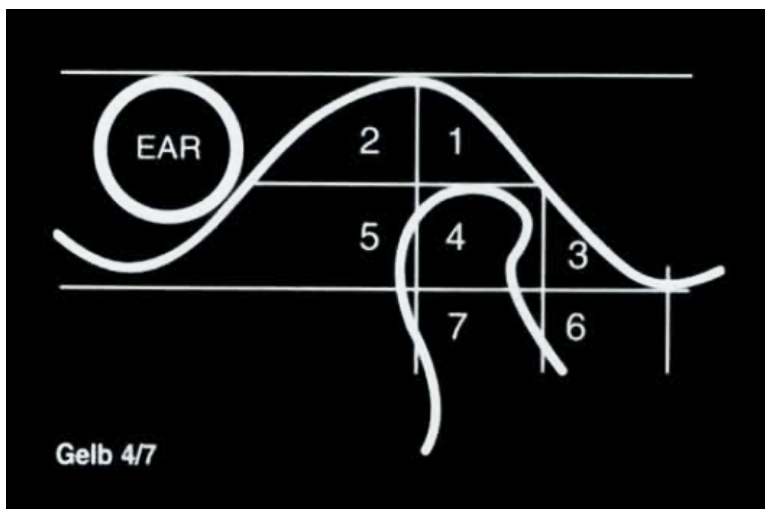
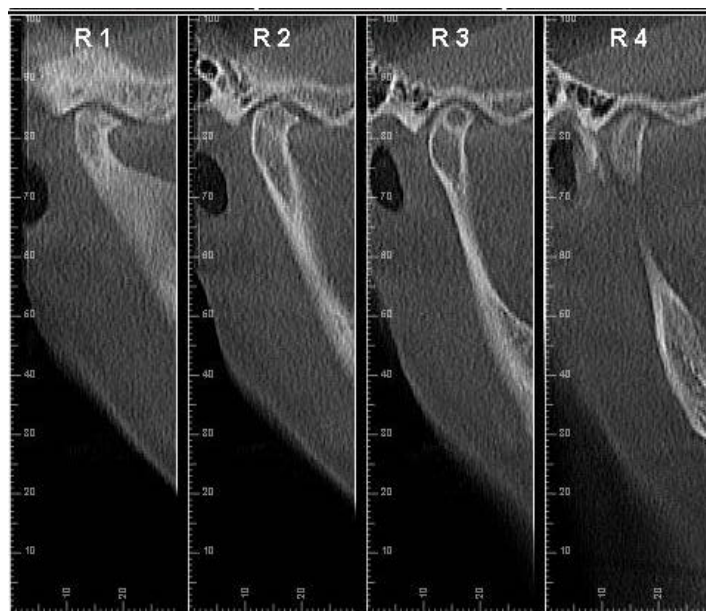


Figure 1. Gelb 4/7 position

A little history – the Fathers of Gnathology, Drs. Stallard, Stuart and McCollum followed Bonwill’s mechanical occlusion theory and translated the movement of the jaw to an articulator in 1930. They developed a jaw position called Centric Relation, which was the most retruded superior position of the jaw joint (*Figure 2*).



Retruded jaw position 1930-1995
Figure 2. Old CR



These men were revered at the time and are still in the USC Dental Hall of Fame. Around the same time, Tweed had just graduated from Angie's School of Orthodontics and rejected non-extraction theory as producing faces that were too protrusive. He began extracting permanent bicuspids to "flatten" profiles and supposedly give more stable results (*Figure 3*). Ron Roth and Robert Williams took the CR concept to orthodontics in ensuing years. Over the next 25 years, the Gnathologists and Tweed orthodontists each contributed to a more retruded jaw position with fewer teeth (*Figure 3*). This jaw position was taught and utilized in American dentistry from 1930-1995.



Figure 3. Four Bicuspid Case



To dentists like Bill Farrar, Barney Jankelson, and Harold Gelb, this made no sense. The condyle wars in the 1970s pitted gnathologists from Pankey, Dawson, and SOS against Gelb, Farrar, Jankelson, and Witzig. Witzig taught the European school of functional orthodontics popularized by Schwartz and Frankel which used the Gelb 4/7 position in non-extraction expansive orthodontics. There was a landmark legal case involving a 4 bicuspid extraction patient who ended up requiring TMJ surgery following extraction orthodontics. Witzig was the expert witness and the patient ended up receiving over a million dollars, which was a huge settlement at the time.

Dawson realized in the 1980s along with the glossary of prosthodontic terms that the gnathologists had no biologic or physiologic evidence for a retruded centric position. They followed Gelb, but in more conservative anterior superior position (*Figure 4*).

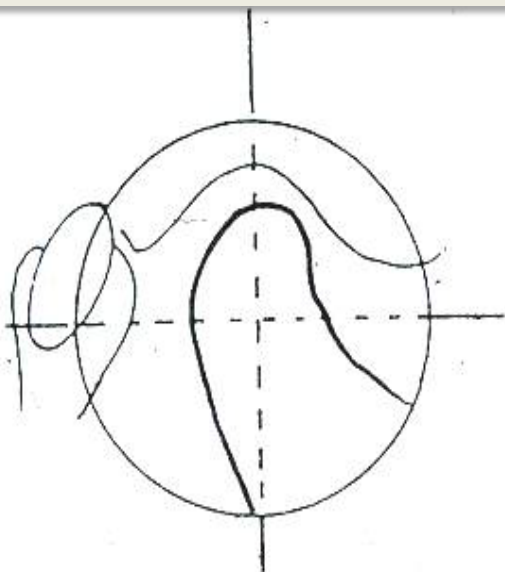


Figure 4. New Prosthodontic CR Anterior-Superior





40 years ago when Dr. Harold Gelb was asked to lecture at conferences on fatigue, he did not realize that the MORA or Gelb appliance was one of the first sleep appliances on the market.”



CHAPTER 2:

New Prosthodontic



The Gelbs

Most prosthodontists and orthodontists still follow the “old” centric relation (*Figure 2*). As my father was developing his approach to TMJ, head and neck pain, my mother was studying myofunctional therapy or oral mycology and the effect of the tongue on facial development and the airway. We have come full circle with the excellent work of Lois Laynee and Joy Moeller as well as Dr. Brian Palmer teaching us about the importance of breast feeding, tongue posture, swallowing, and breathing properly.

Joy and Marc Moeller are working with excellent researchers in Brazil to bring Oromyology to the rest of the world. Chris Farrell, who is from Australia, after studying with Harold Gelb, went on to develop the Myoresearch line of myofunctional appliances which are picking up steam in the United States.

At the same time, Epigenetics in facial development has been brought to the forefront by Dr. Theodore Belfor and Dr. David Singh. Intermittent light forces from swallowing, tongue pressure, and vibrating wire lead to maxillary and mandibular development. This jaw development is being achieved with removable expansion appliances, which open the airway and improve nasal and pharyngeal breathing. Maxillary expansion appliances are also being used as a cranial tool to assist cranial and craniosacral therapy.

Forty years ago when Dr. Harold Gelb was asked to lecture at conferences on fatigue, he did not realize that the MORA or Gelb appliance was one of the first sleep appliances on the market. Even the early Gelb appliances (*Figure 5*) placed the jaw in the 4/7 position for ideal centric finishing in orthodontics or prosthodontics as well as to treat TMJ internal derangement, headache, neckache, earache, and facial pain. We now understand that many 4 bicuspid extraction patients have obstructed nasal breathing, retruded palates and tongues, and retruded mandibles exacerbating TMJ internal derangement, (*Figures 3*) headache and breathing related sleep disorders. The same can be said of Gnathologic full arch cases placed in a retruded Centric relation.



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Gelb 4/7™

Figure 5. NYU appliance (modified Gelb)

The new Gelb 4/7™ AIRWAY CENTRIC™ appliance (*Figure 6*) takes dentistry into the field of Dental Sleep Medicine and allows the dentist or physician to find a position to treat apnea, hypopnea, Upper Airway Resistance Syndrome, as well as snoring.

Dr. Michael Gelb developed the Gel-B™ Bite Balance Breathing System to effectively manage energy, sports performance, and concussion. Strength, balance, and flexibility are improved while training and during competition.

The Gelb-B™ Bite Balance Breathing System is now being used by professional athletes, Broadway actors, singers, and dancers, as well as high school and college athletes and amateur performers at all levels.



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refers to a new philosophy in dentistry as well as Gelb Technologies OTC Sleep and Snoring appliance. The airway now trumps everything else in dentistry. The airway and proper or ideal breathing is hierarchically the most important function for humans.

Ideal health and ideal facial development is dependent on correct tongue posture and nasal breathing. This requires a partnership between dentist, ENT, pulmonologist, lactation consultant, oromyologist, ObGyn, osteopath, chiropractor, and physical therapist.

The Gelb-B Bite Balance Breathing system recognizes these components and builds on the Gelb 4/7 position to establish **AIRWAY CENTRIC™** education so that dentists can now achieve a higher level of health and wellness with their patients.

*AIRWAY CENTRIC™
DENTISTRY refers
to a new philosophy
in dentistry.*

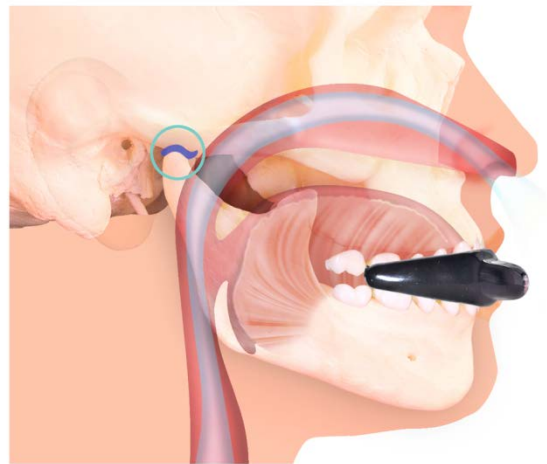


Figure 6. Airway Centric™ dentistry position



The **AIRWAY CENTRIC™** appliance (*Figure 7*) combines the best of mandibular repositioning with tongue and hyoid advancement. This unique appliance is designed to promote a comfortable lower jaw position (Gelb 4/7) by notching anteriorly and a soft thermoplastic material, which retains both upper and lower jaws even in a supine position. The lower jaw is prevented from dropping back or retruding even when sleeping on one's back. The **AIRWAY CENTRIC™** appliance maintains the jaw in the zone all night by allowing the tongue to achieve an ideal posture away from the back of the throat.

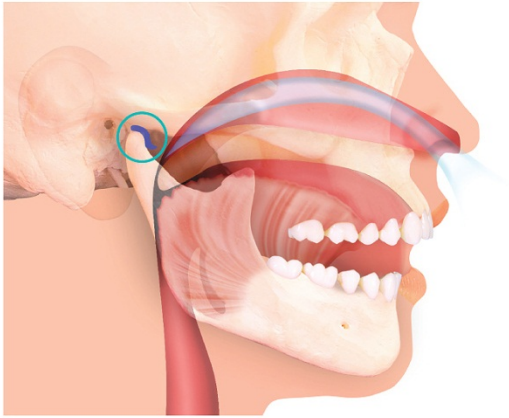
The dentist, by using the **AIRWAY CENTRIC™** appliance, becomes a most valuable member of the patient's overall healthcare team along with their internist, cardiologist, gynecologist, etc.

Use of the **AIRWAY CENTRIC™** appliance is a new method to achieve a better night's sleep, with fewer awakenings and renewed energy in the morning and throughout the day.



Figure 7. Airway Centric™ appliance





For
Optimal
Performance

Figure 8. Sleep Apnea; closed airway

AIRWAY CENTRIC™ appliances reduce sleep fragmentation, increases oxygen saturation, improves heart rate variability, and of course reduces apnea, hypopnea, UARS , and snoring. The number one risk factor for bruxism is Obstructive Sleep Apnea (*Figure 8*). By opening the airway, **AIRWAY CENTRIC™** appliances concurrently treat bruxism as a universal appliance.

The Gel-B Bite Balance Breathing System puts the jaw and tongue in the ideal position for each patient to achieve optimal performance, prevent injury, and improve recovery time. It is also a fabulous pain management system managing clenching, bruxism, and headaches.



AIRWAY CENTRIC™ DENTISTRY

Dentistry will now start to understand that jaw position is dependent on the development of the maxilla and mandible. Most maxillas (82%) are underdeveloped and iatrogenically retruded by dentists and orthodontists as taught by major dental schools and orthodontic programs in the country. We can now understand the folly of Stuart, Stallard, and McCollum, perpetuated by Peter K. Thomas, Pankey, and Dawson in restoring a jaw in the most reproducible retruded non-physiologic iatrogenic position. Even more harmful was the extraction of permanent teeth during orthodontics, which closed airways and retruded jaws. It is now time for the professionals to become aware of the benefits of the Gel-B Bite Balance Breathing System and **AIRWAY CENTRIC™** appliances.

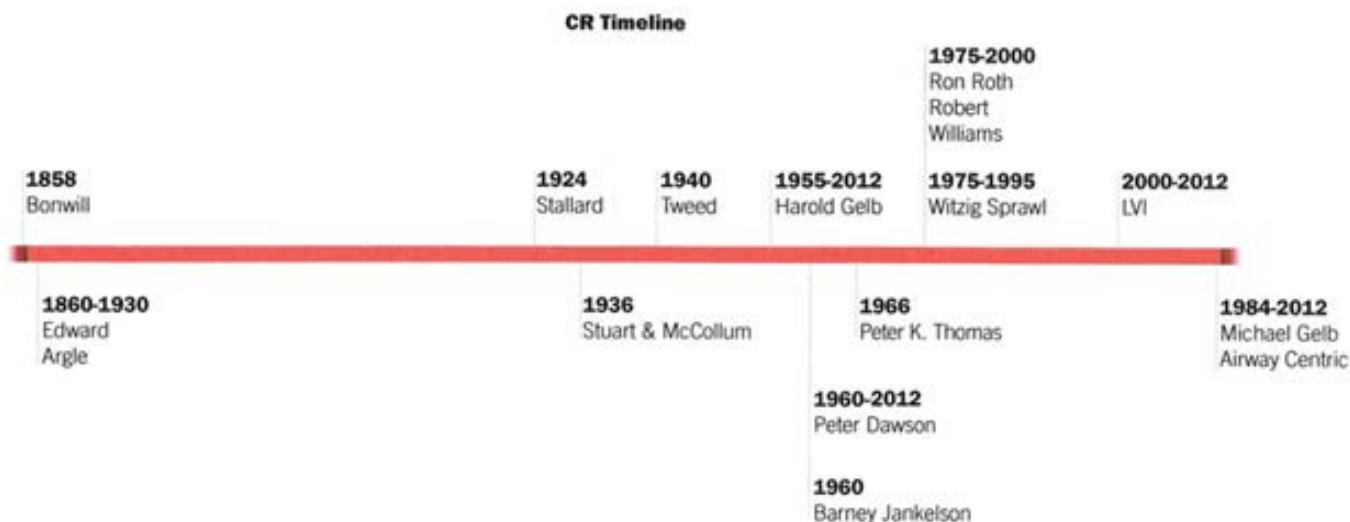


Figure 9. CR Timeline



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For more information about our practice, appliances, and AIRWAY CENTRIC™ Dentistry:

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