

## How Many Years Must a Profession Exist . . . ?

Is it possible that over the last 30-40 years our profession has been searching for increasingly complex solutions for TMD and OSA when there may actually be a relatively simple explanation and solution? To paraphrase Bob Dylan's question in the 1960s, "How many years must a profession exist before it actually sees?" The correlation between TMD, OSA, and facial balance has only recently begun to *be seen* by a few in the profession.

The American Academy of Craniofacial Pain (AACP) meeting in January provided a unique convergence of these ideas by combining Dr. John Mew's *orthotropic* philosophy with thoughts from other speakers. This meeting helped many crystallize the idea that changes in facial balance are likely the primary cause of TMD and OSA. Although his remarks centered on the facial esthetic issues associated with lack of proper growth of the lower face, *Mew noted that TMD and OSA would likely not exist if the maxilla and mandible were ideally related to the rest of the cranium.* He theorizes that changes in rest oral posture, usually secondary to airway insults early in life, ultimately are responsible for altered facial growth. Such changes almost always involve the maxilla and mandible falling back in the face from their ideal genetically determined position in all classes of malocclusion. For several years I've felt these changes can produce decreased tongue space, reduced airways, increased parafunction, and increases in TMD and OSA. Mew offered a solution to altered facial balance with strong evidence that Biobloc treatment can develop the lower face forward in children! He has offered similar observations in the literature and lectures for decades but few have *seen*. Many orthodontists have listened and understood, but used his being *out of the mainstream* as an excuse to not learn what appeared to them a technique far more challenging than straightening teeth with braces. Recent interest in OSA elevates Mew's ideas to front page importance for the profession to discuss.

John Remmers, M.D., also speaking at the AACP, observed that OSA would become the number one chronic disease in industrialized societies and further noted that 65-80% of stroke patients suffer from OSA.

*Remmers made a strong case for a structural basis of OSA and agreed that OSA would likely not exist if the maxilla and mandible were ideally related to the rest of the face.* David Gozal, M.D., raised the stakes even higher when he noted research showing a ten point drop in I.Q. in children with OSA and discussed the irreversible nature of cardiovascular changes which begin to occur in children with OSA. It now appears the discussion is no longer about esthetics but actually about life and death. It seems obvious and crucial to explore ways of developing the maxilla and mandible forward to their ideal positions if we are to prevent or treat these problems.

The two areas of dentistry most likely to offer a solution would be either orthodontics or oral surgery. Oral surgeons can surgically advance the maxilla and mandible to open the airway and eliminate OSA, but few patients would opt for 4-7 hours of surgery if they knew of a simpler way. Is the orthodontic profession as a whole aware of the problem and headed in a direction that will likely result in a solution—or is it moving in the opposite direction? Let us examine the evidence, and you decide.

In 1981 McNamara's<sup>1</sup> article on Class II malocclusion appeared in the literature. He found that maxillary protrusion was not a common finding in Class II patients and noted that a maxilla not ideally placed would more likely be *retruded* than protruded. He further noted that maxillary protrusion was not a common finding. He concluded that efforts to develop the mandible forward might make more sense in treating Class II patients. From his data, he might have called for attempts to develop the maxilla forward before developing the mandible forward. In his defense, in those years no one besides John Mew was even suggesting that such a thing might be possible. It seems ironic that the upcoming May 2006 AAO meeting will feature a speaker still recommending the need for headgears in orthodontics and a very well known educator discussing how to treat one of the "most common orthodontic problems—that of protrusions." In fact, actual protrusion of teeth in the face is exceedingly rare, but treatment of *apparent protrusions*

is sadly still quite common in the literature. The impact of McNamara's<sup>1</sup> article on the profession was less than a pin drop at a rock concert.

The *functional orthodontic revolution* of the 1980s in the U.S. featured attempts to develop the mandible forward, but came and went without significantly impacting the way orthodontics is practiced. This *revolution*, led largely by general dentists attempting to *grow the mandible*, did not escape the scrutiny of academia. Indeed, Dr. Lysle Johnston,<sup>2</sup> former head of the Orthodontic Department at the University of Michigan, found no difference in overall results in patients treated with *functional* appliances vs. headgear/fixed appliance treatment. He noted that both groups were likely to conclude treatment with a "moderate midfacial dentoalveolar retrusion." One might assume that this conclusion would motivate academic leaders to research ways to achieve better facial balance, but several years have passed with apparently no such movement. With a litigious society bent on eliminating all risk in life, we have warnings on Starbucks cups telling us that coffee is hot and on gasoline pumps telling us not to drink gasoline. Combining that mentality with the society's obsession with esthetics of the entire body, one might imagine a future requirement of an Esthetic Impact Statement from orthodontists. If the orthodontic profession is truly concerned about esthetics, isn't it fair to tell parents, in terms they can understand, that a very likely outcome of any orthodontics will feature their children having faces *with both jaws recessed from an ideal position*? Such a warning might also include that some patients will end up with *both jaws severely recessed from an ideal position*. Is it better to do this voluntarily or to wait for patient lawsuits to force the issue? But many in society would protest that beauty on the outside is unimportant and only beauty on the inside really matters! Let us now discuss what is on the inside!

The airway is on the inside, and with it what seems to be emerging as the key to health. With OSA seeming to become a central issue in cardiovascular disease, stroke, and cancer it is hard to fly below the radar any more. Remmers' presentation only touched on the critical role that dentistry might take in health care using oral appliances to address snoring and OSA. His work strongly suggests that OSA is structural and recessed maxillas and mandibles reduce the airway and cause the problem.

As Prof. Johnston noted, many children will have recessed maxillas and mandibles following orthodontic treatment. Is there any way to avoid the conclusion that our post-orthodontic patients are more at risk for OSA with both jaws recessed? It only gets worse considering Mew showed both jaws continuing to fall back during life (*further increasing OSA risk*) unless oral posture is corrected. If parents understood the serious risk of cardiovascular disease, stroke, and cancer associated with OSA (thoroughly discussed at the AACP meeting) would they not demand a better result? If the profession has no solution, should it not at least provide an Airway Impact Statement warning that patients with recessed jaws are more at risk for OSA? Current informed consent forms tell patients that they might have root resorption during orthodontic treatment, but I'm unaware of anyone making a premature exit from planet Earth from shortened roots. People are dying daily of OSA related problems.

John Mew has developed a solution for the facial imbalance, and it has been there for years for those who are interested. Dr. David Singh of the University of Puerto Rico has used his Morpho-Studio Program to analyze records of my patients treated with Biobloc to prove that a more forward direction of growth of the face can be achieved with Biobloc. More importantly, Singh's research (as yet unpublished) shows a dramatic, clinically significant improvement in the airway with this treatment. Having privately presented this information recently to an orthodontic department head, offered to teach it, and proposed significant research projects in this area, he responded that he was unsure that a bigger airway was necessarily better! The outlook for meaningful change in that department appears rather grim at the moment.

Exactly where is the orthodontic profession on this subject right now? The failure of patients to cooperate with either functional appliances or headgear wear has led to a proliferation of *noncompliance* approaches. The upcoming AAO meeting in May will feature 19 speakers on the ultimate instrument of *noncompliance*—temporary anchorage devices (TADs). These are mini-implants to serve as immovable anchorage. If the pattern shown in the literature concerning their use is any indication, most of these speakers will be showing how to get more *retraction* of the front teeth with no

anchorage loss. Such retraction can only be expected to reduce the tongue space and encroach on the airway more than bicuspid extraction with resulting anchorage loss! Another nine presenters will show appliances aimed at *distalizing* the upper teeth without headgear. If both jaws are too far back, as noted by Mew and Remmers, why are we developing new ways to move the maxilla further back? Is this not arriving at the fire with a gasoline tanker instead of water? No presenter will be discussing how to develop both jaws forward. To borrow from another 60s musical group, The Rolling Stones, isn't this like "perfecting ways of making sealing wax" after the self sealing envelope was invented?

Essentially, anything which would retract the front teeth and reduce tongue space needs to be questioned. Obviously this reopens the historically emotional bicuspid extraction debate which has raged for nearly a century based on esthetic concerns. Revisiting that discussion based on functional concerns of trying to fit a size 32 tongue (32 teeth) in a size 24 space (24 teeth) needs to be done. It is my personal belief that a rational discussion of bicuspid extraction would relegate this treatment to the orthodontic history books given the potential to reduce tongue space (airway) dramatically.

The current direction of the orthodontic profession to just achieve straight teeth actually seems silly given the poor record of stability achieved as reported by Little.<sup>3</sup> Parents are upset, but not outraged, when they have paid for orthodontics and their childrens' teeth become crowded again. On the other hand, if getting straight teeth results in unbalanced faces with airways that are compromised, as seems likely, is it not time for a complete rethinking of goals? What if we had a goal of

achieving the best facial balance (with straight teeth)? We appear to be entering a completely new arena where overall health and longevity may trump everything else. If improper facial balance might actually predispose to OSA and, indirectly to shortened longevity, would parents shrug off that news like their reaction to recrowded lower incisors? It is hard for me to imagine any reaction short of total outrage were that information made public. I am not suggesting that the profession maliciously is ignoring the problem since I truly believe individuals want to do the best for people. Having said that, as Bob Dylan wrote, it appears that the "answer is blowing in the wind", and a completely new direction is needed. We had better start to listen before the answer comes from a source outside of the profession with a force that makes Hurricane Katrina look like a soft southern breeze. Is it not time for an openness to intelligently discuss, plan research, and change direction? Our patients expect nothing less than the best from us. As a supposedly learned profession, are we up to the task to provide it?

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### References

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