OBI Foundation for Bioesthetic Dentistry

THE IDEAL BIOLOGIC DENTAL MODEL

By Thomas D. Dumont, DDS,
FICD, FACD, OBI Faculty

"Bioesthetics is the study or theory of the beauty of living things in their natural forms and functions."
Robert L. Lee, D.D.S.

As we delve deeper into learning the nature of the healthiest dental systems, we sense an infinite journey with many discoveries along the way. All that is necessary is curiosity and a commitment to understand. The wonders will unfold and we as biologic beings will benefit as never before.

Bioesthetic Dentistry is based on the Ideal Human Dentognathic Model (hereafter The Model). This Model was discovered by observing and measuring beautiful human dentitions that showed little or no wear, in people over the age of 30. The late Dr. Robert L. Lee, a gnathologist, was the first to make those observations. He wrote and published his findings in Fundamentals of Esthetics by Claude R. Rufenacht, Chapter 5, Quintessence, 1990 - a "must read" for every dentist. In his quest to understand how the human dental system functioned in health, Dr. Lee drew upon his MS in biology to study optimal biologic systems. He observed and recorded nature's successful, long-lasting, unworn dentitions. Amazingly, the most outstanding dentitions had the SAME features in common. This recurring phenomenon facilitated construction of The Model. His discoveries led to a change in how he practiced dentistry. By applying the qualities he observed in the successes of nature to his patients, he found his cases to be very predictable, functional, esthetic, and stable --- superior to any treatment he had previously provided. He termed this very biological approach "Bioesthetic Dentistry" to attract attention.

While discovery of The Model is very recent in terms of dental history, awareness and practice, it presumably has existed since the very beginnings of humanity. The Model, being a composite of outstanding human dentognathic systems, provides objective, relational proportions to serve as an ideal treatment goal. Each element has a specific form and function. As humans, vary in size, so do the treatment solutions. The functional relationships, however, remain the same.

Why did this solution to "the way the mouth works" take so long to be discovered? The answer is found in the way we act about disease and health. Disease forces us to respond. Health does not. Therefore, we have built a huge industry around treating disease. Our schools teach it. Our clinics and hospitals do it. Without obvious signs and symptoms, people are healthy by default. The deception that health is a wide range of subjective acceptable conditions has detained our investigation of ideal health. That context continues to prevail today. Therefore, the lions share of academic time in dentistry – whether formal or as graduate continuing education is consumed studying:

1. Classification of deformative, pathologic, or unesthetic conditions.
2. Theories about etiology.
3. Application of products and technologies associated with treating such conditions.

Unfortunately, extensive knowledge of dental disease, deformity, technology and products never instructs understanding of optimum dental health. <u>The irony is that the</u>

only way to truly learn etiology leading to pathology in a biologic system is to know the systems form and function in its healthiest state.

Possibly because of our immersion into disease without a solid context for health, general confusion and disagreement surround comprehensive restorative care. Dental schools today are, therefore, avoiding controversy by teaching less about dentognathic system dynamics than they did 35 years ago. Confirmation of that point can be found in the flawed conclusions of a 1996 National Institute of Health report, which denies any cause and effect connection between the articulations of teeth and jaw joints.

Similar to dental schools, postgraduate dental clinicians have not been curious about people with ideal dentitions because they take up valuable time and have "nothing wrong". Likewise, these lucky people haven't sought dental attention for the same reason. Again, the logic of studying the healthiest people as the key to solving disease and not the other way around has been largely absent in our profession. For most lay people the concept is simple and makes sense. If our journals are indicative of the kind of treatment currently provided, a substantial amount of multi-tooth, comprehensive restorative dentistry is being practiced. It begs the question: "What exact biologic parameters of anatomy and function are these cases based on?" While The Model defines pathology just as perfection reveals imperfection, it has a greater role to serve as the destination for optimum comprehensive dental treatment.

Thanks to Dr. Lee's published observations and clinical results, we received the information necessary to treat the system proactively and preventatively. These measurements of what nature's finest dentitions have in common are known as the "Bioesthetic Principles". They are:

1. When the teeth are in complete contact, the condyles are in the most superior, anterior, and medial functional position engaging the thinnest portion of the articular disk. Complete occlusion equals stable condylar position.
2.
3. Anterior guidance, sufficient to prevent premature posterior occlusal contacts in all incisive, retrusive and lateral closing movements during mastication. Some measurement ranges found in optimal natural systems are as follows:

    a. Incisal vertical overbite - 3 to 5 mm.
    b. Incisal horizontal overbite (overjet) – 2 to 3 mm.
    c. Cuspid vertical overbite - 4 to 6 mm.
    d. Cuspid horizontal overbite - .3 to .75 mm.
    e. Lower cuspid lingual inclination - 65 to 70° vertical
    f. CEJ to CEJ of occluded central incisors - 16.5 to 20 mm.
    g. CEJ to CEJ of occluded second molars - 10.5 to 14 mm.

3. Genetic unworn tooth morphology.

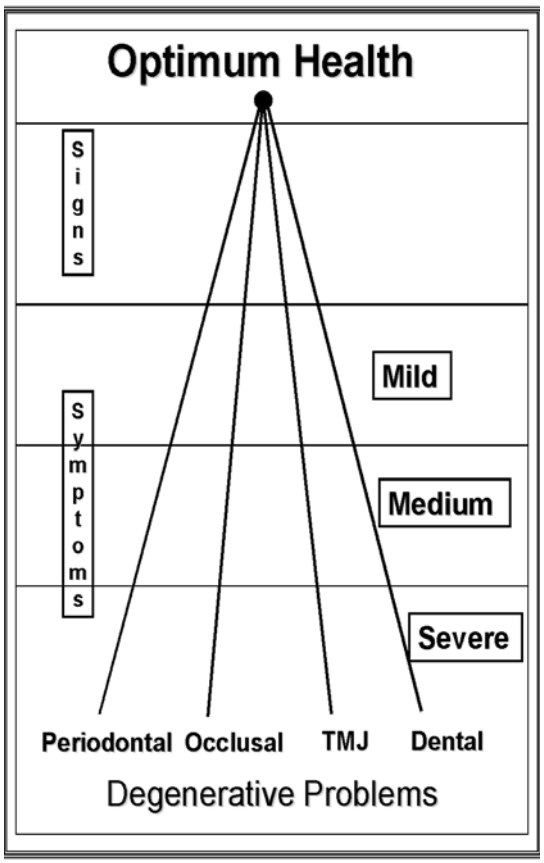
4. A balanced Class I cranial base to mandible relationship.

By virtue of these commonalties, a standard of natural biomechanical excellence has been established on which to base comprehensive care for the human dental system. This dentistry is <u>not</u> just for gifted dentists to perform. It is for all practitioners with

willingness to learn and follow the principles.

With the use of the Optimum Health convergence Diagram, we can gain perspective regarding our current dental care.

Commonly, patients have sought dentistry during or just after a symptomatic event, i.e. the chief complaint. Each problematic condition is identified with use of the term "diagnosis", and attended by a recommended procedure for solution. Depending upon the level of severity and the expertise necessary to treat the condition, the general practitioner performs the procedure or refers the case to a specialist. Specialists are taught to treat the most severe and advanced conditions in each of their respective disciplines.



On the diagram, general dentists spend most of their time reacting to problems on the lower half of the chart. Our specialist colleagues most often operate below that. As the lines diverge, and the disease more serious, knowledge and treatment in each category becomes more isolated and less related to each other. At the lowest level, with linear thinking, periodontics does not relate to occlusion, occlusion does not relate to TMJ and conventional dentistry has very little to do with either occlusion or TMJ. Each discipline has its own domain. Mired deep in specific pathologies, with no unifying philosophy, it's hard to see the big ecological picture. Does this scenario seem like an effective way to treat an interrelated biologic system?

For example, as skilled as prosthodontists' are at complex restorative mechanics and as intelligent as TMJ specialists are concerning the taxonomy and infinite etiologies of joint pathology, there has been NO common understanding and therefore NO agreed upon goal for treatment between the specialists. This is in spite of the obvious interconnectedness, both anatomically and physiologically of the stomatognathic system.

The dilemma prevails, not just between prosthodontist's and TMJ specialists. This tribal mentality is endemic at all levels of dental activity. We have been a profession without a biologic destination, as it pertains to comprehensive system treatment.

What has been missing in dentistry is a positive "go to" concept of the ultimate healthy dental system. This is characterized at the top of the diagram by "Optimum Health". If the specific elements inherent in optimum dental health were known, couldn't we in dentistry ALL unite and proactively help those in need toward that end? While treatments may differ, the goal would ALWAYS be the same!

The great news is The Model of Optimum Health has been discovered in dentistry! It provides a solution for treating our dental system biologically and sets the standard for ALL levels of care, including orthodontics and orthognathic surgery.

For 15 years, cosmetic and implant dentistry have held center stage. In cosmetic dentistry, for reason of appearance, front teeth have been separated from the rest of the system for treatment. Our whole dental culture has been inundated with this subject. One can hardly pick up a dental publication without half of it being devoted to cosmetic ideas, techniques and products. Please contemplate the following:

1. The front teeth must be treated with intimate knowledge of how the rest of the system operates, in order to achieve long-term success. Bonding veneers on undiagnosed systems, if wear is apparent, is altering the biomechanical response without knowing or treating the cause.

2. Anterior wear is most often caused by repositioning the jaw forward to avoid posterior malocclusion. Without posterior correction, the prognosis for new anterior work would necessarily be guarded.

3. To recreate biologic beauty and function, the form of ideal natural teeth must be used for treatment. Beauty in dentistry is not just a fashionable opinion; it is an objective goal with specific functional components.

4. In natural systems, beauty and function are not separate entities. They exist together as a seamless unit as characterized by The Model.

Implant technology has provided an opportunity for wonderful solutions to missing teeth. Knowing the cause of the loss and a specific successful functional configuration are key to restoration. Simply putting an implant back into a malfunctioning situation where the dentition failed and not addressing the underlying problem courts failure. Again, The Model provides a configuration that can be relied upon to function, look beautiful and last.

The traditional discipline that does take a larger view of the system has been gnathology. It too, has evolved from a defensive mind set. Confronted with the greatest dental pathology, toothlessness, the most competent dentists of the 1800's and early 1900's looked beyond the edentulous ridges to the temporomandibular joint to help solve that problem. This deductive thought process established the eminence and movements of the condyles as the primary determining factors when restoring worn down and/or mutilated dentitions.

Today we know that the teeth are the most important guiders of our jaw, whether in an ideal or pathological alignment. If for no other reason but to swallow 600 plus times a day, the jaws must go where the teeth fit best. Genetic preordained form of the teeth, jaws, and occluded dentition prove that function will follow the form. Once the teeth are in occlusion, form will then follow the function, whether healthy (in centric) or degenerative (out of centric).

Nevertheless, gnathology, by bringing the TMJ into play, has made a major contribution to the concept of dentistry as a system. The question remains, however, can we as comprehensive dentists provide the very best dentognathic health solutions by applying an invention-based response to the greatest pathologies? To move beyond that paradigm, we must have a different perspective.

The Model, through the Principles, provides a predictable blueprint for all dental modalities and specialties to diagnose and treat cases. Validity resides in the fact that it is quantifiable (measurable ranges), qualifiable (endowed by nature genetically), intelligent (proprioceptive and physiologically responsive), and has stood the test of lifetimes. The Model is not a theory or an opinion. It is a reality that can be observed, measured and recorded repeatedly. Interviewing patients that have received bioesthetic treatment proves the power of the principles.

By employing The Model, we can:

1. Observe the earliest stages of dental system pathology in our patients. The signs most often appear long before the symptoms.
2. Diagnose and quantify any departure from the Bioesthetic Principles.
3. Treat by building the known principles into the deficient dental system.
4. Promote and maintain optimum condylar position in jaws years after treatment facilitating TMJ and associated tissue health (healing).
5. Direct specialty care, orthodontics, orthognathic surgery, periodontics, prosthodontics, and restorative dentistry to a common goal.

Finally, with the Ideal Human Dentognathic Model, the bioesthetically trained dentist or specialist must take the primary responsibility for diagnosis and coordination of treatment of the dentognathic system. The human proprioceptive system is very sensitive. Well over 90% of the dental system pathology we treat involves various discrepancies between the cranial base and the mandible. To balance these systems, Bioesthetic Principles must be applied.

For comfortable, stable and healthy results, orthodontic and orthognathic surgical cases should also be finished according to the Bioesthetic Principles. Because human tolerance is measured in microns and Bioesthetics treats to that level, Bioesthetic training is fundamental for orthodontists, oral surgeons and prosthodontists who want optimum results.

The Model sets a new paradigm and standard. We have an ideal, consistent, and finite goal for treatment. It serves all ages and conditions and can be used for the smallest interceptive, preventative correction and the most extreme orthognathic, surgical, restorative rehabilitation. Presently, state of the art, it will become the standard of care because it is patterned after the fittest of nature and will eventually serve as a framework to unite all dental disciplines and specialties to a common cause.This paradigm will encourage a continuing discovery process to further understand our magnificent dental system, greatly benefiting the quality of care we provide our patients.

For those interested in learning and doing Bioesthetic Dentistry (and who in dentistry shouldn't be) please contact OBI Foundation for Bioesthetic Dentistry. OBI has been teaching the techniques necessary to reproduce natural form and function clinically since 1994. We presently have four levels to our curriculum:

Level I – Introduction to Bioesthetic Dentistry
Level II – Bioesthetic Diagnosis
Level III – Comprehensive Bioesthetic Rejuvenation
Level IV – Complete Bioesthetic Rejuvenation

The instructional ratio is four students to one instructor with unlimited telephone support between sessions. Upon completion of all four levels, each student will have (1) recorded two cases photographically (2) diagnosed and treated two cases from post-orthosis, stable condylar position, hinge axis mounted models and (3) presented one limited comprehensive case and one full-mouth rejuvenation case, each done under close supervision.

You are welcome to visit the OBI Web site: www.bioesthetics.com or call their toll-free number 1-800-438-6441.