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Occlusion Connections — Las Vegas, Nevada

What Dental School Never Taught You About Occlusion

And Why It's Costing You, Your Practice, and Your Patients

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37 Years in Gneuromuscular Dentistry · Las Vegas, NV

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> *If there is one subject that is consistently undertaught, misunderstood, and left to chance in dental education — it is occlusion. That gap is not a minor oversight. It is the hidden source of your clinical frustrations, your treatment failures, and your patients' chronic suffering.*

You graduated dental school. You passed your boards. You opened — or joined — a practice. And somewhere between your first crown prep and your hundredth, you began to sense something that nobody in a lecture hall ever said out loud:

You were never really taught how to manage the bite.

Not truly. Not systematically. Not with the depth this foundational subject demands.

Oh, there were courses. There were textbooks. Professors mentioned centric relation, mentioned articulating paper, mentioned cusp-fossa relationships. But the full clinical picture — the integrated, physiologic, measurable science of how the jaw truly functions, and what happens when it does not — that was left, at best, to your own trial and error after graduation.

This paper is for you. It is an honest reckoning with what was left out, why it matters more than almost anything else in your clinical life, and what a rigorous, objective approach to occlusion actually looks like.

SECTION 1

The Elephant in the Operatory

Dental school curricula are built around technical competencies: cavity preparation, crown margins, periodontal charting, radiographic interpretation. These are measurable. They are gradable. They are defensible to accreditation bodies.

Occlusion is none of those things — at least, not the way most schools approach it.

What typically passes for occlusion education is a brief survey of gnathologic concepts, some articulator work in lab, and a handful of clinical exercises using articulating paper or T-scan. Students walk away knowing vocabulary: centric relation, centric occlusion, lateral excursions, anterior guidance. But the deeper questions go unanswered:

- What does a physiologically rested, neurologically balanced jaw position actually look like — and how do you find it objectively?
- How do you measure muscle activity to confirm that the occlusion you've created is not creating neuromuscular strain?
- Why do patients who have had occlusal adjustments, splints, or full-mouth reconstructions continue to clench, grind, and hurt?
- What is the actual relationship between the muscles of mastication, the temporomandibular joint, and the occlusal surface — and who is managing that system?

The result of this educational gap is not academic. It shows up every week in your clinic: the patient whose crown feels "off" for months. The grinding patient who has gone through three night guards and reports no improvement. The TMD patient you've quietly been referring out because you're not sure what to do. The full-arch reconstruction case that looked perfect in the articulator but never felt right in the mouth.

These are not random failures. They are predictable outcomes of practicing without a complete understanding of occlusion.

SECTION 2

The Schools of Thought: A Divided Profession

Part of why occlusion is so confusing — and so poorly taught — is that the dental profession itself has been divided for decades between two fundamentally different philosophies. Understanding this division is essential to understanding where you stand clinically.

The Gnathologic School

Born from the work of Stallard, Stuart, and McCollum, and carried forward through a variety of evidence-based, philosophy-centered, and broad restorative continuing edu-

cation programs, gnathologic dentistry centers on centric relation (CR) as the foundational reference position for the mandible.

In this framework, CR — defined variously over the decades as the most retruded position of the condyle, and later as the anterosuperior condylar position against the articular disc — becomes the universal landmark from which all restorative and occlusal treatment is referenced. The primary diagnostic tool is the clinician's bimanual manipulation technique: the skilled hands of the dentist seating the condyle and recording the relationship.

This school has produced extraordinary clinicians and has advanced the profession in many important ways. But it rests on a critical assumption: that CR, found through manual manipulation, represents an ideal physiologic starting point for every patient. And it relies on the clinician's subjective perception to find and verify that position.

The Neuromuscular / GNM School

A parallel tradition, pioneered by Dr. Bernard Jankelson and advanced by his son Dr. Robert Jankelson, and subsequently by this author's own three decades of clinical application and teaching, takes a fundamentally different view.

The neuromuscular school — and its more developed synthesis, **Gneuromuscular Dentistry (GNM)** — begins with a foundational question: *What does the jaw musculature itself tell us?* Rather than imposing a reference position on the mandible through manual force, GNM uses objective instrumentation to allow the muscles to guide the jaw to its most physiologically relaxed, unstrained, and neurologically balanced position.

This position — **Myocentric** — is found after relaxing the elevator muscles with J5 Dental TENS therapy, then measuring and recording jaw position, jaw movement, and muscle activity using the K7 Evaluation System: computerized mandibular scanning (CMS), electromyography (EMG), and electrosonography (ESG).

The question is not simply where the condyle sits. The question is whether the muscles that move the jaw — and support the entire masticatory system — are working in a state of physiologic ease or chronic strain.

The American Dental Association recognized the significance of this objective instrumentation approach when it granted its **Seal of Recognition to Myotronics instrumentation in 1986**. This is not fringe science. It is a validated, measurable, re-

producible methodology for evaluating the functional state of the stomatognathic system.

The dentist who understands both — who can evaluate their patient's structural occlusal anatomy and simultaneously assess the neuromuscular functional state — is the dentist who will achieve consistently superior outcomes.

SECTION 3

The GPT Evolution: Even the Definition of "Correct" Has Changed

Here is something that should give every dentist pause: the foundational definition of centric relation — the reference point upon which an enormous body of gnathologic treatment philosophy rests — has been revised multiple times in the official Glossary of Prosthodontic Terms (GPT).

From **GPT-1 through GPT-4 (1956–1977)**, CR was defined primarily as a retruded border position. Then **GPT-5 through GPT-8 (1987–2005)** shifted the definition toward an anterosuperior condyle-disc relationship, abandoning the retruded concept. Most recently, **GPT-9 (2017)** made a quiet but remarkable addition: it introduced the words "*physiologic*" and "*unstrained*" into the definition of CR.

When the official glossary of your profession finally adopts the words "*physiologic*" and "*unstrained*" to describe the ideal mandibular reference position — after 60 years — it is worth asking: **who has been pointing toward physiologic, unstrained jaw function all along?**

The answer, documented in decades of neuromuscular and GNM clinical science, is clear. The language of GPT-9 represents an implicit convergence toward what the neuromuscular school has long argued: that an unforced, musculature-guided, physiologically balanced position is the correct foundation for occlusal treatment.

This is not a small terminological shift. It reflects a fundamental reconsideration of what "correct" means when we talk about jaw position. And it means that the dentist who learned gnathologic CR in dental school may be working from a conceptual foundation that has quietly shifted beneath their feet.

SECTION 4

What Objective Measurement Changes Everything

The most transformative step in elevating your occlusal acumen is moving from subjective assessment to objective measurement. This is not merely a philosophical preference — it is the difference between clinical inference and clinical evidence.

The K7 Evaluation System: A Clinical Language for the Jaw

The K7 integrates three distinct measurement technologies that, together, provide a comprehensive functional portrait of the masticatory system:

- **Computerized Mandibular Scanning (CMS / Jaw Tracking)** — Scan 2 measures functional opening and closing, including velocity and quality of jaw movement. Scan 3 records the habitual rest position relative to habitual centric occlusion. Scans 4 and 5 record the position of the mandible relative to centric occlusion (CO), relative to the physiologic rest position and the isotonic path of closure — the foundation of the Myocentric bite registration.
- **Electromyography (EMG)** — Measures the electrical activity of the muscles of mastication. Scan 11 evaluates functional clench. EMG data reveals whether muscles are balanced, whether one side is overloaded, and whether the occlusal position the clinician is creating produces muscle harmony or strain.
- **Electrosonography (ESG)** — Scan 15 records clicks, crepitus, and joint noise patterns — providing objective data on joint health that a simple clinical examination cannot.
- **Chewing Cycle Analysis (Scan 8)** — Evaluates the efficiency and symmetry of the functional chewing cycle, revealing how the patient's current occlusion affects real-world jaw function.

No articulating paper tells you whether the muscles are in balance. No bimanual manipulation technique tells you whether the position recorded is truly unstrained. **The K7 does not replace clinical skill. It amplifies it.**

J5 Dental TENS: Resetting the System

Before any bite registration can be truly physiologic, the muscles of mastication must be relaxed from their habitual state of engram-driven tension. The J5 Dental TENS unit delivers a precisely calibrated ultra-low frequency transcutaneous electrical nerve stimulation to the muscles of mastication and facial muscles, inducing rhythmic relaxa-

tion and effectively neutralizing the muscle memory that has been pulling the mandible into its habitual — often strained — position.

The resulting **Myocentric position** is then recorded not by manual force, but by allowing the patient's own relaxed musculature to find its equilibrium. It is the most physiologic, reproducible, and patient-specific reference position available in clinical dentistry.

SECTION 5

The Three Primary Factors: A Framework for Clinical Clarity

GNM provides a more complete framework by recognizing that persistent dysfunction in the masticatory system is almost always the product of three interacting primary factors, and that treatment which addresses only one or two will produce incomplete results.

1. STRUCTURAL FACTORS

The physical anatomy of occlusion: the relationship of mandibular teeth to maxillary teeth, condylar position, skeletal morphology, arch form, and the structural integrity of the temporomandibular joint. This is what most dentists were taught — and it is genuinely important. *But it is not the whole story.*

2. BIOCHEMICAL FACTORS

The systemic and cellular environment in which the masticatory system operates: inflammation, nutritional status, neurotransmitter balance, hormonal factors, and the presence of systemic conditions that affect muscle function and healing. A patient whose biochemical terrain is characterized by chronic inflammation, mineral deficiency, or autonomic dysregulation will not respond normally to structural occlusal treatment.

3. PSYCHOLOGICAL AND EMOTIONAL FACTORS

The role of chronic stress, anxiety, emotional trauma, and psychological overlay in the perpetuation of bruxism, muscle hyperactivity, and pain. Patients who carry significant psychosocial burden often present with occlusal symptoms that resist mechanical correction — because the driver of their dysfunction is not at the level of the occlusal surface.

The dentist who only addresses the structural factor is managing one leg of a three-legged system. **When the patient fails to improve, it is rarely because the dentistry was technically poor. It is because the other factors were never evaluated.**

SECTION 6

Why Bite Adjustments Fail — And How to Change That

One of the most common expressions of occlusally untrained practice is the well-intentioned but ultimately ineffective bite adjustment. The patient complains of a high crown, of teeth that don't feel right, of jaw fatigue. The clinician checks with articulating paper, marks, grinds, checks again — and sends the patient home hoping for improvement.

Sometimes it works. Frequently, it does not. Why?

- Articulating paper identifies *contact*, but not force distribution or the neurologic significance of that contact.
- Without EMG data, the clinician cannot know whether the adjustment has produced muscle balance or merely shifted the strain pattern.
- The reference position used for the adjustment may itself be a pathologic position, not a physiologic one.
- The three primary factors are not addressed: structural adjustment alone cannot resolve a biochemically or psychologically driven muscle problem.

The **OC Optimized Bite Protocol** addresses this systematically — beginning with physiologic muscle relaxation via J5 Dental TENS, establishing a verified Myocentric reference position through computerized jaw tracking, and using pre- and post-treatment EMG to confirm that the resulting occlusal relationship reduces muscle strain rather than redistributing it.

SECTION 7

The Cost of the Gap — And the Opportunity

Every day that a dentist practices without a rigorous occlusal framework, there is a cost. Some of it is visible: the case that fails, the patient who never seems to improve,

the crown adjustments that stretch into multiple appointments. Some of it is invisible: the cases that were never attempted, the patients referred away, the procedures declined because the clinician did not feel equipped.

But the opportunity is equally real. Dentists who invest in occlusal mastery consistently report transformative outcomes:

- **Greater diagnostic confidence.** The ability to identify the source of a patient's dysfunction, not simply manage symptoms.
- **Expanded clinical scope.** The training to address complex TMD, full-arch reconstruction, and occlusal disease with a systematic, documented protocol.
- **Improved patient outcomes.** Treatment that succeeds because it is built on a physiologic foundation, not a mechanical assumption.
- **Professional differentiation.** The ability to offer a level of occlusal analysis and treatment that the vast majority of general dentists are not trained to provide.
- **Clinical longevity.** Cases that hold. Restorations that function. Patients who return with gratitude rather than complaints.

SECTION 8

An Honest Word to the Worldwide Neuromuscular Community

There is a conversation that needs to be had — not with the gnathologic world, but within the neuromuscular community itself.

Across the world, there are thousands of dentists who discovered neuromuscular dentistry, invested in the K7 Evaluation System, attended foundational training, and embraced the promise of objective, instrumentation-guided occlusal care. They deserve enormous credit for that. Choosing the neuromuscular path — often against the resistance of colleagues, study clubs, and dental school professors — required intellectual courage and genuine commitment to their patients.

The GPT evolution described above vindicates that choice. The foundation was sound. **But here is an honest observation, offered with the deepest respect for that community: for the most part, the learning stopped.**

Over the past two decades, the worldwide community of K7-equipped neuromuscular dentists has largely remained at the level of its initial training. The foundational con-

cepts were learned — TENS relaxation, Myocentric bite registration, basic EMG pre- and post-treatment comparison — and then practice settled into routine. The deeper layers of the K7's diagnostic capability were never fully explored. The scan data was collected, but not truly interpreted. The technology sat in operatories around the world, capable of far more than it was being asked to do.

Owning the instrument is not the same as mastering it. The K7 is not a recording device — it is a diagnostic language. And like any language, fluency requires years of dedicated study beyond the introductory course.

The FFT frequency analysis of EMG data. The nuanced interpretation of ESG joint sound patterns. The proper use of Scan 12 — and what the anteroposterior-to-vertical (A/V) ratios of the myotrajectory actually reveal: the distinction between the classic isotonic trajectory broadly assumed for decades, and the truly optimized, patient-specific isotonic path of closure that objective GNM measurement discloses. The distinction between Scan 9 and Scan 10 EMG recordings. The diagnostic significance of Scan 19 and Scan 21 — scans most neuromuscular dentists have never been taught to interpret with clinical confidence. **These are not advanced electives. They are the clinical tools that separate adequate neuromuscular practice from truly excellent GNM care.**

And the gap goes deeper still. Even among those who learned to collect and read K7 data with reasonable competence, a critical body of clinical knowledge remained out of reach: the principles of **Micro Occlusion** and its management. Micro Occlusion — the precise understanding of how minute occlusal discrepancies at the level of the individual tooth surface affect the neuromuscular system, joint loading, and long-term structural outcomes — is the clinical bridge between objective measurement and masterful treatment execution.

OC-trained GNM doctors have learned these principles. The broader neuromuscular community, by and large, has not. This is part of the cost of the gap that applies not only to the general dentist who never studied occlusion rigorously, but equally to the neuromuscular dentist who studied it — and then stopped short of its full clinical depth.

If you are a neuromuscular dentist who has felt that your K7 training plateaued — *this is not a personal failing. It is a curriculum gap.* And it is precisely what the OC GNM Masterclass was built to address.

The door is open. The next level of this science is waiting.

SECTION 9

What the OC GNM Masterclass Offers

Occlusion Connections exists because of exactly this gap — the space between what dental schools teach and what clinical mastery actually requires. For over two decades, the OC GNM Masterclass program has provided dentists with the most comprehensive, instrumentation-grounded, clinically rigorous occlusal education available in continuing dental education.

What Makes OC Different

- A complete **9-level GNM occlusion curriculum**, from foundational principles through advanced clinical application and full-arch rehabilitation.
- Dedicated **orthodontic and orthopedic tracks (Levels 1–3)** for dentists integrating occlusal science with growth guidance and alignment treatment.
- The **most advanced K7 Scan Interpretation program in the world** — covering FFT analysis, ESG electrosonography, EMG functional clench, and computerized jaw tracking in depth.
- **Small-group, intimate Masterclass format** taught personally by Dr. Chan in Las Vegas.
- Direct mentorship from a clinician who has taught, treated, and refined this material across three decades of real-world application.
- A **Mastership Award program (Levels 5–7)** that formally recognizes the attainment of advanced GNM clinical competency.

The dentist who masters occlusion does not just become a better clinician. They become a more confident, more complete, more fulfilled practitioner — one who understands, perhaps for the first time, what was missing from day one.

CLOSING

An Invitation

If you have read this far, something in you recognized the gap this paper describes. Perhaps you have felt it in a patient encounter that did not go as planned. Perhaps you have wondered why a patient's chronic jaw pain persists

despite technically sound dentistry. Perhaps you have sensed that there is a layer to this subject you never fully reached.

That recognition is not a failure. It is a beginning.

Occlusion is learnable. The jaw is measurable. The science is there, waiting to be applied. And the clinical life that opens up when a dentist truly understands this subject — with objectivity, depth, and systematic rigor — is one of the most rewarding transformations in this profession.

We invite you to take that step. ***Occlusion Connections is where that journey continues.***

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