A Perception of Dentistry

Physiologic Occlusion

- Bones
- Muscles
- TM Joints
- Teeth

Physiologic:
“characteristic of or appropriate to an organism’s healthy or normal functioning.” - Webster’s Dictionary

Hips, Muscles, Tm Joints and Teeth

That’s what’s so cool!

Why the AccuLiner is Different

1. Designed based on the premise that the maxilla is the foundation of the occlusion - not the mandible.
2. Designed to accommodate both rotational and translational movements of mandible - TMJs are not hinges nor is the AccuLiner

And it’s all measurable!
The Maxillary Arch is the Foundation
The AccuLiner Registers the HIP Plane

The HIP Plane
(Cooperman’s Hamular - Incisive Papilla Plane)

Hamular Notches:
Junction of the Palatine Bone and the Pterygoid Process of the Sphenoid Bone

Incisive Papilla:
The small mound of tissue located on the midline just distal to the central incisors

They all want to be level to each other! - Symmetry

The AccuLiner Relates the Plane of Occlusion to the HIP Plane

The plane of Occlusion needs to be level and at right angles to the forces of occlusion.

Forces of Occlusion
Dissipated Unevenly within the Cranium
Dissipated Evenly within the Cranium

The AccuLiner is not a Hinge
- Creates a Translational Change to the Condyles
- Not just Rotation.
- Changes Mandibular Position - “Opens the Bite”

The AccuLiner Records the Plane of Occlusion in a 3-Way Alignment

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The Plane of Occlusion
is Not Level

The Plane of Occlusion
is Not Level

Is Your’s...?
The AccuLiner Records the Mandible in a 6-Way Alignment
1. Vertical
2. Anteroposterior
3. Mediolateral
4. Yaw
5. Roll
6. Pitch

The AccuLiner Can Change the Position of the Condyles
- Position of the Mandible
- Adjust the Vertical Column
- Vertical Change to the Mandible

Mandibular Changes are Measurable
Four Scales
- Condylar Scale
- Vertical Scale
- Lateral Scale
- Protrusive Scale

The AccuLiner
- Vertical Lock
- Rotation Lock
- Table Lock
- Protrusive Movement

Mounting Upper Models
- Set the Vertical Column to “MP”
- Insert Mounting Plate

Identify the Landmarks on the Model
- Hamular Notches
- Incisive Papilla

The AccuLiner
- Hinge Axis Adjustment
- Top Plate
- Mounting Plate Locking Screw

Mounting Upper Models
- Insert the Mounting Fence
- Align Incisive Guide Pin on the Magnet
- Be sure Mounting Table is Flush
- “0” on the Rotation and Lateral Scales
Mounting Upper Model
- Be sure that all movements are securely locked
- Place hamular notches on the Mounting Fence
- Place incisive papilla on the Incisive Guide Pin – Pin on the midline

Mounting Upper Model
Check the space available for mounting plaster/stone

Mounting Upper Model
Mounting is Complete!

Mounting Upper Model
Apply Mounting Plaster/Stone Close & Lock the Hinge Plate

Mounting Upper Model
Lift Model & Remove Fence & Pin
Lock Top Plate and Bring the Model Down to Table

Mounting Lower Model
Remove the Mounting Table
Insert & Lock the Adapter @ Zero

Mounting Lower Model
Insert the Mounting Plate
Set Vertical Scale to “Zero”

Mounting Lower Model
Lay the AccuLiner on it’s “Back”

Mounting Lower Model
Articulate the Lower Model – CO or “The Bite”
Mounting Lower Model

Is there room for the plaster? Increase Vertical Scale Setting or reduce the thickness of the model.

Mounting Lower Model

Apply the Mounting Plaster. Both the Model & the Mounting Plate. Flip & Lock Top Plate.

Mounting Lower Model

Mounting is Complete!

AccuLiner Adjustments

Increase Vertical 3mm.

AccuLiner Adjustments

Move the Mandible 3mm Anterior.

AccuLiner Adjustments

Hinge Axis Rotational Movement.

AccuLiner Adjustments

Lateral-Rotation Movement.

AccuLiner Adjustments

Rotational Movement.
The AccuLiner is Valuable in all areas of Dentistry

- Diagnosis & Treatment Planning
- Case Presentation / Sales Tool
- Restorations, Crowns, and Bridges
- Full Dentures
- Partial Dentures
- Orthodontic Appliances
- Implant Cases
- Snoring & Sleep Apnea Appliances
- TMJ Appliances

Snoring & Sleep Apnea Appliances

“Engineered” Full Dentures

Full Mouth Reconstruction
To Use of the BioPak Requires Knowledge

- Bones
- Muscles
- Ligaments
- Temporomandibular Joint Function or Dysfunction
- Limitations

Muscles of Mastication

**Elevators**
- Temporalis
- Masseter

**Depressors**
- Lateral Pterygoid
- Medial Pterygoid
- Digastrics
- Suprahyoid
- Infrahyoid

**Temporalis**

- Function
  - Elevates Mandible Vertically
  - Retrudes Mandible

- Origin
  - Temporal Fossa
- Insertion
  - Coronoid Process and Ramus

**Masseter**

- Origin
  - Zygomatic Arch
- Insertion
  - Ramus & Coronoid Process
**Masseter**

**Function**
- Elevates Mandible
- Brings Teeth Together for Chewing
- Protrudes Mandible

**Lateral Pterygoid**

**Function**
- Pulls Condyles Down
- Protrudes Mandible
- Moves Mandible Down & Forward
- Closes Mandible (During Chewing - Power Stroke)
- Pulls Disc Anterior and Medial

**Medial Pterygoid**

**Function**
- Protracts Mandible
- Elevates Mandible
- Rotates Mandible

**Digastrics**

**Origin**
- Posterior Belly – Mastoid Notch of Temporal Bone
- Anterior Belly – Lower Border of the Mandible

**Insertion**
- Posterior Belly – Hyoid Bone
- Anterior Belly – Hyoid Bone
**Digastrics**

**Function**
- Depresses Mandible (Brings Teeth out of Contact)
- Elevate Hyoid Bone (Necessary for Swallowing)

**Suprahyoid**

**Function**
- Elevates Hyoid
- Depresses Hyoid
- Retracts Hyoid
- Elevates Tongue
- Depresses Mandible

**Infrahyoid**

**Function**
- Elevates Hyoid
- Depresses Hyoid
- Retracts Hyoid
- Elevates Tongue
- Depresses Mandible

**Suprahyoid & Infrahyoid Group**

**Functions**
- Elevates Hyoid
- Depresses Hyoid
- Retracts Hyoid
- Elevates Tongue
- Depresses Mandible

**Cervical Muscles**

- **Trapezius**
  - **Origin**
  - Occipital Protuberance
  - Spinous Processes C7
  - Spinous Processes T1-T12
  - **Insertion**
  - Clavicle
  - Scapula
  - **Function**
  - Rotates Scapula
  - Elevate Scapula
  - Depress Scapula
  - Move Head Laterally

- **Splenius Capitis**
  - **Function**
  - Rotates Scapula
**Splenius Capitis**

- **Origin**
  - Spinous Processes C7
  - Spinous Processes T1-T4
- **Insertion**
  - Mastoid Process

**Function**

- Flexion of Head Laterally
- Rotates Head
- Rotates Neck
- Extends Head
- Extends Neck

**Sternocleidomastoid**

- **Origin**
  - Clavicle
- **Insertion**
  - Mastoid Process

**Function**

- Rotates Head
- Flex Head
- Raise Thorax

**Electrode Placement**

- **Ground "Trode"**
  - Placing electrodes on the skin.
Stages of Internal

- Stage I: Early Disc Displacement with Reduction
- Stage II: Intermediate Disc Displacement with Reduction
- Stage III: Disc Displacement without Reduction
- Stage 4: Early Degenerative Joint Disease
- Stage 5: Advanced Degenerative Joint Disease
**Signs vs. Symptoms**

- Signs are Objective
- Symptoms are Subjective

**SIGNS OF DYSFUNCTION (Objective Findings)**

- Limited Interincisal Opening
  - Normal 45 – 55 mm.
  - a) Add overbite
  - b) Subtract open bite

**Interincisal Opening**

- Normal 10-12 mm.

**Measuring Overbite**

- 3 mm. Overbite

**Maximum Opening**

- 52 + 3 = 55 mm.

**SIGNS OF DYSFUNCTION**

- Limited Lateral Excursions
  - Normal 10-12 mm.

**Lateral Excursion**
Use Midlines or Marker

Right Lateral 9 mm.

Right Lateral 9 mm.

Left Lateral 10 mm.

Left Lateral 10 mm.

Left Lateral 10 mm.

SIGNS OF DYSFUNCTION

• Limited Protrusive Movement
  Normal 6-10 mm.
  a) add overjet
  b) subtract underjet

Protrusive 5 mm.

Overjet 5 mm.

Maximum Protrusive
5 + 5 = 10 mm.
SIGNS OF DYSFUNCTION

- Deviation Present
  - Deviates to right, left or both sides then back to midline on opening or closing

- Deflection Present
  - Deflects to one side during opening and does not come back to midline at MO

Deviation/Deflection

Deviation

Deflection

Characteristics of Dysfunctional Interincisal Opening

- Clicking on Opening or Closing
- Crepitus on Opening or Closing
- Clenching or Grinding
- Tooth Mobility
- Limited Cervical Range of Motion

Differential Diagnosis

- TENS
- Energex
- Injections
- Hot or Cold Therapies (Spray & Stretch)
- Cold Laser
SYMPTOMS OF DYSFUNCTION (Subjective Complaints)
- Patient Questionnaire
- Discussion with Patient

SYMPTOMS OF DYSFUNCTION
- Pain
- Inability to Open
- Clicking, Popping
- Ringing in Ears
- Blurry Eyesight

Limitations
- Age of Patient
- ROM Dysfunction
- Cranial Distortions
- Anatomical Anomalies
- Restrictions due to Pain

Adaptive Range Concept
Balance is the Key!

Compensation
Level Planes

Compensation
Axial of Gravity
Current Head Position
Sphenoid Sinuses
Cranial Imbalances
Level Plane of the Skull and Mandible
Multidiciplinary Approach to Balancing the Body

- Dentist
- Chiropractor
- Cranial Sacral Therapist
- Massage Therapist
- Physiotherapist
- Medical Doctors
- Osteopaths
- Acupuncturist
- Splint Therapy Stabilize TMJ’s
- Cranial Adjustments to Level Cranium and Balance Muscles and Improve Neurology
- Chiropractic Care to Level the Body and Balance the Sacrum
- Nutrition to Improve Healing and Prevent Disease
- Patient Education to Follow Regiment for a Lifetime!

JVA Placement

- Placement Over Head of Condyles
- 10 mm. Anterior & Inferior to Ear
- Placement of JT should be level Right/Left and Anterior/Posterior
- Nasion Marker in Place
- Paddles Balanced

Magnet Placement

- Placement of Magnet is Crucial
- Centered with Frenum
- Line Left Level
- No Interferences
- Deep Bite Place on Attached Gingiva or Lingual

Magnet Positioner
**Placement of BioEMG**

- Electrode Placement Parallel to Muscle

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**TENS (Trancutaneous Electrical Nerve Stimulation)**

- Placement Over Coronoid Notch
- Intervene 5th & 7th Cranial Nerves
- Shut Off Muscles of Mastication
- 45 Minutes