Introduction to Osteopathic Principles and Practice

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Disclosure Statement
No faculty or planning committee member in a position to influence or control the content of this presentation has any relevant financial relationships to disclose.

American Osteopathic Association guidelines for osteopathic manipulative treatment Brandon Isaacs, DO, FAAFP, Professor, Pacific Northwest University of Health Sciences, Yakima, WA

1) Explain the osteopathic philosophy,

2) Review the American Osteopathic Association guidelines for osteopathic manipulative treatment (OMT),

3) Discuss the benefits of OMT treatment vs. traditional treatment methods,

4) Explain the cost/benefit of OMT.

The Acronyms

- **OPP** → Osteopathic Principles and Practice
  - A medical philosophy and the title of courses in undergraduate medical education.

- **OMM** → Osteopathic Manipulative Medicine
  - Application of osteopathic philosophy, structural diagnosis, and OMT in patient management.

- **OMT** → Osteopathic Manipulative Treatment
  - Application of manual techniques to improve physiologic function and/or support homeostasis.
  - Correct somatic dysfunction.
Our Organizations

- American Osteopathic Association (AOA)
  - The representative member organization
  - Equivalent to the AMA
  - www.osteopathic.org

- American Academy of Osteopathy (AAO)
  - Non-profit organization supporting osteopathic medical education
  - www.academyofosteopathy.org

Our Accreditation and Licensing Bodies

- American Association of Colleges of Osteopathic Medicine (AACOM)
  - www.aacom.org

- Commission on Osteopathic College Accreditation (COCA)
  - www.osteopathic.org/inside-aoa/accreditation/COM-accreditation

- National Board of Osteopathic Medical Examiners (NBOME)
  - www.nbome.org

History: Andrew Taylor (A. T.) Still

- Born 1828.
- Physician, abolitionist, civil war surgeon, and Methodist minister.
- Disillusioned from the medical standards of his time after his wife and three children died from spinal meningitis.
- Believed that current medical treatments were sometimes harmful and often ineffective.
- Turned to nature… Noticed that nature “provided amply for all things with which to move, defend themselves, and live…”

“It is the job of the Osteopathic physician to find the health, anyone can find disease”

~Andrew Taylor Still, MD, DO
What is Osteopathic Medicine?

“A concept of health care supported by expanding scientific knowledge that embraces the concept of the unity of the living organism’s structure (anatomy) and function (physiology).”

“Emphasizes the interrelationship between structure and function, and has an appreciation of the body’s ability to heal itself.”

The Four Tenets of Osteopathy

1. The body is a dynamic unit of function.
   • Mind, body, and spirit.
2. The body possesses self-regulatory mechanisms.
   • The body is capable of self-regulation, self-healing, and health maintenance.
3. Structure and function are interrelated.
4. Rational treatment is based on these principles.

Osteopathic Education Core Competencies

• Requirements in osteopathic undergraduate and graduate education.
• 7 Core Competencies
  ▪ Medical Knowledge
  ▪ Patient Care
  ▪ Interpersonal and Communication Skills
  ▪ Professionalism
  ▪ Practice-based Learning and Improvement
  ▪ System-based Practice
  ▪ Osteopathic Philosophy and OMM
• http://www.aacom.org/ome/profdev/occ

History & Physical Exam

• Utilize the standard SOAP note format
• Additional Osteopathic section under the musculoskeletal PE
How do osteopathic physicians diagnose the musculoskeletal system?

- Standard orthopedic, neurologic and circulatory exams
- “Palpation” for tissue texture changes
- Additional observation for asymmetry
- Motion tests for restrictions
- Examination for tenderness
- TART

How do osteopathic physicians treat the musculoskeletal system?

- Soft tissue
- Myofascial release
- Lymphatics
- Counterstrain
- Muscle energy
- High velocity, low amplitude thrust (HVLA)
- And other techniques

Somatic Dysfunction

- An impaired or altered function of related components of the somatic system (body framework) for which manipulation is an appropriate, effective, and sufficient treatment.
- Alterations in the intrinsic and extrinsic reflexes, creating imbalance.
- Can occur anywhere – bones, joints, muscles, viscera, fascia, and their related vasculature, innervation, and lymphatics.
- A. T. Still explained that the presence of somatic dysfunction can lead to disease.
  - He taught that correcting and removing somatic dysfunction would restore the body’s ability to heal itself.
  - Example: Treating the rib cage and diaphragm can improve respiratory function, lymph circulation, and help better distribute medication to affected areas.

What is and what is not considered somatic dysfunction?

**Somatic Dysfunction**
- Alterations in vertebral motions
- Tissue texture changes
- Motion restriction
- Pain
- Fascial restrictions

**Not Somatic Dysfunction**
- Degenerative diseases*
- Fractures*
- Inflammation
- Microbial infections
- Medication side effects

* These disease processes are not considered somatic dysfunction by definition. However, the associated somatic dysfunction can be treated with OMT.

Causes of Somatic Dysfunction

- Posture
  - Work, sports, habit
- Gravity
  - Body habitus, weight bearing
- Congenital anatomical abnormalities
- Transitional areas
  - OA, C7/T1, T12/L1, L5/sacrum
- Trauma
- Muscle hyperirritability
  - Reflex (somatic or visceral), muscle stress, emotions, infection
- Joint damage
- Stress
  - Ability to adapt to stressors
  - Mind, body, spirit
- Structural compensation
  - From other somatic dysfunctions
  - Pregnancy
The Ad Hoc Committee established by the AACOM has made the recommendation that residents “should be able to integrate at least three of the seven major OMT modalities into the care of patients and be familiar with all seven major OMT modalities…”

**The 7 Foundational Modalities:**
- Lymphatic
- Myofascial release
- Soft tissue
- Strain-counterstrain
- Muscle energy
- High-velocity, low amplitude (HVLA) thrust
- Osteopathic cranial manipulative medicine

**Types of reflexes**
- **Viscerosomatic**
  - A visceral dysfunction that refers to related somatic components.
- **Somatovisceral**
  - A somatic dysfunction that refers to related visceral components.
- **Somatosomatic**
  - A somatic dysfunction that refers to related somatic components.
- **Viscerovisceral**
  - A visceral dysfunction that refers to related visceral components.

**Sympathetic Innervation**
- **Head and Neck:** T1 – T4
- **Heart:** T1/T2 – T5/T6
- **Respiratory:** T1/T2 – T6/T7
- **Esophagus:** T2 – T8
- **Upper GI Tract:** T5 – T9
  - Stomach, Liver, Gall Bladder, Spleen, Pancreas, Duodenum
- **Middle GI Tract:** T10 – T11
  - Pancreas, Duodenum, Jejunum, Ileum, Ascending colon, Right Transverse Colon, Kidney, Upper Ureter, Gonads
- **Lower GI Tract:** T12 – L2
  - Left Transverse Colon, Descending Colon, Sigmoid colon, Rectum, Prostate, Bladder, Lower Ureter

**Parasympathetic Innervation**
- **Vagus Nerve (OA, AA, C2)**
  - Trachea, esophagus, heart, lungs, liver, gallbladder, stomach, pancreas, spleen, kidneys, proximal ureter, small intestine, ascending colon, and transverse colon up to the splenic flexure
  - **S2-S4**
  - Distal to the splenic flexure of the transverse colon, descending colon, sigmoid colon, rectum, distal ureter, bladder, reproductive organs, and external genitalia
- **Variations: Ovaries & Testes**
  - Vagus Nerve
  - S2-S4
Before doing **ANY** OMT, you must get patient consent (verbal or written, as appropriate).

**OMT is a procedure.**

- **Direct techniques:**
  - The dysfunctional body part is moved toward the restrictive barrier until the end of motion is felt.
  - The force/direction of the treatment is *toward* the barrier.
  - Utilizes extrinsic forces.

- **Indirect techniques:**
  - The dysfunctional body part is moved away from the restrictive barrier until tissue tension is equal in one or all planes and directions.
  - The force/direction of the treatment is *away* from the barrier (into the freedom of motion).
  - Utilizes intrinsic forces.

**Direct Techniques**
- Myofascial release
- Lymphatic treatment
- Soft tissue technique
- Muscle energy
- High velocity, low amplitude (HVLA)

**Indirect Techniques**
- Myofascial release
- Strain-counterstrain
- Facilitated Positional Release (FPR)
Active vs. Passive Techniques

- **Active techniques:**
  - Patient actively participates
  - Patient voluntarily performs a motion as directed by the physician
  - Physician monitors

- **Passive techniques:**
  - Patient passively participates
  - Physician performs the motion

OMT Modalities:

- **Myofascial Release (MFR) Mechanism**
  - Provides peripheral neuroreflexive alterations in muscle tone and neural facilitation, in part, by its influence on mechanoreceptors.
  - Allows for connective tissue plastic changes which are associated with release of restrictions.
  - This facilitates normalization of muscle tone and fascial tension.

OMT Modalities: Lymphatic Techniques

- Designed to remove impediments to lymphatic circulation and promote and augment the flow of interstitial fluid and lymph.
  - A direct technique.
  - Promote flow of lymph.
  - Increase immune cell circulation.
  - Facilitating distribution of medication.
- Treatment starts with myofascial release of key locations in the body where the lymphatic channels may be obstructed.
- This is followed by manual relaxation of tissues with minimal pressure.
- It is generally completed by inducing rhythmic, waveform motion in the body (lymphatic pump).

OMT Modalities: Soft Tissue Techniques

- A direct technique that usually involves kneading, stretching, deep pressure, inhibition, and/or traction, while monitoring tissue response and motion changes by palpation. This technique is a form of myofascial.
  - A direct technique
  - **End-feel:** taut/tight muscle; rubbery
OMT Modalities: Soft Tissue Techniques Mechanism

- Improves the elasticity of shortened or fibrotic myofascial structures.
- Facilitates circulation, enhancing thermodynamic effects.
- Improves tissue nutrition and oxygenation.
- Increases venous and lymphatic drainage to decrease swelling and edema, allowing clearance of metabolic waste.
  - It is similar to massage techniques.

OMT Modalities: Strain – counter strain

- An osteopathic system of diagnosis and indirect treatment in which the patient’s somatic dysfunction, diagnosed by an associated myofascial tender point, is treated by using a position of spontaneous tissue release while simultaneously monitoring the tender point.
- Diagnosis is by locating tender points.
- The patient is placed in a position which shortens the tissue around the tender point, and maintained in that position for 90 seconds.
- The body’s response is to relax the tissue.
- **Note:** a tender point is different than a trigger point
  - Tender point: localized, non-radiating
  - Trigger point: referred pain
- **End-feel:** tender point; tense

OMT Modalities: Muscle Energy (ME) Mechanism

- Goal is to accomplish relaxation of hypertonic muscles, mediated by the nerve bundles.
- Immediately after isometric contraction (agonist), the resting tone is decreased, then passive stretching is performed without encountering strong myotatic reflex opposition (antagonist).
- The physician takes up the slack during this refractory period, passively stretching the muscle toward the new barrier. This stretched muscle is now set at a new baseline with increased ROM.
- This is evidenced by elimination of the muscle spasm and/or decreased hypertonicity.

OMT Modalities: Performing HVLA Thrust

- Also known as a “thrust” technique.
- Position the position at the “feather’s edge” of the restrictive barrier.
- A quick thrust (high velocity) over a short distance (low amplitude) is applied to the joint to move it through the restrictive barrier.
- **VERY IMPORTANT:** Continue to maintain the barrier – this is IMPERATIVE!
- This technique is often more effective if soft tissue has been performed first.
OMT Modalities:

HVLA Mechanism

• Restriction of motion at a joint is caused by abnormal connective tissue adhesions.
• Sudden change of position (HVLA) of the tissues alters the output of the mechanoreceptors, leading to decrease of hypertonicity.
• HVLA resets normal muscle tension and neural activity.
• HVLA often produces a “pop” sound.
  ▪ What causes the sound is unknown.
  ▪ Producing sound is not necessary for a successful treatment.

Indications & Contraindications for OMT

• Indications:
  ▪ Presence of somatic dysfunction

• Contraindications:
  ▪ May be relative or absolute
  ▪ Requires physician’s clinical judgement
  ▪ ABSOLUTE contraindications always include:
    ➢ Lack of patient cooperation
    ➢ Patient refusal

Cost/Benefit

• Coding
  ▪ RVU addition
  ▪ Coding and reimbursement
• M99.00 - Head
• M99.01 - Cervical Spine
• M99.02 - Thoracic Spine
• M99.03 - Lumbar Spine
• M99.04 - Sacrum
• M99.05 - Pelvis
• M99.06 - Lower Extremities
• M99.07 - Upper Extremities
• M99.08 - Ribs
• M99.09 - Viscera

Procedure

• Treatment is coded by number of regions treated.
  • 98925 : 1-2 regions
  • 98926 : 3-4 regions
  • 98927 : 5-6 regions
  • 98928 : 7-8 regions
  • 98929 : 9-10 regions
Resources for Osteopathic Education

• Single GME Accreditation System
  ▪ http://www.aacom.org/news-and-events/single-gme

• COILS (Clinical Osteopathically Integrated Learning Scenarios)

• AOA Basic Documents for Postdoctoral Training

• AACOM Recommended Books
  ▪ http://www.aacom.org/ome/resources/recommended-books

Suggested Resources

• The Philosophy and Mechanical Principles of Osteopathy, by Andrew Taylor Still

• Foundations of Osteopathic Medicine

• An Osteopathic Approach to Diagnosis and Treatment, by Eileen L. DiGiovanna

• Atlas of Osteopathic Techniques, by Alexander S. Nicholas & Evan A. Nicholas

Suggested Resources

• Glossary of Osteopathic Terminology

• Bate’s Guide to Physical Examination and History Taking

• Somatic Dysfunction in Family Medicine, American College of Osteopathic Family Physicians

• Netter’s Atlas of Human Anatomy or Gray’s Anatomy