



**NBOME**

NATIONAL BOARD OF OSTEOPATHIC MEDICAL EXAMINERS



# COMPLEX-USA MASTER BLUEPRINT

REVISED MARCH 2024

**COMLEX-USA**

**MASTER  
BLUEPRINT**

EFFECTIVE BEGINNING SEPTEMBER 2018  
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# Introduction

The Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA) is the pathway to licensure for osteopathic physicians seeking to practice medicine. It is the principal means by which the NBOME delivers on its mission to protect the public by providing assessment of competencies for osteopathic physicians and related health care professions.

The COMLEX-USA examination series is designed to assess osteopathic medical knowledge, fundamental clinical skills, and other foundational competencies considered essential for the practice of osteopathic medicine. The primary and intended purpose of COMLEX-USA is for licensure of osteopathic physicians, and COMLEX-USA is accepted for medical licensure in all 50 states and in US territories.

The master examination blueprint emphasizes the competencies required for generalist physicians to deliver safe and effective osteopathic medical care. The foundation of COMLEX-USA is the osteopathic approach to patient care. Its evidence-based design assures state licensing boards and the public that a DO has demonstrated minimal competence by passing a series of national standardized examinations designed for the practice of osteopathic medicine. Aligned with the education and training pathway of a DO, passing Levels 1 and 2-CE of COMLEX-USA is required for graduation with a DO degree and entry into residency training.

In the years since its implementation, the COMLEX-USA blueprint has been reviewed and revised regularly to reflect the practice of osteopathic medicine, consistent with the recommendations of the *Standards for Educational and Psychological Testing* 2014 established by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME). The design of COMLEX-USA has transitioned from its initial conjunctive, discipline-based content organization in 1995 to today's innovative blueprint.

The current COMLEX-USA master examination blueprint, implemented beginning with [Level 3](#) in September 2018, features a framework that maps content to competency domains and clinical presentations. The master blueprint and test specifications for each exam were then introduced into [Level 1](#), [Level 2-PE](#), and [Level 2-CE](#) with the new test cycles beginning in 2019. Further information on the development of the COMLEX-USA master examination blueprint is described in “Evidence-Based Redesign of the COMLEX-USA Series” (John R. Gimpel, DO, MEd; Dorothy Horber, PhD; Jeanne M. Sandella, DO; Janice A. Knebl, DO; John E. Thornburg, DO, PhD), *The Journal of the American Osteopathic Association*, April 2017, Vol. 117, pp. 253–261. doi:10.7556/jaoa.2017.043.

# Foundation for COMLEX-USA

Osteopathic principles and practice continue to form the foundation of COMLEX-USA within both of its dimensions.

## TENETS OF OSTEOPATHIC MEDICINE



The body is a unit; the person is a unit of body, mind, and spirit.



The body is capable of self-regulation, self-healing, and health maintenance.



Structure and function are reciprocally interrelated.



Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.

# Two Distinct Dimensions

COMLEX-USA test content is organized by two dimensions: Dimension 1, Competency Domains and Dimension 2, Clinical Presentations.

## **DIMENSION 1: COMPETENCY DOMAINS**

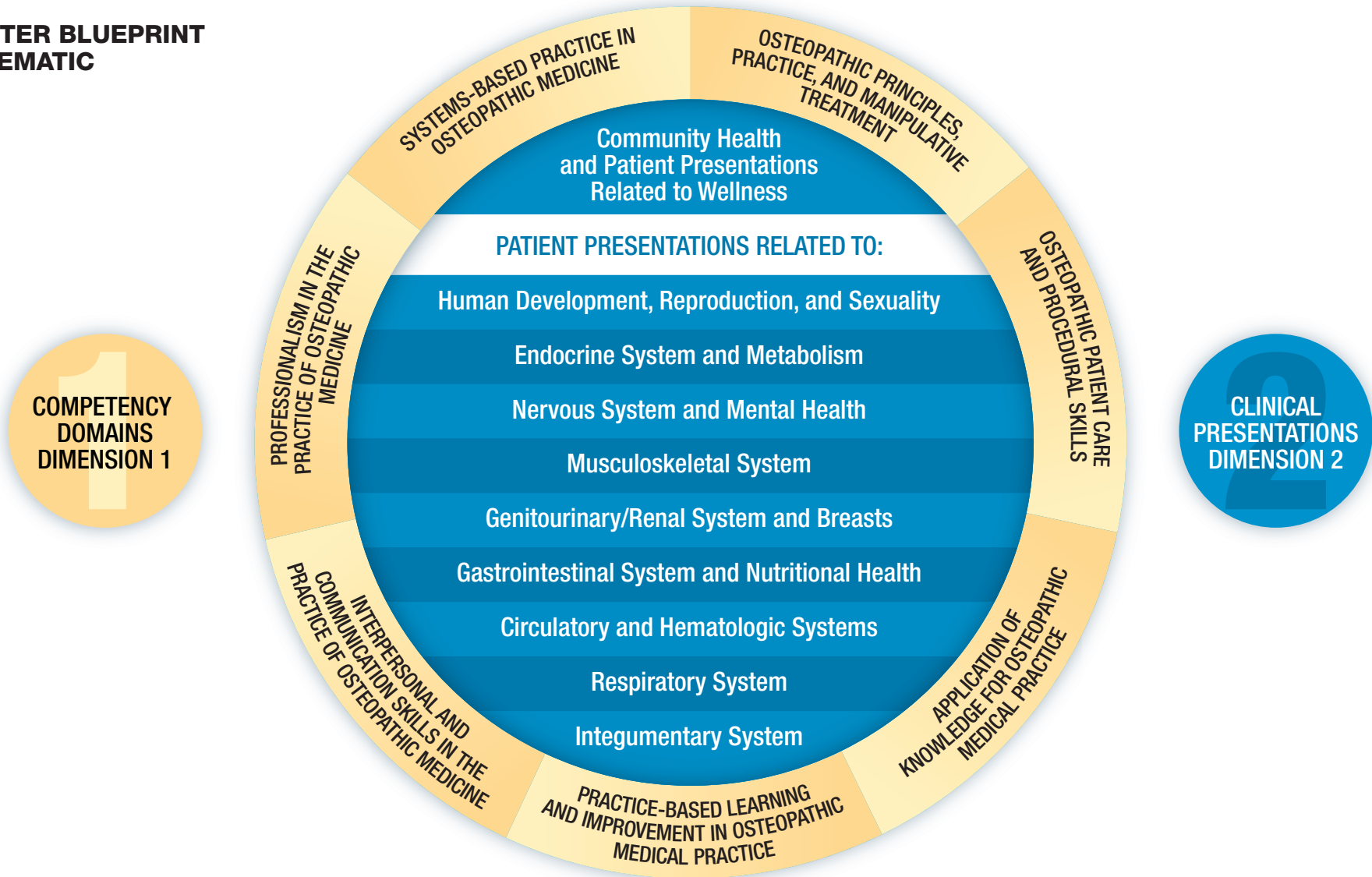
Dimension 1 of the COMLEX-USA master examination blueprint consists of the **seven COMPETENCY DOMAINS**, the related sets of foundational abilities representing the required elements and outcomes that define osteopathic knowledge, skills, experience, attitudes, values, behaviors, and established professional standards. Each competency domain is described in detail with required elements and measured outcomes. For each examination in the series, test specifications outline the content coverage as it relates to these **seven** competency domains.

## **DIMENSION 2: CLINICAL PRESENTATIONS**

Dimension 2 of the blueprint consists of the **10 CLINICAL PRESENTATIONS**, which represent the manner in which a particular patient, group of patients, or a community present(s) for osteopathic medical care. These high-frequency, high-impact categories are based on evidence from osteopathic medical practice. Patient presentations span all relevant age categories, special populations, and varied clinical settings. Each clinical presentation is described in detail, further categorized into topics with accompanying guides, and provides examples illustrative of the presentation. For each examination in the series, test specifications outline the content coverage as it relates to the 10 clinical presentations.



## MASTER BLUEPRINT SCHEMATIC



## LICENSURE ASSESSMENT ALIGNED WITH MEDICAL EDUCATION PATHWAY

Candidates will be required to demonstrate minimal competency across each of the seven competency domains. The outline for implementation of the two-decision-point, competency-based COMLEX-USA Master Examination Blueprint is depicted here:

COMLEX-USA EXAMINATION PROGRAM			
LEVEL 1	LEVEL 2-CE	LEVEL 2-PE*	LEVEL 3
DECISION POINT 1	DECISION POINT 1	DECISION POINT 1	DECISION POINT 2
One-day computer-based examination consisting of 352 predominantly multiple-choice test questions	One-day computer-based examination consisting of 352 predominantly multiple-choice test questions	One-day 12-station standardized patient-based performance evaluation of fundamental clinical skills	Two-day computer-based examination consisting of 420 multiple-choice test questions, clinical decision-making cases, and other novel test item formats (approx. 26 additional clinical cases)

\*Please note that the Level 2-PE has been discontinued. For Level 3 eligibility pathways and details, please visit the [NBOME website](#).

## CONTENT ACROSS THE EXAMINATION SERIES

<b>COMPETENCY DOMAINS: DIMENSION 1</b>		<b>MINIMUM</b>
1	Osteopathic Principles, Practice, and Manipulative Treatment	10%
2	Osteopathic Patient Care and Procedural Skills	25%
3	Application of Knowledge for Osteopathic Medical Practice	30%
4	Practice-Based Learning and Improvement in Osteopathic Medical Practice	5%
5	Interpersonal and Communication Skills in the Practice of Osteopathic Medicine	10%
6	Professionalism in the Practice of Osteopathic Medicine	5%
7	Systems-Based Practice in Osteopathic Medicine	5%
<b>CLINICAL PRESENTATIONS: DIMENSION 2</b>		<b>MINIMUM</b>
1	Community Health and Patient Presentations Related to Wellness	12%
2	Patient Presentations Related to: Human Development, Reproduction, and Sexuality	5%
3	Patient Presentations Related to: Endocrine System and Metabolism	5%
4	Patient Presentations Related to: Nervous System and Mental Health	10%
5	Patient Presentations Related to: Musculoskeletal System	13%
6	Patient Presentations Related to: Genitourinary/Renal System and Breasts	5%
7	Patient Presentations Related to: Gastrointestinal System and Nutritional Health	10%
8	Patient Presentations Related to: Circulatory and Hematologic Systems	10%
9	Patient Presentations Related to: Respiratory System	10%
10	Patient Presentations Related to: Integumentary System	5%



## TEST SPECIFICATIONS FOR EACH EXAMINATION

DIMENSION 1: COMPETENCY DOMAINS		TEST SPECIFICATIONS PERCENTAGES				
		Level 1	Level 2-CE	Level 2-PE+ HUM*   BM/BM*	Level 3	Series Minimum
1	Osteopathic Principles, Practice, and Manipulative Treatment	11%*	10%	0%   15%	10%	10%
2	Osteopathic Patient Care and Procedural Skills	6%	30%	0%   25%	40%	25%
3	Application of Knowledge for Osteopathic Medical Practice	60%	26%	0%   15%	15%	30%
3.1	Foundational Biomedical Sciences Knowledge Base	75%	25%		10%	
4	Practice-Based Learning and Improvement in Osteopathic Medical Practice	5%**	7%	0%   5%	8%	5%
5	Interpersonal and Communication Skills in the Practice of Osteopathic Medicine	3%	5%	60%   20%	5%	10%
6	Professionalism in the Practice of Osteopathic Medicine	3%	7%	30%   5%	6%	5%
7	Systems-Based Practice in Osteopathic Medicine	2%	5%	0%   5%	6%	5%

\*Will change to 12% at the start of the 2024-2025 testing cycle on May 7, 2024

\*\*Will change to 4% at the start of the 2024-2025 testing cycle on May 7, 2024

DIMENSION 2: CLINICAL PRESENTATIONS		Level 1	Level 2-CE	Level 2-PE+	Level 3	Series Minimum
1	Community Health and Patient Presentations Related to Wellness	12%	12%	14%	12%	12%
2	Patient Presentations Related to Human Development, Reproduction, and Sexuality	5%	5%		5%	5%
3	Patient Presentations Related to Endocrine System and Metabolism	5%	5%		5%	5%
4	Patient Presentations Related to Nervous System and Mental Health	10%	10%	14%	10%	10%
5	Patient Presentations Related to Musculoskeletal System	13%	13%	14%	13%	13%
6	Patient Presentations Related to Genitourinary/Renal System and Breasts	5%	5%		5%	5%
7	Patient Presentations Related to Gastrointestinal System and Nutritional Health	10%	10%	14%	10%	10%
8	Patient Presentations Related to Circulatory and Hematologic Systems	10%	10%	14%	10%	10%
9	Patient Presentations Related to Respiratory System	10%	10%	14%	10%	10%
10	Patient Presentations Related to Integumentary System	5%	5%		5%	5%

\*For the classes of 2020-2025, Level 2-PE is substituted with attestation by the COM Dean that a candidate has graduated and demonstrated the fundamental osteopathic clinical skills necessary for graduation.

\*HUM: Humanistic Domain | BM/BM: Biomedical/Biomechanical Domain

COMPETENCY DOMAINS are related sets of foundational abilities representing the required elements and outcomes that define knowledge, skills, experience, attitudes, values, behaviors, and established professional standards. They constitute a general descriptive framework for the practice of osteopathic medicine. **Required elements** articulate the essential foundational specifications, including specific, definable knowledge, skills, experiences, attitudes, values, and/or behaviors that make up the standards for the competency domain. **Measured outcomes** can be directly assessed in a reliable manner in the assessments that make up the COMLEX-USA examination program.

## 1. Osteopathic Principles, Practice, and Manipulative Treatment

## 2. Osteopathic Patient Care and Procedural Skills

## 3. Application of Knowledge for Osteopathic Medical Practice

## 4. Practice-Based Learning and Improvement in Osteopathic Medical Practice

## 5. Interpersonal and Communication Skills in the Practice of Osteopathic Medicine

## 6. Professionalism in the Practice of Osteopathic Medicine

## 7. Systems-Based Practice in Osteopathic Medicine

## overview

Osteopathic physicians must demonstrate knowledge of osteopathic principles and practice such that care of patients is approached from the distinct behavioral, philosophical, and procedural aspects of osteopathic medical practice related to the four tenets of osteopathic medicine: 1) the body is a unit; the person is a unit of body, mind, and spirit; 2) the body is capable of self-regulation, self-healing, and health maintenance; 3) structure and function are reciprocally interrelated; and 4) rational treatment is based on an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function. While osteopathic tenets are considered foundational to the other competency domains herein, this classification emphasizes the distinctive osteopathic foundation and approach to patient care, including osteopathic principles, the treatment of somatic dysfunction, and the use of osteopathic manipulative treatment (OMT). Osteopathic physicians must recognize, diagnose, and treat patients with somatic dysfunction using OMT in the clinical setting. The AACOM 2017 *Glossary of Osteopathic Terminology* defines OMT and somatic dysfunction as follows:

“osteopathic manipulative treatment (OMT): the therapeutic application of manually guided forces by an osteopathic physician...to improve physiologic function and/or support homeostasis that has been altered by somatic dysfunction.”

“somatic dysfunction: impaired or altered function of related components of the body framework system: skeletal, arthrodial and myofascial structures, and their related vascular, lymphatic, and neural elements... Somatic dysfunction is treatable using osteopathic manipulative treatment.”

### REQUIRED ELEMENT 1.1

KNOWLEDGE OF OSTEOPATHIC PRINCIPLES, PRACTICE, AND OMT

### REQUIRED ELEMENT 1.2

SKILLS IN OSTEOPATHIC PRINCIPLES, PRACTICE, AND OMT

### REQUIRED ELEMENT 1.3

INTEGRATION OF OSTEOPATHIC PRINCIPLES, PRACTICE, AND OMT INTO CARE

**REQUIRED ELEMENT 1.1****KNOWLEDGE OF OSTEOPATHIC PRINCIPLES,  
PRACTICE, AND OMT****DEFINITION**

The osteopathic physician must demonstrate an understanding of osteopathic principles and practice, including knowledge of the basic science, mechanisms of action, and physical findings of somatic dysfunction, and basic application of OMT.

**MEASURED OUTCOMES**

The osteopathic physician must:

- describe the concept of body unity and recognize its role in whole-person health care.
- describe the concept of interrelatedness of structure and function in the human body and how it guides physical examination for patient presentations, including biomechanical, respiratory, circulatory, neurologic, biopsychosocial, and metabolic structure-function relationships and their effect on the body's self-regulating and self-healing capabilities.
- describe the reciprocal effects of dysfunction within the musculoskeletal system and dysfunction within the vascular, lymphatic, neurologic, and organ systems.
- describe how the human body's self-healing and self-regulatory mechanisms affect treatment options.
- describe the scientific knowledge supporting the use of osteopathic principles, practice, and OMT, including the basic science of the mechanisms of OMT and of somatic dysfunction, and the current evidence base for the clinical application of OMT and the role of the osteopathic physician to facilitate health.
- name and define the types of physical examination findings that are consistent with somatic dysfunction.
- name, define, and describe the types of somatic dysfunction

found within the 10 body regions, which are the head, cervical, thoracic, lumbar, sacral, pelvic, lower extremity, upper extremity, rib, and abdominal/visceral regions.

- describe the underlying mechanisms, signs, symptoms, and physical findings associated with viscerosomatic, somatovisceral, viscerovisceral, and somatosomatic reflexes
- name and describe the diagnostic examination, initial positioning, monitoring, motion barriers, activating forces, therapeutic timing, repetition, and reassessments used in indirect and direct technique types of OMT, including the following: counterstrain; muscle energy; myofascial release; high velocity, low amplitude; soft tissue; lymphatic; osteopathic cranial manipulative medicine; articular; balanced ligamentous tension; ligamentous articular strain; facilitated positional release; Still; visceral; treatment of Chapman reflexes; and treatment of trigger points.
- identify the indications and contraindications of different OMT techniques.
- compare and contrast the relative value, advantages, and disadvantages of different OMT techniques.

**REQUIRED ELEMENT 1.2****SKILLS IN OSTEOPATHIC PRINCIPLES,  
PRACTICE, AND OMT****DEFINITION**

The osteopathic physician must be able to apply osteopathic principles, including the use of OMT, to an appropriate patient care plan.

**MEASURED OUTCOMES**

The osteopathic physician must:

- incorporate osteopathic principles into problem solving in clinical settings.

- obtain medical, family, social, and cultural histories from or about the patient pertinent to the presenting complaint, with emphasis on assessing potential structure-function and mind-body-spirit relationship influences
- perform an appropriate osteopathic structural examination before and reassessment after administration of OMT.
- diagnose somatic dysfunction within the 10 body regions (head, cervical, thoracic, lumbar, sacral, pelvic, lower extremity, upper extremity, rib, and abdominal/visceral), prioritize a differential diagnosis, and develop an appropriate care plan.
- perform effective indirect and direct technique types of OMT and associated elements, including diagnostic examination, initial positioning, monitoring, motion barriers, activating forces, therapeutic timing, repetition, and reassessment. The technique types of OMT include: counterstrain; muscle energy; myofascial release; high velocity, low amplitude thrust; soft tissue; lymphatic; osteopathic cranial manipulative medicine; articular; balanced ligamentous tension; ligamentous articular strain; facilitated positional release; Still; visceral; treatment of Chapman reflexes; and treatment of trigger points.
- provide for the safety and dignity of the patient while diagnosing somatic dysfunction and administering OMT.
- communicate principles of and demonstrate use of appropriate therapeutic and rehabilitative exercises, activity modification, and supportive and adaptive device in the management of neuromusculoskeletal dysfunction and facilitation of health.



**REQUIRED ELEMENT 1.3****INTEGRATION OF OSTEOPATHIC PRINCIPLES,  
PRACTICE, AND OMT INTO CARE****DEFINITION**

The osteopathic physician must demonstrate sufficient depth of knowledge and skills to recognize, diagnose, and treat patients who have somatic dysfunctions, using OMT in the clinical setting.

**MEASURED OUTCOMES**

The osteopathic physician must:

- apply osteopathic principles and practice in health and disease to resolve complaints and concerns with which patients commonly present, giving particular emphasis on optimizing homeostasis and maximizing the patient's comfort and health.
- advocate for the administration of OMT in appropriate clinical settings.
- identify viscerosomatic relationships and the role of the musculoskeletal system in the patient presentation by performing an osteopathic structural examination.
- demonstrate respect to patients of heterogeneous and diverse populations, including but not limited to diversity in ethnicity, culture, gender identity and/or sexual orientation, and religious beliefs, who may express the symptoms of their somatic and/or visceral dysfunctions in unique or unconventional ways.
- document diagnostic information to allow for appropriate coding for evaluation and management services and OMT.
- determine the limits of his/her knowledge and clinical skills and seek an appropriate referral in regard to the use of OMT or the application of osteopathic principles and practice.
- report and interpret epidemiologic data in patients with musculoskeletal dysfunction.

- integrate scientific knowledge supporting the use of osteopathic principles, practice, and OMT into the clinical evaluation and management of the patient.

## overview

Osteopathic physicians must provide osteopathic medical care that is patient-centered, compassionate, safe, effective, evidence-based, timely, efficient, and equitable in order to promote health and the body's self-regulatory and self-healing nature, in both the care of the patient and the care of communities and populations.

Osteopathic physicians must provide these elements of effective osteopathic patient care, as appropriate to their scope of practice, to patients in a broad range of diverse and special populations in varied clinical settings, including outpatient, inpatient, and home care settings, across the lifecycle.

This patient care involves determining and monitoring the nature of the patient's concern or complaint; appropriately incorporating osteopathic principles, practice, and OMT; and implementing effective, equitable, timely, evidence-based, and mutually agreed-upon diagnostic and patient care plans, including appropriate patient education and follow-up. This includes performing all other diagnostic and therapeutic clinical procedures essential for the area of practice. In the delivery of the highest-quality patient care, promotion of wellness, and prevention of disease, osteopathic physicians must be able to serve appropriately as members or leaders of interprofessional health care teams and foster effective communication with and among other professionals. Interprofessional team outcomes will be mapped primarily to the systems-based practice domain (Domain 7).

### REQUIRED ELEMENT 2.1

DATA GATHERING

### REQUIRED ELEMENT 2.2

DIFFERENTIAL DIAGNOSIS

### REQUIRED ELEMENT 2.3

ESSENTIAL CLINICAL PROCEDURES

### REQUIRED ELEMENT 2.4

PATIENT CARE MANAGEMENT

### REQUIRED ELEMENT 2.5

PATIENT EDUCATION



**REQUIRED ELEMENT 2.1****DATA GATHERING****DEFINITION**

The osteopathic physician must effectively gather accurate, essential data from all sources, including the patient, secondary sources, medical records, and physical examination (including osteopathic structural examination), regardless of patient age or clinical setting.

**MEASURED OUTCOMES**

The osteopathic physician must:

- elicit the patient's view of the concern, complaint, or issue.
- elicit the essential information regarding medication and allergy histories, social history, family history, sexual history, developmental milestones, and psychosocial issues that contribute to the patient's behaviors or condition.
- elicit a comprehensive and patient-focused history, including symptoms, psychological factors, cultural considerations, need for interpretive or adaptive services, and community/social factors, from the patient and other sources as appropriate and in a timely manner.
- elicit the essential information regarding past medical history of diseases, disorders, and surgical procedures.
- elicit the essential information regarding mechanism of injury and disease presentations and/or biomechanical influences that contribute to the patient's condition.
- adapt the gathering of information effectively to the situation and interview patients, families, and caregivers in various clinical settings.
- gather information regarding health promotion and disease prevention through medical history-taking and physical examination regarding the biomedical, biomechanical, and biopsychosocial issues that contribute to health and disease.

- apply an appropriate knowledge base to medical-history taking and physical examination, regarding the psychosocial and cultural issues that contribute to health, disease, and behavior.
- determine the patient's living circumstances and the depth and scope of the patient's support network.
- explore the patient's beliefs, concerns, expectations, and literacy about health and disease while considering contextual factors such as the patient's age, gender, culture, literacy, sexual orientation, spirituality, and economic background.
- interpret the results of relevant laboratory, imaging, and other diagnostic studies in the context of patient care.

**REQUIRED ELEMENT 2.2****DIFFERENTIAL DIAGNOSIS****DEFINITION**

The osteopathic physician must formulate a differential diagnosis based on the patient evaluation and epidemiologic data, prioritize diagnoses appropriately, and determine the nature of the concern or complaint in the context of the patient's life cycle and in a variety of health care settings.

**MEASURED OUTCOMES**

The osteopathic physician must:

- generate, assess, and test appropriate hypotheses during the medical interview and physical examination.
- generate and prioritize an appropriate list of potential diagnoses given the medical history, physical examination findings, and other available data, recognizing the effect of biomedical, biomechanical, psychosocial, and cultural factors.

**REQUIRED ELEMENT 2.3****ESSENTIAL CLINICAL PROCEDURES****DEFINITION**

The osteopathic physician must perform basic clinical procedures essential for the generalist practice of osteopathic medicine.

**MEASURED OUTCOMES**

The osteopathic physician must:

- perform a clinically appropriate physical examination including evaluation of each of the body areas (head, neck, chest, abdomen, genitalia/groin/buttocks, back/spine, and upper and lower extremities) and organ and body systems (constitutional; cardiovascular; ears, nose, mouth, and throat; eyes; genitourinary—female and male; hematologic/lymphatic/immunologic; musculoskeletal; neurologic; psychiatric; respiratory; and skin).
- perform an osteopathic structural examination and OMT.
- employ hand hygiene practices, universal precautions, and medical aseptic technique to minimize nosocomial infections.

**REQUIRED ELEMENT 2.4****PATIENT CARE MANAGEMENT****DEFINITION**

The osteopathic physician must provide diagnostic information; develop a safe, evidence-based, cost-effective, equitable, patient-centered care plan; and use all ethical and appropriate options for the goal of relieving the patient's physical and psychological distress. Within the context of evidence-based and cost-effective care, the osteopathic physician must assess the patient's motivation, willingness, and ability to cooperate with the diagnostic and therapeutic plan. →

**MEASURED OUTCOMES**

The osteopathic physician must:

- elicit and consider the patient's perspective in developing and planning the diagnostic and care plan with patients and their families, including orders and prescriptions, using a nonjudgmental approach to elicit health beliefs and values that may influence the patient's comfort and compliance with the treatment plan.
- identify, ethically address, and appropriately relieve the patient's suffering and distress while maintaining patient dignity.

**REQUIRED ELEMENT 2.5**  
PATIENT EDUCATION**DEFINITION**

The osteopathic physician must assess the patient's health literacy and understanding and must counsel and educate the patient accordingly.

**MEASURED OUTCOMES**

The osteopathic physician must:

- explain the nature of the patient's concern or complaint at a level commensurate with the patient's health literacy.
- describe diagnostic procedures, therapeutic options, and care plans at a level commensurate with the patient's health literacy.

## overview

Osteopathic physicians must demonstrate the understanding and application of established and evolving principles of foundational biomedical and clinical sciences integral to the practice of patient-centered osteopathic medical care. As with the other competency domains, application of knowledge is about ability (i.e., knowledge put into action). Cognitive and other learning science theorists explain that the acquisition of declarative knowledge in biomedical and clinical sciences, the conscious knowledge that something is the case, progressively transforms into procedural knowledge (knowing how to do something). This gradual transformation leads the osteopathic physician to develop a problem- and task-specific knowledge base that is integrated across individual disciplines. It is this knowledge base that provides a foundation for competent patient-centered osteopathic medical care. An osteopathic physician with a fluent knowledge base in foundational biomedical and clinical sciences, for example, would be able to explain principles of health, disease, and diagnostic and treatment options to patients. Included in this knowledge base is the articulation of core scientific and clinical practice principles relevant to osteopathic medical practice (e.g., health and the body's innate capacity to heal, differential diagnoses, disease etiologies, indications and contraindications, assessment of the risks and benefits of diagnostic and therapeutic interventions).

Knowledge fluency is fundamental to a generalist osteopathic physician's competency to practice osteopathic medicine, and it is demonstrated by the ability to efficiently interpret, process, and skillfully apply principles of foundational biomedical and clinical sciences in a timely manner. Also important to an osteopathic physician's knowledge competency is the ability to formulate appropriate clinical questions, retrieve evidence to inform patient care, acquire additional and evolving knowledge for lifelong learning, and apply this knowledge for continuous practice improvement. Demonstration of the understanding and application of core knowledge is fundamental to the incorporation of new knowledge. Continuous quality improvement, however, is primarily addressed in the practice-based learning and improvement domain (Domain 4).

As osteopathic medical knowledge provides the foundation for many physician competency domains, considerable overlap exists between this competency domain and the other six. Testing concepts are mapped here when the primary component being assessed is application of knowledge (e.g., the knowledge of the scientific understanding of mechanisms of action; molecular and macro systems including biomolecules, molecules, cells, and organs; origins of disease processes; why certain diagnostic tests and treatments are used).

The principles that underlie the human condition, including its biologic complexity, genetic diversity, homeostatic mechanisms, structure-function interrelationships, development, and interactions of systems and environmental influences, guide the osteopathic physician in the understanding of health and the diagnosis and treatment of disease. While these foundational principles often cross biomedical science and clinical disciplines in the practice of osteopathic medicine, they are mapped here for primary characterization.

### REQUIRED ELEMENT 3.1

FOUNDATIONAL BIOMEDICAL SCIENCES KNOWLEDGE  
BASE

### REQUIRED ELEMENT 3.2

CLINICAL SCIENCES KNOWLEDGE BASE

### REQUIRED ELEMENT 3.3

CONTINUOUS KNOWLEDGE BASE DEVELOPMENT AND  
LIFELONG LEARNING

### REQUIRED ELEMENT 3.1 FOUNDATIONAL BIOMEDICAL SCIENCES KNOWLEDGE BASE

#### DEFINITION

Given the various clinical presentations common and important to osteopathic medical practice and described herein, the osteopathic physician must be able to demonstrate the application of knowledge of clinically applicable foundational biomedical science concepts related to patient care and health, homeostasis, structure-function relationships, prevention, and disease, and do so in an integrated, patient-centered, osteopathic manner.

#### MEASURED OUTCOMES

The osteopathic physician must effectively apply clinically relevant foundational biomedical science knowledge related to:

- the molecular, biochemical, tissue, and cellular bases of health and disease.
- medical genetics.
- the anatomic and structural bases of health and disease.
- the physiologic and pathologic bases of health and disease.
- the microbiologic and immunologic bases of health and disease.
- pharmacologic principles and pharmacotherapeutics in health and disease.
- neurosciences.
- biopsychosocial sciences.
- epidemiology and population sciences.
- medicolegal and governing regulatory principles in medical practice.

### REQUIRED ELEMENT 3.2 CLINICAL SCIENCES KNOWLEDGE BASE

#### DEFINITION

Given the various clinical presentations common and important to osteopathic medical practice and described herein, the osteopathic physician must be able to demonstrate the application of knowledge of established and evolving clinical science concepts related to patient care and health, homeostasis, structure-function relationships, prevention, and disease, and do so in an integrated, patient-centered, osteopathic manner.

#### MEASURED OUTCOMES

The osteopathic physician must effectively apply clinical science knowledge related to disciplines pertaining to the primary-care-oriented focus of osteopathic medical practice, including generalist concepts from the following specialties:

- emergency and acute care medicine
- family medicine
- general internal medicine and its subspecialties (e.g., allergy/immunology, cardiology, endocrinology, gastroenterology, hematology, infectious diseases, nephrology, oncology, pulmonary medicine, rheumatology)
- preventive and occupational medicine
- neurology
- obstetrics and gynecology
- osteopathic neuromusculoskeletal medicine
- pain medicine, hospice, and palliative care
- physical medicine and rehabilitation
- pediatrics and adolescent medicine
- geriatrics

- psychiatry and behavioral medicine
- general surgery and its subspecialties (e.g., colon and rectal, neurologic, pediatric, plastic, thoracic, urologic, and vascular)
- orthopedics and sports medicine
- anesthesiology
- otorhinolaryngology and ophthalmology
- radiology
- pathology
- dermatology
- other clinical discipline areas relevant to primary care in osteopathic medicine

### REQUIRED ELEMENT 3.3 CONTINUOUS KNOWLEDGE BASE DEVELOPMENT AND LIFELONG LEARNING

#### DEFINITION

The osteopathic physician must demonstrate the ability to acquire and sustain knowledge of applicable foundational biomedical and clinical science concepts appropriate for clinical practice for lifelong learning, including, as applicable, at the point of care.

#### MEASURED OUTCOMES

The osteopathic physician must demonstrate the ability to:

- incorporate new developments in foundational biomedical and clinical science knowledge relevant to the practice of osteopathic medicine into clinical practice.

## overview

Practice-based learning and improvement is the continuous self-evaluation of osteopathic medical practice, using evidence-based medicine approaches to develop best practices that will continuously improve patient experiences of care, reduce inefficiencies and redundancies, and result in optimal and equitable patient care outcomes.

Osteopathic physicians must assimilate and apply evidence-based medicine principles and practices, fundamental biostatistical and epidemiologic concepts, clinical decision-making skills, and methods to evaluate relevance and validity of established and evolving scientific evidence. Osteopathic physicians must also appraise the clinical significance of research evidence.

Osteopathic physicians must demonstrate the use of best medical evidence, practical strategies for integrating evidence-based principles and practices into patient care, and systematic methods relating to continuous self-evaluation of clinical practice patterns and practice-based improvements, including those that reduce medical errors and promote health. Osteopathic physicians must set learning and quality improvement goals and must incorporate feedback and reflection into daily practice.

### **REQUIRED ELEMENT 4.1**

FUNDAMENTAL EPIDEMIOLOGIC CONCEPTS

### **REQUIRED ELEMENT 4.2**

CLINICAL DECISION-MAKING TOOLS

### **REQUIRED ELEMENT 4.3**

EVIDENCE-BASED MEDICINE PRINCIPLES AND PRACTICES

### **REQUIRED ELEMENT 4.4**

CLINICAL SIGNIFICANCE OF RESEARCH EVIDENCE AND STATISTICAL INFERENCES

### **REQUIRED ELEMENT 4.5**

TRANSLATING EVIDENCE INTO PRACTICE AND CONTINUOUS LEARNING

### **REQUIRED ELEMENT 4.6**

CONTINUOUS EVALUATION, FEEDBACK, AND REFLECTION FOR THE IMPROVEMENT OF OSTEOPATHIC CLINICAL PRACTICE

**REQUIRED ELEMENT 4.1**  
**FUNDAMENTAL EPIDEMIOLOGIC CONCEPTS****DEFINITION**

The osteopathic physician must articulate and apply fundamental epidemiologic concepts to practice-based learning and improvement.

**MEASURED OUTCOMES**

The osteopathic physician must:

- interpret features and meanings of different types of data, including quantitative and qualitative, and different types of scales (e.g., nominal, dichotomous, ordinal, continuous).
- interpret measures of central tendency, including mode, median, and mean, and measures of variability, including variance and standard deviation.
- explain and interpret measures of frequency of disease, injury, and death in forms of rate, ratio, and proportion, including incidence and prevalence.

**REQUIRED ELEMENT 4.2**  
**CLINICAL DECISION-MAKING TOOLS****DEFINITION**

The osteopathic physician must interpret literature regarding research and clinical topics for use in understanding disease- and patient-oriented evidence.

**MEASURED OUTCOMES**

The osteopathic physician must:

- conduct, interpret, and apply systematic reviews (e.g., meta-analysis) of literature regarding specific research and clinical topics with an understanding of limitations, such as design bias and sources of scientific uncertainty.

- compare and contrast disease- and patient-oriented evidence in the interpretation of literature.
- identify and apply population health data to address health care disparities.

**REQUIRED ELEMENT 4.3**  
**EVIDENCE-BASED MEDICINE PRINCIPLES AND PRACTICES****DEFINITION**

The osteopathic physician must learn and apply evidence-based osteopathic medical principles and practices.

**MEASURED OUTCOMES**

The osteopathic physician must:

- access the best-available/highest level of evidence, in order to answer a clinical question with accuracy and maximum efficiency.
- critically appraise the available evidence and its validity, impact, and applicability.

**REQUIRED ELEMENT 4.4**  
**CLINICAL SIGNIFICANCE OF RESEARCH EVIDENCE AND STATISTICAL INFERENCES****DEFINITION**

The osteopathic physician must determine the clinical significance of research evidence.

**MEASURED OUTCOMES**

The osteopathic physician must:

- judge and interpret aspects of statistical inference and hypothesis testing (e.g., decision errors, sample size, power, confidence intervals, degree of freedom, blinding,

external and internal validity, number needed to treat, number needed to harm, sample size) as applied to osteopathic medical practice.

- interpret pretest/posttest probabilities in diagnostic and screening tests, as applied to osteopathic medical practice.

**REQUIRED ELEMENT 4.5**  
**TRANSLATING EVIDENCE INTO PRACTICE AND CONTINUOUS LEARNING****DEFINITION**

The osteopathic physician must apply evidence to clinical practice.

**MEASURED OUTCOMES**

The osteopathic physician must:

- use information technology, including the internet, to optimize learning and to access and manage medical information online.
- communicate best clinical evidence, including osteopathic principles and practice, to patients and colleagues.

**REQUIRED ELEMENT 4.6**  
**CONTINUOUS EVALUATION, FEEDBACK, AND REFLECTION FOR THE IMPROVEMENT OF OSTEOPATHIC CLINICAL PRACTICE****DEFINITION**

The osteopathic physician must identify, describe, and apply systematic methods relating to continuous evaluation of personal osteopathic clinical practice patterns, practice-based improvements, and the reduction of medical errors. The osteopathic physician must do so using information about individual patients, populations of patients, or →



communities to improve care. The osteopathic physician must incorporate regular feedback and reflection into practice, as well as set learning and improvement goals.

**MEASURED OUTCOMES**

The osteopathic physician must:

- describe the nature, function, and utilization of strategies in quality improvement (e.g., PDCA cycle, six sigma, lean principles, root cause analysis) and health failure modes and effects analysis.
- consult physician colleagues and engage other health care professionals in the care of patients as appropriate.

## overview

Osteopathic physicians must demonstrate the knowledge, skills, experience, attitudes, values, and behaviors that facilitate accurate and efficient information gathering, empathetic rapport building, and effective information giving in interactions with the patient and surrogates, the patient's family members and caregivers, and other members of the interprofessional collaborative team.

Osteopathic physicians must also demonstrate the ability to effectively document and synthesize clinical findings, diagnostic impressions, and diagnostic and treatment instructions in verbal, written, and electronic format. Communication in the English language is essential, as is communication with other members of the health care team, patients, and others when language barriers or other challenges to effective communication are encountered.

Interpersonal and communication skills for osteopathic medical practice are based on the incorporation of appropriate knowledge, experience, attitudes, values, and behaviors to determine the nature of the patient's concern or complaint; to develop, maintain, and conclude the therapeutic relationship; and to facilitate patient education, shared decision-making, and implementation of diagnostic and care plans. These skills include active listening involving verbal and nonverbal behaviors, as well as effective documentation and synthesis of clinical findings and impressions. This set of knowledge, skills, experience, attitudes, values, and behaviors extends to the medical interview and to communication with the patient, family members, caregivers, and other members of the interprofessional collaborative team. It is essential for osteopathic medical practice that the approach be patient-centered, holistic, comprehensive, compassionate, and respectful, contributing to an understanding of the patient, family, and caregiver perspectives and facilitating trust and therapeutic patient-physician relationships.

### REQUIRED ELEMENT 5.1

ELICITING INFORMATION

### REQUIRED ELEMENT 5.2

RAPPORT BUILDING

### REQUIRED ELEMENT 5.3

INFORMATION GIVING

### REQUIRED ELEMENT 5.4

WRITTEN AND/OR ELECTRONIC DOCUMENTATION  
AND COMMUNICATION

**REQUIRED ELEMENT 5.1****ELICITING INFORMATION****DEFINITION**

The osteopathic physician must communicate effectively with the patient, the patient's family, and other caregivers in order to establish a diagnostic impression and to help ascertain the nature of the concern or complaint. The osteopathic physician must open patient interviews by encouraging the patient to fully express concerns and must further gather information in a manner that results in effective exchange of information and collaboration with patients, their families, and other health care professionals.

**MEASURED OUTCOMES**

The osteopathic physician must:

- allow patients (or other persons being interviewed) to complete their opening statements without interruption in order to elicit the full set of patient concerns.
- use open-ended and closed-ended questions effectively.
- listen actively, using appropriate verbal and nonverbal techniques, including appropriate eye contact and touch.
- use interpretation services effectively as necessary to communicate with patients and to minimize potential barriers to effective information exchange with patients and family members; these services include language-interpreting services and hearing-impaired services.

**REQUIRED ELEMENT 5.2****RAPPORT BUILDING****DEFINITION**

The osteopathic physician must develop, maintain, and conclude the therapeutic relationship and demonstrate competence in the rapport-building functions of the medical interview.

**MEASURED OUTCOMES**

The osteopathic physician must:

- communicate interest in, respect for, support of, and empathy for the patient.
- understand the patient's, family's, and caregiver's perspectives, concerns, complaints, and issues.
- provide closure to interviews by summarizing and affirming agreements, asking whether the patient has other issues or concerns, and planning follow-up (e.g., next visit and awareness of unexpected outcomes).
- communicate effectively with patients who are exhibiting anger or who present other challenges in order to resolve relational barriers between the physician, other health care professionals, and the patient.
- communicate effectively and encourage open communication with the patient, as appropriate, during clinical procedures, including OMT.
- clarify their role in the patient's care and/or on the health care team with the patient.
- understand and appreciate the role of other health care professionals in the care of patients and work in cooperation with them when applicable to provide high-quality patient-centered care.

**REQUIRED ELEMENT 5.3****INFORMATION GIVING****DEFINITION**

The osteopathic physician must effectively provide patient education and information, ensuring that the patient (or caregiver) understands their condition and the diagnostic and/or treatment options and recommendations. This includes achieving consensus between the patient (or caregiver) and the physician. It also includes facilitating the

informed consent process and recommending mutually agreed-upon diagnostic and/or therapeutic steps, or health promotion and disease prevention strategies. Additionally, it includes enhancing patient coping mechanisms and encouraging appropriate lifestyle changes to avoid illness and to promote and maintain health.

**MEASURED OUTCOMES**

The osteopathic physician must:

- share information using appropriate terminology and concepts that the patient, patient's family, and/or legal decision-maker can understand and, as indicated, use language-interpreting services, hearing-impaired services, or other services to minimize potential barriers to effective information exchange.
- summarize discussions, check for understanding, and conclude conversations by ensuring that all questions and concerns have been thoroughly addressed.
- encourage active patient participation in decision making while verifying the patient's willingness and ability to follow the care plan as part of informed consent.
- communicate to the patient the philosophy of osteopathic principles and practice and of OMT.
- communicate with compassion any news that may evoke in the patient and the patient's family or caregiver distress, sorrow, anger, or other emotion, such as any applicable information relative to terminal illness, disability, death, and dying.
- enhance the patient's coping ability by actively exploring and utilizing biopsychosocial concepts and addressing the social and psychological consequences of the condition and the treatment.
- recommend and explain appropriate disease prevention and health promotion strategies, including lifestyle changes and available community support services.



**REQUIRED ELEMENT 5.4****WRITTEN AND/OR ELECTRONIC  
DOCUMENTATION AND COMMUNICATION****DEFINITION**

The osteopathic physician must demonstrate effective written and electronic communication in patient care and in working as a member of the interprofessional collaborative team.

**MEASURED OUTCOMES**

The osteopathic physician must:

- document subjective elements (e.g., information provided by the patient or a secondary source) of the medical, surgical, family, medication, allergy, social, cultural, and sexual histories and review of systems, as appropriate.
- document objective patient information (e.g., physical examination findings, laboratory/diagnostic test results, imaging results) as appropriate.
- document a reasonable diagnostic assessment or differential diagnosis as supported by diagnostic hypotheses, as well as subjective and objective findings and data as appropriate.
- document elements of the patient care and follow-up or disposition plan as appropriate.

## overview

Osteopathic physicians must understand and adhere to the ethical, behavioral, and social science principles that underpin medical professionalism, demonstrating accountability to patients, society, and the profession. Osteopathic physicians must consistently display high moral and ethical standards in the conduct of medical education, training, research, and practice. This conduct includes properly establishing, maintaining, and concluding the physician-patient relationship in a manner that is altruistic, compassionate, and conscientious. Osteopathic physicians must exemplify integrity, humanistic behavior, and a responsiveness to the needs of patients that supersedes self-interest.

They must show respect for the patient as a person and demonstrate cultural sensitivity and responsiveness to a diverse patient population. While professionalism also includes a commitment to excellence and continuous professional development, these attributes are classified in the practice-based learning and improvement domain (Domain 4).

### REQUIRED ELEMENT 6.1

KNOWLEDGE OF ETHICS AND PROFESSIONALISM

### REQUIRED ELEMENT 6.2

HUMANISTIC BEHAVIOR

### REQUIRED ELEMENT 6.3

PRIMACY OF PATIENT NEED

### REQUIRED ELEMENT 6.4

ACCOUNTABILITY AND DUTY IN THE PHYSICIAN-  
PATIENT RELATIONSHIP

### REQUIRED ELEMENT 6.5

CULTURAL COMPETENCY

### REQUIRED ELEMENT 6.8

ETHICAL PRINCIPLES IN PRACTICE AND RESEARCH

**REQUIRED ELEMENT 6.1**  
**KNOWLEDGE OF ETHICS AND**  
**PROFESSIONALISM****DEFINITION**

The osteopathic physician must demonstrate sufficient knowledge of the behavioral and social sciences that provide the foundation for the professionalism competency, including medical ethics, social accountability, and responsibility.

**MEASURED OUTCOMES**

The osteopathic physician must:

- articulate moral, legal, and ethical guidelines for professional behavior.
- explain and apply the ethical principles of autonomy, beneficence, nonmaleficence, fidelity, justice, and utility.
- identify the patient's social and economic situation, capacity for self-care, and ability to participate in shared decision-making.
- identify and describe the impact of social inequalities in health care, including public health crises, and the social factors that are determinants of health outcomes.
- comprehend and apply the concepts of social accountability and responsibility.

**REQUIRED ELEMENT 6.2**  
**HUMANISTIC BEHAVIOR****DEFINITION**

The osteopathic physician must demonstrate respect, altruism, compassion, integrity, honesty, and trustworthiness.

**MEASURED OUTCOMES**

The osteopathic physician must:

- exhibit respect and compassion for the patient's autonomy, dignity, and privacy.
- exhibit openness, honesty, and trustworthiness with patients and their families in the completion of all reports and during the provision of evidence in any formal inquiries, including those related to litigation.

**REQUIRED ELEMENT 6.3**  
**PRIMACY OF PATIENT NEED****DEFINITION**

The osteopathic physician must demonstrate responsiveness to the needs of patients and society that supersedes self-interest.

**MEASURED OUTCOMES**

The osteopathic physician must:

- use reason and appropriate judgment, and incorporate the patient's perspective when taking into consideration risks to the patient's health, income, and job security.
- respect patient autonomy and the right of the patient to be fully involved in decisions about care.
- respect the right of the patient to personal privacy and dignity during evaluation and management.

**REQUIRED ELEMENT 6.4**  
**ACCOUNTABILITY AND DUTY IN THE PHYSICIAN-**  
**PATIENT RELATIONSHIP****DEFINITION**

The osteopathic physician must properly establish, maintain, and conclude the physician-patient relationship in accordance with proper ethical and legal standards. The osteopathic physician must demonstrate accountability to

patients, society, and the profession.

**MEASURED OUTCOMES**

The osteopathic physician must:

- take appropriate action to protect patients from risk if the physician has good reason to believe that they or a colleague may not be fit to practice or when unprofessional behavior compromises patient care or represents a threat to patients or others (e.g., impairment, substance abuse, incompetence, unethical conduct, inappropriate relationships).
- properly establish the physician-patient relationship by examining, diagnosing, and treating in a consensual manner and conscientiously maintaining the relationship consistent with proper ethical and legal standards.

**REQUIRED ELEMENT 6.5**  
**CULTURAL COMPETENCY****DEFINITION**

The osteopathic physician must demonstrate sensitivity, respect, and responsiveness to a diverse and heterogeneous patient population, including but not limited to diversity in culture, religion, age, gender, sexual orientation, socioeconomic circumstances, mental and physical disabilities, and military personnel and their families.

**MEASURED OUTCOMES**

The osteopathic physician must:

- demonstrate cultural awareness, respect, and responsiveness when communicating with the patient, family, caregivers, and other members of the health care team.
- discuss cultural issues openly and be responsive to culturally based cues, interpreting the implications of →



symptoms as they are expressed by patients from diverse cultures and circumstances.

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**REQUIRED ELEMENT 6.8****ETHICAL PRINCIPLES IN PRACTICE AND RESEARCH****DEFINITION**

The osteopathic physician must demonstrate knowledge of, and the ability to apply, ethical principles in the practice and research of osteopathic medicine, particularly in the areas of confidentiality of patient information, access to care, regulation of care, provision or withholding of care, and the conduct of research.

**MEASURED OUTCOMES**

The osteopathic physician must:

- provide appropriate care to address physical, emotional, and spiritual pain and minimize needless helplessness or suffering.
  - use ethical principles pertaining to provision or withholding of clinical care, including diagnostic and treatment modalities that are considered futile.
-

## overview

Osteopathic physicians must understand the larger context and systems of health care and the broader system of linked goals. They must effectively identify and utilize system resources to maximize the health of the individual and the community or population at large. This facilitates improving the individual experience of care, improving the health of populations, and reducing the per capita costs of care. Osteopathic physicians must work well as members and leaders of interprofessional health care teams, identifying areas for improvement to promote care and a culture that enhances quality and patient safety, as well as reduce medical errors, inequities, needless pain and suffering, helplessness, and waste and other inefficiencies.

### REQUIRED ELEMENT 7.1

HEALTH SYSTEMS AWARENESS

### REQUIRED ELEMENT 7.2

ENGAGE IN AN INTERPROFESSIONAL HEALTH CARE TEAM FOR OPTIMAL PATIENT- AND POPULATION-CENTERED CARE

### REQUIRED ELEMENT 7.3

INCORPORATE CONSIDERATIONS OF COST AWARENESS AND RISK-BENEFIT ANALYSIS IN CARE

### REQUIRED ELEMENT 7.4

ADVOCATE FOR ALL PATIENTS WITHIN THE HEALTH CARE SYSTEM

### REQUIRED ELEMENT 7.5

IMPROVE HEALTH SYSTEMS AND PATIENT SAFETY

**REQUIRED ELEMENT 7.1**  
**HEALTH SYSTEMS AWARENESS****DEFINITION**

The osteopathic physician must understand in-person and virtual health care delivery systems, including but not limited to: Medicare, Medicaid, managed care, the Veterans Health Administration, formularies, accountable care organizations, and patient-centered medical homes, all of which affect the practice of osteopathic physicians and the care of patients and the community.

**MEASURED OUTCOMES**

The osteopathic physician must:

- know the various types of medical practices and national health care delivery systems, including types of third-party coverage and methods of payment.
- understand the impact of health care delivery systems on patient care at the national level.
- identify global issues affecting the health of patients and communities.

**REQUIRED ELEMENT 7.2**  
**ENGAGE IN AN INTERPROFESSIONAL HEALTH CARE TEAM FOR OPTIMAL PATIENT- AND POPULATION-CENTERED CARE****DEFINITION**

The osteopathic physician must understand the function of the interprofessional health care team and their role in the team and also optimize team performance across the health care system for safe, quality patient- and population-centered care.

**MEASURED OUTCOMES**

The osteopathic physician must:

- identify and define the roles of trainees (i.e., medical students and residents) and other health care professionals as members of the interprofessional collaborative team.

**REQUIRED ELEMENT 7.3**  
**INCORPORATE CONSIDERATIONS OF COST AWARENESS AND RISK-BENEFIT ANALYSIS IN CARE****DEFINITION**

The osteopathic physician must consider how to allocate resources (e.g., evaluating value, quality, cost, risk-benefit analysis, potential wastes) in the health care delivery system and incorporate them into the care of patients.

**MEASURED OUTCOMES**

The osteopathic physician must:

- incorporate considerations of cost awareness and risk-benefit analysis in patient- and/or population-based care.
- make cost-effective decisions in the provision of optimal patient care (e.g., request consults effectively, use diagnostic tests judiciously, participate in effective transitions of care) involving health care and resource allocation.

**REQUIRED ELEMENT 7.4**  
**ADVOCATE FOR ALL PATIENTS WITHIN THE HEALTH CARE SYSTEM****DEFINITION**

The osteopathic physician must be an advocate for all patients within the health care system.

**MEASURED OUTCOMES**

The osteopathic physician must:

- recognize and work to reduce logistical and systems-based barriers to patient care.

**REQUIRED ELEMENT 7.5**  
**IMPROVE HEALTH SYSTEMS AND PATIENT SAFETY****DEFINITION**

The osteopathic physician must understand, advocate for, and apply methods for the evaluation and improvement of patient care systems, with the goal of improving patient safety and quality of care.

**MEASURED OUTCOMES**

The osteopathic physician must:

- identify and use known effective methods for recognizing health system errors, implementing potential system solutions, and improving patient safety and systems of care (e.g., error reporting, root cause analysis, training to improve effective transitions of care, best practices for safe prescribing, infection control, disease reporting, disaster management).

CLINICAL PRESENTATIONS represent the manner in which a particular patient, group of patients, or community presents to osteopathic physicians. The emphasis within each clinical presentation is on high-frequency and high-impact categories based on evidence from osteopathic medical practice. Each clinical presentation is further categorized into specific topics.

Clinical presentations may include presentations of patients across all relevant age categories, from special populations, and in varied clinical settings, and the ways in which patients present for osteopathic medical care.

## 1. Community Health and Patient Presentations Related to Wellness

PATIENT PRESENTATIONS RELATED TO

## 2. Human Development, Reproduction, and Sexuality

PATIENT PRESENTATIONS RELATED TO

## 3. Endocrine System and Metabolism

PATIENT PRESENTATIONS RELATED TO

## 4. Nervous System and Mental Health

PATIENT PRESENTATIONS RELATED TO

## 5. Musculoskeletal System

PATIENT PRESENTATIONS RELATED TO

## 6. Genitourinary/Renal System and Breasts

PATIENT PRESENTATIONS RELATED TO

## 7. Gastrointestinal System and Nutritional Health

PATIENT PRESENTATIONS RELATED TO

## 8. Circulatory and Hematologic Systems

PATIENT PRESENTATIONS RELATED TO

## 9. Respiratory System

PATIENT PRESENTATIONS RELATED TO

## 10. Integumentary System

COMMUNITY HEALTH AND PATIENT  
PRESENTATIONS RELATED TO WELLNESS

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- |            |   |
|------------|---|
| <b>1.1</b> | <b>END-OF-LIFE/PALLIATIVE CARE</b>  |
| <b>1.2</b> | <b>PATIENT SAFETY</b>   |
| <b>1.3</b> | <b>PUBLIC HEALTH</b>  |
| <b>1.4</b> | <b>RISK ASSESSMENT</b>  |
| <b>1.5</b> | <b>HEALTH PROMOTION AND DISEASE PREVENTION</b>  |
| <b>1.6</b> | <b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO COMMUNITY HEALTH AND WELLNESS</b> |

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

#### 1.1 END-OF-LIFE/PALLIATIVE CARE

#### 1.2 PATIENT SAFETY

#### 1.3 PUBLIC HEALTH

#### 1.4 RISK ASSESSMENT

#### 1.5 HEALTH PROMOTION AND DISEASE PREVENTION

#### 1.6 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO COMMUNITY HEALTH AND WELLNESS

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

age-appropriate physicals for wellness (e.g., newborn), travel, school, sports participation, and employment (e.g., ergonomics) • anticipatory guidance (e.g., toilet training, feeding, dental care, safety) • cancer screening • cardiovascular risk assessment (e.g., lipids, blood pressure, endocarditis prophylaxis) • coordination/transition of care • death-related issues (e.g., right to die, medical futility, advance directives) • diet and nutrition counseling (e.g., diabetes, obesity prevention) • environmental public health risks • environmental screening • genetic screening • heavy-metal poisoning and environmental toxin screening (e.g., lead, secondhand smoke) • medication safety (e.g., polypharmacy) • outbreaks/epidemics/pandemics (e.g., infection control, bioterrorism) • pre- and postoperative/procedure counseling • pre- and post-screening test counseling • preconception and prenatal counseling • safety concerns – prevention, protection, and reporting of child, sexual, or elder abuse; intimate partner violence; sexual assault; gun safety or violation; motor vehicle operation safety or violation; fall prevention; use of protective devices (e.g., helmets, seatbelts, infant/child seats) • sexually transmitted infection prevention • smoking cessation • substance abuse prevention and screening • sudden unexpected death in infancy including sudden infant death syndrome • vaccinations • wellness – mental, physical and spiritual (e.g., stress management, diet and exercise programs, sleep hygiene, counseling)

Laboratory tests and diagnostic imaging studies related to screening for disease or abuse

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

<b>2.1</b>	SEXUAL DEVELOPMENT AND MATURATION, INCLUDING ABNORMALITIES AND GENDER IDENTITY
<b>2.2</b>	AGING MILESTONES
<b>2.3</b>	DEVELOPMENTAL DELAY
<b>2.4</b>	CONGENITAL ANOMALIES, MALFORMATIONS, PRIMARY AND ACQUIRED IMMUNODEFICIENCY DISORDERS
<b>2.5</b>	FAILURE TO THRIVE
<b>2.6</b>	INFERTILITY
<b>2.7</b>	PREGNANCY PREVENTION AND CONTRACEPTION
<b>2.8</b>	NORMAL OBSTETRICS, LABOR AND DELIVERY
<b>2.9</b>	PREGNANCY COMPLICATIONS
<b>2.10</b>	PREGNANCY LOSS
<b>2.11</b>	NEONATAL CONDITIONS
<b>2.12</b>	IMPAIRMENT OF SEXUAL FUNCTION
<b>2.13</b>	PHYSICAL EXAM FINDINGS RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY
<b>2.14</b>	LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 2.1 SEXUAL DEVELOPMENT AND MATURATION, INCLUDING ABNORMALITIES AND GENDER IDENTITY
- 2.2 AGING MILESTONES
- 2.3 DEVELOPMENTAL DELAY
- 2.4 CONGENITAL ANOMALIES, MALFORMATIONS, PRIMARY AND ACQUIRED IMMUNODEFICIENCY DISORDERS
- 2.5 FAILURE TO THRIVE
- 2.6 INFERTILITY
- 2.7 PREGNANCY PREVENTION AND CONTRACEPTION
- 2.8 NORMAL OBSTETRICS, LABOR AND DELIVERY
- 2.9 PREGNANCY COMPLICATIONS
- 2.10 PREGNANCY LOSS
- 2.11 NEONATAL CONDITIONS
- 2.12 IMPAIRMENT OF SEXUAL FUNCTION
- 2.13 PHYSICAL EXAM FINDINGS RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY
- 2.14 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

ABO incompatibility • abortion – threatened, inevitable, missed, medical and surgical (therapeutic); elective; spontaneous (miscarriage); complete, incomplete • abruptio placentae • ambiguous genitalia • androgen insensitivity • antepartum care • artificial nutrition and hydration • bacterial infections (e.g., streptococcal, gonococcal) in obstetrics • biophysical profile • birth trauma • bleeding in pregnancy • bloody show • caloric consumption, adequate or inadequate • cerebral palsy • cervical insufficiency • children with special needs • chromosomal abnormalities • congenital/genetic anomalies (e.g., Down syndrome, cystic fibrosis, craniosynostosis), malformations, innate immune disorders, cellular and antibody deficiencies • contraceptives – oral, injectable, implantable; vaginal rings and other barrier methods; abstinence and fertility awareness methods; surgical methods (e.g., tubal ligation, vasectomy) • developmental milestones, physiologic, of normal infant, child, and adolescent and healthy aging of adult and geriatric patients • developmental milestones, standard, including social/emotional, language/communication, cognitive, fine/gross motor development • eclampsia • ectopic pregnancy • embryo harvesting, storage, and implantation • endometriosis • failure to meet developmental milestones (e.g., isolated domain delays, global domain delays) • failure to thrive, adult or child • fetal and neonatal infections, bacterial or viral (e.g., antepartum, intrapartum, postpartum) • fetal status indicators, reassuring and non-reassuring (e.g., fetal heart tone variability, decelerations) • gestational trophoblastic disease • glycogen storage disorders • HELLP syndrome • hydrocele • hypogonadism • hypotonic infant • in vitro fertilization • induction of labor • infertility, male or female (includes disorders of sperm production, motility, and transport) • initial neonatal

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 2.1 SEXUAL DEVELOPMENT AND MATURATION, INCLUDING ABNORMALITIES AND GENDER IDENTITY
- 2.2 AGING MILESTONES
- 2.3 DEVELOPMENTAL DELAY
- 2.4 CONGENITAL ANOMALIES, MALFORMATIONS, PRIMARY AND ACQUIRED IMMUNODEFICIENCY DISORDERS
- 2.5 FAILURE TO THRIVE
- 2.6 INFERTILITY
- 2.7 PREGNANCY PREVENTION AND CONTRACEPTION
- 2.8 NORMAL OBSTETRICS, LABOR AND DELIVERY
- 2.9 PREGNANCY COMPLICATIONS
- 2.10 PREGNANCY LOSS
- 2.11 NEONATAL CONDITIONS
- 2.12 IMPAIRMENT OF SEXUAL FUNCTION
- 2.13 PHYSICAL EXAM FINDINGS RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY
- 2.14 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

assessment • intellectual disability • jaundice/hyperbilirubinemia in the newborn • labor and delivery • lactation • language and social impairment (e.g., autism spectrum disorder and related entities) • large for gestational age • learning difficulties (e.g., dyslexia, attention deficit hyperactivity disorder) • maternal substance abuse – maternal and neonatal complications • menarche • menopause • metabolic disturbances (e.g., hypoglycemia, hypothyroidism) • multiple gestation • neonatal sepsis • oligo/polyhydramnios • pelvic adhesions • physiologic changes of pregnancy • placenta previa, accreta, marginatum • placental insufficiency • polycystic ovary syndrome • postpartum care • postpartum hemorrhage • precocious puberty • preconception counseling • preeclampsia • pregnancy complications (e.g., pyelonephritis, cholecystitis, appendicitis) • pregnancy loss • premature newborn • premature rupture of membranes • premature sexual maturation • prenatal counseling • preterm infant complications (e.g., patent ductus arteriosus, necrotizing enterocolitis, retinopathy of prematurity) • preterm labor • primary ovarian failure • protein-energy malnutrition • psychosocial or medical illnesses or situations (e.g., neglect) • recurrent pregnancy loss • respiratory distress of the newborn (e.g., meconium aspiration, transient tachypnea) • Rh isoimmunization/incompatibility • rupture of membranes • sexual development • sexual dysfunction, male or female (e.g., vaginismus, vaginal dryness, erectile dysfunction, priapism, dyspareunia), reduced or absent desire, arousal, or orgasm • small for gestational age, including intrauterine fetal growth restriction or discrepancies • spermatocoele • testicular cancer • uterine rupture • viral infections (e.g., TORCH infections) • virilization



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 2.1 SEXUAL DEVELOPMENT AND MATURATION, INCLUDING ABNORMALITIES AND GENDER IDENTITY
- 2.2 AGING MILESTONES
- 2.3 DEVELOPMENTAL DELAY
- 2.4 CONGENITAL ANOMALIES, MALFORMATIONS, PRIMARY AND ACQUIRED IMMUNODEFICIENCY DISORDERS
- 2.5 FAILURE TO THRIVE
- 2.6 INFERTILITY
- 2.7 PREGNANCY PREVENTION AND CONTRACEPTION
- 2.8 NORMAL OBSTETRICS, LABOR AND DELIVERY
- 2.9 PREGNANCY COMPLICATIONS
- 2.10 PREGNANCY LOSS
- 2.11 NEONATAL CONDITIONS
- 2.12 IMPAIRMENT OF SEXUAL FUNCTION
- 2.13 PHYSICAL EXAM FINDINGS RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY
- 2.14 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO HUMAN DEVELOPMENT, REPRODUCTION, AND SEXUALITY

The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

#### CONSTITUTIONAL SIGNS AND SYMPTOMS

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

#### PHYSICAL EXAM FINDINGS

bimanual ovarian and uterine palpation • external genitalia inspection and palpation • gynecologic speculum exam • Leopold maneuvers • manual cervical checks in labor • symphysis fundal heights • Tanner stages of sexual maturation

#### LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING

β-HCG levels • bilirubin levels, total serum and conjugated • bone age measurements • bone density studies • cervical culture and sensitivity • CT scanning • DHEA-S levels • genetic screening in pregnancy • gestational diabetes screening • Gram staining • hemoglobin electrophoresis • magnetic resonance imaging • newborn blood-screening tests • Pap smear • prenatal lab panels • radiography • semen analysis • serum testosterone, estrogen, and FSH levels • ultrasonography, including obstetric ultrasounds

PATIENT PRESENTATIONS RELATED TO THE  
ENDOCRINE SYSTEM AND METABOLISM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**3.1** ABNORMALITIES OF WEIGHT AND STATURE**3.2** ENDOCRINE AND NECK MASSES**3.3** HYPOTHERMIA AND HYPERTHERMIA**3.4** POLYURIA, POLYDIPSIA, POLYPHAGIA; DIABETES MELLITUS**3.5** PHYSICAL EXAM FINDINGS RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM**3.6** LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 3.1 ABNORMALITIES OF WEIGHT AND STATURE
- 3.2 ENDOCRINE AND NECK MASSES
- 3.3 HYPOTHERMIA AND HYPERTHERMIA
- 3.4 POLYURIA, POLYDIPSIA, POLYPHAGIA; DIABETES MELLITUS
- 3.5 PHYSICAL EXAM FINDINGS RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM
- 3.6 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

anesthesia-related complications • bariatric surgery • congenital neck masses (e.g., branchial cleft abnormalities) • diabetes mellitus, including diabetic ketoacidosis • dysmorphic features and genetic syndrome stigmata • endocrine disorders (e.g., Cushing syndrome, Addison disease, Hashimoto thyroiditis, Graves disease) • fever in immunocompromised host • fever of undetermined etiology • fluid and electrolyte management in hospitalized patient • gestational hyperglycemia • heat exhaustion, heat stroke • hyper/hypoglycemia • hyper/hypothermia from acute illness (viral, bacterial, parasitic) • hyperglycemic crisis, hyperosmolar (hyperglycemic) state • hypothermia from environmental exposure • masses – thyroid, adrenal, and pituitary (benign and malignant or metastatic tumors) • metabolic syndrome • multiple endocrine neoplasias • neck lymphadenitis • pre-diabetes • puberty, delayed or precocious • salivary gland neoplasms • sepsis • sialadenitis • stature abnormalities including unusual shortness (e.g., dwarfism due to achondroplasia or ateliosis) and excessive height (e.g., gigantism due to Marfan syndrome) • thyroglossal duct and/or dermoid cysts • weight abnormalities – involuntary weight loss, excessive weight gain, obesity

#### CONSTITUTIONAL SIGNS AND SYMPTOMS

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

#### PHYSICAL EXAM FINDINGS

acromegaly • adipose distribution • Chvostek sign • exophthalmos • hyper/hyporeflexia • lid lag • lymphadenopathy, neck • macroglossia •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

### 3.1 ABNORMALITIES OF WEIGHT AND STATURE

### 3.2 ENDOCRINE AND NECK MASSES

### 3.3 HYPOTHERMIA AND HYPERTHERMIA

### 3.4 POLYURIA, POLYDIPSIA, POLYPHAGIA; DIABETES MELLITUS

### 3.5 PHYSICAL EXAM FINDINGS RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM

### 3.6 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE ENDOCRINE SYSTEM AND METABOLISM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

monofilament testing • myxedema • retinopathy • striae • thyromegaly and goiter • tremors • Trousseau sign

### LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING

CT scanning • electrolyte levels (e.g., calcium, potassium, sodium, phosphorus, magnesium, chloride) • glucose testing • growth hormone levels • hemoglobin A1c testing • magnetic resonance imaging • nuclear medicine imaging • radiography • serum parathyroid hormone levels • thyroid function tests (e.g., TSH, free or total T<sub>4</sub> or T<sub>3</sub>) • thyroid peroxidase antibodies • ultrasonography • urine microalbumin/creatinine levels

PATIENT PRESENTATIONS RELATED TO THE  
NERVOUS SYSTEM AND MENTAL HEALTH

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

<b>4.1</b>	<b>ANXIETY</b>
<b>4.2</b>	<b>DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS</b>
<b>4.3</b>	<b>COGNITIVE DISTURBANCES</b>
<b>4.4</b>	<b>DISTURBANCES OF BEHAVIOR AND PERCEPTION</b>
<b>4.5</b>	<b>LIFE ADJUSTMENT AND STRESSORS</b>
<b>4.6</b>	<b>DISTURBANCES OF THE SPECIAL SENSES</b>
<b>4.7</b>	<b>HEADACHE</b>
<b>4.8</b>	<b>SPEECH AND LANGUAGE DISTURBANCES</b>
<b>4.9</b>	<b>MOVEMENT DISTURBANCES</b>
<b>4.10</b>	<b>SEIZURES</b>
<b>4.11</b>	<b>SENSORY DISTURBANCES AND PAIN</b>
<b>4.12</b>	<b>SLEEP DISTURBANCES</b>
<b>4.13</b>	<b>SUBSTANCE ABUSE</b>
<b>4.14</b>	<b>NERVOUS SYSTEM TRAUMA</b>
<b>4.15</b>	<b>WEAKNESS AND PARALYSIS</b>
<b>4.16</b>	<b>PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH</b>
<b>4.17</b>	<b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH</b>



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**4.1 ANXIETY****4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS****4.3 COGNITIVE DISTURBANCES****4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION****4.5 LIFE ADJUSTMENT AND STRESSORS****4.6 DISTURBANCES OF THE SPECIAL SENSES****4.7 HEADACHE****4.8 SPEECH AND LANGUAGE DISTURBANCES****4.9 MOVEMENT DISTURBANCES****4.10 SEIZURES****4.11 SENSORY DISTURBANCES AND PAIN****4.12 SLEEP DISTURBANCES****4.13 SUBSTANCE ABUSE****4.14 NERVOUS SYSTEM TRAUMA****4.15 WEAKNESS AND PARALYSIS****4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS  
SYSTEM AND MENTAL HEALTH****4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING  
RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

abuse and neglect, child or elder • acalculia • action tremors • adjustment disorder • agnosia • agraphia • akinesia • amyotrophic lateral sclerosis • anomia • anxiety disorders, including generalized anxiety, anxiety secondary to another medical condition or mental disorder or induced by illicit, prescribed, or over-the-counter drugs or substances • apraxia • arteriovenous malformations • athetosis • atrophy of extremity muscles • ballismus • behavioral abnormalities, including avoidance, dependency, and obsessive-compulsive disorder • bipolar and related disorders • brain concussion/mild traumatic brain injury • brain tumors, including sellar/pituitary masses, neoplasms, and metastatic tumors; paraneoplastic syndromes • cerebral palsy • cerebrovascular disorders, including aneurysms and vasculitis (e.g., temporal arteritis) • chalazion • chronic fatigue syndrome, fibromyalgia • cognitive impairments, including altered level of consciousness, mild cognitive impairment, amnesia, coma, confusion, delirium, disorientation, subcortical and cortical dementia (e.g., Alzheimer disease, Huntington disease, Parkinson disease) • cyclothymic disorder • depressive disorders • disruptive behaviors, including attention deficit/hyperactivity disorder, pediatric anxiety (e.g., disruptive mood dysregulation disorder, selective mutism, separation anxiety) • dissociative disorders • dizziness and true vertigo (e.g., peripheral or central vestibular dysfunction, benign paroxysmal positional vertigo, labyrinthitis, Ménière disease) • dysautonomias • dyskinesias • dystonias • ear and hearing disorders, including acoustic neuroma and other neoplasms; conductive, sensorineural, or neurogenic hearing loss; presbycusis; otosclerosis; ototoxic drugs; Ménière disease •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

#### 4.1 ANXIETY

#### 4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS

#### 4.3 COGNITIVE DISTURBANCES

#### 4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION

#### 4.5 LIFE ADJUSTMENT AND STRESSORS

#### 4.6 DISTURBANCES OF THE SPECIAL SENSES

#### 4.7 HEADACHE

#### 4.8 SPEECH AND LANGUAGE DISTURBANCES

#### 4.9 MOVEMENT DISTURBANCES

#### 4.10 SEIZURES

#### 4.11 SENSORY DISTURBANCES AND PAIN

#### 4.12 SLEEP DISTURBANCES

#### 4.13 SUBSTANCE ABUSE

#### 4.14 NERVOUS SYSTEM TRAUMA

#### 4.15 WEAKNESS AND PARALYSIS

#### 4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

#### 4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

eating and feeding disorders (e.g., anorexia nervosa, bulimia, pica, binge-eating) • elimination disorders (e.g., enuresis, encopresis) • encephalopathies (e.g., Reye syndrome, Wernicke-Korsakoff encephalopathy, shock) • epidural hematoma • eye and vision disorders, including discharge, pain, lacrimal drainage, blepharitis, iritis, subconjunctival hemorrhage, hordeolum, floaters, cataracts, glaucoma, red eye, eye trauma (e.g., orbital floor fracture), diplopia, amblyopia, nystagmus, strabismus, refractive error, ptosis, optical migraine, photophobia, blurred vision (e.g., acute narrow-angle glaucoma), unilateral and bilateral vision loss, acute vision loss (e.g., amaurosis fugax [temporary blindness]) • fasciculations • gambling disorder • gender dysphoria • grieving and normal bereavement • head and spinal cord injury • headache (acute and chronic), including cluster, migraine, tension; episodic and constant; unilateral and bilateral; primary and secondary, with and without red flag symptoms (e.g., aura); trigeminal autonomic cephalgia; headache attributed to a substance or its withdrawal; headache from trauma/traumatic brain injury • hoarding disorder • Huntington disease • hypomania • infantile and pediatric seizures and spells • infections (e.g., systemic, central nervous system, sinusitis, encephalitis, meningitis) • learning disorders • malingering • mood disorders, including depressed mood, elevated mood, with or without depressed mood, mania, cyclothymia • mouth and jaw disorders, including taste disorders, mastication pain • movement disorders, including voluntary and involuntary abnormal movements, such as cerebellar and sensory ataxias, chorea, and other hyperkinetic (e.g., Tourette syndrome) and bradykinetic (e.g., Parkinson disease) disorders and diseases • myoclonus • nerve-, muscle-, and pain-related syndromes, including complex regional pain syndrome, post-herpetic neuralgia, meralgia paresthetica,



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

#### 4.1 ANXIETY

#### 4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS

#### 4.3 COGNITIVE DISTURBANCES

#### 4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION

#### 4.5 LIFE ADJUSTMENT AND STRESSORS

#### 4.6 DISTURBANCES OF THE SPECIAL SENSES

#### 4.7 HEADACHE

#### 4.8 SPEECH AND LANGUAGE DISTURBANCES

#### 4.9 MOVEMENT DISTURBANCES

#### 4.10 SEIZURES

#### 4.11 SENSORY DISTURBANCES AND PAIN

#### 4.12 SLEEP DISTURBANCES

#### 4.13 SUBSTANCE ABUSE

#### 4.14 NERVOUS SYSTEM TRAUMA

#### 4.15 WEAKNESS AND PARALYSIS

#### 4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

#### 4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

compression or diabetic neuropathy, spinal stenosis, Guillain-Barré syndrome, multiple sclerosis, Bell palsy, myasthenia gravis • neurologic gait disorders (e.g., hemiplegic gait, spastic diplegic gait, neuropathic gait, myopathic gait, Parkinsonian gait, choreiform gait, ataxic [cerebellar] gait, sensory gait) • obsessive-compulsive and related disorders (e.g., body dysmorphic disorder, trichotillomania, excoriation disorder) • olfactory disorders • pain, including chronic nonmalignant, neuropathic, nociceptive, mixed, and sympathetic • panic disorder • paraphilias • personality disorders (e.g., paranoid, schizoid, schizotypal, antisocial, histrionic, borderline, narcissistic) • phobias (e.g., specific phobias, agoraphobia), social anxiety disorder • postpartum depression or psychosis • premenstrual dysphoric disorder • psychotic disorders, brief, including schizophreniform disorder, schizophrenia spectrum, and other psychotic disorders • psychotic disorders, hallucinations, delusions, and disturbances of perception • psychotic disorders, specific, including delusional disorders; shared psychotic disorder; psychosis secondary to illicit, prescribed, and over-the-counter drugs and substances; psychosis secondary to medical conditions • pupillary abnormalities (e.g., isocoria, anisocoria, mydriasis, miotic pupils) • relational problems • resting tremors • seizures, atonic or convulsive, focal and generalized, including epilepsies and secondary seizures • seizures secondary to illicit, prescribed, or over-the-counter drugs or substances • sleep disorders, including obstructive sleep apnea, somnambulism, insomnia, excessive daytime sleepiness, sleep-wake disorders, narcolepsy, night terrors, parasomnias • somatic symptoms and related disorders (e.g., conversion disorder, factitious disorders, psychological factors affecting other conditions) • →

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**4.1 ANXIETY****4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS****4.3 COGNITIVE DISTURBANCES****4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION****4.5 LIFE ADJUSTMENT AND STRESSORS****4.6 DISTURBANCES OF THE SPECIAL SENSES****4.7 HEADACHE****4.8 SPEECH AND LANGUAGE DISTURBANCES****4.9 MOVEMENT DISTURBANCES****4.10 SEIZURES****4.11 SENSORY DISTURBANCES AND PAIN****4.12 SLEEP DISTURBANCES****4.13 SUBSTANCE ABUSE****4.14 NERVOUS SYSTEM TRAUMA****4.15 WEAKNESS AND PARALYSIS****4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH****4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

speech/language-related disorders, including alexia, aphasia (fluent and nonfluent), dysphasia, and dysarthria • stereotypy • stroke (e.g., transient ischemic attack, hemorrhagic stroke) • subarachnoid hemorrhage • subdural hematoma • substance-related and addictive disorders, including oral and intravenous abuse of tobacco, alcohol, opioids, cocaine, and cannabis; intoxication; withdrawal symptoms (e.g., delirium tremens) • suicidal ideation • tactile disturbances, including sensory loss, numbness, vibration/temperature/proprioception loss, tingling, and paresthesia • tics and tic disorders (e.g., Tourette syndrome) • tinnitus, unilateral or bilateral, with or without hearing loss, including tinnitus secondary to ototoxic medications, tinnitus with somatic triggers (e.g., labyrinthitis, Ménière disease) • trauma and stressor-related disorders (e.g., adjustment disorders, post-traumatic stress disorder) • weakness and paralysis, focal (e.g., hemiplegia); postural instability or tremors

**CONSTITUTIONAL SIGNS AND SYMPTOMS**

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

**PHYSICAL EXAM FINDINGS**

abdominal reflex • Chvostek sign • clonus • cognitive testing (e.g., mini-cog, mini-mental status examination) • cogwheel rigidity • corneal reflex, nystagmus • cranial nerve findings • cremasteric reflex • decreased muscle tone • deep tendon (muscle stretch) reflexes and grading • dysdiadochokinesia • fundoscopic findings and cup-to-disc ratios • Glasgow coma score • heel-to-shin test • Hoffmann sign



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**4.1 ANXIETY****4.2 DISTURBANCES OF MOOD/DEPRESSIVE DISORDERS****4.3 COGNITIVE DISTURBANCES****4.4 DISTURBANCES OF BEHAVIOR AND PERCEPTION****4.5 LIFE ADJUSTMENT AND STRESSORS****4.6 DISTURBANCES OF THE SPECIAL SENSES****4.7 HEADACHE****4.8 SPEECH AND LANGUAGE DISTURBANCES****4.9 MOVEMENT DISTURBANCES****4.10 SEIZURES****4.11 SENSORY DISTURBANCES AND PAIN****4.12 SLEEP DISTURBANCES****4.13 SUBSTANCE ABUSE****4.14 NERVOUS SYSTEM TRAUMA****4.15 WEAKNESS AND PARALYSIS****4.16 PHYSICAL EXAM FINDINGS RELATED TO THE NERVOUS  
SYSTEM AND MENTAL HEALTH****4.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING  
RELATED TO THE NERVOUS SYSTEM AND MENTAL HEALTH**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

- increased muscle tone
- light reflex
- micro-aneurysms
- optic and retinal abnormalities (e.g., papilledema, cotton wool spots)
- plantar (Babinski) reflex
- proliferative changes
- red reflex
- Romberg sign
- signs of meningitis (e.g., nuchal rigidity, Kernig sign, Brudzinski sign)
- slit-lamp exam findings
- tuning-fork testing
- visual acuity testing

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

- angiography
- cerebrospinal fluid evaluation
- CT scanning
- electroencephalography
- magnetic resonance imaging
- nuclear medicine imaging
- radiography
- serum creatine kinase levels
- ultrasonography
- vitamin levels (e.g., vitamin B<sub>12</sub>)

PATIENT PRESENTATIONS RELATED  
TO THE MUSCULOSKELETAL SYSTEM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- |             |   |
|-------------|---|
| <b>5.1</b>  | <b>POSTURAL ABNORMALITIES AND SPINAL DEFORMITIES</b>  |
| <b>5.2</b>  | <b>BACK PAIN AND SOMATIC DYSFUNCTION OF THE PELVIS, SACRUM, AND LUMBAR AND THORACIC SPINE</b> |
| <b>5.3</b>  | <b>NECK PAIN AND SOMATIC DYSFUNCTION OF THE CERVICAL SPINE</b>                                |
| <b>5.4</b>  | <b>GAIT DISTURBANCES</b>  |
| <b>5.5</b>  | <b>JOINT PAIN, STIFFNESS, AND SWELLING</b>  |
| <b>5.6</b>  | <b>MUSCLE SYMPTOMS</b>  |
| <b>5.7</b>  | <b>CHEST WALL PAIN AND SOMATIC DYSFUNCTION OF THE RIBS</b>                                    |
| <b>5.8</b>  | <b>HEAD, OROFACIAL, AND TEMPOROMANDIBULAR JOINT PAIN AND SOMATIC DYSFUNCTION OF THE HEAD</b>  |
| <b>5.9</b>  | <b>PAIN AND SOMATIC DYSFUNCTION OF THE EXTREMITIES</b>  |
| <b>5.10</b> | <b>MUSCULOSKELETAL TRAUMA, FRACTURES, AND DISLOCATIONS</b>                                    |
| <b>5.11</b> | <b>SCIATICA AND RADICULAR SYMPTOMS</b>  |
| <b>5.12</b> | <b>MUSCULOSKELETAL MASSES</b>   |
| <b>5.13</b> | <b>SOMATIC MANIFESTATIONS OF SYSTEMIC DISEASE</b>   |
| <b>5.14</b> | <b>VISCEROSOMATIC AND RELATED REFLEXES</b>  |
| <b>5.15</b> | <b>PHYSICAL EXAM FINDINGS RELATED TO THE MUSCULOSKELETAL SYSTEM</b>                           |
| <b>5.16</b> | <b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE MUSCULOSKELETAL SYSTEM</b>  |

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 5.1 POSTURAL ABNORMALITIES AND SPINAL DEFORMITIES
- 5.2 BACK PAIN AND SOMATIC DYSFUNCTION OF THE PELVIS, SACRUM, AND LUMBAR AND THORACIC SPINE
- 5.3 NECK PAIN AND SOMATIC DYSFUNCTION OF THE CERVICAL SPINE
- 5.4 GAIT DISTURBANCES
- 5.5 JOINT PAIN, STIFFNESS, AND SWELLING
- 5.6 MUSCLE SYMPTOMS
- 5.7 CHEST WALL PAIN AND SOMATIC DYSFUNCTION OF THE RIBS
- 5.8 HEAD, OROFACIAL, AND TEMPOROMANDIBULAR JOINT PAIN AND SOMATIC DYSFUNCTION OF THE HEAD
- 5.9 PAIN AND SOMATIC DYSFUNCTION OF THE EXTREMITIES
- 5.10 MUSCULOSKELETAL TRAUMA, FRACTURES, AND DISLOCATIONS
- 5.11 SCIATICA AND RADICULAR SYMPTOMS
- 5.12 MUSCULOSKELETAL MASSES
- 5.13 SOMATIC MANIFESTATIONS OF SYSTEMIC DISEASE
- 5.14 VISCEROSOMATIC AND RELATED REFLEXES
- 5.15 PHYSICAL EXAM FINDINGS RELATED TO THE MUSCULOSKELETAL SYSTEM
- 5.16 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE MUSCULOSKELETAL SYSTEM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

ankle injuries and conditions, including sprains and Achilles tendinitis • ankylosing spondylitis • apophysitis, calcaneal or tibialis • articular somatic dysfunction and counterstrain tender points • benign arthralgias of childhood • benign hypermobility • bursitis • cauda equina syndrome • cervical disk herniation • cervical spine segmental somatic dysfunction (i.e., occipitoatlantal, C1, C2-7) • cervical spondylosis • Chapman reflex points • costochondritis • counterstrain tender points • cranial somatic dysfunction • crush injuries, compartment syndrome • cysts and tumors, bone and musculoskeletal • degenerative disk disease • dermatomyositis • drug-induced myopathies • early-morning stiffness • Ehlers-Danlos syndrome • elbow, humero-ulnar, radioulnar, and radiohumeral somatic dysfunction • entrapment neuropathies • extremity somatic dysfunction • fasciitis, iliotibial band syndrome • fibromyalgia, chronic fatigue syndrome • foot deformities, somatic dysfunctions of the foot – talocalcaneal, tarsotalar, tarsometatarsal, metatarsophalangeal • gout and pseudogout • hemarthrosis • herniated intervertebral disks, spinal stenosis • humeral (lateral and medial) epicondylitis • idiopathic inflammatory myopathies (e.g., polymyositis) • infectious joint pain, septic arthritis • inflammatory joint pain (e.g., monoarticular, oligoarticular, polyarticular) • intra-articular conditions (e.g., osteoarthritis, Baker cyst, ganglion cyst, adhesive capsulitis, Charcot joint) • kyphosis, adult and juvenile • leg-length discrepancy • ligamentous injury lower extremity abnormalities (e.g., genu varus/valgus, severe physiologic bowing, Blount disease, intoeing, metatarsus adductus, medial (internal) tibial torsion, femoral anteversion (medial femoral torsion), developmental dysplasia of the hip) • lordosis • lumbar somatic dysfunction • Lyme disease • mallet finger •





Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 5.1 POSTURAL ABNORMALITIES AND SPINAL DEFORMITIES
- 5.2 BACK PAIN AND SOMATIC DYSFUNCTION OF THE PELVIS, SACRUM, AND LUMBAR AND THORACIC SPINE
- 5.3 NECK PAIN AND SOMATIC DYSFUNCTION OF THE CERVICAL SPINE
- 5.4 GAIT DISTURBANCES
- 5.5 JOINT PAIN, STIFFNESS, AND SWELLING
- 5.6 MUSCLE SYMPTOMS
- 5.7 CHEST WALL PAIN AND SOMATIC DYSFUNCTION OF THE RIBS
- 5.8 HEAD, OROFACIAL, AND TEMPOROMANDIBULAR JOINT PAIN AND SOMATIC DYSFUNCTION OF THE HEAD
- 5.9 PAIN AND SOMATIC DYSFUNCTION OF THE EXTREMITIES
- 5.10 MUSCULOSKELETAL TRAUMA, FRACTURES, AND DISLOCATIONS
- 5.11 SCIATICA AND RADICULAR SYMPTOMS
- 5.12 MUSCULOSKELETAL MASSES
- 5.13 SOMATIC MANIFESTATIONS OF SYSTEMIC DISEASE
- 5.14 VISCEROSOMATIC AND RELATED REFLEXES
- 5.15 PHYSICAL EXAM FINDINGS RELATED TO THE MUSCULOSKELETAL SYSTEM
- 5.16 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE MUSCULOSKELETAL SYSTEM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

Marfan syndrome • meniscal injury • muscle conditions, including spasm, myalgia, atrophy, soreness, myositis, and muscular dystrophies • musculoskeletal pelvic pain/pelvic floor myalgia • myelopathy • myofascial pain syndrome and trigger points • necrotizing fasciitis • Osgood-Schlatter disease • osteomalacia and related conditions (e.g., rickets, hip dysplasia, slipped capital femoral epiphysis, Legg-Calvé-Perthes disease) • osteomyelitis • osteopenia and osteoporosis • Paget disease • pain, acute, chronic, or referred, with or without red flag signs or symptoms – back, neck, upper and lower extremity, joint • patellofemoral syndrome (chondromalacia patellae) • pediatric fractures (e.g., Salter-Harris physeal fracture classification) • pelvic somatic dysfunction • piriformis syndrome • plantar fasciitis • polymyalgia rheumatica • postural considerations • psoas syndrome • psoriatic arthritis • radiculopathy • reactive arthritis • reflex mechanisms (e.g., viscerosomatic, viscerovisceral) • rheumatoid arthritis, juvenile rheumatoid arthritis • rib conditions – counterstrain tender points, somatic dysfunction • sacral somatic dysfunction • scoliosis • shoulder dysfunctions – dislocation, rotator cuff injury, labral injury (e.g., superior labral tear from anterior to posterior [SLAP] lesion), adhesive capsulitis (frozen shoulder) • Sjögren syndrome, scleroderma • soft tissue and bone cysts, tumors, and other bone lesions • somatic dysfunctions of the abdomen/viscera • somatic dysfunctions of the hand (e.g., metacarpophalangeal and interphalangeal) • somatic dysfunctions of hip and knee (e.g., patellofemoral glide, tibiofemoral and tibiofibular) • somatic dysfunctions of the shoulder – glenohumeral, sternoclavicular, acromioclavicular, scapulothoracic joints •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 5.1 POSTURAL ABNORMALITIES AND SPINAL DEFORMITIES
- 5.2 BACK PAIN AND SOMATIC DYSFUNCTION OF THE PELVIS, SACRUM, AND LUMBAR AND THORACIC SPINE
- 5.3 NECK PAIN AND SOMATIC DYSFUNCTION OF THE CERVICAL SPINE
- 5.4 GAIT DISTURBANCES
- 5.5 JOINT PAIN, STIFFNESS, AND SWELLING
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- 5.8 HEAD, OROFACIAL, AND TEMPOROMANDIBULAR JOINT PAIN AND SOMATIC DYSFUNCTION OF THE HEAD
- 5.9 PAIN AND SOMATIC DYSFUNCTION OF THE EXTREMITIES
- 5.10 MUSCULOSKELETAL TRAUMA, FRACTURES, AND DISLOCATIONS
- 5.11 SCIATICA AND RADICULAR SYMPTOMS
- 5.12 MUSCULOSKELETAL MASSES
- 5.13 SOMATIC MANIFESTATIONS OF SYSTEMIC DISEASE
- 5.14 VISCEROSOMATIC AND RELATED REFLEXES
- 5.15 PHYSICAL EXAM FINDINGS RELATED TO THE MUSCULOSKELETAL SYSTEM
- 5.16 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE MUSCULOSKELETAL SYSTEM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

somato-visceral and somatosomatic reflexes • spina bifida • spinal fractures • spinal stenosis • spondylitis • spondyloarthropathies • spondylolisthesis • spondylolysis • spondylosis • sprains and strains, dislocations • stress fractures • suspicious and accidental fractures, including pathologic and fragility fractures • systemic lupus erythematosus • temporomandibular joint dysfunction • tendinopathies (e.g., impingement syndromes, tendon rupture, enthesitis, tenosynovitis) • thoracic outlet syndrome • thoracic somatic dysfunction • tibiotalar effusion • torticollis • transient synovitis • trigger finger • weakness, tingling, or numbness in the arms, legs, and/or feet • whiplash syndromes • wrist – radiocarpal and carpocarpal somatic dysfunction

#### CONSTITUTIONAL SIGNS AND SYMPTOMS

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

#### PHYSICAL EXAM FINDINGS

active and passive range-of-motion testing • Adson test • anterior and posterior drawer signs (knee and ankle) • Apley compression and distraction tests • asymmetry, joint, regional, and segmental testing • Barlow maneuver, Ortolani maneuver • Bouchard and Heberden nodes • bounce home test • boutonniere and swan-neck deformities • cervical compression test • cervical distraction test • empty-can test • Finkelstein test • gait abnormalities • Hawkins impingement sign, drop-arm test • Homan sign • Hoover sign • layer-by-layer palpation • Lhermitte sign • McMurray test •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 5.1 POSTURAL ABNORMALITIES AND SPINAL DEFORMITIES
- 5.2 BACK PAIN AND SOMATIC DYSFUNCTION OF THE PELVIS, SACRUM, AND LUMBAR AND THORACIC SPINE
- 5.3 NECK PAIN AND SOMATIC DYSFUNCTION OF THE CERVICAL SPINE
- 5.4 GAIT DISTURBANCES
- 5.5 JOINT PAIN, STIFFNESS, AND SWELLING
- 5.6 MUSCLE SYMPTOMS
- 5.7 CHEST WALL PAIN AND SOMATIC DYSFUNCTION OF THE RIBS
- 5.8 HEAD, OROFACIAL, AND TEMPOROMANDIBULAR JOINT PAIN AND SOMATIC DYSFUNCTION OF THE HEAD
- 5.9 PAIN AND SOMATIC DYSFUNCTION OF THE EXTREMITIES
- 5.10 MUSCULOSKELETAL TRAUMA, FRACTURES, AND DISLOCATIONS
- 5.11 SCIATICA AND RADICULAR SYMPTOMS
- 5.12 MUSCULOSKELETAL MASSES
- 5.13 SOMATIC MANIFESTATIONS OF SYSTEMIC DISEASE
- 5.14 VISCEROSOMATIC AND RELATED REFLEXES
- 5.15 PHYSICAL EXAM FINDINGS RELATED TO THE MUSCULOSKELETAL SYSTEM
- 5.16 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE MUSCULOSKELETAL SYSTEM

The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:

muscle-strength grading • Neer impingement sign • Ottawa ankle rules • Patrick (FABERE) test • Phalen maneuver, Tinel sign • rubor, calor • shoulder apprehension test, Apley scratch test • straight-leg raising test • stress testing of the ankle • talar tilt test • tenderness • Thomas test • tissue texture abnormalities • Trendelenburg test

#### LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING

antinuclear antibody tests • autoantibody tests • C-reactive protein levels • creatine kinase levels • CT scanning • dual-energy x-ray absorptiometry scanning • erythrocyte sedimentation rate • magnetic resonance imaging • nuclear medicine imaging • radiography • synovial fluid evaluation for crystals • ultrasonography

PATIENT PRESENTATIONS RELATED TO THE  
GENITOURINARY/RENAL SYSTEM AND BREASTS

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 6.1** ANURIA, OLIGURIA, POLYURIA, AND EDEMA
- 6.2** ENURESIS/INCONTINENCE, PROLAPSE, AND PELVIC RELAXATION
- 6.3** URINARY FREQUENCY/HESITANCY, DYSURIA, URINARY RETENTION
- 6.4** HEMATURIA AND DISCOLORED URINE
- 6.5** AMENORRHEA AND VAGINAL BLEEDING
- 6.6** URETHRAL DISCHARGE
- 6.7** PELVIC PAIN
- 6.8** VULVAR AND VAGINAL DISCHARGE, LESIONS, AND PAIN
- 6.9** PENILE, SCROTAL, AND TESTICULAR LESIONS, MASSES, PAIN, AND BLEEDING
- 6.10** PELVIC, PROSTATE, AND RENAL MASSES
- 6.11** BREAST MASSES, DISCHARGE, AND PAIN
- 6.12** PHYSICAL EXAM FINDINGS RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS
- 6.13** LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 6.1 ANURIA, OLIGURIA, POLYURIA, AND EDEMA
- 6.2 ENURESIS/INCONTINENCE, PROLAPSE, AND PELVIC RELAXATION
- 6.3 URINARY FREQUENCY/HESITANCY, DYSURIA, URINARY RETENTION
- 6.4 HEMATURIA AND DISCOLORED URINE
- 6.5 AMENORRHEA AND VAGINAL BLEEDING
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- 6.7 PELVIC PAIN
- 6.8 VULVAR AND VAGINAL DISCHARGE, LESIONS, AND PAIN
- 6.9 PENILE, SCROTAL, AND TESTICULAR LESIONS, MASSES, PAIN, AND BLEEDING
- 6.10 PELVIC, PROSTATE, AND RENAL MASSES
- 6.11 BREAST MASSES, DISCHARGE, AND PAIN
- 6.12 PHYSICAL EXAM FINDINGS RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS
- 6.13 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

bleeding, abnormal genital (vaginal or uterine), such as menorrhagia, menometrorrhagia, non-gynecologic causes (e.g., in pregnant or anovulatory women)

- breast conditions – masses, benign or malignant, including fibrocystic disease; nipple discharge, including galactorrhea; gynecomastia and mastitis; mastalgia
- breast procedures – mastectomy (modified, radical), lumpectomy; augmentation or reduction; stereotactic biopsy
- estrogen deficiency
- genital lesions, inflammatory or neoplastic causes, local or systemic, male or female – excoriations and infestations; ulcers and erosions (painful or painless); vesicles, plaques and papules; vulvovaginitis
- gynecologic and pelvic masses and lesions – cyst or tumor of uterus, ovaries, or fallopian tube – benign, malignant, or metastatic; pelvic adhesions
- kidney disease, acute or chronic including nephrolithiasis or calculus disease (kidney stones); diabetic nephropathy; end-stage renal disease; hemolytic uremic syndrome; nephrotic syndrome; renal masses, solid or cystic
- kidney injury, acute
- menopause
- menstrual abnormalities, including dysmenorrhea, ovulation pain (mittelschmerz); ovarian torsion; premenstrual syndrome; primary and secondary amenorrhea; toxic shock syndrome
- pelvic infection and inflammation, female (e.g., endometriosis, pelvic inflammatory disease)
- pelvic pain, acute or chronic
- pelvic relaxation and pelvic organ prolapse – uterus, vagina, bladder (cystocele), bowel/rectum (enterocele, rectocele)
- prostate conditions, including prostatitis; benign prostatic hyperplasia; masses, benign, malignant, or metastatic
- sexually transmitted diseases and infections, male and female
- testicular and scrotal conditions, including orchitis, epididymitis; testicular torsion; scrotal masses, painful or painless, benign or malignant (e.g., hydrocele, varicocele, tumor)
- tubular necrosis, acute
- urinary tract infections and conditions – upper vs lower, cystitis, urethritis, pyelonephritis, glomerulonephritis;



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**6.1 ANURIA, OLIGURIA, POLYURIA, AND EDEMA****6.2 ENURESIS/INCONTINENCE, PROLAPSE, AND PELVIC RELAXATION****6.3 URINARY FREQUENCY/HESITANCY, DYSURIA, URINARY RETENTION****6.4 HEMATURIA AND DISCOLORED URINE****6.5 AMENORRHEA AND VAGINAL BLEEDING****6.6 URETHRAL DISCHARGE****6.7 PELVIC PAIN****6.8 VULVAR AND VAGINAL DISCHARGE, LESIONS, AND PAIN****6.9 PENILE, SCROTAL, AND TESTICULAR LESIONS, MASSES, PAIN, AND BLEEDING****6.10 PELVIC, PROSTATE, AND RENAL MASSES****6.11 BREAST MASSES, DISCHARGE, AND PAIN****6.12 PHYSICAL EXAM FINDINGS RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS****6.13 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GENITOURINARY/RENAL SYSTEM AND BREASTS**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

obstruction; painful bladder syndrome/interstitial cystitis; dysuria, pyuria, hematuria (glomerular, extraglomerular, nephritic/nephrotic), bacteriuria (symptomatic or asymptomatic) • urination dysfunctions – altered frequency, incontinence (stress, urge, overflow, neurogenic), retention, enuresis (nocturnal or diurnal), hesitancy, congenital outflow tract abnormalities

**CONSTITUTIONAL SIGNS AND SYMPTOMS**

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

**PHYSICAL EXAM FINDINGS**

cervical motion tenderness • costovertebral angle tenderness • pelvic organ prolapse and pelvic relaxation

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

acid-base disorders (e.g., metabolic acidosis with elevated or normal anion gap, metabolic alkalosis) • blood urea nitrogen levels • CA-125 • calcium levels • CT scanning • cystoscopy • dipstick urinalysis and sediment microscopy • FSH levels • LH levels • magnetic resonance imaging • mammography • microscopy • nuclear medicine imaging • oxalate levels • prolactin levels • prostate-specific antigen levels • radiography • serum  $\beta$ -HCG levels • serum creatinine levels • serum estrogen levels • serum testosterone levels • ultrasonography • uric acid levels • urinary citrate levels • urinary protein levels • urine culture and sensitivity • vaginal wet mount, KOH prep

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

<b>7.1</b>	<b>JAUNDICE</b>
<b>7.2</b>	<b>ASCITES</b>
<b>7.3</b>	<b>ANOREXIA</b>
<b>7.4</b>	<b>NAUSEA, VOMITING, AND HEMATEMESIS</b>
<b>7.5</b>	<b>DISORDERS OF BOWEL FREQUENCY AND EVACUATION</b>
<b>7.6</b>	<b>ABDOMINAL PAIN</b>
<b>7.7</b>	<b>ABDOMINAL, GASTROINTESTINAL, AND GI TRACT MASSES, CANCERS, AND ORGANOMEGALY</b>
<b>7.8</b>	<b>MELENA/HEMATOCHEZIA/ANORECTAL BLEEDING AND PAIN</b>
<b>7.9</b>	<b>HEARTBURN AND REFLUX</b>
<b>7.10</b>	<b>OROPHARYNGEAL AND DENTAL PAIN AND LESIONS</b>
<b>7.11</b>	<b>ABNORMALITIES OF WEIGHT AND/OR NUTRITION</b>
<b>7.12</b>	<b>ABDOMINAL TRAUMA</b>
<b>7.13</b>	<b>DYSPHAGIA AND ODYNOPHAGIA</b>
<b>7.14</b>	<b>FOREIGN BODY IN GASTROINTESTINAL TRACT</b>
<b>7.15</b>	<b>ABDOMINAL WALL ABNORMALITIES</b>
<b>7.16</b>	<b>PHYSICAL EXAM FINDINGS RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH</b>
<b>7.17</b>	<b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH</b>



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

#### 7.1 JAUNDICE

#### 7.2 ASCITES

#### 7.3 ANOREXIA

#### 7.4 NAUSEA, VOMITING, AND HEMATEMESIS

#### 7.5 DISORDERS OF BOWEL FREQUENCY AND EVACUATION

#### 7.6 ABDOMINAL PAIN

#### 7.7 ABDOMINAL, GASTROINTESTINAL, AND GI TRACT MASSES, CANCERS, AND ORGANOMEGALY

#### 7.8 MELENA/HEMATOCHEZIA/ANORECTAL BLEEDING AND PAIN

#### 7.9 HEARTBURN AND REFLUX

#### 7.10 OROPHARYNGEAL AND DENTAL PAIN AND LESIONS

#### 7.11 ABNORMALITIES OF WEIGHT AND/OR NUTRITION

#### 7.12 ABDOMINAL TRAUMA

#### 7.13 DYSPHAGIA AND ODYNOPHAGIA

#### 7.14 FOREIGN BODY IN GASTROINTESTINAL TRACT

#### 7.15 ABDOMINAL WALL ABNORMALITIES

#### 7.16 PHYSICAL EXAM FINDINGS RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH

#### 7.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

abdominal conditions, acute or chronic – distention, trauma (blunt or penetrating, splenic rupture/splenomegaly); abdominal aortic aneurysm; abdominal wall hernias; pulsatile masses • abdominal pain, acute or chronic (localized and diffuse/generalized); radiating to extra-abdominal location; infection (e.g., peritonitis, gastroenteritis, appendicitis, mesenteric adenitis); sickle cell crises; mesenteric ischemia • anorectal conditions, including fissures, pain, hemorrhoids, pruritus ani, encopresis/stool incontinence • ascites due to liver disease (e.g., cirrhosis, portal hypertension), malignancy, heart failure, renal failure • bleeding, lower or upper gastrointestinal; overt gastrointestinal; in stool (e.g., occult, melena, hematochezia) • bowel conditions, acute, chronic, or inflammatory – constipation, flatus, obstruction, intussusception, volvulus, obstipation, ischemic bowel; inflammatory bowel disease (Crohn disease, ulcerative colitis); fecal impaction; adhesions; diverticulitis, diverticulosis; ileus, meconium ileus; gastroparesis; infantile colic; Meckel diverticulum • dental disease and conditions – abscess, gingival abnormalities, periodontal disease • diabetes-related conditions (e.g., gastroparesis, ketoacidosis) • eating disorders – bulimia, anorexia (including anorexia due to drugs), metabolic disorders, mood disorders; laxative abuse • esophageal and pharyngeal disorders – epiglottitis, esophagitis, oropharyngeal or esophageal dysphagia, retropharyngeal abscess, hernia, stricture, varices, Mallory-Weiss syndrome, Boerhaave sign, Barrett esophagus • feeding and nutrition – feeding tubes, total parenteral nutrition • gallbladder conditions – cholecystitis, cholelithiasis, cholestasis • gastroesophageal disorders – foreign body (e.g., ingested food boluses and non-food items such as bones, fruit pits, broken teeth, dental appliances); gastroesophageal reflux disease; gastritis; peptic ulcer disease,



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

### 7.1 JAUNDICE

### 7.2 ASCITES

### 7.3 ANOREXIA

### 7.4 NAUSEA, VOMITING, AND HEMATEMESIS

### 7.5 DISORDERS OF BOWEL FREQUENCY AND EVACUATION

### 7.6 ABDOMINAL PAIN

### 7.7 ABDOMINAL, GASTROINTESTINAL, AND GI TRACT MASSES, CANCERS, AND ORGANOMEGALY

### 7.8 MELENA/HEMATOCHEZIA/ANORECTAL BLEEDING AND PAIN

### 7.9 HEARTBURN AND REFLUX

### 7.10 OROPHARYNGEAL AND DENTAL PAIN AND LESIONS

### 7.11 ABNORMALITIES OF WEIGHT AND/OR NUTRITION

### 7.12 ABDOMINAL TRAUMA

### 7.13 DYSPHAGIA AND ODYNOPHAGIA

### 7.14 FOREIGN BODY IN GASTROINTESTINAL TRACT

### 7.15 ABDOMINAL WALL ABNORMALITIES

### 7.16 PHYSICAL EXAM FINDINGS RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH

### 7.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

Helicobacter pylori infection • gastrointestinal disorders – parasites (e.g., helminths and protozoa), polyps, stomas • Henoch-Schönlein purpura • hernias, direct and indirect – inguinal, abdominal wall, hiatal, esophageal • Kawasaki disease • lesions, gastrointestinal, including erosions, blisters, white lesions, neoplasms • liver conditions, including fatty liver; hepatitis; jaundice, infection-induced (e.g., bacterial, parasitic, viral) or neonatal (prehepatic [physiologic or pathologic], hepatic, or posthepatic hyperbilirubinemia); hepatomegaly; masses; iron storage disorder (hemosiderosis) • malabsorption conditions, acute and chronic – diarrhea; celiac diseases; immune or enzyme deficiency (e.g., lactase, disaccharidase); steatorrhea; short-bowel syndrome • mouth disorders (e.g., mucous membrane disorders, such as oral ulcers); tongue abnormalities • muscle strain, abdominal • nausea and vomiting – due to drugs/toxins/poisoning, food allergy, infections; hyperemesis gravidarum; pediatric vomiting; hematemesis; irritable bowel syndrome; pyloric stenosis; other systemic cause (e.g., uremia, central nervous system and psychiatric conditions) • pancreatitis • tumors, including primary and secondary gastrointestinal and abdominal organ malignancies

### CONSTITUTIONAL SIGNS AND SYMPTOMS

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

### PHYSICAL EXAM FINDINGS

abdominal and inguinal palpation, rigidity, tenderness • abdominal auscultation, bowel sounds • abdominal percussion • asterixis • Cullen sign • fluid thrill or wave • Grey Turner sign • Murphy sign • peritoneal signs • →

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**7.1 JAUNDICE****7.2 ASCITES****7.3 ANOREXIA****7.4 NAUSEA, VOMITING, AND HEMATEMESIS****7.5 DISORDERS OF BOWEL FREQUENCY AND EVACUATION****7.6 ABDOMINAL PAIN****7.7 ABDOMINAL, GASTROINTESTINAL, AND GI TRACT MASSES, CANCERS, AND ORGANOMEGALY****7.8 MELENA/HEMATOCHEZIA/ANORECTAL BLEEDING AND PAIN****7.9 HEARTBURN AND REFLUX****7.10 OROPHARYNGEAL AND DENTAL PAIN AND LESIONS****7.11 ABNORMALITIES OF WEIGHT AND/OR NUTRITION****7.12 ABDOMINAL TRAUMA****7.13 DYSPHAGIA AND ODYNOPHAGIA****7.14 FOREIGN BODY IN GASTROINTESTINAL TRACT****7.15 ABDOMINAL WALL ABNORMALITIES****7.16 PHYSICAL EXAM FINDINGS RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH****7.17 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE GASTROINTESTINAL SYSTEM AND NUTRITIONAL HEALTH**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

puddle maneuver • shifting dullness

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

alkaline phosphatase levels • amylase levels • bilirubin levels, total serum and conjugated • carcinoembryonic antigen levels • Clostridium difficile testing • CT scanning • fluoroscopy • Helicobacter pylori stool antigen or breath tests • lipase levels • liver enzyme levels • magnetic resonance imaging • nuclear medicine imaging • radiography • serum ascites-albumin gradient • stool culture • stool for ova and parasites • tissue transglutaminase antibody or antimicrobial antibody levels • ultrasonography • viral hepatitis panels

PATIENT PRESENTATIONS RELATED TO THE  
CIRCULATORY AND HEMATOLOGIC SYSTEMS

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- |             |   |
|-------------|---|
| <b>8.1</b>  | <b>CARDIOVASCULAR CHEST PAIN</b>  |
| <b>8.2</b>  | <b>PALPITATIONS AND RHYTHM DISTURBANCES</b>   |
| <b>8.3</b>  | <b>EDEMA AND SWELLING</b>   |
| <b>8.4</b>  | <b>MASSES AND LYMPHADENOPATHY</b>   |
| <b>8.5</b>  | <b>EXTREMITY PAIN AND CLAUDICATION</b>  |
| <b>8.6</b>  | <b>SHORTNESS OF BREATH/DYSPNEA AND ORTHOPNEA</b>  |
| <b>8.7</b>  | <b>BRUISING, BLEEDING, AND CLOTTING DISTURBANCES</b>  |
| <b>8.8</b>  | <b>CIRCULATORY COLLAPSE AND SHOCK</b>   |
| <b>8.9</b>  | <b>BLOOD PRESSURE EVALUATION</b>  |
| <b>8.10</b> | <b>CHEST TRAUMA</b>   |
| <b>8.11</b> | <b>PHYSICAL EXAM FINDINGS RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS</b>                          |
| <b>8.12</b> | <b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS</b> |

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 8.1 CARDIOVASCULAR CHEST PAIN
- 8.2 PALPITATIONS AND RHYTHM DISTURBANCES
- 8.3 EDEMA AND SWELLING
- 8.4 MASSES AND LYMPHADENOPATHY
- 8.5 EXTREMITY PAIN AND CLAUDICATION
- 8.6 SHORTNESS OF BREATH/DYSPNEA AND ORTHOPNEA
- 8.7 BRUISING, BLEEDING, AND CLOTTING DISTURBANCES
- 8.8 CIRCULATORY COLLAPSE AND SHOCK
- 8.9 BLOOD PRESSURE EVALUATION
- 8.10 CHEST TRAUMA
- 8.11 PHYSICAL EXAM FINDINGS RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS
- 8.12 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

aortic aneurysm, thoracic – rupture, dissection • atherosclerosis, arteriosclerosis, hypercholesterolemia • blood and blood-related diseases – anemias, leukemias, lymphomas, sickle cell disease, thrombocytopenias • blood pressure abnormalities – diastolic or systolic cardiac dysfunction, hypertension, hypertension in pregnancy, hypotension, syncope • cardiac conditions – arrest, myocardial infarction, left- or right-sided heart failure, valvular heart disease, outflow obstruction, tumors, cardiomyopathies, congenital heart diseases • cardiac rhythm disorders – bradyarrhythmia/bradycardia, tachyarrhythmia/tachycardia (e.g., atrial fibrillation) • coagulation disorders – hemophilia, von Willebrand disease, factor V Leiden thrombophilia, disseminated intravascular coagulopathy, pulmonary embolism, deep vein thrombosis, drug-induced coagulation disorders • edema, generalized • human immunodeficiency virus infection and AIDS • lymphatic system disorders – lymphadenopathy, lymphedema • pain, chest, ischemic and nonischemic; angina pectoris • pericardial diseases (e.g., pericarditis) • peripheral vascular disease/blood vessel disorders – vasculitis, venous stasis/insufficiency, arteriosclerosis, Kawasaki disease • pulse abnormalities – pulsus alternans, pulsus parvus, water-hammer pulse, delayed/unequal pulses • shock – septic, anaphylactic

#### **CONSTITUTIONAL SIGNS AND SYMPTOMS**

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**8.1 CARDIOVASCULAR CHEST PAIN****8.2 PALPITATIONS AND RHYTHM DISTURBANCES****8.3 EDEMA AND SWELLING****8.4 MASSES AND LYMPHADENOPATHY****8.5 EXTREMITY PAIN AND CLAUDICATION****8.6 SHORTNESS OF BREATH/DYSPNEA AND ORTHOPNEA****8.7 BRUISING, BLEEDING, AND CLOTTING DISTURBANCES****8.8 CIRCULATORY COLLAPSE AND SHOCK****8.9 BLOOD PRESSURE EVALUATION****8.10 CHEST TRAUMA****8.11 PHYSICAL EXAM FINDINGS RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS****8.12 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE CIRCULATORY AND HEMATOLOGIC SYSTEMS**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

**PHYSICAL EXAM FINDINGS**

calf tenderness, Homans sign • cardiac auscultation, murmurs, and heart sounds • cardiac percussion and palpation (e.g., thrills, point of maximal impulse, parasternal heave) • hemodynamic assessment (e.g., blood pressure measurement, tilt test, jugular venous pressure, pulses, edema) • petechiae and purpura • vascular bruits (e.g., carotid, renal)

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

angiography • blood types (e.g., ABO and Rh groups) • cardiac enzyme levels • CD4 count • CT scanning • D-dimer levels • ECG, 12-lead and rhythm strips • high-sensitivity troponin levels • human immunodeficiency virus testing – antibody, antigen, viral load • interpretation of complete blood count (e.g., anemia, thrombocytopenia, neutropenia, neutrophilia, polycythemia) • iron studies • magnetic resonance imaging • nuclear medicine imaging • peripheral blood smear • prothrombin time, international normalized ratio, partial thromboplastin time, hemoglobin electrophoresis • radiography • reticulocyte count • serum protein electrophoresis • ultrasonography

PATIENT PRESENTATIONS  
RELATED TO THE RESPIRATORY SYSTEM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

<b>9.1</b>	<b>COUGH</b>
<b>9.2</b>	<b>SORE THROAT</b>
<b>9.3</b>	<b>SHORTNESS OF BREATH</b>
<b>9.4</b>	<b>NASAL BLEEDING</b>
<b>9.5</b>	<b>AIRWAY OBSTRUCTION</b>
<b>9.6</b>	<b>NASAL DISCHARGE</b>
<b>9.7</b>	<b>EAR PAIN/EAR DISCHARGE</b>
<b>9.8</b>	<b>RESPIRATORY ARREST</b>
<b>9.9</b>	<b>RESPIRATORY CHEST PAIN</b>
<b>9.10</b>	<b>RESPIRATORY GROWTHS AND MALFORMATIONS</b>
<b>9.11</b>	<b>PHYSICAL EXAM FINDINGS RELATED TO THE RESPIRATORY SYSTEM</b>
<b>9.12</b>	<b>LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE RESPIRATORY SYSTEM</b>

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 9.1 COUGH
- 9.2 SORE THROAT
- 9.3 SHORTNESS OF BREATH
- 9.4 NASAL BLEEDING
- 9.5 AIRWAY OBSTRUCTION
- 9.6 NASAL DISCHARGE
- 9.7 EAR PAIN/EAR DISCHARGE
- 9.8 RESPIRATORY ARREST
- 9.9 RESPIRATORY CHEST PAIN
- 9.10 RESPIRATORY GROWTHS AND MALFORMATIONS
- 9.11 PHYSICAL EXAM FINDINGS RELATED TO THE RESPIRATORY SYSTEM
- 9.12 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE RESPIRATORY SYSTEM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

ear conditions, acute and chronic – trauma (e.g., tympanic membrane perforation), cerumen impaction, otitis externa, otitis media, eustachian tube dysfunction • nose and paranasal sinus conditions – nasal congestion, allergic rhinitis, sneezing, anterior and posterior nosebleeds, rhinorrhea, sinusitis • throat conditions, acute – infections (e.g., tonsillitis, mononucleosis), hoarseness (e.g., inflammatory, infectious, vocal abuse, traumatic dysphonia, vocal cord paralysis) • upper respiratory system disorders and conditions, acute and chronic – laryngomalacia, epiglottitis; tracheitis; neoplasms; structural anomalies (e.g., fistulas, webs, malformations) • lung/pulmonary diseases and conditions, acute and chronic – acute respiratory distress syndrome; airway foreign body; anaphylaxis; asthma; breath-holding spells; transient tachypnea of newborn; hemoptysis, hemothorax, pneumothorax, chylothorax; pulmonary embolism; pulmonary hypertension; chronic obstructive pulmonary disease; bronchiectasis; sarcoidosis; interstitial lung disease; occupational lung disease; lung and pleural tumors (e.g., cancer, nodules); angioedema; pulmonary effusion (e.g., from cancer, infections, heart failure); cystic fibrosis; smoke inhalation, mediastinal masses • respiratory tract infections (e.g., upper respiratory infections, bronchitis, pneumonia, bronchiolitis, influenza, tuberculosis) • sleep disorders (e.g., apnea)

#### **CONSTITUTIONAL SIGNS AND SYMPTOMS**

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor





Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**9.1 COUGH****9.2 SORE THROAT****9.3 SHORTNESS OF BREATH****9.4 NASAL BLEEDING****9.5 AIRWAY OBSTRUCTION****9.6 NASAL DISCHARGE****9.7 EAR PAIN/EAR DISCHARGE****9.8 RESPIRATORY ARREST****9.9 RESPIRATORY CHEST PAIN****9.10 RESPIRATORY GROWTHS AND MALFORMATIONS****9.11 PHYSICAL EXAM FINDINGS RELATED TO THE RESPIRATORY SYSTEM****9.12 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE RESPIRATORY SYSTEM**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

**PHYSICAL EXAM FINDINGS**

pulmonary auscultation, percussion, and palpation (e.g., egophony, stridor, rales, rhonchus, wheeze, bronchophony, fremitus, chest wall expansion, diaphragmatic excursion)

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

arterial blood gases • audiogram • CT scanning • evaluation of pleural effusions (e.g., exudate, transudate) • fluoroscopy • interpretation of pulse oximetry • magnetic resonance imaging • nuclear medicine imaging • pulmonary function testing • purified protein derivative (PPD) skin test • radiography • spirometry • sputum Gram stain, culture and sensitivity • sweat chloride testing • tympanometry • ultrasonography

PATIENT PRESENTATIONS  
RELATED TO THE INTEGUMENTARY SYSTEM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

- 10.1** HAIR AND SCALP DISORDERS
- 10.2** CYANOSIS/PALLOR/PIGMENTATION DISTURBANCES AND DISORDERS OF COLORATION
- 10.3** NAIL DISORDERS
- 10.4** LESIONS/ULCERS/MASSES
- 10.5** PRURITUS
- 10.6** RASHES, EXANTHEMS, AND ACNE
- 10.7** BURNS
- 10.8** WOUNDS
- 10.9** URTICARIA AND ANGIOEDEMA
- 10.10** DERMATOLOGIC PRESENTATIONS OF SYSTEMIC DISEASE
- 10.11** SWEATING DISORDERS
- 10.12** BITES/STINGS/INFESTATIONS
- 10.13** PHYSICAL EXAM FINDINGS RELATED TO THE INTEGUMENTARY SYSTEM
- 10.14** LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE INTEGUMENTARY SYSTEM

Patient presentations span all relevant age categories, special populations, and varied clinical settings.

#### 10.1 HAIR AND SCALP DISORDERS

#### 10.2 CYANOSIS/PALLOR/PIGMENTATION DISTURBANCES AND DISORDERS OF COLORATION

#### 10.3 NAIL DISORDERS

#### 10.4 LESIONS/ULCERS/MASSES

#### 10.5 PRURITUS

#### 10.6 RASHES, EXANTHEMS, AND ACNE

#### 10.7 BURNS

#### 10.8 WOUNDS

#### 10.9 URTICARIA AND ANGIOEDEMA

#### 10.10 DERMATOLOGIC PRESENTATIONS OF SYSTEMIC DISEASE

#### 10.11 SWEATING DISORDERS

#### 10.12 BITES/STINGS/INFESTATIONS

#### 10.13 PHYSICAL EXAM FINDINGS RELATED TO THE INTEGUMENTARY SYSTEM

#### 10.14 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE INTEGUMENTARY SYSTEM

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

acne and related conditions – rosacea, acne vulgaris, acneform skin lesions • bites, human, animal, and other vectors – tick bites, lice infestation (pediculosis) • burns, chemical, thermal, and electrical • dermatitis, allergic, contact, atopic (e.g., eczema), irritant, perioral, stasis, seborrheic; dermatoses and pruritus in pregnancy • fungal infections – candidiasis, tinea capitis, tinea corporis • hair-related conditions – folliculitis • hirsutism/hypertrichosis, hydradenitis suppurativa, alopecia (areata, universalis, traction) • nail plate/ungual conditions, acute and chronic – nail trauma and infections (e.g., paronychia); discoloration; nail fold and bed deformities, primary, or secondary to systemic disease (e.g., koilonychia, onychosis, Beau lines, clubbing, splinter hemorrhages, Muehrcke lines, Terry nails) • newborns, normal dermatologic manifestations (e.g., cradle cap/seborrheic dermatitis, milia, erythema toxicum, vascular birthmarks) • rashes – impetigo, vesicobullous lesions • skin lesions, immunologic (e.g., related to foods, medications, aeroallergens, autoimmune disease immunodeficiency, infection), nonimmunologic (e.g., related to physical stimuli) • skin/cutaneous lesions and dermatologic disorders, congenital and acquired – keratosis; wheals; vesicles; bullae; pemphigus (vulgaris, bullous); verrucae (warts); macules; papules; psoriasis; papulosquamous lesions; pustules; plaques; lichen planus and lichen sclerosus et atrophicus; pruritus with or without primary skin lesions (e.g., manifestations of systemic disease); carcinomas, cutaneous – basal cell, squamous cell, melanoma • skin/cutaneous pigmentation lesions and disorders, congenital and acquired – vitiligo; solar lentigo; overexposure to ultraviolet (UV) radiation; phototoxic drug eruptions; nevi; acanthosis nigricans; discoid lupus erythematosus; vascular lesions (e.g., petechiae, purpura) •



Patient presentations span all relevant age categories, special populations, and varied clinical settings.

**10.1 HAIR AND SCALP DISORDERS****10.2 CYANOSIS/PALLOR/PIGMENTATION DISTURBANCES AND DISORDERS OF COLORATION****10.3 NAIL DISORDERS****10.4 LESIONS/ULCERS/MASSES****10.5 PRURITUS****10.6 RASHES, EXANTHEMS, AND ACNE****10.7 BURNS****10.8 WOUNDS****10.9 URTICARIA AND ANGIOEDEMA****10.10 DERMATOLOGIC PRESENTATIONS OF SYSTEMIC DISEASE****10.11 SWEATING DISORDERS****10.12 BITES/STINGS/INFESTATIONS****10.13 PHYSICAL EXAM FINDINGS RELATED TO THE INTEGUMENTARY SYSTEM****10.14 LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING RELATED TO THE INTEGUMENTARY SYSTEM**

**The guide to clinical presentations in this category may include, but is not limited to, the following ways in which patients present for osteopathic medical care:**

sweat gland-related conditions – bromhidrosis, hyper/hypohidrosis; miliaria • systemic diseases – disseminated gonorrhea, secondary syphilis; lupus; Kawasaki disease; Raynaud syndrome (e.g., primary, secondary); Stevens-Johnson syndrome; cutaneous manifestations of internal malignancies • trauma, skin – abrasions, lacerations, contusions, stab wounds, surgical wounds, high-pressure injection injuries • ulcers, skin – traumatic, neurologic, infectious, cellulitis and cutaneous abscesses, furuncles, carbuncles, metabolic, drug-related • urticaria, acute and chronic • viral infections – varicella, herpes, enteroviruses, pityriasis rosea

**CONSTITUTIONAL SIGNS AND SYMPTOMS**

fatigue • fever • generalized weakness • involuntary weight loss • malaise • night sweats • pallor

**PHYSICAL EXAM FINDINGS**

Auspitz sign • Nikolsky sign • visual inspection (including temperature, color, moisture, tenderness)

**LABORATORY TEST FINDINGS AND DIAGNOSTIC IMAGING**

microscopic evaluations • fungal cultures • skin biopsies • Wood lamp

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