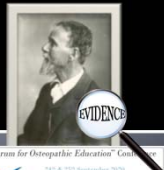




TEACHING THE PRINCIPLES OF OSTEOPATHY IN A MODERN CONTEXT

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This presentation

How do we integrate modern concepts and critical thinking into osteopathic teaching without losing the distinctiveness of osteopathic principles?

- **Content** – what are osteopathic principles and what do we need to emphasize in a modern curriculum?
- **Delivery (curriculum & pedagogy)** – what is the best way to teach osteopathy students to integrate critical thinking with osteopathic principles?

Illustrate with examples from the VU Osteopathy program

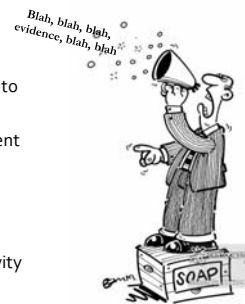
The modern context?

As the profession matures, it grows, it becomes more integrated in national health systems ... and more accountable

- Best practice, evidence-based management
- Clear communication and informed consent
- Graduates are critical thinkers and continue to learn and change according to best evidence

Evidence, critical thinking, & osteopathy

- Why this topic again??
- Evidence-informed practice aims to provide **best patient care**
- Promotes the positive development of osteopathy for the benefit of patients and practitioners
- Lack of engagement with EBP approaches by the profession will threaten the adoption and longevity of the profession



What attributes & capabilities do modern osteopathy graduates need?

- **Patient management skills**
 - Examination, diagnostic & treatment planning
 - Manual treatment skills, other management
 - Communication - consent
 - Clinical information management (case notes)
- **Able to work with other disciplines**
 - Shared care, interprofessional practice
- **Evidence-informed, critical thinking**
 - Evidence-savvy; able to search, retrieve, appraise & implement new evidence
 - Reflective, critical thinkers, life-long learners; appraise and integrate new knowledge

What should we emphasize in the modern osteopathic curriculum?

- Osteopathic principles
- Critical thinking
 - Evidence-base for effectiveness of treatments
 - Evidence for plausible therapeutic mechanisms
- Biopsychosocial approach to management
- Patient-centred care
 - Good communication – particularly consent
 - Shared care – Inter-professional practice, active role in management for patient
- Use of valid risk & outcome measure tools (PROMS)

Content – 'osteopathic'


Not the purpose of the presentation to discuss what is the 'osteopathic' body of knowledge, but ...

Are there agreed sets of osteopathic principles?
Or osteopathic practice?

... no clear agreement

Structure governs function

Content – 'osteopathic'




- Four Kirksville principles
- 'Classical' Littlejohn principles
- 'Three pillars' – parietal, visceral, cranial
- Models of osteopathic intervention
- Bioenergetic, OCF

Many different perspectives but most would agree on the importance of

- Holism (physical & biopsychosocial)
- Interconnectedness of the body
- Treatment of the body framework with hands-on techniques

Each country and School has their own 'flavour', 'culture', and interpretation of osteopathic principles

Teaching traditional principles



Students need to ...

- Understand the history and context of the development of the profession (the 'culture' of the profession)
- Need to be aware of current beliefs and perspectives in the profession

... but with the proviso that they

- Acknowledge these are guiding principles sometimes without clear supporting evidence
- Understand that the profession has always been changing and evolving

Each country and School has their own 'flavour', 'culture', and interpretation of osteopathic principles

Osteopathic models need reappraisal

Traditional models of osteopathic concepts are ageing

- Overly biomechanical, biomedical
- Inconsistencies with modern pain science
- Too little emphasis on psychosocial factors
- Passive approaches are emphasised

The Biopsychosocial model: Redefining osteopathic philosophy?

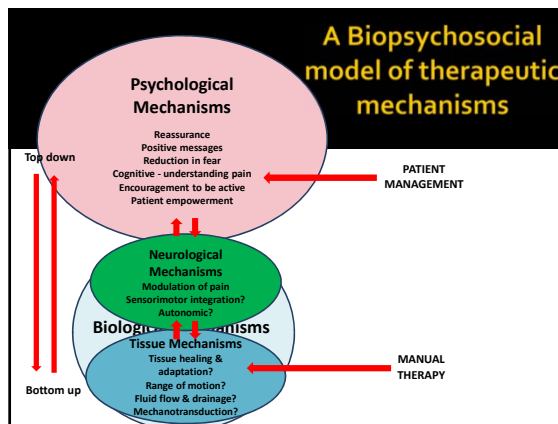
The fall of the postural-structure model in manual and physical therapy: Exemplified by lower back pain

What does best practice care for musculoskeletal pain look like? Eleven consistent recommendations from high-quality clinical practice guidelines: systematic review

Osteopathic models need reappraisal

- Need to review traditional principles & concepts in relation to modern evidence
- Discussion of likely physiological mechanisms
- Reflection on 'somatic dysfunction' and the reliability of palpation

Students should understand that principles & concepts are evolving and it is OK to question them



Teaching traditional principles


Introduce & discuss traditional osteopathic principles

+

Reflect on strengths & possible shortcomings of these principles

+

Develop student skills and create the environment to critically appraise principles & practice



Regularly revisiting these principles throughout the course

Progressively developing these skills throughout the course ... and applying them

Delivery (curriculum & pedagogy)

1. Scaffolded throughout the curriculum
2. Inquiry based learning – a variety of active teaching approaches including case-based learning (CBL), problem-based learning (PBL), simulated patients
3. Needs to be assessed
4. Needs to be practiced in the teaching clinic

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
- Biopsychosocial approach
- Patient-centred care
 - Good communication – consent
 - Shared care – inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

1. Scaffolded throughout curriculum

- Poor student uptake if isolated to a single subject or year level
- Need to span all year levels and progressing build knowledge and skills

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
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1. Scaffolded throughout curriculum

YEAR 1	HRE1000 Evidence and Research HCE1000 Professional Communication	HBO1000 Biomedical Science for Osteopathy 1 HBO1000 Biomedical Science for Osteopathy 3	HBO1002 Biomedical Science for Osteopathy 2 HBO1000 Biomedical Science for Osteopathy 4	HBS1104 Clinical Skills 1 HBS1204 Clinical Skills 2
YEAR 2	HBO2005 Biomedical Science for Osteopathy 5 HBO2006 Biomedical Science for Osteopathy 6	HBS2003 Patient and Health System 1 HBS2404 Clinical Skills 4	HBO2007 Biomedical Science for Osteopathy 7 HBS3004 Clinical Skills 5	HBS2001 Evidence Based Practice for Osteopathy HBS2002 Clinical Skills 4A
YEAR 3	HBO3004 Patient and Health System 2 HBO3009 Biomedical Science for Osteopathy 9	HBO3008 Biomedical Science for Osteopathy 8 HBS3004 Clinical Skills 6	HBS3002 Evidence Based Practice for Osteopathy 3 HBS3009 Introduction to Clinical Practice	HBS3002 Evidence Based Practice for Osteopathy 2 HBS3009 Introduction to Clinical Practice
YEAR 4	HMO7205 Clinical Practice 1 HMO7205 Clinical Practice 2	HMO7001 Applied Clinical Theory & Skill 1 HMO7008 Project & Scholarship 2	HMO7001 Applied Clinical Theory & Skill 2 HMO7003 Applied Clinical Theory & Skill 3	HMO7007 Project & Scholarship 1 HMO7004 Applied Clinical Theory & Skill 4
YEAR 5	HMO7305 Clinical Practice 3	HMO7005 Applied Clinical Theory & Skill 5 HMO7008 Project & Scholarship 3	HMO7005 Applied Clinical Theory & Skill 6 HMO7008 Project & Scholarship 4	HMO7006 Applied Clinical Theory & Skill 5

Aspects to emphasise:

- Critical thinking
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 - Evidence for mechanisms
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- Patient-centred care
 - Good communication – consent
 - Shared care – inter-professional practice, active role for patient
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1. Scaffolded throughout curriculum

YEAR 1	HRE1000 Evidence and Research HCE1000 Professional Communication	HBO1001 Biomedical Science for Osteopathy 1 HBO1003 Biomedical Science for Osteopathy 3	HBO1002 Biomedical Science for Osteopathy 2 HBO1004 Biomedical Science for Osteopathy 4	HBS1104 Clinical Skills 1 HBS1204 Clinical Skills 2
YEAR 2	HBO2005 Biomedical Science for Osteopathy 5 HBO2006 Biomedical Science for Osteopathy 6	HBS2003 Patient and Health System 1 HBS2404 Clinical Skills 4	HBO2007 Biomedical Science for Osteopathy 7 HBS3004 Clinical Skills 5	HBS2001 Evidence Based Practice for Osteopathy HBS2002 Clinical Skills 4A
YEAR 3	HBO3004 Patient and Health System 2 HBO3009 Biomedical Science for Osteopathy 9	HBO3008 Biomedical Science for Osteopathy 8 HBS3004 Clinical Skills 6	HBS3002 Evidence Based Practice for Osteopathy 3 HBS3009 Introduction to Clinical Practice	HBS3002 Evidence Based Practice for Osteopathy 2 HBS3009 Introduction to Clinical Practice
YEAR 4	HMO7205 Clinical Practice 1 HMO7205 Clinical Practice 2	HMO7001 Applied Clinical Theory & Skill 1 HMO7008 Project & Scholarship 2	HMO7001 Applied Clinical Theory & Skill 2 HMO7003 Applied Clinical Theory & Skill 3	HMO7007 Project & Scholarship 1 HMO7004 Applied Clinical Theory & Skill 4
YEAR 5	HMO7305 Clinical Practice 3	HMO7005 Applied Clinical Theory & Skill 5 HMO7008 Project & Scholarship 3	HMO7005 Applied Clinical Theory & Skill 6 HMO7008 Project & Scholarship 4	HMO7006 Applied Clinical Theory & Skill 5

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms

Osteopathic Clinical Skills

- Reference to traditional principles
- Review of likely physiological mechanisms
- Overview of Clinical Practice Guidelines and levels of evidence for treatments

1. Scaffolded throughout curriculum

Osteopathic Clinical Skills units

- Yellow flags (psychosocial risks)
- Communication
 - Practice informed consent for HVLA
 - Ongoing consent and patient information when working with student peers
- Patient-centred & shared care
 - 'What do you hope to achieve from the treatment'
 - Exercise prescription

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
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- Patient-centred care
 - Good communication – consent
 - Shared care – inter-professional practice, active role for patient
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1. Scaffolded throughout curriculum

Patient & Health System units
Clinical Practice units

YEAR 1	HBE1000 Evidence and Research HBM1000 Professional Communication	HBC1001 Biomedical Science for Oncology 1 HBC1004 Biomedical Science for Oncology 3	HBC1002 Biomedical Science for Oncology 2 HBC1004 Biomedical Science for Oncology 4	HBS1004 Clinical Skills 1 HBS1004 Clinical Skills 2
YEAR 2	HBC1005 Biomedical Science for Oncology 5 HBC1006 Biomedical Science for Oncology 6	HBS2003 Patient and Health Systems 1 HBS1004 Clinical Skills 4	HBS2004 Clinical Skills 3 HBC1007 Biomedical Science for Oncology 7	HBC1001 Evidence Based Practice for Oncology HBS1002 Clinical Skills 4A
YEAR 3	HBS3004 Patient and Health Systems 2 HBC1008 Biomedical Science for Oncology 8	HBC1008 Biomedical Science for Oncology 8 HBS3004 Clinical Skills 5	HBS3003 Evidence Based Practice for Oncology 3 HBC1009 Applied Clinical Theory & Skills 2	HBS3002 Evidence Based Practice for Oncology 2 HBS3009 Introduction to Clinical Practice
YEAR 4	HBA1201 Clinical Practice 1 HBA1202 Clinical Practice 2	HBA1201 Applied Clinical Theory & Skills 1 HBA1202 Applied Clinical Theory & Skills 2	HBA1201 Applied Clinical Theory & Skills 1 HBA1202 Applied Clinical Theory & Skills 2	HBA1201 Project & Scholarship 1 HBA1204 Applied Clinical Theory & Skills 4
YEAR 5	HBA1203 Clinical Practice 3	HBA1203 Applied Clinical Theory & Skills 3	HBA1203 Applied Clinical Theory & Skills 3	HBA1204 Applied Clinical Theory & Skills 4 HBA1204 Applied Clinical Theory & Skills 4

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
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 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

2. Inquiry-based learning

- Active, inquiry-based learning approaches may produce deeper learning & better problem-solving skills
 - A variety of teaching approaches are likely to provide the most effective training

Years 1-3

- Case-based learning (CBL) a component in many units
 - 'Guided enquiry'; facilitator more actively prepares & guides small group of students

Years 4-5

- Problem-based learning (PBL) a component in many units
 - 'Open enquiry'; facilitator plays a minimal role

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
- Biopsychosocial approach
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 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

Chang C, et al. Problem-based learning: its role in undergraduate surgical education. Can J Surg. 1995; 38(1):13-21. PMID: 7802301.
Stoneman M, et al. Comparing Problem-Based Learning with Case-Based Learning: Effects of a Master Candidate Shift at Two Institutions. Academic Medicine. 2007; 82:74-82

3. Needs to be assessed

Any important knowledge, skill, or capability needs to be assessed

- If it is not assessed, students do not value it or do it

- Evidence-based Practice units
 - Focus is EBP skills
- Clinical Skills units
 - Justification of treatment plan using Clinical Guidelines/Systematic reviews/Clinical trials
- Clinical Practice units
 - EBP tasks in clinical placement

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
- Biopsychosocial approach
- Patient-centred care
 - Good communication – consent
 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

3. Needs to be assessed

Any important knowledge, skill, or capability needs to be assessed

- If it is not assessed, students do not value it or do it

- CBL & PBL within multiple units
 - Have BPS questions for cases
- Final year OSCE
 - Psychosocial OSCE station

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
- Biopsychosocial approach
- Patient-centred care
 - Good communication – consent
 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

3. Needs to be assessed

Any important knowledge, skill, or capability needs to be assessed

- If it is not assessed, students do not value it or do it

- Clinical Skills units
 - Informed Consent for HVLA and ongoing Communication examined
- Shared care in CBL, PBL, Clinic

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
 - Evidence for mechanisms
- Biopsychosocial approach
- Patient-centred care
 - Good communication – consent
 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

3. Needs to be assessed

Any important knowledge, skill, or capability needs to be assessed

- If it is not assessed, students do not value it or do it

- Patient & Health System units
- CBL & PBL
- Final year OSCE

Aspects to emphasise:

- Critical thinking
 - Evidence-base for effectiveness
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- Patient-centred care
 - Good communication – consent
 - Shared care – Inter-professional practice, active role for patient
- Use of valid risk & outcome measure tools (PROMS)

4. Needs to be practiced in clinic

Evidence-seeking and appraisal tasks *imbedded in clinical activities (clinic)*

Aspects to emphasise:

- Critical thinking
- Evidence-base for effectiveness
- Evidence for mechanisms
- Biopsychosocial approach

- EBP tasks associated with patient care
- Modelling & support of EBP by clinicians
 - Selection of clinicians
 - Training of clinicians

PATIENT EVIDENCE-INFORMED MANAGEMENT	
Primary presenting complaint	
Most relevant clinical guideline; or Most relevant systematic review; or Most relevant clinical study	Publication details of Guideline here (if available) Publication details of Systematic Review here (if available) Publication details of study here (only if Guideline & review not available)
Evidence reflection:	Briefly describe how/ if your proposed management is consistent with the chosen guidelines or review
Primary techniques employed	
Relevant supporting journal article for main technique-approach	Publication details of Systematic Review or research study here
Evidence reflection:	Briefly describe how/ if this article supports your treatment selection?

4. Needs to be practiced in clinic

Evidence-seeking and appraisal tasks *imbedded in clinical activities (clinic)*

Aspects to emphasise:

- Critical thinking
- Evidence-base for effectiveness
- Evidence for mechanisms
- Biopsychosocial approach
- Patient-centred care
- Good communication – consent
- Personal time

- Diagnostic model that includes pain mechanism and psychological & social factors

Diagnosis model used in clinic

Formulation of a diagnosis

- A tissue-based diagnosis is not always appropriate
- Needs to reflect the growing importance of
 - Biopsychosocial factors
 - Pain processes
- Reflect the key biomechanical & 'osteopathic' factors
- Diagnosis needs to be readily communicable to third parties
 - General practitioners
 - Other allied health practitioners
 - Third party insurers

Yellow flags
Fear avoidance behaviours
Beliefs about disability

Noiceptive
Nociplastic
Neuropathic

Diagnosis model used in clinic

Two components of model:

- Diagnosis**
 - Brief, standard nomenclature
- Clinical impression**
 - Narrative description, includes
 - Likely pain process
 - Pathological factors and/or
 - Biomechanical (or other osteopathic) factors and/or
 - Psychosocial factors

1. Diagnosis

Steps to formulating a diagnosis

Chronic

low back

Acute defined as <3/12

Chronic defined as >3/12

Right / left

Anterior / posterior

Superior / inferior

Medial / lateral

PAIN

Diagnosis - Specific or nonspecific pain?

Can the pain be attributed to a specific issue?

SPECIFIC PAIN

NON-SPECIFIC PAIN

Identify the PROBABLE TISSUE(S) AFFECTED & PATHOANATOMICAL PROCESS

Identify any relevant ICD code

Identify any relevant ICD code

A judgement call ... not necessarily clear-cut

Diagnosis - Specific cause of pain

Wording of diagnosis:

TEMPORAL PROFILE
+ SPATIAL LOCATION
+ BODY REGION
+ "Pain"

"due to suspected"
+ TISSUE(S) AFFECTED
+ PATHOANATOMICAL PROCESS

Relevant ICD code to be listed in parentheses

Acute
Right lateral
Shoulder
Pain

Due to (suspected)
Rotator cuff
tear

Acute right lateral shoulder pain due to suspected rotator cuff tear

Diagnosis - nonspecific pain?

Can the pain be attributed to a specific tissue?

```

    graph TD
      A[Can the pain be attributed to a specific tissue?] --> B[SPECIFIC PAIN]
      A --> C[NON-SPECIFIC PAIN]
      B --> D[Identify the PROBABLE TISSUE(S) AFFECTED & PATHOANATOMICAL PROCESS]
      D --> E[Identify any relevant ICD code]
      C --> F[Identify any relevant ICD code]
      style C stroke:#f00,stroke-width:2px
    
```

A judgement call ... not necessarily clear-cut

Chronic spinal pain is usually regarded as pain with 'nonspecific' cause

Diagnosis - nonspecific pain?

Wording of diagnosis:

TEMPORAL PROFILE
+ NON-SPECIFIC
+ SPATIAL LOCATION
+ BODY REGION
+ "Pain"

Relevant ICD code to be listed in parentheses

Chronic
Nonspecific
Low back
Pain

Chronic nonspecific low back pain (ICD M54.5)

Chronic primary musculoskeletal pain (ICD-11 MG30.02)

2. Clinical Impression formulation

- Short narrative overview of patient (*summarise the patient presentation & impression in prose*)
 - Allows the reader to understand the emphasis and context of contributing factors
 - Components can be varied according to the case
- Include the following:
 - Likely pain process
 - Pathological factors (confirmed by tests/imaging) *and/or*
 - Biomechanical (or other osteopathic) factors *and/or*
 - Psychosocial factors

Clinical Impression formulation

Identify the TIMING OF ONSET	Acute / Chronic
Specify PAIN PROGRESSION	Worsening / improving / stable
Articulate the DIAGNOSIS	Nonspecific neck pain
Specify any REFERRAL or RADIATION	Radiating to the lateral upper arm
Specify predominant SYMPTOM	Pain
Specify PAIN DISTRIBUTION	Localised / multifocal / widespread
Suggest most likely PAIN PROCESS	Nociceptive / Central sensitization / Neuropathic <i>(if nociceptive, include 'due to suspected tissue/pathoanatomical process')</i>
Identify the SALENT CLINICAL FINDINGS associated with the diagnosis	Marked tenderness of trapezius and cervical muscles
Identify any relevant IMAGING FINDINGS	N/A

Clinical Impression formulation

Consider PREDISPOSING FACTORS that have contributed to the presentation

"are these factors suspected or confirmed?"

Identify PATHOLOGICAL FACTORS
Identify BIOMECHANICAL FACTORS
Identify PSYCHOSOCIAL FACTORS

Consider MAINTAINING FACTORS that have contributed to the presentation

"are these factors suspected or confirmed?"

Identify PATHOLOGICAL FACTORS
Identify BIOMECHANICAL FACTORS
Identify PSYCHOSOCIAL FACTORS

Clinical Impression formulation

Wording of clinical impression

[name] is a [age] year old [gender] [occupation] presenting with a [timing of onset] duration of [pain progression] [diagnosis] with [referral / radiation]. [name]'s [symptom] is [pain distribution] and likely [pain process] in nature. [name] also displayed [salient clinical findings]. [name]'s complaint is [likely/confirmed] due to [imaging findings], predisposed by [pathological factors AND/OR biomechanical factors AND/OR psychosocial factors] and maintained by [pathological factors AND/OR biomechanical factors AND/OR psychosocial factors].

Amanda is a 54 year old female landscape gardener presenting with chronic progressive nonspecific neck pain with referral to the right scapular and upper arm. Amanda's pain is multifocal and likely a mix of nociceptive and nociplastic in nature, with referred nociceptive pain from suspected lower cervical facet joints. Amanda displays **marked tenderness over her right rhomboid and trapezius muscles**. Amanda's complaint is likely unrelated to the minor cervical degenerative changes seen on X-ray. Her relatively **increased and inflexible thoracic kyphosis** and resultant head forward posture may predispose and contribute to mechanical strain and irritability of the lower cervical spine. Amanda demonstrates **substantial misinterpretation of her neck pain and catastrophises** about it, which likely exacerbates her pain and guarding behaviour.

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Wording of clinical impression

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4. Needs to be practiced in clinic

Evidence-seeking and appraisal tasks **imbedded in clinical activities (clinic)**

- Exemplified in the supervised clinic
- Outcome measures**
 - Risk stratification tools
 - StarT BACK tool, Fear avoidance behaviour, Centz sensitisation inventory
 - Generic (MSK-HQ) or region specific
 - Pain and function

Aspects to emphasise:

Critical thinking




Summary

Evidence-based practice, critical thinking can be taught alongside **osteopathic principles & models**

- Students can appreciate & reflect on osteopathic concepts
- Also feel empowered to critique principles and integrate new evidence

Critical thinking & EBP skills be

- Scaffolded throughout the curriculum
- Use inquiry based learning (CBL, PBL)
- Assessed throughout the course
- Practiced in the teaching clinic





**TEACHING THE PRINCIPLES OF
OSTEOPATHY IN A MODERN CONTEXT**


Thank you

Questions?

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 **VICTORIA UNIVERSITY**
MELBOURNE AUSTRALIA

 "Open Forum for Osteopathic Education" Conference
28th & 29th September 2019
TEACHING THE WORKING PRINCIPLES OF OSTEOPATHY