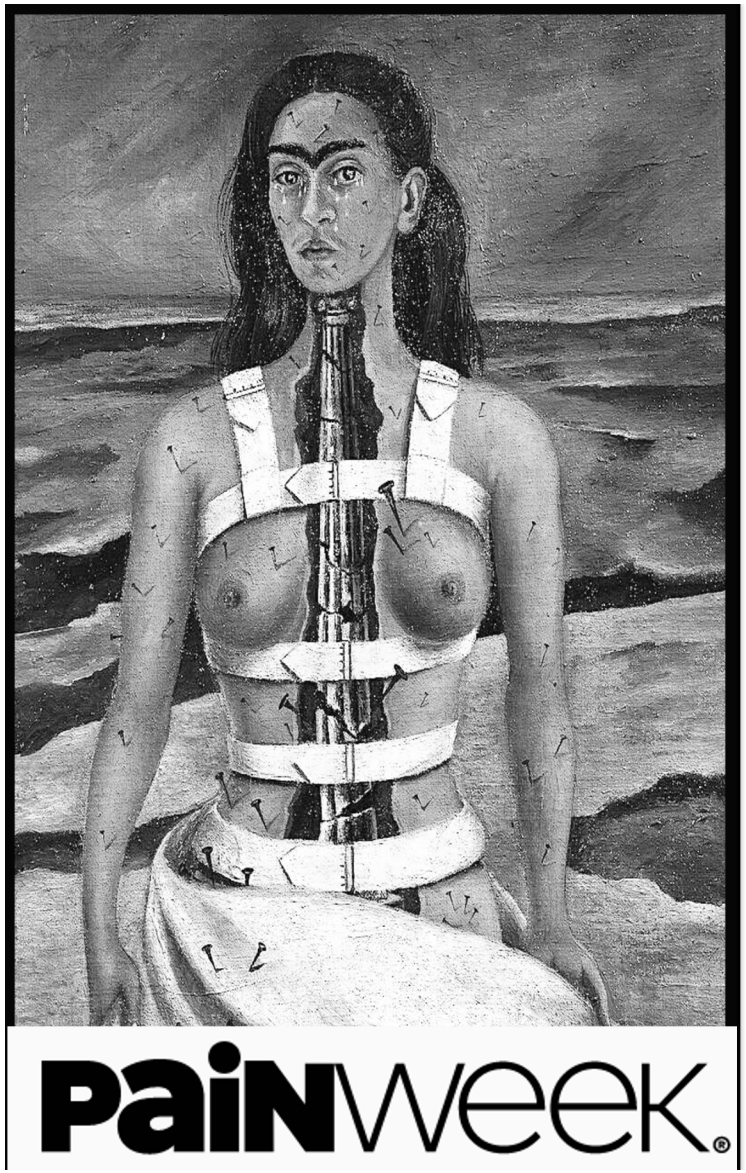

Chronic Overlapping Pain Conditions

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INTERNATIONAL PELVICPAIN SOCIETY

Disclosures and Acknowledgements

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- Christin Veasley, BS
  Co-Founder and Director, Chronic Pain Research Alliance
- William Maixner, DDS, PhD, Prof. of Anesthesiology

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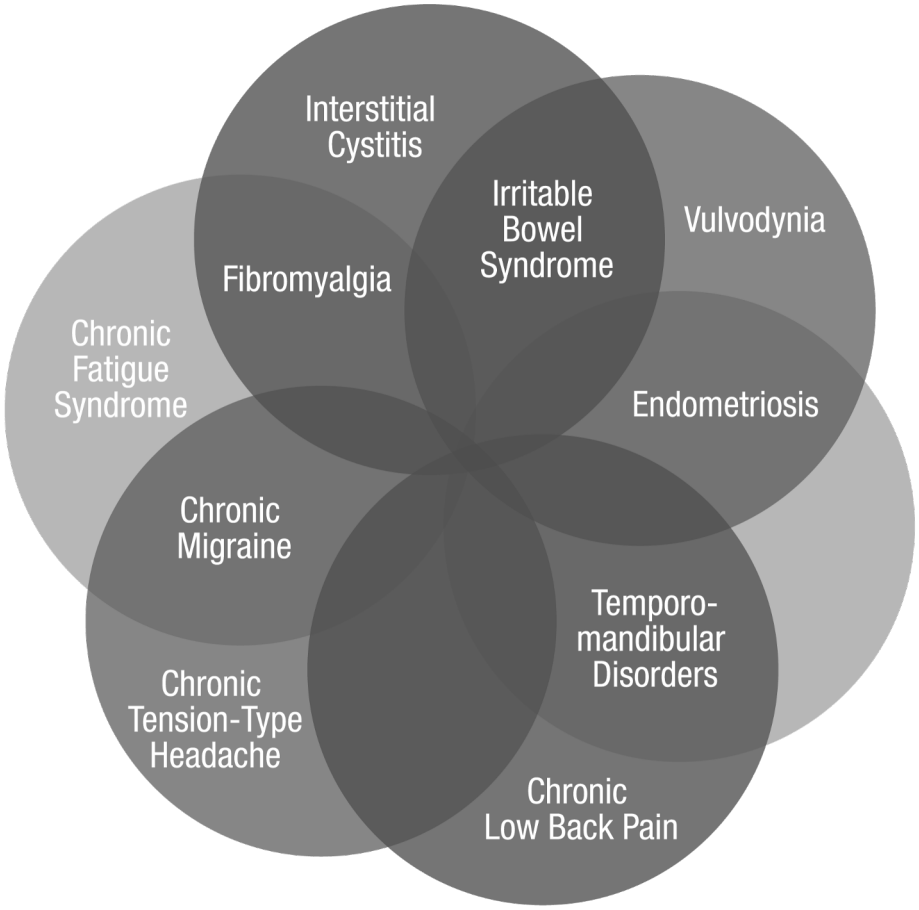
- Abbvie, Myovant, SOLVD Health, Medical Learning Institute

Learning Objectives

1	Summarize the underlying disease mechanisms common to chronic overlapping pain conditions (COPCs).
2	Discuss how to perform a comprehensive biopsychosocial assessment for chronic pain, which includes common nonpain comorbidities such as sleep, mood, fatigue, cognitive impairment, and physical and social function.
3	Review common pharmacologic and nonpharmacologic treatment approaches for COPCs and chronic pain.
4	Identify individualized multimodal treatment regimens that address affected pain and nonpain domains.

Chronic Overlapping Pain Conditions

- Conditions that often co-exist and share similar disease mechanisms across the neurological, endocrine, and immune systems
- Conditions predominantly (or solely) affect women
- Any number and combination of conditions is possible
- Several conditions can develop at once or gradually over years

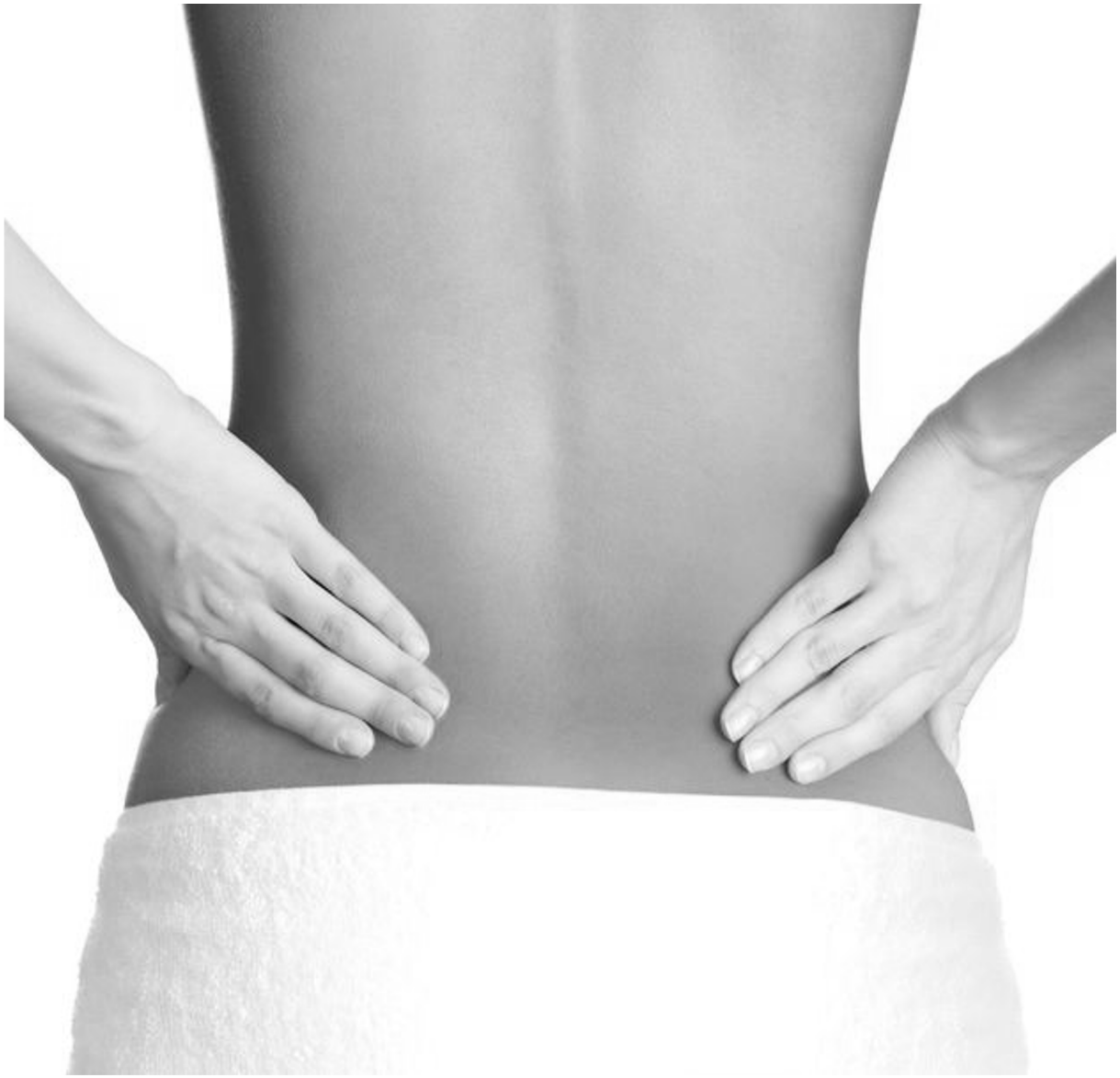


Primary Care
Gastroenterology
Urology
Orthopedics
Gynecology
Medicine
Physical Therapy

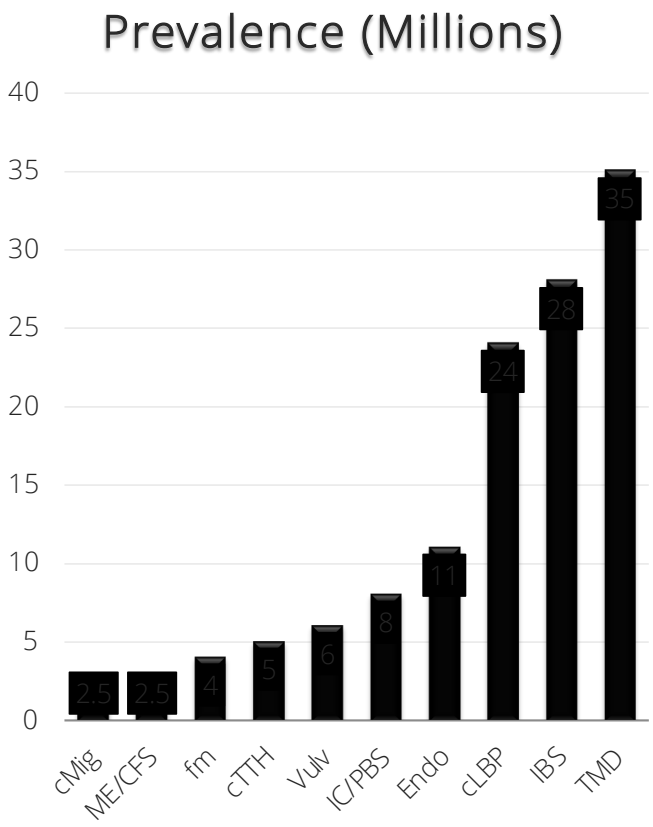
- 50 MILLION U.S. adults live with daily CHRONIC pain;
  2 women: 1 men

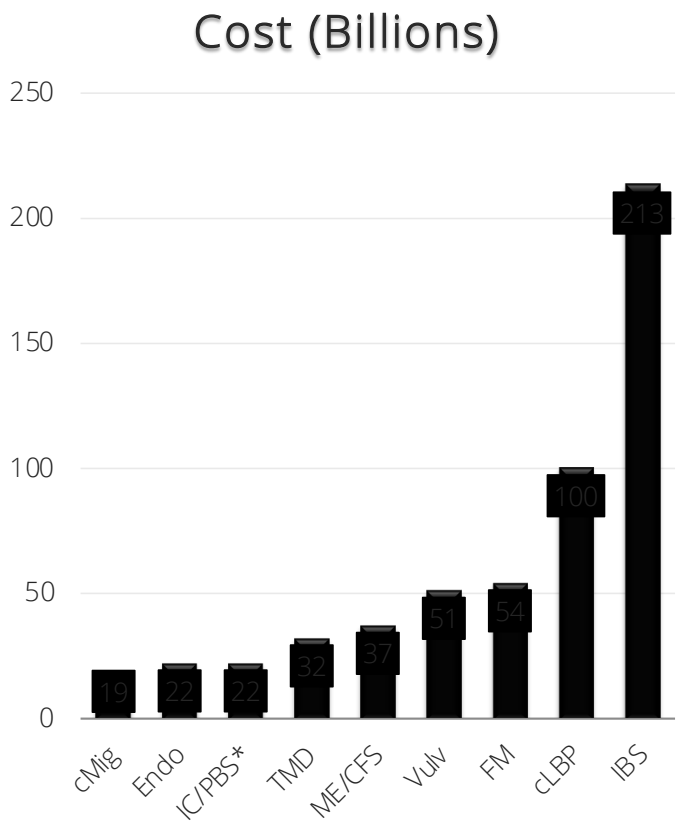
- 19.6 MILLION live with high impact pain interfering with daily life or work activities

- Less than 5% of people who suffer with chronic pain have access to pain specialist



U.S. Prevalence & Total Cost Burden

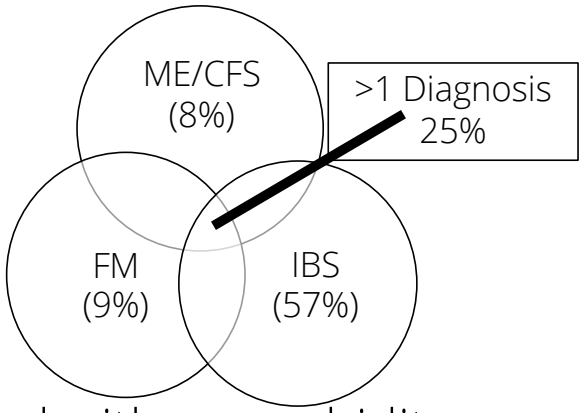


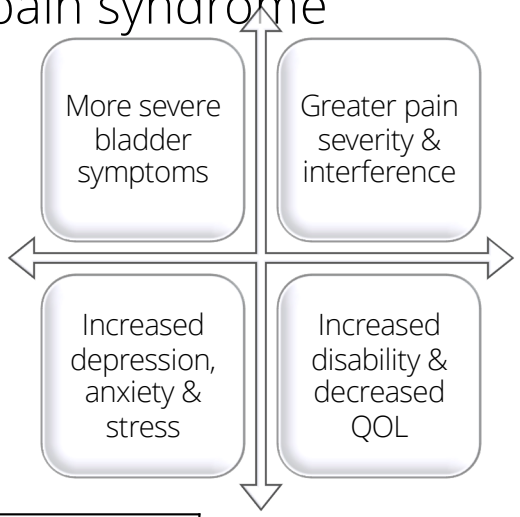


*Direct costs only
cTTH not included – cost unknown

Multi-Disciplinary Approach to the Study of Chronic Pelvic Pain (MAPP)

- Prominent longitudinal NIH-led, IC/PBS study. Comorbidity assessed as important disease modifier.
- Of 424 participants, 38% reported at least 1 comorbid pain syndrome (44% female vs 31% male)
- Co-prevalence rates:





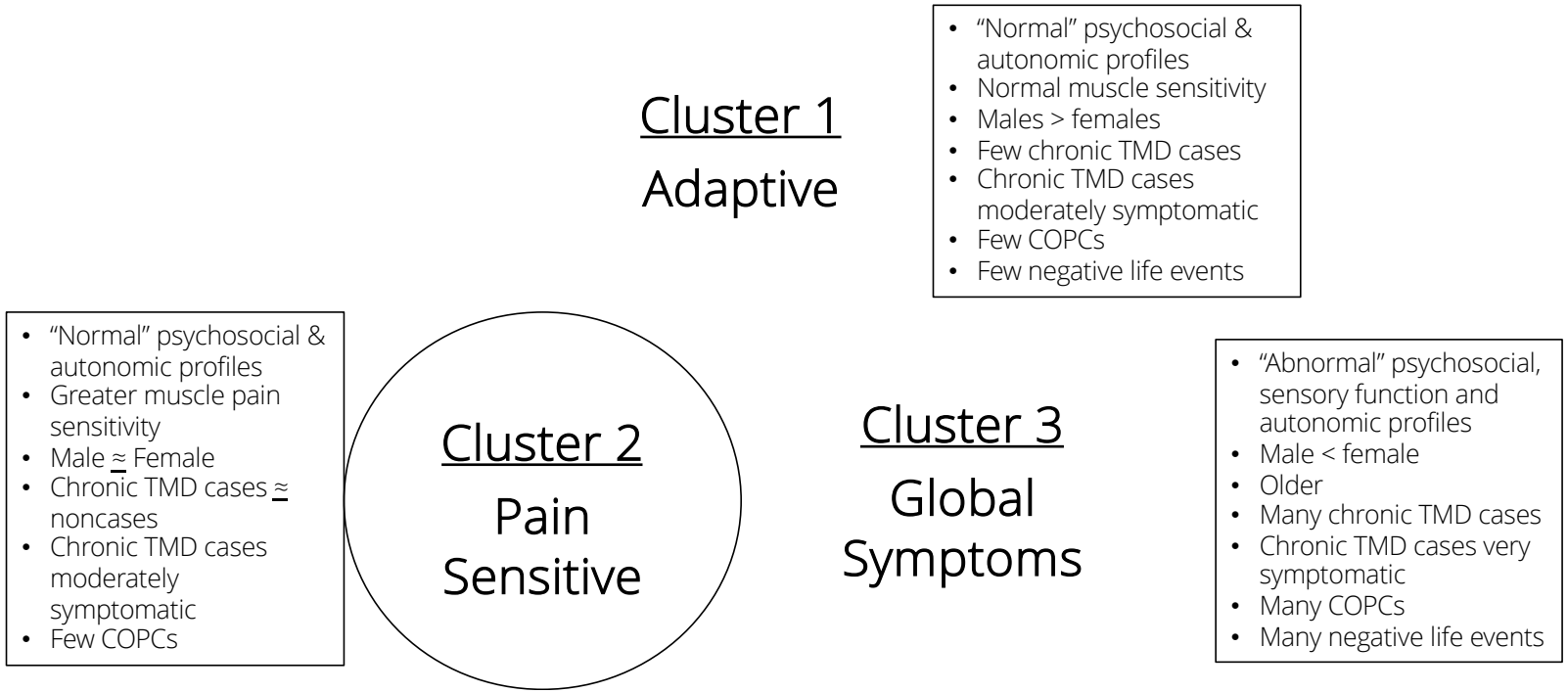
- Two constructs associated with comorbidity:

Generalized Sensory Sensitivity (GSS)
+ increased sensitivity to *external* stimuli across multiple sensory modalities
+ Increased sensitivity to *internal* symptoms/sensations (somatic awareness)
+ Hyperalgesia/allodynia in multiple body regions

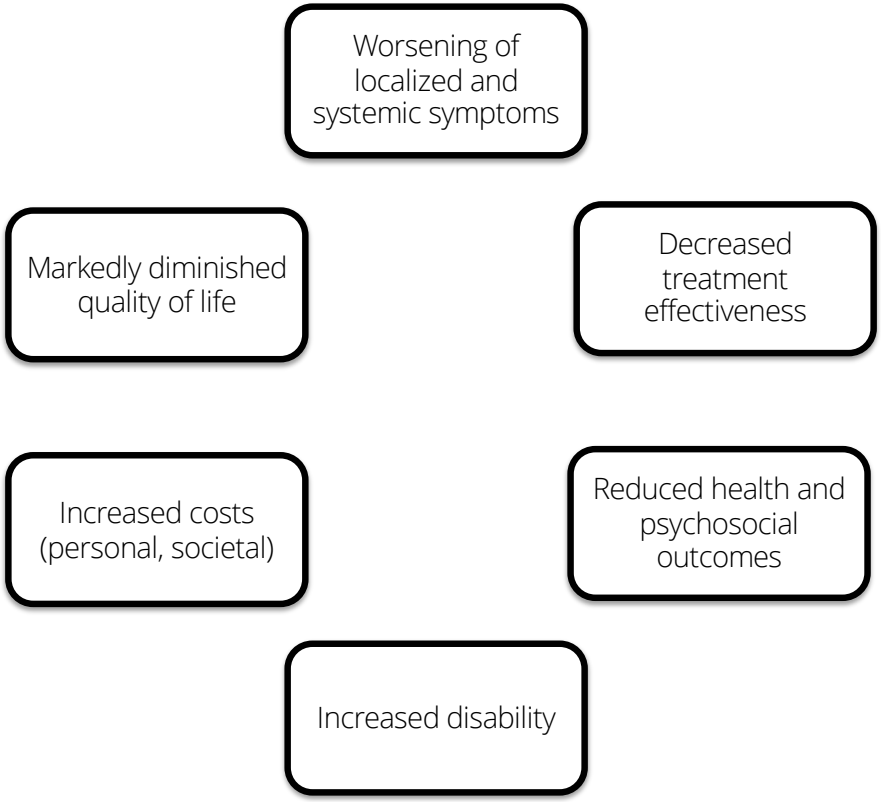
S.P.A.C.E.	
S	Sleep disturbance
P	Pain (widespread)
A	Affect (negative)
C	Cognitive dysfunction
E	Energy depletion/fatigue

Orofacial Pain Prospective Evaluation & Risk Assessment (OPPERA) Study

- Prominent NIH-funded longitudinal TMD study. Comorbidity assessed as important disease modifier.
- Cluster analysis of 1031 chronic TMD cases & 3,247 TMD-free controls



Mounting evidence demonstrates that as the number of pain diagnoses (or body sites of pain) increases, a vicious cycle ensues.



Highlights Importance of Comorbidity in Clinical Examination

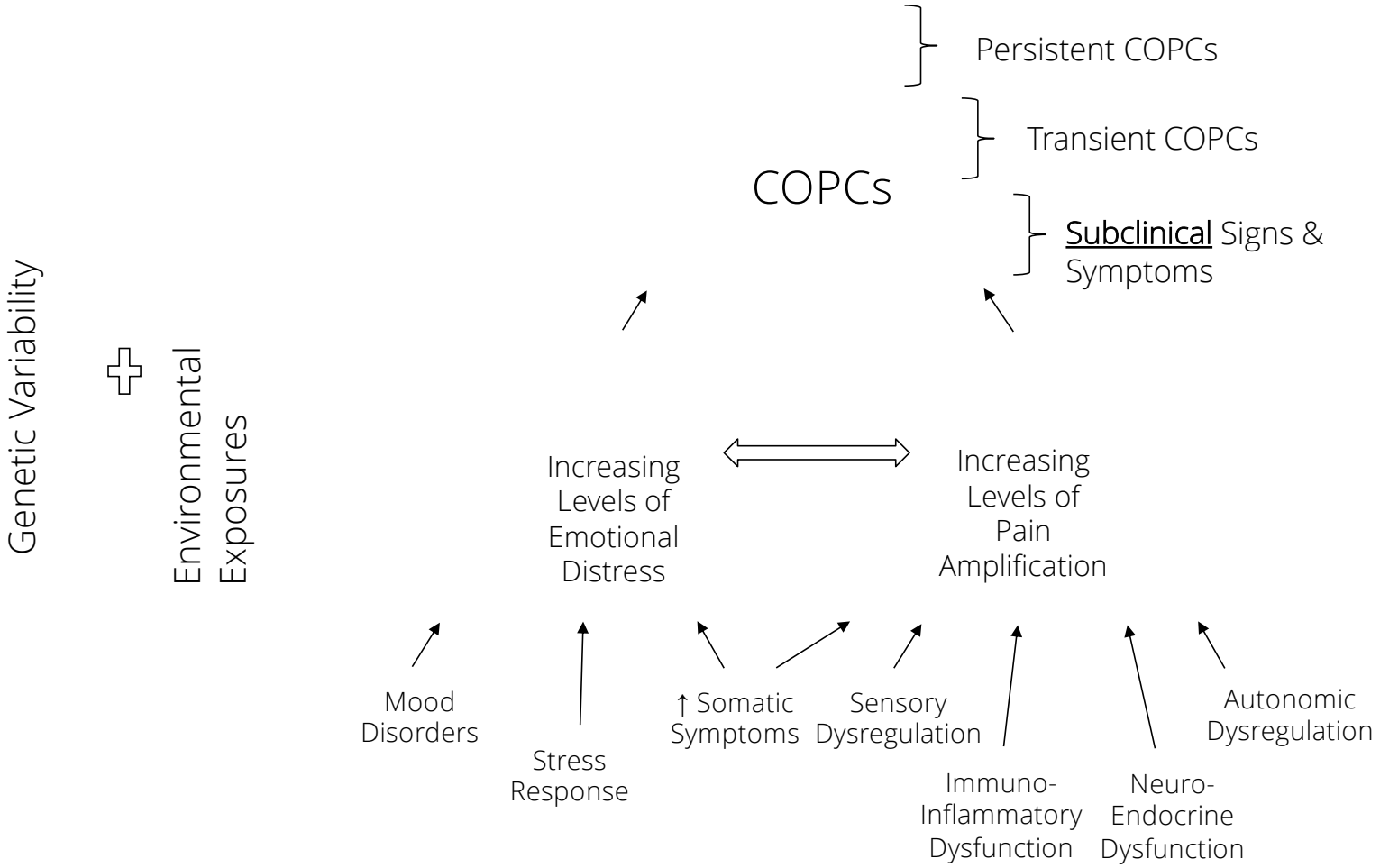
Mechanistic Characterization of Pain

Variable Degrees of any Mechanism can Contribute to any Disease

	Nociceptive	Neuropathic	Centralized
Cause	Inflammation or tissue damage	Nerve entrapment or damage	CNS or systemic problem
Clinical Features	Pain is well localized, consistent effect of activity on pain	Follows distribution of peripheral nerves (i.e., dermatome), episodic, lancinating, numbness, tingling	Pain is widespread and accompanied by fatigue, sleep, memory and/or mood difficulties as well as history of previous pain elsewhere in body
Treatment	Nonsteroidal anti-inflammatory drugs, injections, surgery	Local treatments aimed at nerve (surgery, injections, topical) or CNS-acting drugs	CNS-acting drugs, nonpharmacological therapies
Classic Examples	Osteoarthritis Autoimmune disorders Cancer pain	Diabetic painful neuropathy Post-herpetic neuralgia Sciatica Carpal tunnel syndrome	COPCs

Figure adapted from: Harper DE, et al. J Dent Res. 2016 Sep;95(10):1102-8.

COPCs Pathophysiology



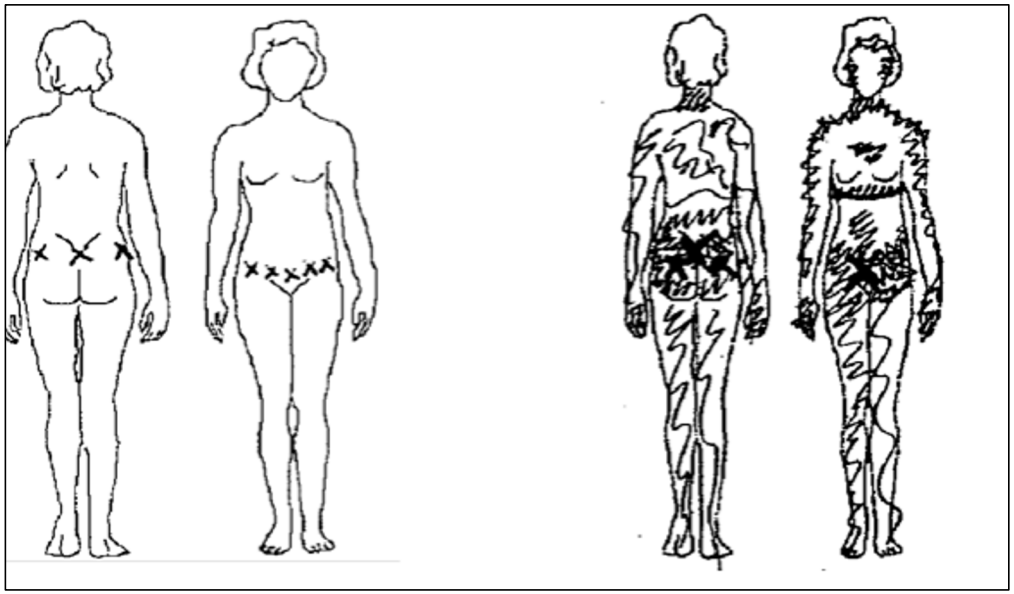
Adapted from Figure 4: Maixner W., et al. J Pain. Sept 2016;17(9):T93-107.

Diagnostic Criteria: Central Sensitization

International Association for the Study of Pain defines central sensitization as an: "Increased responsiveness of neurons in the central nervous system to their normal or subthreshold afferent input."

Criteria		
Step 1	Rule out neuropathic pain	No history or identification of lesion or disease of the nervous system Pain is not neuroanatomically logical Pain is not described as burning, shooting or prickling
Step 2	Rule out nociceptive pain	Pain will be disproportionate to the extent of injury or pathology
Step 3	At least one of the following (if Steps 1-3 are positive, CS is present)	Bilateral symmetrical pain pattern Pain varying in anatomical location (i.e., traveling) or large neuroanatomically illogical distribution Widespread pain in all four quadrants of the body Allodynia/hyperalgesia outside the reported primary site of pain
Step 4	General hypersensitivity to sensory stimuli (if Steps 1-2 & 4 are positive, CS is present)	Can include: mechanical pressure, odors, chemicals, cold, heat, electrical stimulation, light, sounds, weather, food, stress, emotions, mental load. Can be assessed as a score of ≥ 40 on the Central Sensitization Inventory.

Clinical Signs Suggestive of Central Sensitization



- Pain at multiple sites in the body
- Multiple pain diagnoses
- Wide-spread hyperalgesia and/or allodynia
- Pain associated with psychiatric or emotional dysfunction
- Opioids do not effectively reduce pain
- Pain does not respond to peripheral therapies

How do we evaluate and treat patients with COPCs?

Definitions

Evaluation

Treatments

Diagnostic Criteria: Temporomandibular Disorders

International Research Diagnostic Criteria for Temporomandibular Disorders
Consortium Network and Orofacial Pain Special Interest Group

Pain Related TMD Diagnoses

Disorder	History	Exam Findings
Myalgia	Pain in a masticatory structure modified by jaw movement, function or parafunction.	Report of familiar pain in temporalis or masseter muscle(s) with: 1) Palpation of these muscles; or 2) Maximum unassisted or assisted opening movement(s)
Myofascial pain with referral	Same as for myalgia	1) Report of familiar pain with palpation of the temporalis or masseter muscle(s); and 2) Report of pain at a site beyond the boundary of the muscle being palpated (e.g., referral to tooth)
Arthralgia	Same as for myalgia	Report of familiar pain in TMJ with: 1) Palpation of the TMJ; or 2) Maximum unassisted or assisted opening, right or left lateral, or protrusive movement(s)
Headache attributed to TMD	Headache in temporal area modified by jaw movement, function or parafunction	Report of familiar headache in temple area with: 1) Palpation of the temporalis muscle(s); or 2) Maximum unassisted or assisted opening, right or left lateral, or protrusive movement(s). [Note: A diagnosis of pain-related TMD must also be present (e.g., myalgia, arthralgia.]

Pain with palpation or opening movements of the temporalis or masseter muscles

May be associated with headache in the temple area

Tool: Jaw Functional Limitation Scale

Diagnostic Criteria: Headache

2018 International Headache Society (IHS) Classification
International Classification for Headache Disorders-3

Criteria	Chronic Migraine	Chronic Tension Type
A	Headache (migraine-like or tension-type-like) on 15 days/month for > 3 months, and fulfilling criteria B & C	Headache occurring on 15 days/month on average for > 3 months (180 days/year), fulfilling criteria B-D
B	Occurring in a patients who has had 5+ attacks fulfilling **criteria B-D for 1.1. Migraine without aura** and/or **criteria B and C for 1.2 Migraine with aura**	Lasting hours to days, or unremitting
C	On 8 days/month for > 3 months, fulfilling any of the following: • **Criteria C & D for 1.1. Migraine without aura** • **Criteria B & C for 1.2 Migraine with aura** • Believed by patient to be migraine at onset and relieved by a triptan or ergot derivative	At least 2 of the following 4 characteristics: • Bilateral location • Pressing or tightening (nonpulsating) quality • Mild or moderate intensity • Not aggravated by routine physical activity, such as walking or climbing stairs
D	Not better accounted for by another ICHD-3 diagnosis	Both of the following: • No more than one of photophobia, phonophobia, or mild nausea • Neither moderate or severe nausea or vomiting
E	---	Not better accounted for by another ICHD-3 diagnosis

Diagnostic Criteria: Nonspecific Chronic Low Back Pain

American College of Physicians–American Pain Society Low Back Pain Guidelines Panel

Item	Description
Anatomic Location	Pain occurring primarily in the low back, defined as the lumbar region between the posterior margin of the rib cage and horizontal gluteal fold
Duration	3 months or longer
Underlying Cause/Conditions	No signs of a serious underlying condition (e.g., cancer, infection, cauda equina syndrome), spinal stenosis or radiculopathy, or another specific cause (e.g., vertebral compression fracture, ankylosing spondylitis)
Imaging Findings	Degenerative changes on lumbar imaging are usually considered nonspecific, as they correlate poorly with symptoms

Diagnostic Criteria: Vulvodynia

2015 ISSVD, ISSWSH & IPPS Consensus Terminology & Classification

"Vulvar pain of at least 3 months, without a clear identifiable cause, which may have potential associated factors."

Degree/Areas of Vulva Affected, Pain Description, Onset	Localized to one area of the vulva (e.g., vestibulodynia, clitorodynia)
	Generalized (affects several areas of vulva), mixed or localized; provoked, spontaneous, mixed; primary, secondary; intermittent, persistent
	Mixed (e.g., localized and generalized)
Associated Factors	Comorbid pain conditions
	Genetics
	Hormonal factors (e.g., pharmacologically induced)
	Inflammation
	Musculoskeletal (e.g., pelvic muscle overactivity, myofascial, biomechanical)
	Neurologic mechanisms (e.g., central-brain/spine, peripheral-neuroproliferation)
	Psychosocial factors (e.g., mood, interpersonal, coping, role, sexual function)
	Vulvovaginal structural defects (e.g., perineal decent, pelvic organ prolapse

Diagnostic Criteria: Myeloencephalitis/ Chronic Fatigue Syndrome

2015 National Academies of Sciences, Engineering and Medicine Criteria

A. Diagnosis requires the following 3 symptoms:
   1. Substantial reduction/impairment in ability to engage in pre-illness levels of occupational, educational, social, or personal activities, that persists for more than 6 months, accompanied by fatigue–often profound–is of new or definite onset (not lifelong), is not the result of ongoing excessive exertion, and is not substantially alleviated by rest; and
   2. Post-exertional malaise*; and
   3. Unrefreshing sleep*

B. <u>At least one</u> of the following is also required:
   1. Cognitive impairment*; or
   2. Orthostatic intolerance

C. Additional symptoms/manifestations:
   1. Pain: common, highly variable in presence, nature, severity, with higher prevalence in severe cases
   2. Immune Impairment: sufficient evidence supports the finding of immune dysfunction
   3. Infection: sufficient evidence that ME/CFS can follow Epstein-Barr virus & possibly other infections
   4. Other symptoms: gastrointestinal impairment, genitourinary impairment, sore throat, painful/tender axillary/cervical lymph nodes, sensitivity to external stimuli (e.g., foods, drugs, chemicals)

**Assess frequency and severity of symptoms. Question diagnosis if symptoms aren't present at least half of the time with moderate or severe intensity.*

Diagnostic Criteria: Fibromyalgia

2016 American College of Rheumatology Diagnostic Criteria

A patient satisfies the 2016 ACR Criteria if ALL of the following conditions are met:

	Description
Symptom Severity	Widespread Pain Index ≥ 7 AND Symptom Severity Scale score ≥ 5 OR Widespread Pain Index of 4-6 AND Symptom Severity Scale score ≥ 9
Anatomic Regions	Generalized pain, defined as pain in at least 4 of 5 regions (left upper region, right upper region, axial region, left lower region, right lower region)*
Duration	Symptoms have been generally present for at least 3 months
Comorbidity	A fibromyalgia diagnosis is valid irrespective of other diagnoses, and does not exclude the presence of other clinically important illnesses

**jaw, chest & abdominal pain are not included in generalized pain definition*

Printable Screener can be downloaded here.

Diagnostic Criteria: IC/PBS

American Urological Association & RAND IC Epidemiology Study (RICE)

AUA definition: "An unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder and associated with lower urinary tract symptoms of more than six weeks duration in the absence of infection or other identifiable cause."

RICE IC/PBS Definition (Female)**		
	High Sensitivity Definition 81% Sensitivity 54% Specificity*	High Specificity Definition 48% Sensitivity 83% Specificity*
Pain, pressure or discomfort in the pelvic area	+	+
Daytime urinary frequency 10+ or urgency due to pain, pressure, or discomfort, not fear of wetting	+	+
Symptoms did not resolve after treatment with antibiotics		+
No treatment with hormone injection therapy for endometriosis**		+
Exclusion criteria: bladder cancer, urethral diverticulum, spinal cord injury, stroke, Parkinson's disease, multiple sclerosis, spina bifida, cyclophosphamide treatment, radiation to pelvic area, tuberculosis affecting bladder, genital herpes, uterine/vaginal cancer**, pregnancy**		

*for IC vs endometriosis, vulvodynia and overactive bladder

**For males: replace with prostate cancer & remove criterion related to hormone injection therapy

Diagnostic Criteria: Endometriosis

National Institute of Child Health and Human Development
American College of Obstetricians & Gynecologists

- Endometrial-like cells implanted outside the uterus
- Estrogen dependent growth and inflammation
- Primary symptoms:
  - Pain: dysmenorrhea, dyspareunia
  - Abnormal bleeding
  - & Infertility

- Pain severity does not correspond with the number, location or extent of endometriosis lesions

Symptoms are more common in younger women aged 18-29

- **73% dysmenorrhea**
- **57% noncyclical pelvic pain**
- **43% dyspareunia**

In reproductive aged women, the triad of dysmenorrhea, noncyclic pelvic pain and dyspareunia should trigger an evaluation for endometriosis to prevent delay in diagnosis.

- Diagnosis may be made on clinical suspicion, currently, surgery is the only way to confirm a diagnosis of endometriosis
- Imaging tests
  - Larger nodules or cysts may be identified using MRI or ultrasound, but imaging will not aid in the diagnosis of small lesions or adhesions

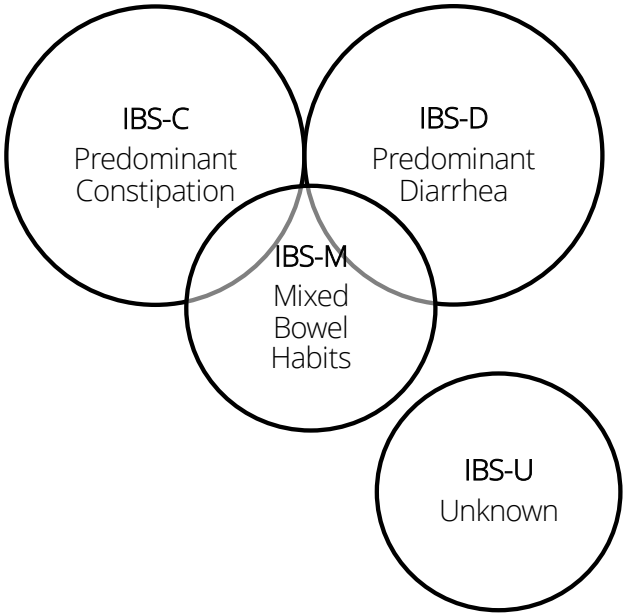
Diagnostic Criteria: Irritable Bowel Syndrome/ Disorder of Gut-Brain Interaction

Rome IV Classification

Recurrent abdominal pain, on average, at least 1 day/week in the last 3 months, associated with <u>two or more</u> of the following:

- Related to defecation
- Associated with a change in frequency of stool
- Associated with a change in form (appearance) of stool

Subtypes



How do we evaluate and treat patients with COPCs?

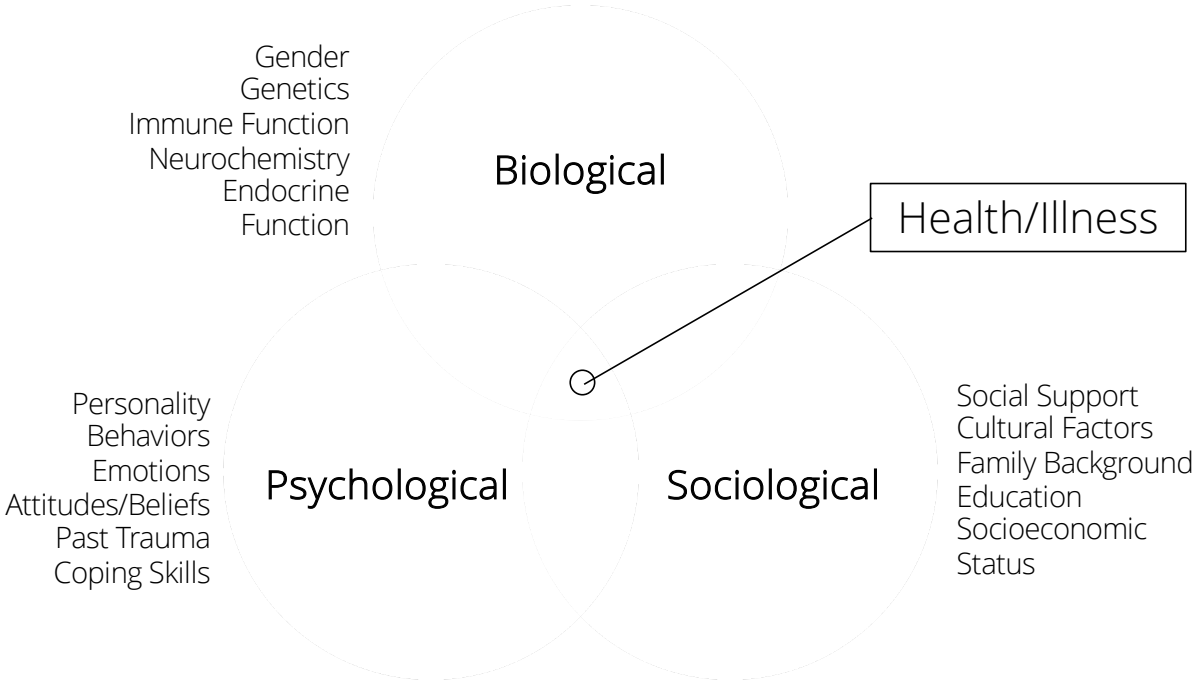
Definitions

Evaluation

Treatments

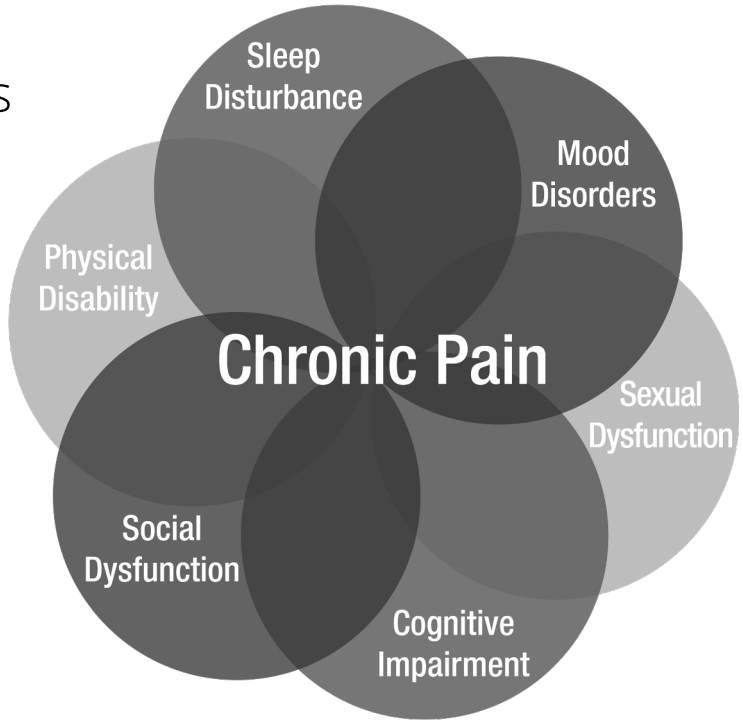
Biopsychosocial Model of Health & Illness

- Evaluates the integrated “whole person” with both the mind and body together as interconnected entities, recognizing biological, psychological and sociological components
- Accounts for dynamic interactions among the biological, psychological and sociological factors in the pain experience process
- Emphasizes illness and how one lives with, and responds to, a health condition



Nonpain Comorbidities & Contributing Factors

- Nonpain comorbidities are common in COPCs patients
- Chronic pain also has far-reaching impact, causing fatigue, cognitive impairment and varying degrees of physical, social, and sexual dysfunction
- Certain medications and treatments for chronic pain (and/or other health conditions) can also contribute
- Interplay is highly complex and unique to each person
- A comprehensive assessment includes assessment of these conditions and factors



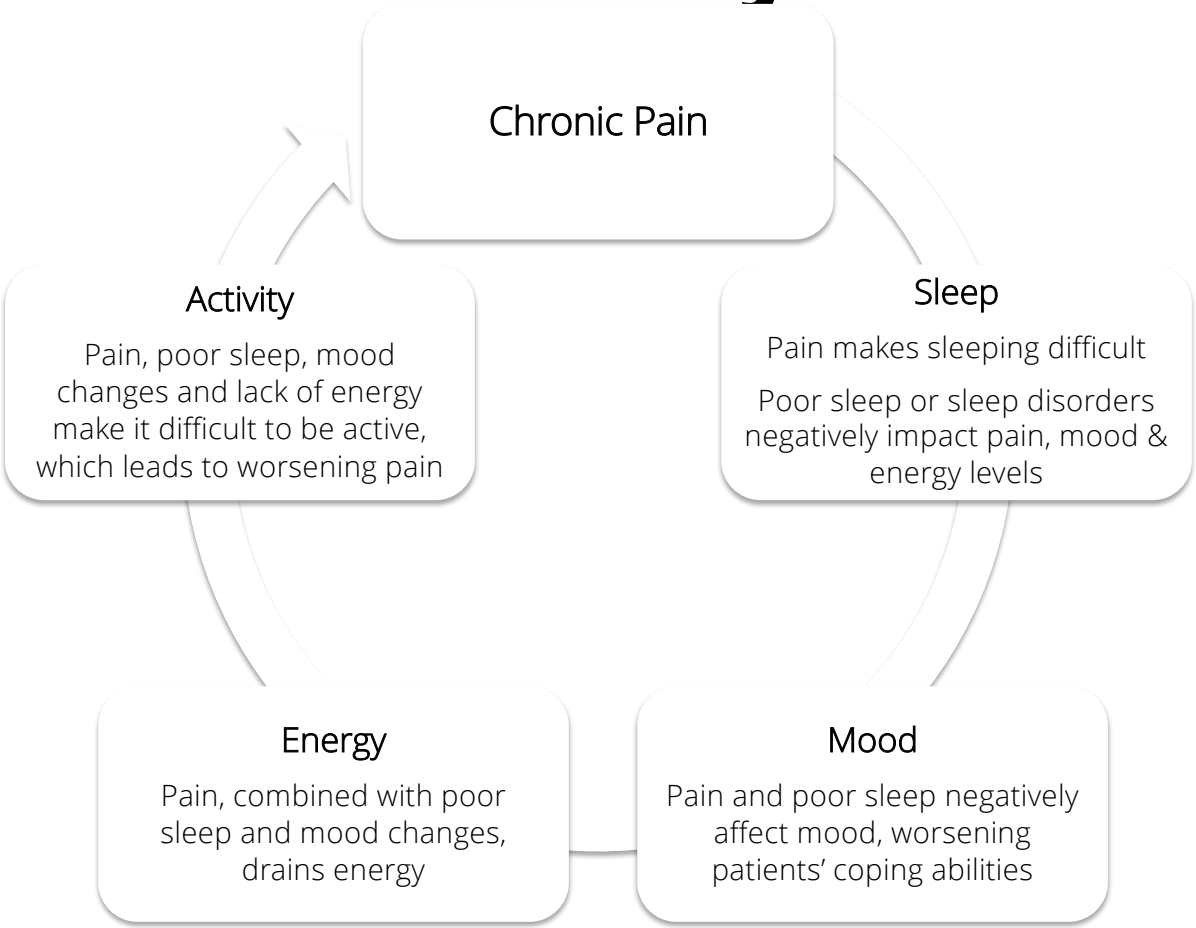
Pain & Sleep: Major Findings

1	Sleep disturbances are common among those with chronic pain.
2	Pain disrupts sleep, with difficulty falling or staying asleep, poor sleep quality, short sleep duration, and disrupted sleep architecture.
3	Sleep disturbance aggravates pain and inflammatory processes, reduces endogenous pain inhibitory responses, increases emotional distress and reduces well-being.
4	Sleep deprivation is associated with worsening neurocognitive, behavioral, metabolic and autonomic parameters, and alterations in neuroendocrine and immuno-inflammatory systems.
5	Sleep deprivation increases risk of chronic conditions, including diabetes mellitus, cardiovascular disease, cancer and mortality, particularly in women.

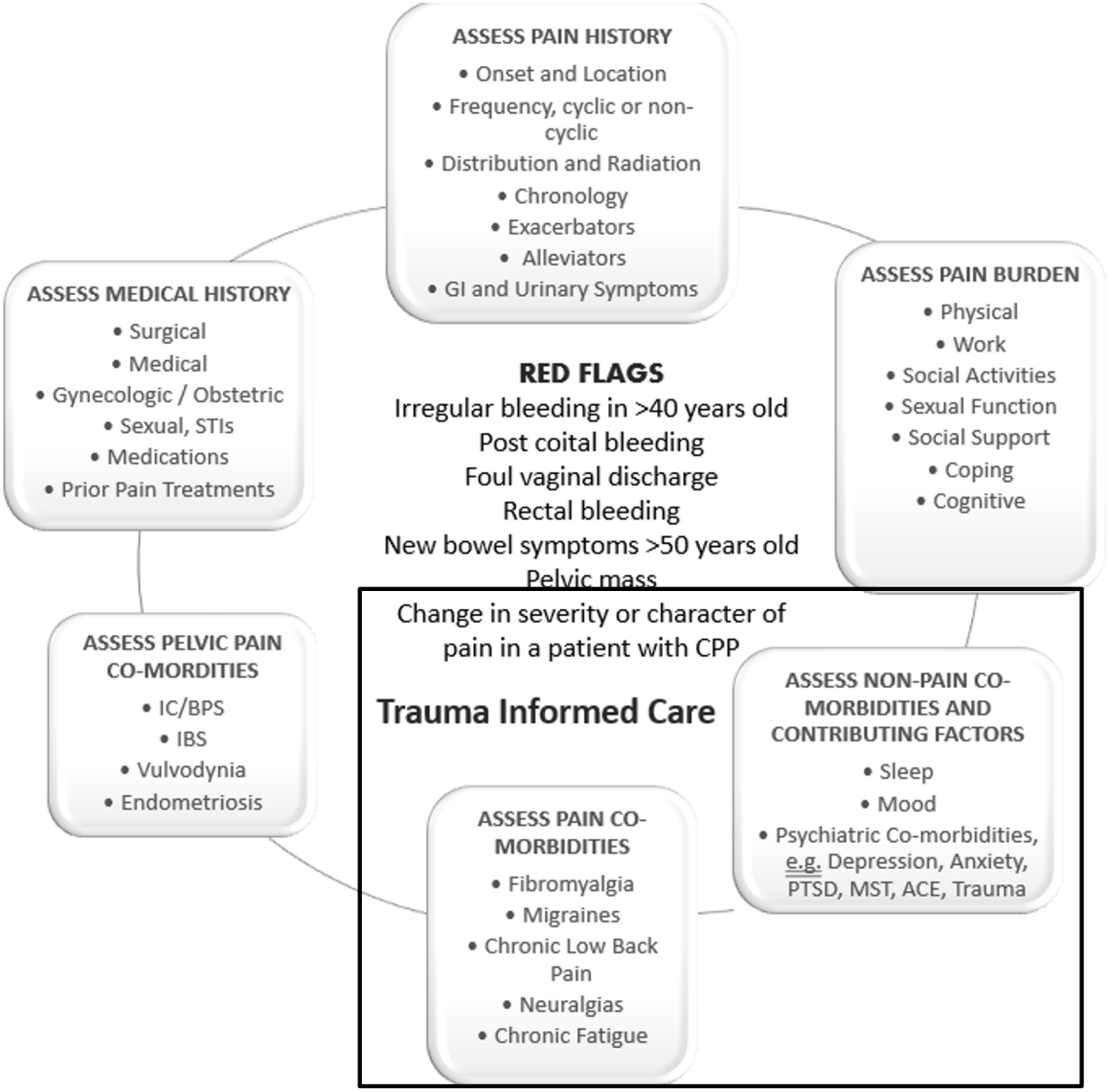
Pain & Sleep: Major Findings

1	Data supports a bidirectional link between chronic pain and mood disorders. Chronic pain increases risk of developing a mood disorder, and psychological variables (e.g., depression, anxiety, distress) are potent predictors of developing chronic pain.
2	Although psychiatric conditions can co-occur with chronic pain, negative affect (at sub-threshold levels for a mood disorder) plays an influential role in shaping pain responses and pain-related outcomes.
3	Psychological variables (e.g., somatic awareness, anxiety, pain-related catastrophizing) likely reflect altered peripheral and central nervous system processing of sensory stimuli.
4	Psychological processes either exist as pre-existing "vulnerability" factors (e.g., childhood trauma, distress, fear, catastrophizing) or potentially "protective" factors (e.g., social support, active coping, acceptance, self-efficacy).
5	Assessment of clinical/sub-clinical depression and anxiety is essential, as is assessment of maladaptive thoughts in both depressed and nondepressed patients. These include beliefs, attitudes, catastrophizing, coping, control, self-efficacy.

Clinical Presentation: Vicious Cycle



Biopsychosocial Pain Assessment



NEW

Important Elements of Physical Examination

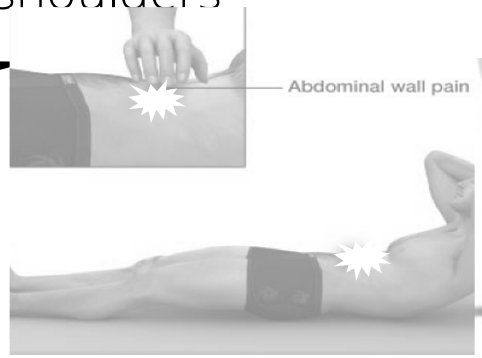
TRAUMA INFORMED CARE

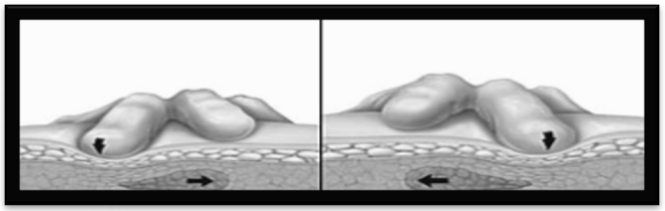
General	Musculoskeletal and Neurosensory	External Vulvar and Neurosensory	Internal Single Digit Musculoskeletal	Speculum
•Mood •Affect	•Gait •Posture •Abdomen and Pubic Symphysis •Back SI Joints •Inguinal and Ventral Hernias, Scars •Myalgias •Neuralgias •Radiculopathy	•Neuralgias •Dermatoses	•Palpation •Tone •Voluntary Contraction and Relaxation •Bimanual for Adnexal Masses or Pain •Rectovaginal •Prolapse •Myalgias	•Vaginal Discharge •Vaginitis and STI screen •Cervical Masses

Catastrophizing
rumination
maladaptive beliefs:
fear avoidance

Musculoskeletal

Numeric Rating Scale 0 (no pain) – 10 (most intense pain imaginable)
McGill Pain Questionnaire (MPQ) (yields sensory, affective & evaluative subscales)
Retrospective Self-Report and or Pain Diaries Q: For how long have you experienced *pain most of the time*?
Pain Drawing Included in MPQ Q: Does pain radiate to other body areas?





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Assessment of Sleep Quality

Clinical Pearls	Prevalence of sleep disorders vary by pain condition and are irregular. Insomnia, hypersomnolence, sleep apneas and restless legs syndrome may be the most common sleep disorders in those with chronic pain. Diagnostic tests differ by sleep disorder, as does treatment.
Assessment Differential Diagnosis	Management of Common Sleep Disorders (APF) Classification of Sleep Disorders Assessment of Psychosocial and Functional Impact of Chronic Pain
Screening Tools	Sleep Disorders Screening Checklist-25: A Primary Care Friendly and Comprehensive Screener for Sleep Disorders

Assessment of Mood & Maladaptive Thinking

Assessment Differential Diagnosis	Depression: Screening for Depression (AFP) Anxiety: Diagnosis and Management of Generalized Anxiety Disorder (AFP) Beliefs/Attitudes: Assessment of Psychosocial & Functional Impact of Chronic Pain
Screening Tools	Depression: Patient Health Questionnaire-9 Anxiety: Generalized Anxiety Scale-7 Beliefs, Attitudes, Coping: Fear-Avoidance Beliefs Questionnaire, Pain Self-Efficacy Scale Abbreviated, Coping Strategies Questionnaire

Other Nonpain Domains Important to Assess

Domain	Findings	Assessment	Screening Tools
Physical Function & Disability	COPCs patients report increasing levels of physical dysfunction and disability.	Assessment of Psychosocial and Functional Impact of Chronic Pain	Pain Disability Index Keele Assessment of Participation (also assesses social function)
Sexual Function	COPCs, in varying degrees dependent on their bodily location and severity, can result in sexual dysfunction.	Sexual Function in Chronic Illness	Female Sexual Function Index
Fatigue	Tiredness/fatigue is commonly associated with chronic pain and is part of the symptomology of several COPCs (e.g., ME/CFS, FM).	Fatigue: An Overview	Multidimensional Assessment of Fatigue
Cognitive Impairment	Cognitive impairment (in varying degrees) is experienced by those with chronic pain and is part of the symptomology of some COPCs (e.g., FM, ME/CFS).	Methods and Instruments to Evaluate Cognitive Function in Chronic Pain Patients: A Systematic Review	Multidimensional Inventory of Subjective Cognitive Impairment
Social Support	Social support has been shown to decrease the adverse influence of pain-related stress and facilitate coping ability.	Social and Emotional Support and its Implication for Health	Duke-UNC Functional Social Support Questionnaire

Principles of Trauma-Informed Care

UNIVERSAL SCREENING for history of trauma *before* the examination, including childhood, adult or elder abuse (physical, sexual, emotional) and combat trauma

Provide a SENSE OF CONTROL

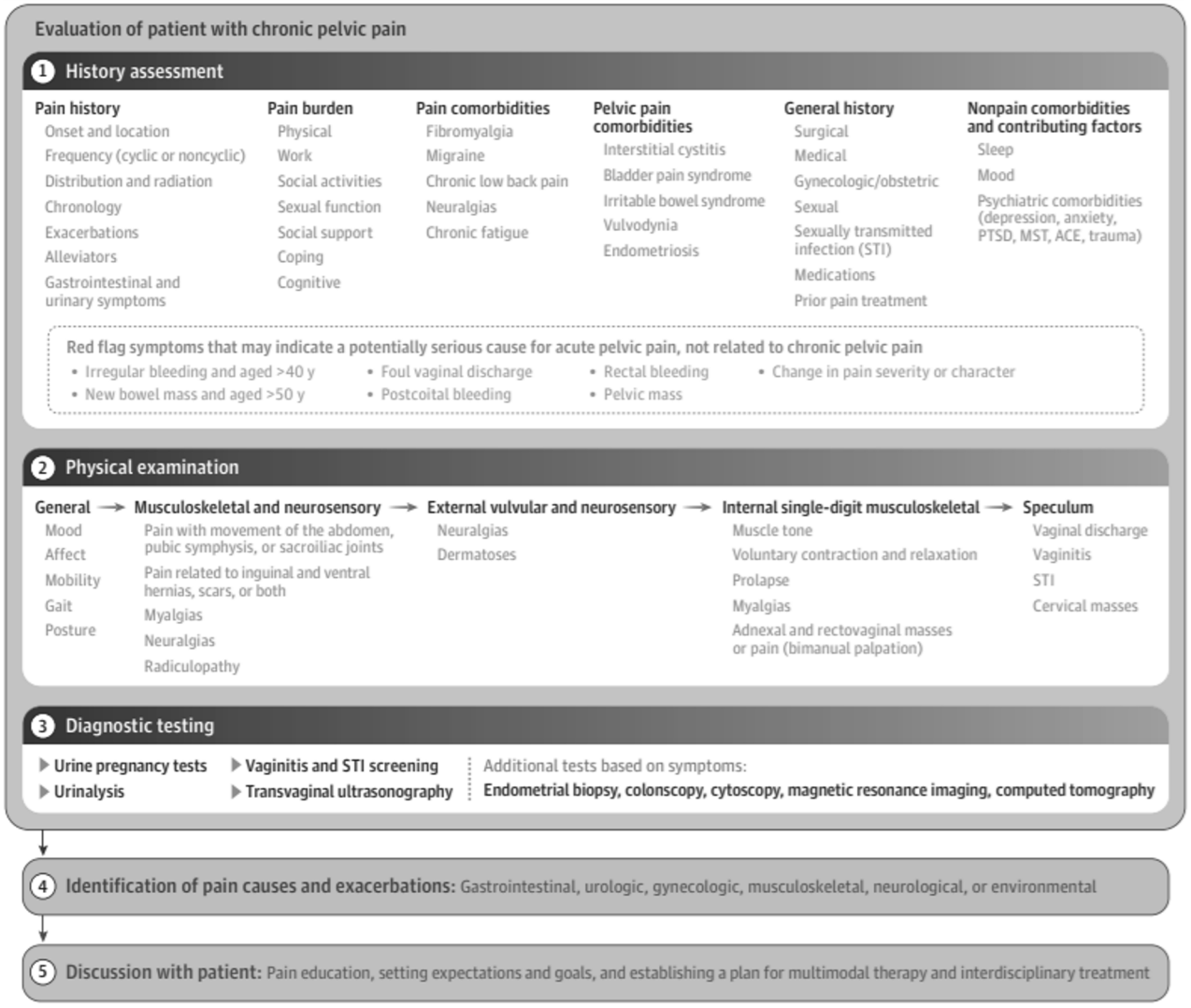
- Take the history with the patient dressed
- Explain what is being examined, explain sensory scales
- Get permission to start/resume the exam and option to stop
- Establish TRUST, validate the personal pain experience, differentiate between clinical setting and 'what you feel at home'
- Monitor verbal/nonverbal cues of discomfort, employ distractions, if signs of distress… "*Would you like to stop and take a minute or delay?*"

CHAPERONE must be present for pelvic/genital examination

Putting It All Together

When considering causes for pain think multifactorial and organ system

Figure 2. Suggested Steps to Be Taken During the Evaluation of Chronic Pelvic Pain



ACE indicates adverse childhood event; MST, military sexual trauma; and PTSD, posttraumatic stress disorder.

How do we evaluate and treat patients with COPCs?

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Department of Health and Human Services, Pain Management Best Practices, 2019

Best care practices recommend:

- Individualized approach to pain management
- Interdisciplinary treatments
- Education
- Shared decision making
- Goal setting

This approach has proven to reduce pain severity, improve mood and overall QoL, increase function in patients with chronic pain

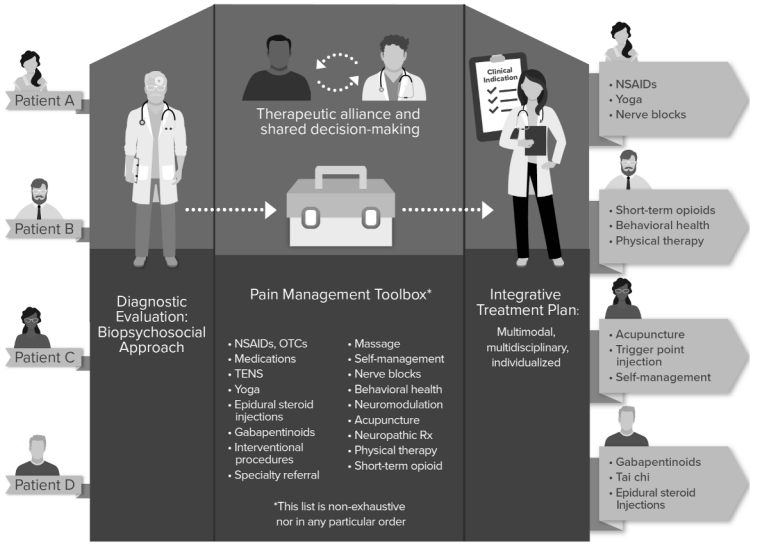
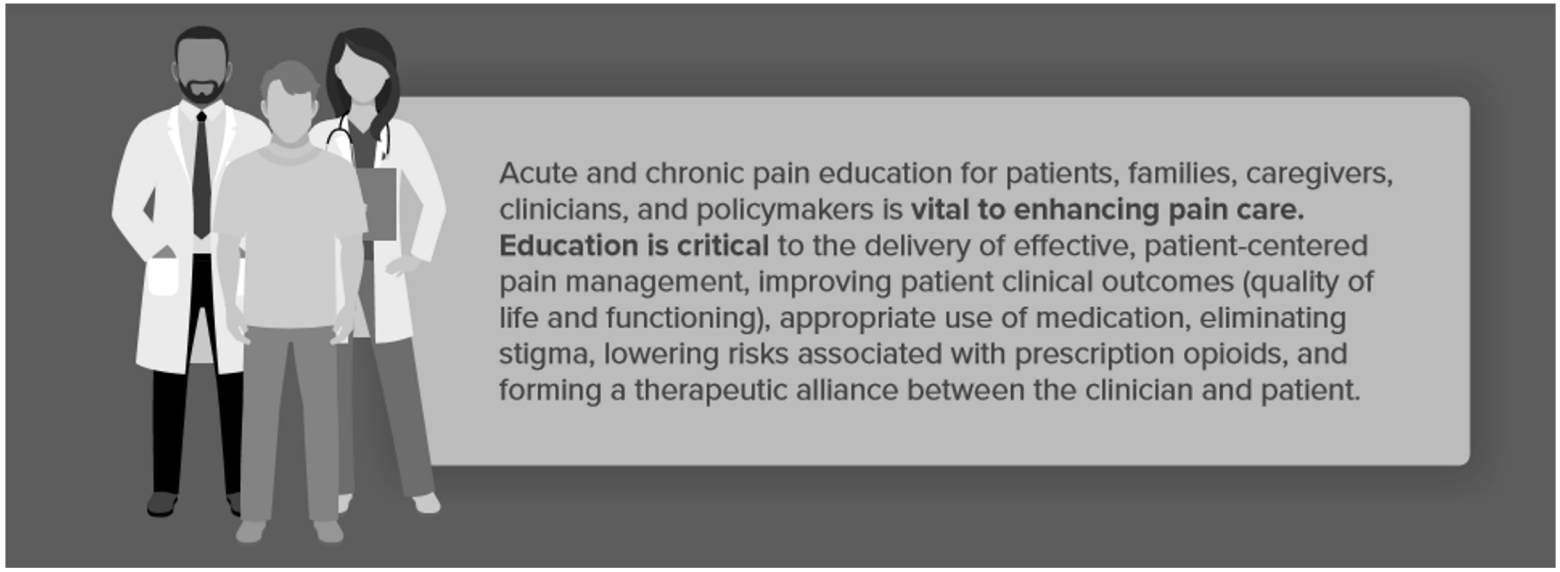


Figure 6: Individualized Patient Care Consists of Diagnostic Evaluation That Results in an Integrative Treatment Plan That Includes All Necessary Treatment Options

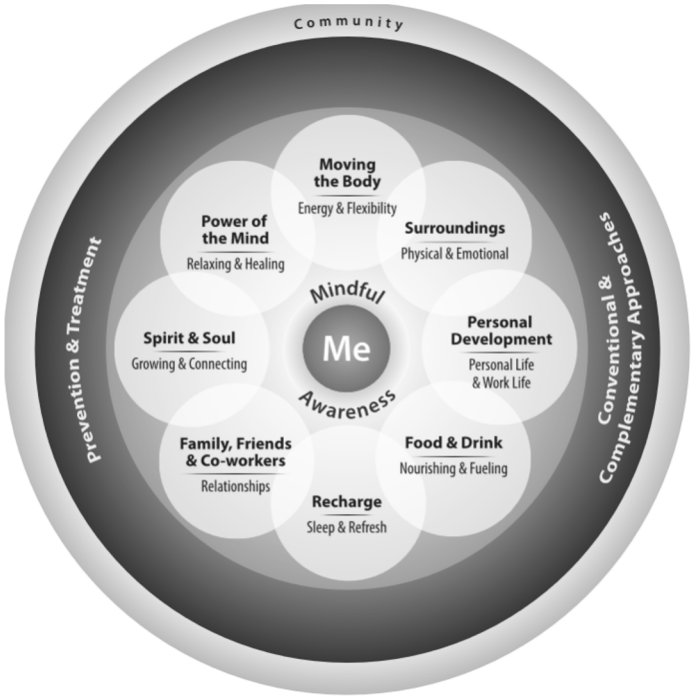
U.S. Department of Health and Human Services (2019, May). Pain Management Best Practices Inter-Agency Task Force Report: Updates, Gaps, Inconsistencies, and Recommendations. Retrieved from U. S. Department of Health and Human Services

Department of Health and Human Services, Pain Management Best Practices, 2019



- Set time aside for education
- Tailer education based on the learning style of our patient
- Use education to improve adherence and promote self-care

Essential Elements of the First Patient-Clinician Interaction



- COPCs can be multifactorial, may require multiple interventions, several visits and long-term follow-up
- Biopsychosocial assessment may involve repeat physical (pelvic) examinations
- Mind-body interactions and whole-health approaches are beneficial
- Prioritize what is considered improvement, and choose what to work on first

This education must be done even if it requires a subsequent or prolonged visit

Key Components of Therapy Success

Shared Decision-Making: the AHRQ SHARE Approach

1. **S**eek your patient's participation
2. **H**elp your patient explore and compare treatment options
3. **A**ssess your patient's values and preferences
4. **R**each a decision with your patient
5. **E**valuate your patient's decision

Agency for Healthcare Research & Quality (AHRQ)
Curriculum & handouts available at: https://www.ahrq.gov/professionals/education/curriculum-tools/shareddecisionmaking/tools/sharefactsheet/index.html

Functional Goal Setting

Research demonstrates that goal-setting:

Increases progress toward mutually agreed upon goals

Fosters adherence to clinician recommendations

Helps create successful individualized treatment plan

Improves patient-clinician communication

- **S**pecific
- **M**easurable
- **A**ction oriented
- **R**ealistic
- **T**imed

How to:

http://projects.hsl.wisc.edu/SERVICE/modules/30/M30_CT_Goal_Setting_for_Pain_Rehabilitation.pdf

Integrative Therapies for IBS

1st Line

Dietary changes

Identification of food sensitivities and elimination (e.g. lactose)

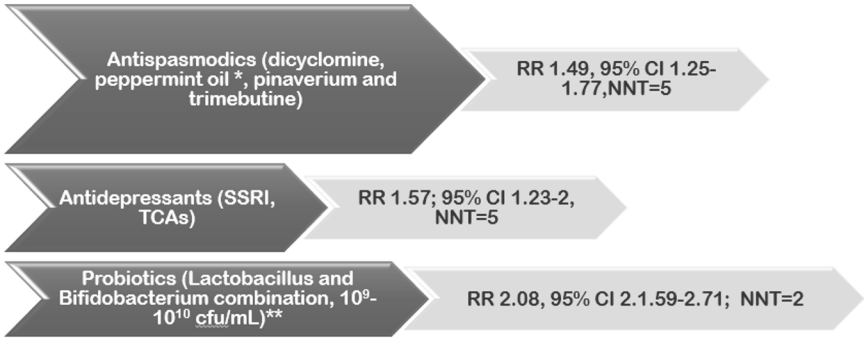
Education and self-management

Stress management, exercise, mindfulness, meditation, cognitive behavioral therapy

Restore normal gut *function*

- **Moderate fiber (slowly up to 30g/day over several weeks), stool softeners and water intake**
- **Restore healthy gut bacteria**
- **Improve bowel motility; reduce diarrhea and constipation**

2nd Line



Peppermint oil dose 0.2-0.4 mL of 300mg/mL enteric-coated capsules TID (smooth muscle relaxant can cause GERD,)
****Probiotic may work best for IBS-Diarrhea**

FDA Approved for IBS

After colonoscopy and GI evaluation

IBS-D	IBS-C
Rifaximin	Linactolide
Eluxadoline	Lubiprostone
Alosetron	Tegaserod

Integrative Therapies for IC/BPS

1st Line

Pain education

2nd Line

Physical therapy

Pharmacotherapy

- Amitriptyline
- Cimetidine
- Hydroxyzine
- PPS–FDA approved

3rd Line

Stress management

4th Line

Relaxation

Intravesical instillation

- Heparin
- DMSO
- Lidocaine

5th Line

Self-care

6th Line

Behavioral modifications

Cystoscopy with hydrodistension and treatment of Hunner's Ulcers

Intradetrussor Botulinum toxin A

Neuromodulation

Cyclosporine A

Diversion +/- cystectomy, cystoplasty

Integrative Therapies for ***Chronic*** Low Back Pain

Pain education, self care, physical activity/therapy, mindfulness, stress reduction and cognitive behavioral therapies

If inadequate response to nonpharmacologic therapy then nonsteroidal anti-inflammatory drugs as 1st line therapy, or tramadol or duloxetine as 2nd line therapy. Nonbenzodiazepine muscle relaxants may also be used short term.

Short term opioids only in patients who have failed previous treatments and only if the potential benefits outweigh the risks for individual patients and after a discussion of known risks and realistic benefits with patients.

Opioids

FDA Approved Therapies

INTRACEPT® Intraosseous Nerve Ablation System	**Radiofrequency Ablation**	**2016**
Senza® Spinal Cord Stimulation System	**Neurostimulation**	**2015**
***Duloxetine (Cymbalta®)**	**SNRI**	**2010**

Integrative Approaches to TrPs and Myofascial Pelvic Pain

Individualized multidisciplinary treatment is recommended by experts; however, evidence-based guidelines are lacking

Physical therapy: manual therapy, exercise, patient education of pelvic anatomy and function, use of physical agents to improve tissue elasticity or tolerance to sexual intercourse (i.e., TENS, biofeedback, ultrasound, laser, vaginal dilators).

Medical therapy: NSAIDS, muscle relaxants, less evidence for TCAs and anticonvulsants. Hormonal suppression of menstruation if pain is cyclical.

Additional interventions include injection therapy (using anesthetics or botulinum toxin A, equally effective), neuromodulation (few observational studies).

Integrative Therapies for Fibromyalgia

Education

Physical Therapy
Exercise

Therapy: for mood, sleep, cognitive impairment

Pharmaco-therapy

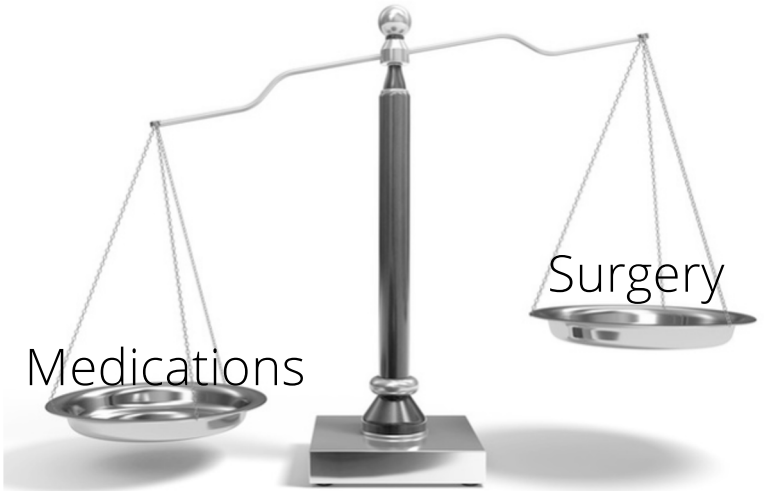
FDA approved therapies for fibromyalgia

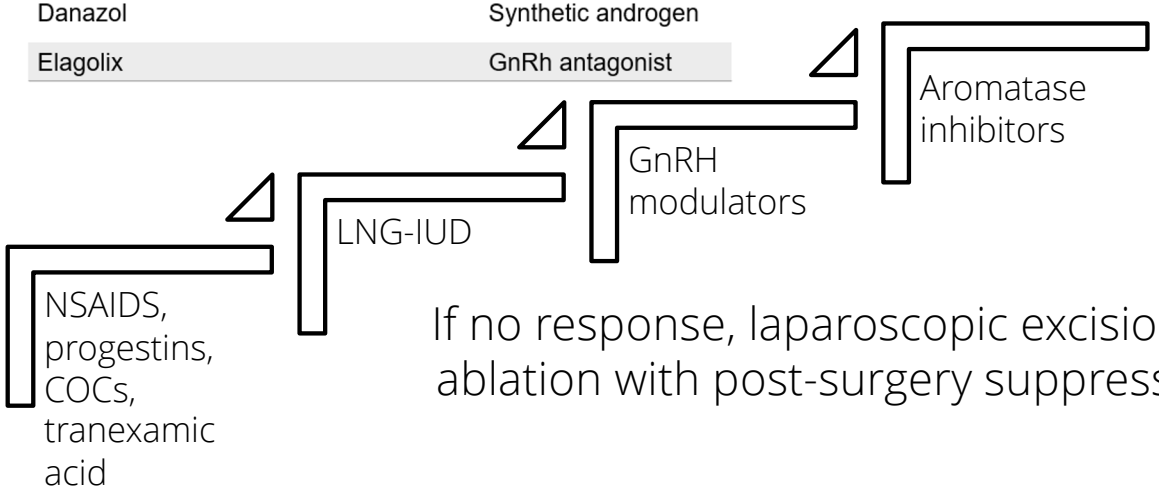
Milnacipran HCL	SNRI	2009
Duloxetine	SNRI	2008
Pregabalin	Anticonvulsant	2007

Therapy Options for Endometriosis CPP

FDA Approved Pharmacotherapy for Endometriosis

Treatment	Type
Norethindrone	Synthetic progestin
Medroxyprogesterone acetate	Progestin
Leuprolide acetate	GnRH agonist
Nafarelin acetate	GnRH agonist
Goserelin acetate	GnRH agonist
Danazol	Synthetic androgen
Elagolix	GnRh antagonist





If no response, laparoscopic excision or ablation with post-surgery suppression

Hysterectomy (+/- BSO)

Fertility is preserved

Infertility

Summary Evidence on Endometriosis-Associated Chronic Pelvic Pain

- When using medical therapy
  - Full suppression of menstruation with continuous regimens is recommended in women with endometriosis associated pain and/or dysmenorrhea
  - Progestins are preferred over E/P hormonal regimens
  - Expect that therapies will not be effective long term (~ every 2 years)
- When using surgical therapy
  - Up to 40% of patients do not respond, recurrence rates are high; 15%-50% have recurrent pain or reoperation within 2 years
  - Medical suppression with progestins, LNG-IUD, GnRH analogues or combination contraceptives delays recurrence of pain after conservative surgery
- Hysterectomy is beneficial for pain relief; however, ovarian preservation is recommended in women aged <40 years as oophorectomy is associated with severe menopausal symptoms and increased all-cause mortality

VULVODYNIA

- Psychological interventions and physical therapy are recommended (grade B) based on level 2 and 3 evidence.
- Vestibulectomy is recommended with caution for PVD only, once less invasive treatments have been attempted (grade B) based on level 2 and 3 evidence.
- Tricyclic antidepressants are not recommended for management of PVD alone (grade A) based on level 1 evidence, although TCAs are recommended for the management of pain in patients with centralized pain syndromes.
- Topical corticosteroids are not recommended (grade C) based on level 3-5 evidence.
- Lidocaine ointment is not recommended for long-term use for PVD (grade B) based on level 2 and 3 evidence, although it may be beneficial for short-term use.
- There is not enough evidence to recommend anti-inflammatory agents, anticonvulsants, hormonal treatments, Capsaicin, botulinum toxin A, as first-line treatments.

Goldstein AT, Pukall CF, Brown C, Bergeron S, Stein A, Kellogg-Spadt S. Vulvodynia: Assessment and Treatment. *J Sex Med*. 2016;13(4):572-590.

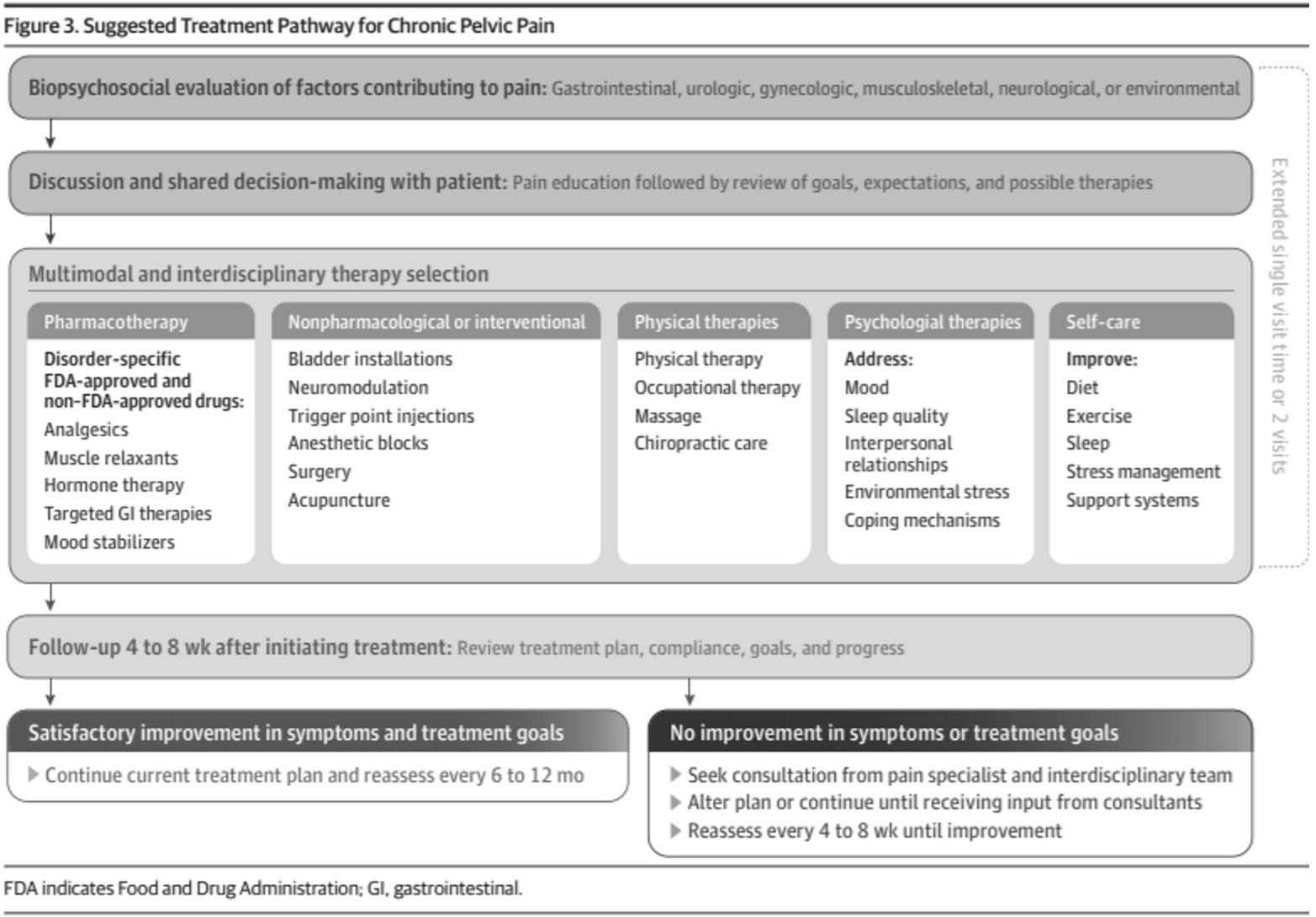
Treatment Selection

Think multimodal, mind-body and rehabilitation

Pain management takes time!

Set time aside specifically for discussion, education, assessing progress.

Do not set up the expectation that CPP can be 'cured' in one visit



Key Summary Points

1	*Chronic overlapping pain conditions (COPCs)* describe a set of conditions that often co-exist and either predominantly or solely affect women, which share similar disease mechanisms across the neurological, endocrine and immunological systems.
2	Large, multisite, NIH-funded studies demonstrate that COPCs comorbidity is associated with abnormalities in two general constructs: Generalized Sensory Sensitivity and S.P.A.C.E. (sleep, pain, affect, cognition, energy).
3	Mounting evidence demonstrates that with increasing body sites of pain, a vicious cycle ensues, with worsening of localized and systemic pain symptoms; decreased treatment effectiveness; reduced health and psychosocial outcomes; increased disability and costs; and markedly reduced quality of life.
4	Evidence suggests that genetic predisposition and environmental exposures combine to increase the risk of developing and maintaining COPCs, through abnormal pain amplification and emotional distress, moderated by factors from multiple body systems. COPCs are not an extension of acute pain but considered a complex multisystem illness.
5	Most COPCs are diagnoses of exclusion, i.e., they are diagnosed after known causes for pain in different body systems/locations are ruled out. Diagnostic criteria for each COPC contain elements of criteria put forth for diagnosing Central Sensitization.

Key Summary Points

6	The biopsychosocial model is the most heuristic approach to chronic pain assessment and treatment, and the best foundation for tailoring a comprehensive pain management regimen to individual patients. Multimodal, interdisciplinary treatment, based on this model, is vital to addressing the complexities faced by COPCs patients.
7	Elements of a comprehensive biopsychosocial pain assessment include taking a detailed medical history and conducting a physical exam to clarify pathophysiology, if possible. Assessment of critical pain domains, along with nonpain comorbidities/domains, such as sleep, mood, cognition and fatigue, are critical, as is assessing pain's impact on physical, social and sexual function.
8	Developing functional goals that patients can begin to work towards between visits has been shown to foster adherence to clinician recommendation and improve patient-clinician communication, among other benefits. It is an important part of a successful individualized treatment plan for COPCs patients.
9	An individualized treatment plan for COPCs patients includes a combination of: FDA-approved treatment options (available for 6 of 10 COPCs); other disorder-specific approaches; universal chronic pain treatment approaches; and treatment for nonpain comorbidities, such as sleep and mood disorders.

Resources

- Painguide.com
- Pelvicpaineducation.com
- International Pelvic Pain Site: www.pelvicpain.org
  - CPRA Web Site: www.chronicpainresearch.org.
  - Companion Patient Self-Help Guidebook, available at: http://chronicpainresearch.org/Resources
  - COPCs Brochure, available at: http://chronicpainresearch.org/Resources
  - Electronic Newsletter, *COPCs Research Advances,* provides abstracts of recently published studies on the epidemiology, pathophysiology and clinical management of COPCs. Available at: http://chronicpainresearch.org/New_Findings
  - CPRA White Paper: *Impact of Chronic Overlapping Pain Conditions on Public Health and the Urgent Need for Safe and Effective Treatment: 2015 Analysis and Policy Recommendations*, available at: http://chronicpainresearch.org/Resources.

Differential Diagnoses Resources

For further reading on the differential diagnoses of COPCs,

Condition	Resources
cMig	Chronic Migraine. Classification, Differential Diagnosis, and Epidemiology. Chronic Daily Headache: Diagnosis and Management (APF).
cTTH	The Differential Diagnosis of Chronic Daily Headaches. Chronic Daily Headache: Diagnosis and Management (APF).
TMD	Expanding the Taxonomy of the Diagnostic Criteria for Temporomandibular Disorders.
Vulv	Etiology, Diagnosis and Clinical Management of Vulvodynia.
Endo	Endometriosis: Pathogenesis, clinical features, and diagnosis. Diagnosis and Management of Endometriosis (APF). Invasive and non-invasive methods for the diagnosis of endometriosis.
IC/PBS	AUA Clinical Guideline: Diagnosis & Treatment of IC/BPS. Update on the Pathology and Diagnosis of IC/BPS: A Review.
IBS	Diagnosing Irritable Bowel Syndrome: What's Too Much, What's Enough?
FM	Differential Diagnosis of Fibromyalgia.
ME/CFS	Beyond ME/CFS: Redefining an illness. Report guide for clinicians.
cLBP	Clinical Classification in Low Back Pain: Best-Evidence Diagnostic Rules Based on Systematic Reviews. Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the ACP & APS. Common Questions About Chronic Low Back Pain (AFP).

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