Preventing Chronic Pain and Addiction

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Chronic Pain = & Addiction
#1 reason people seek care

67% of all visits

Mayo Clinic Proceedings, 2011
The most common chronic condition

Figures in millions of people from the Institute of Medicine of The National Academies and the American Diabetes, Heart and Cancer Associations.
#1 Cause of Disability

- Arthritis or rheumatism: 8.6
- Back or spine problems: 7.6
- Heart trouble: 3.0
- Mental or emotional problem: 2.2
- Lung or respiratory problem: 2.2
- Diabetes: 2.0
- Deafness or hearing problem: 1.9
- Stiffness or deformity of limbs/extremities: 1.6
- Blindness or vision problem: 1.5
- Stroke: 1.1

Number (in millions) of 47.5 million U.S. adults with a disability

http://www.cdc.gov/Features/dsAdultDisabilityCauses/
#1 cause of addiction

Headache and orofacial pain are the most common...

Lifetime Prevalence of Headache

- Tension headache: 16%
- Migraine: 6%
- 78% had at least one headache within the past year

http://www.americanheadachesociety.org/assets/1/7
Joint pain is the most expensive...

33% reported joint pain in last 30 days

http://www.cdc.gov/arthritis
Back and neck pain cause more disability...

Any Given Day

- 24%

Sometime in their life

- 90%

Summary Health Statistics for U.S. Adults: National Health Interview Survey, Center for Disease Control, 2011
Billions are spent treating it
How well do treatments work?
What about opioids?

Strong opioids (morphine, hydromorphone, oxycodone, oxymorphone, and tapentadol) were compared to placebo in six pain trials (1887 participants).

They were found to be better than placebo for short-term relief from musculoskeletal pain with moderate quality evidence.

Most doctors agree!

42% of workers with back injuries receive opioids at their 1\textsuperscript{st} visit
But, 16% were still on opioids at one year

At HealthPartners in Midwest...
29.2% of patients with back pain were taking opioids, even though it is generally not recommended (2014)
In RCTs, opioids = NSAIDs for chronic pain

Two trials showed NSAIDs had equal back pain relief than opioid.

• Study 1 (796 patients): 63.2% had relief with NSAID versus 49.9% with opioid.
• Study 2 (802 patients) 64.1% had relief with NSAID versus 55.1% with opioid.

And, there were fewer adverse events in the NSAID group.

What about Arthroscopic Knee Surgery?

- **2008 Canadian study**—91 patients with osteoarthritis of the knee were randomly assigned either physical/medical therapy or arthroscopic surgery. No differences between groups at either point.

- **2013 Canadian study**—351 patients were randomly assigned either physical/medical therapy or arthroscopic surgery and followed at 6 month and 1 year. No differences between groups at either point.

AKirkley A, NEJM September 11, 2011 and NEJM May 2, 2013
Systematic Reviews of RCTs

- Physical therapy & chiropractic
- Cognitive-Behavioral treatments
- Psychological treatments
- Splints and orthotics
- Medications including opioids (oral & topical)
- Injections and nerve blocks
- Surgery and implants

Preventing chronic pain at https://www.coursera.org/learn/chronic-pain
Opioids vs NSAIDs for musculoskeletal pain

Results: Oral doses of opioids have similar efficacy to non-steroidal anti-inflammatories for musculoskeletal pain
Tricyclics vs placebo for chronic pain (n=484)

Conclusion: Overall trend toward showing favorable effects of the tricyclics compared to placebo (P = 0.037).

Bendtsen et al., 1996
Gobel et al., 1994
Holroyd et al., 2001
Langemark et al. 1990
Pfaffenrath et al. 1994
Exercise vs placebo for head and neck pain (n=150)

Conclusion: Exercise shows greater improvement than placebo in treating MFP pain.

Fusion back surgery (n=392) vs back rehabilitation with exercise and cognitive therapy (n=242)

Conclusion: There is a trend to favor surgery but no statistical differences between surgical treatment versus non-surgical treatment (95%CI: −0.82 to 9.08, p=0.10)
Almost every treatment works about 10 to 20% above placebo...

Systematic reviews show...

Almost every treatment works about 10 to 20% above placebo... but only short-term
Over half of individuals with pain conditions at 1 month still have pain 5 years later.

Many of these patients continue to seek care for their pain years after onset.

Failed treatment and delayed recovery is often due to many physical, behavioral, and psychosocial risk factors that are not addressed.

What do we do about it?
Solution:
Improve treatment outcomes

“An ounce of prevention is worth a pound of cure”
-Benjamin Franklin
Consider ancient wisdom:

“It is more important to know what kind of person has a disease than to know what kind of disease a person has.”

-Hippocrates
(384 BC to 322 BC)
Risk Factor (causes)

Characteristic, condition, or behavior, such as poor sleep, diet, stress or smoking, that increases the possibility of illness, injury, pain (sensitization).

Protective Factor (cures)

Characteristic, condition, or behavior, such as exercise or healthy diet, that prevents or reduces vulnerability to developing an illness and pain.
How do risk factors increase pain?

Body

Nerves & Spinal cord

Brain

Injury, strain, & inflammation

Wind-up & convergence

Central Sensitization
### Studies of Risk and protective factors for chronic pain

<table>
<thead>
<tr>
<th>Category</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body</strong></td>
<td>e.g. fitness, range of motion, posture, strength, injury</td>
</tr>
<tr>
<td><strong>Lifestyle</strong></td>
<td>e.g. diet, sleep, activity level, pacing, sitting, strain, work activity, substance use</td>
</tr>
<tr>
<td><strong>Emotions</strong></td>
<td>e.g. anxiety/calm, depression/happiness, anger/peace, guilt/shame</td>
</tr>
<tr>
<td><strong>Spirit:</strong></td>
<td>e.g. direction/ burned out, hope/ hopeless, stress, self-compassion</td>
</tr>
<tr>
<td><strong>Society</strong></td>
<td>e.g. harmony with others, social connection/ support, stress, secondary gain/ recovery rewards</td>
</tr>
<tr>
<td><strong>Mind</strong></td>
<td>e.g. optimism/ pessimism, understanding, expectation, self-efficacy, resilience, coping</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>e.g. safe, clean, infection-free, organized, orderly, adverse event-free, accident-free</td>
</tr>
</tbody>
</table>
Recovery Principle

- Fewer Risk Factors
- More Protective Factors
New Model of Transformative Care

**Treat** as usual with medications, therapy, surgery, and others

**Train** patients in self-management to reduce risk and boost protective factors

**Team** with health coach to support patient change

Transform the patient and the health care system
Transformative Care is a rare TRIPLE WIN!

- Better quality of care
- Better outcomes of care
- Lower cost of care

-Institute for Healthcare Improvement
Barriers to self-management

Neglected in routine care due to...

- Not part of biomedical model
- Inadequate time to “train” patients
- Lack of reimbursement
- Healthcare reform and regulation by health plans
- Tedious electronic health record charting
- Inadequate training of health professionals

Battersby M et al. The Joint Commission Journal on Quality and Patient Safety. 2010
Massive Open On-line Course

Preventing Chronic Pain: A Human Systems Approach

Be the change you want to see in the world.
-Gandhi
Participant Ratings (n=771)

95% very good to excellent lesson quality
93% changed their life
85% changed their care

“Absolutely fascinating and enlightening…This information should be part of every health care educational program!”

“This course has really helped me to understand myself better and why I think, act and see the world as I do.”

“I am eternally grateful for taking the time and energy to provide this beacon of knowledge to the world.”

“I think this course is a wonderful gift…pain is an avoidable part of our lives.”
Self-management pain program for patients
- improve outcomes of treatment and relieve pain
  long-term
- 32 on-line training tools to improve outcomes
- Personalized based on risk factors present
- On-line access anywhere anytime
- Tele-health coaching

Supported by NIH NIDCR R34DE024260 and NIDCR/U01DE025609
32 on-line training tools...

- **Understand pain**: Conditions, causes, treatments, self-management
- **Body tools**: Stretching, exercise, posture, reducing strain
- **Lifestyle tools**: Diet, sleep, substance use, and activity level
- **Emotion tools**: Anxiety, depression, anger, guilt, and shame
- **Mind Tools**: Optimism, self-efficacy, expectations, coping, resilience
- **Spirit tools**: Purpose, self-compassion, hopefulness, grit and determination
- **Social tools**: Belonging, social support, work well-being, social stressors
- **Environment tools**: Safe living, hygiene, pollution-free, and minimizing risk
Program Instructions

Following the steps below, from start to finish, will provide you with the right knowledge and experiences as you need them along the way. You'll be able to start the next step as soon as you complete the step before it. You'll also fill out several short assessments; these will help you track your progress and provide you with some insight into how you’re feeling. Please take your time on each Lesson, and be sure you complete your homework between Lessons. You can start a Lesson and then leave it at any time; your information will be saved and when you return you can continue the lesson from the same spot where you left off. Good luck!
Each PACT tool includes...

- Pain and Risk Assessment
- Personalized CBT training to reduce risk factors & strengthen protective actions
- Personal stories of real people
- Daily action plan (habits, pauses, calming)
- Documenting outcomes
- Overcoming barriers
Engaging staff present material

Professor Payne  Action Annie  Calming Kate  Barrier Bob
Healthy HABITS

Healthy Actions Bring Improvement & Transformation

Studies of...
- Exercise
- Posture
- Diet
- Sleep
- Social support

👍👍👍 = Excellent results
Take a PAUSE

Pause Assess Understand Start New Enjoy moment

Studies of...

Mindfulness practice
Posture & strain awareness
Substance use
Emotional awareness
Social support

👍👍👍 = Excellent results
Practice CALMING

Calming Actions Lighten the Mind

Studies of...
Meditation
Biofeedback/relaxation
Self-hypnosis
Emotional calming

👍👍👍 = Excellent results
Health Coach & Support Team

- Support self-management
- Tele-health coach visits
- Family & friends support
- Improve adherence
- Achieve goals

= Excellent results
Resources to Enhance Engagement

- Smart phone app
- Worksheets
- Action plans
- Daily logs
- Precautions
- Seeking care
Measure Engagement & Outcomes

My Dashboard

Name: testpact2 pactest2
Work: Employed fulltime
Education: No formal education
Disability: No
Readiness to change score: 7.0

Worst pain (0-10): is
Second worst pain (0-10): is
Third worst pain (0-10): is
Other pains include:
Other symptoms include:
Amount of past health care (0-10): 0.0

Impact score: 0.0
Medical history includes:
Self-care includes:
Goals include:

Lessons Completed  Action Plan  Pain Level  Interference

Pain Level

This chart shows how your pain changes after each module
Introducing self-management to patients

“80% of success is based on what you do in self-management and 20% success comes from the treatments. Are interested?”
Introducing PACT in the clinic

Health professionals need to ask...
“...I am happy to provide you treatment but it is more effective long-term if we also train you to reduce the lifestyle causes of your pain. Are you interested?”
Preventing Chronic Pain


www.preventingchronicpain.org
Health Professional Toolkit

- On-line CME course
- Implementation plan
- Patient engagement process
- Outcomes documentation
- Resources for patients
- Reimbursement process

www.preventingchronicpain.org
Tale of Two Patients

Case 1: Mona’s Smile

27 year old female office worker and mother.

- **Chief complaints:** headaches, jaw, neck and back pain
- **Diagnoses:** myofascial pain, migraine, neck and back strain, spinal disk disorder
- **Onset:** 2 months ago. Tried OTC analgesics.
- **Risk factors:** posture at work, mild stress, some tensing, lots of caffeine
Case 2: Nancy’s Nightmare

Chief complaints: headaches, jaw, neck and back pain, pain daily

Diagnoses: myofascial pain, migraine, neck and back strain, spinal disk disorder

Onset: 17 years ago, 15 previous clinicians, multiple medications, physical therapy, counseling. “nothing works, I can’t take it! Wants surgery to fix it!”

Risk factors: Depression, anger, family conflicts, financial stress, poor sleep and diet, clenching, tensing, poor posture, unrealistic expectations, no compliance, confused, demanding
How would you treat these 2 cases?

<table>
<thead>
<tr>
<th></th>
<th>Case 1 Mona</th>
<th>Case 2 Joan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief complaints</td>
<td>Same</td>
<td>Same</td>
</tr>
<tr>
<td>Diagnoses</td>
<td>Same</td>
<td>Same</td>
</tr>
<tr>
<td>History</td>
<td>Months</td>
<td>Years</td>
</tr>
<tr>
<td>Risk factors</td>
<td>Few well controlled</td>
<td>Many uncontrolled</td>
</tr>
<tr>
<td>Treatment</td>
<td>Simple treatment with single clinician</td>
<td>Complex with team-based Transformative care</td>
</tr>
</tbody>
</table>
“Divine is the task to relieve pain.”
-Hippocrates

Thank you

www.preventingchronicpain.org