Pain Medicine treats more than 800 chronic pain conditions using a multi-modal approach

**Non-opioid medications**
- There are 200 medications in pain that are opioids.
- Non-opioid medications for non-cancer pain management.

**Psychology**
- Pain is a product of the brain. It has sensory and emotional components. Psychological skills help individuals modulate pain and engage in life.
- Psychological treatments reduce depression, anxiety, and helplessness.
  - Pain coping skills
  - Biofeedback & meditation
  - Free support group for individuals, family & friends
  - Acceptance and commitment therapy

**Opioid Tolerance**
- Over time, opioids desensitize pain pathways, requiring ever-higher doses & causing side effects.

**Interventional procedures**
- Pain Medicine specialists master more than 250 types of interventional procedures:
  - Epidural steroid injections for nerve impingement
  - Radiofrequency nerve ablation for painful nerves for facet joint neck & back pain and for painful scars after surgery & trauma
  - Cryoneurolysis for painful nerves for occipital headache
  - Spinal cord stimulation for failed back surgery syndrome and peripheral neuropathy
  - Intra-spinal medication delivery systems

**Complementary & alternative**
- Pain acupuncture & evidence-based supplements

**Pre-habilitation**
- Pre-operative conditioning to optimize surgical outcomes with pre-operative nerve and psychology treatments

**Precision health care**
- Outcomes-based care using our open source platform for learning health systems, CHOIR (Collaborative Health Outcomes Information Registry)

**Coordinated care**
- Dedicated Complex Care Case Managers (CCCMs) to connect community resources and reduce barriers to care

**Self-management**
- Empowering patients to manage their pain for patient-centered care

**Stanford Pain Management Center**
- The Stanford Pain Management Center requires completion of interdisciplinary evaluation before consideration of prescription of opioid medications. For patients struggling with substance abuse, ongoing treatment with board-certified addictionologist is a requirement before Pain Clinic evaluation.

"Chronic pain affects more American adults than heart disease, cancer and diabetes combined"

- Chronic pain costs the United States $635,000,000,000 and is the leading cause for why people are out of work.

**Side effects of long-term opioid use**
- Physical Dependence
- Sleep Disorders
- Drowsiness
- Tolerance
- Dry Mouth and Tooth Decay
- Opioid Induced Hyperalgesia
- Constipation and Bowel Dysfunction
- Low Sex Hormones
- Risk of Fracture
- 44 people in the U.S. died from overdose of prescription painkillers, and many more become addicted.

**Pain Pathways**
- Frontal cortex
  - Thought & expectations
  - Including pain experience
- Somatosensory cortex
  - Processes the type and location of pain
- Limbic system
  - Emotional processing related to pain experience
- ascending pain signal
  - Descending inhibitory signal

**Opioid Doses Suggestive of Tolerance**
- Opioids increase & decrease the sensitivity of nerves.

<table>
<thead>
<tr>
<th>Opioid</th>
<th>Dose</th>
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<tbody>
<tr>
<td>Codeine</td>
<td>150 mg</td>
</tr>
<tr>
<td>Fentanyl Patches</td>
<td>25 mcg</td>
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<tr>
<td>Hydromorphone</td>
<td>8 mg</td>
</tr>
<tr>
<td>Methadone</td>
<td>20 mg</td>
</tr>
<tr>
<td>Morphine</td>
<td>60 mg</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>30 mg</td>
</tr>
</tbody>
</table>