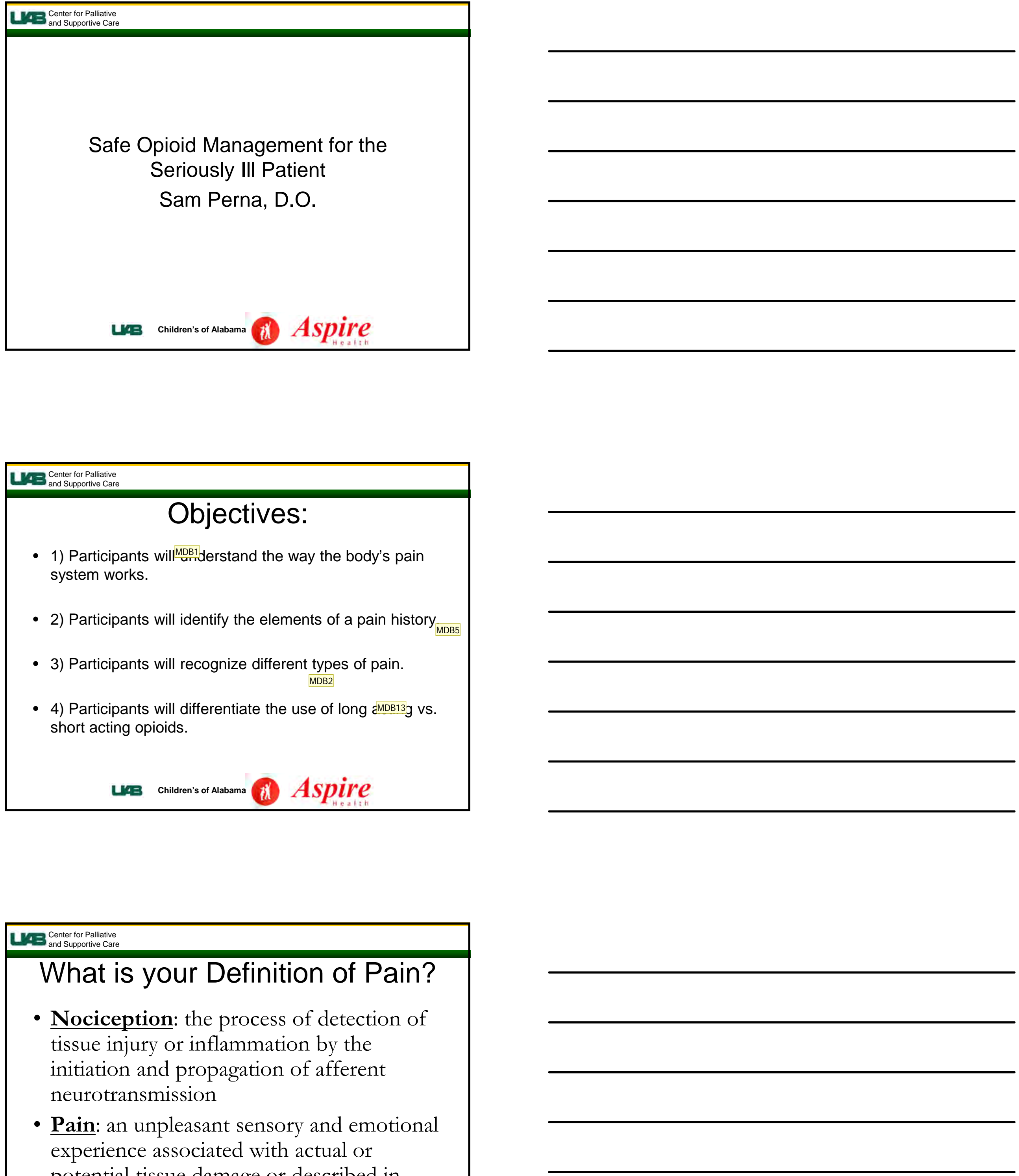

Center for Palliative and Supportive Care
Safe Opioid Management for the Seriously Ill Patient
Sam Perna, D.O.
Children's of Alabama
Aspire Health
Center for Palliative and Supportive Care
Objectives:
1) Participants will understand the way the body's pain system works.
2) Participants will identify the elements of a pain history
3) Participants will recognize different types of pain.
4) Participants will differentiate the use of long acting vs. short acting opioids.
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What is your Definition of Pain?
Nociception: the process of detection of tissue injury or inflammation by the initiation and propagation of afferent neurotransmission
Pain: an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage
Berde and Wolfe, J Pediatr 2003; 142: 361-3
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Slide 2

MDB1 Careful introducing new abbreviations without first defining them.
Michael David Barnett, 3/26/2013

MDB2 What about age-appropriate dosing? The differences between opioid-naive dosing in neonates v. children v. teens v. adults? Differences in metabolism of opioids in different ages?
Michael David Barnett, 3/26/2013

MDB5 Consider combining these two learning objectives since you teach them together later. E.g. "To list maximum blood concentrations (Cmax) and expected duration of opioids by route of administration."
Michael David Barnett, 3/26/2013

MDB13 You list this as a learning objective...but I don't see where you convert between opioids in your cases? Do you show them how to use the conversion table?
Michael David Barnett, 3/26/2013

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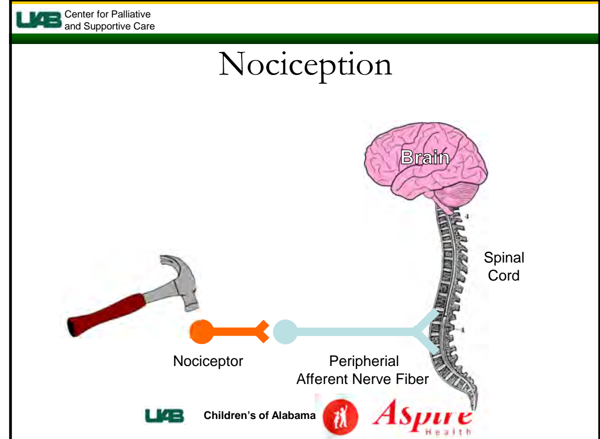
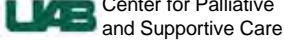
Nociception





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Types of Pain

- Important to know the etiology to choose the most effective therapy.

- Somatic Pain
- Visceral Pain
- Neuropathic Pain
- Acute vs. Chronic Pain

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Clinical Case

- Ashley is a 78yo female, with newly DX metastatic recurrent breast cancer.

- What questions do you ask about her pain?

- Irvin, W., et al. (2011). "Symptom management in metastatic breast cancer." The oncologist **16**(9): 1203-1214.

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Taking a Pain History

- Intensity of pain (0-10)
- Location and quality of pain
- Precipitating and alleviating factors
- **Impact of pain on function**
- Other symptoms: Fever, Dyspnea, etc.
- Patient's History of Pain (if chronic)
  - Number of episodes of pain in the past year
  - Number of ER visits and hospital admissions
  - Current medication regimen
  - Similarity of present episode to previous episodes

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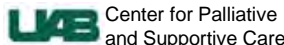

Physical Examination

- Heart Rate and Blood Pressure
- Oxygen Saturation and Respiratory Rate
  - CO_2 Monitors are better
- Temperature
- Site of Pain
  - Warmth, tenderness, swelling, erythema
- Additional organ systems and further testing

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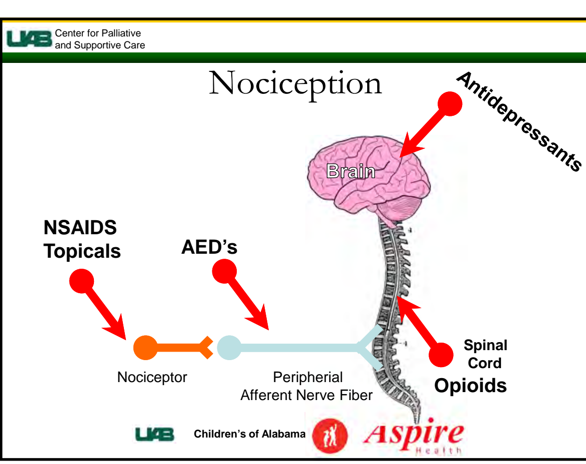
Nociception



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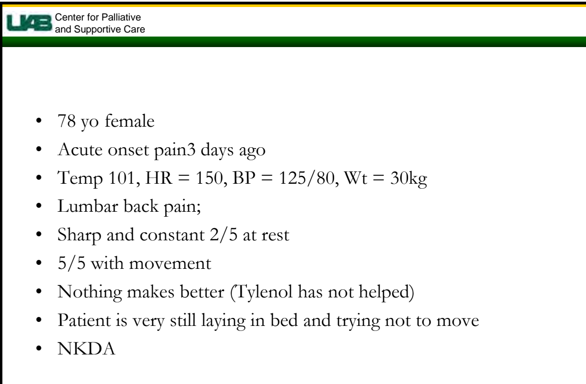

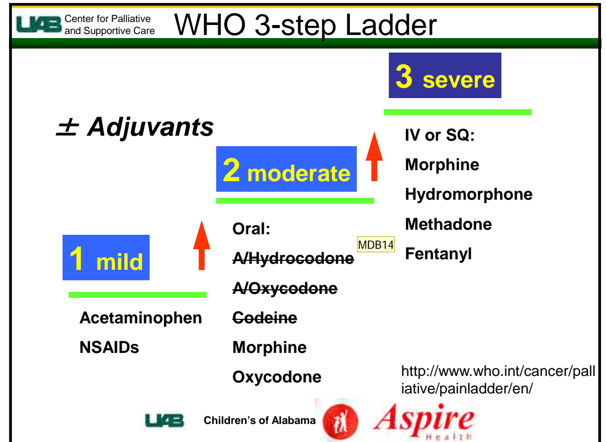

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Safety–Pharmacology is KEY!

- Neonates & infants < 6mo:
- increased half-life and diminished clearance
- 30% starting dose reduction
- Dose intervals longer
- At a higher risk for respiratory depression.

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Slide 11

MDB14 Why not these three? Are you going to talk about why no codeine?
Michael David Barnett, 3/26/2013

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Safety –Pharmacology is KEY!

- 6 months to 12 yrs:
- Increased clearance with normal volume of distribution
- Pediatric starting dose
- Dose intervals may be shorter

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Safety –Pharmacology is KEY!

- >12 yrs and >50kg:
- Adult Dosing

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Safety –Pharmacology is KEY!

- Precautions for Prescribers:
  - Risk of Adverse Events greatest when prescribing a new medication or when increasing the dose/frequency.

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Safety –Pharmacology is KEY!

- Precautions for Prescribers:
  - Anaphylaxis
  - POTENTIAL Respiratory Effects:
    - Decreased Respiratory Rate
    - Decreased Tidal Volume
    - The above may cause impaired gas exchange: ie. hypercapnia and hypoxemia.

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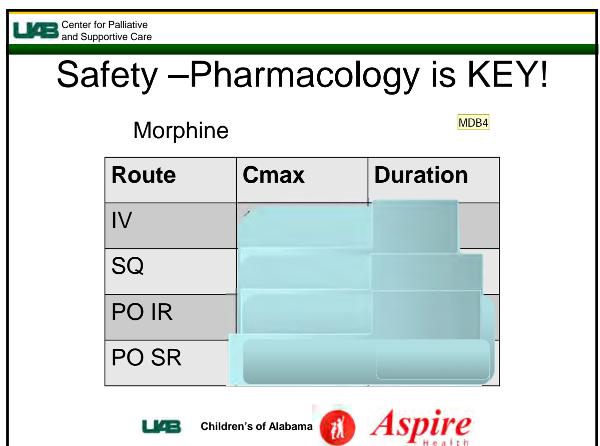
Safety –Pharmacology is KEY!



Morphine

Route	Cmax	Duration
IV		
SQ		
PO IR		
PO SR		

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Routine oral dosing

immediate-release preparations

Adjust dose daily

- mild / moderate pain ↑ 25%–50%
- severe / uncontrolled pain ↑ 50%–100%

Adjust more quickly for severe uncontrolled pain

Adapted from EPEC

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Slide 17

MDB4 But the table is for IV/SQ, IR & SR?
Michael David Barnett, 3/26/2013

Slide 18

MDB7 This doesn't come in a stand-alone product does it? (or at least not yet in US)?
Michael David Barnett, 3/26/2013

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Opioids - Principles of Dosing

- Individualize dose by gradual escalation until development of adequate analgesia or intolerable and unmanageable side effects.
  - No therapeutic ceiling effect.
- "Around the clock dosing" for continuous or frequently recurring pain.
- As needed ("prn") dosing for dose finding and for "rescue doses".

Kochhar R, et al. Opioids in cancer pain: common dosing errors. *Oncology.* 2003; 17:571-9.

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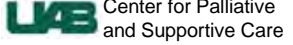
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WHO Ladder

- For severe pain you would prescribe?
  - IV opioid
- For moderate pain you would prescribe?
  - PO opioid
- For mild pain you would prescribe?
  - Tylenol or NSAID

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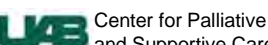
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Rescue dosing

- Use immediate-release opioids
  - 5%–15% of 24-h dose
  - offer after C_{max} reached
    - po / pr ≈ q 60 min
    - SC, IM ≈ q 30 min
    - IV ≈ q 15 min
- Why NOT use extended-release opioids for rescue?

Kochhar R, et al. Opioids in cancer pain: common dosing errors. *Oncology.* 2003; 17:571-9.

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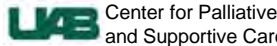
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Opioid Tapering

Customize to Patient need / condition

- Typical Taper: reduce dose by 25% daily and maintain schedule as tolerated.
  - Change to PRN dosing when pain no longer constant.
- Rapid Taper if no pain and too sleepy or abnormally low respiratory rate.

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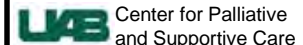
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Narcan

- Birth to 5 years: 0.1mg/kg IV / IM q3 to 8 minutes prn until respiratory rate is normalized, the repeat q 2hrs PRN.
- 5 years or >20kg: 2mg IV / IM /SQ / IO / ETT q2 to 3 minutes prn until respiratory rate is normalized, the repeat q 2hrs PRN.
- Palliative Patient or chronic opioid patient:
  - Give 10% of above dose q 2 minutes and bag ventilate until respiratory rate is normalized.

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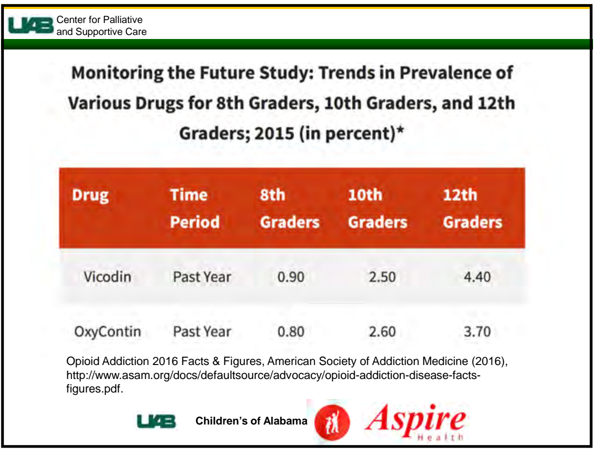

Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2015 (in percent)*

Drug	Time Period	8th Graders	10th Graders	12th Graders
Vicodin	Past Year	0.90	2.50	4.40
OxyContin	Past Year	0.80	2.60	3.70

Opioid Addiction 2016 Facts & Figures, American Society of Addiction Medicine (2016), http://www.asam.org/docs/defaultsource/advocacy/opioid-addiction-disease-facts-figures.pdf.

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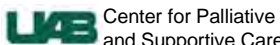

DO NOT FORGET

- If frequent opioids, please do not forget to write the prescription for a
- SCHEDULED LAXATIVE !!!!
- Docusate
- Bisacodyl
- Miralax
- Sorbitol

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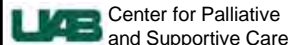

CDC CLINICAL REMINDERS

- Use immediate-release opioids when starting
- Start low and go “smart”
- When opioids are needed for acute pain, prescribe no more than needed
- Do not prescribe ER/LA opioids for acute pain
- Follow-up and re-evaluate risk of harm; reduce dose or taper and discontinue if needed

http://www.cdc.gov/drugoverdose/prescribing/guideline.html
accessed 2016

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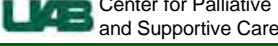

2015 National Survey on Drug Use and Health (NSDUH).

- 37.8% of adults used prescription opioids;
- 4.7% misused them;
- 0.8% had a use disorder.

Han B, Compton WM, Blanco C, Crane E, Lee J, Jones CM. Prescription Opioid Use, Misuse, and Use Disorders in U.S. Adults: 2015 National Survey on Drug Use and Health. Ann Intern Med. [Epub ahead of print 1 August 2017] doi: 10.7326/M17-0865

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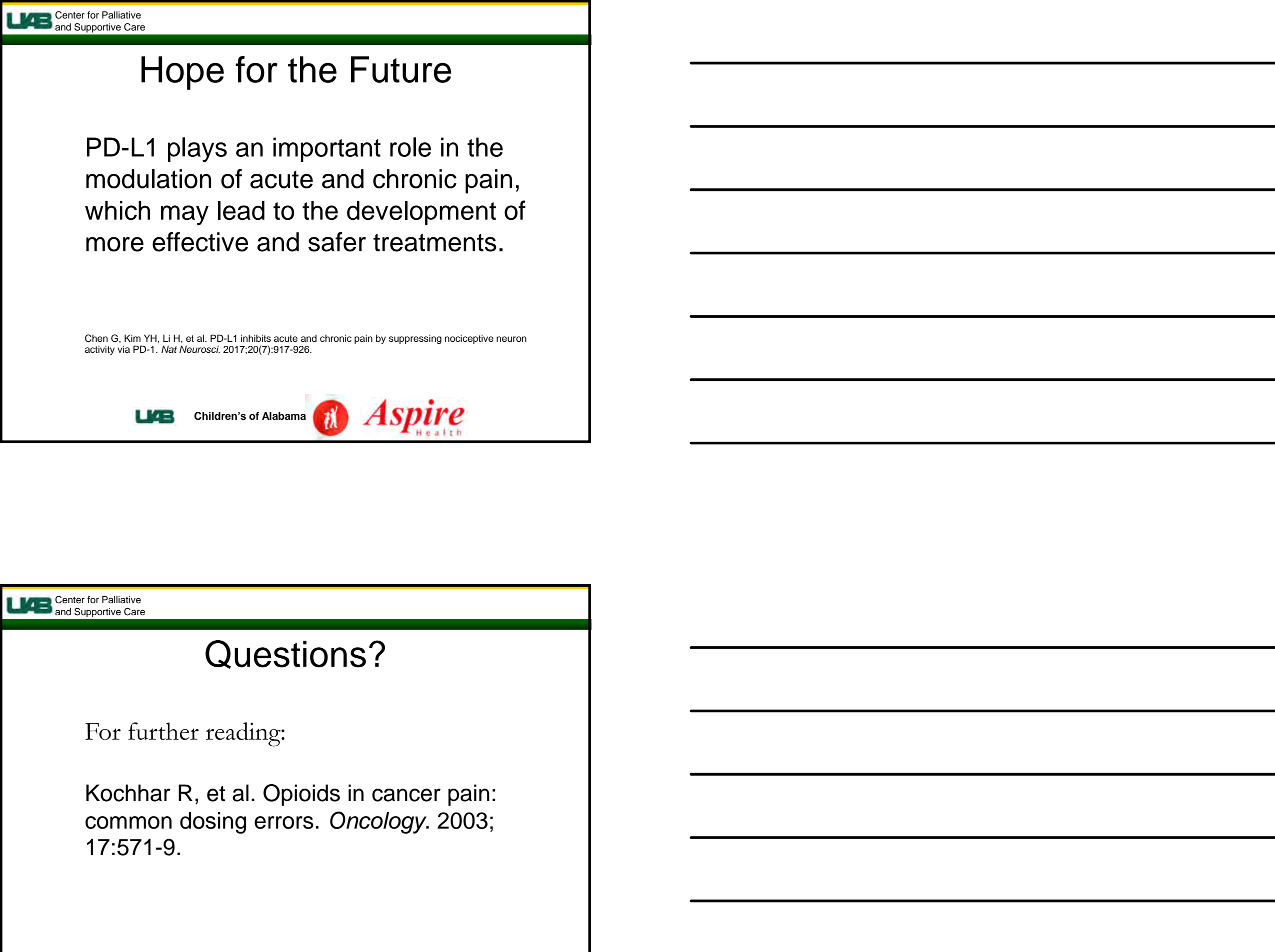
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Hope for the Future
PD-L1 plays an important role in the modulation of acute and chronic pain, which may lead to the development of more effective and safer treatments.
Chen G, Kim YH, Li H, et al. PD-L1 inhibits acute and chronic pain by suppressing nociceptive neuron activity via PD-1. Nat Neurosci. 2017;20(7):917-926.
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Questions?
For further reading:
Kochhar R, et al. Opioids in cancer pain: common dosing errors. Oncology. 2003; 17:571-9.
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