

# OPIOIDS AND CANNABINOIDS IN PAIN MANAGEMENT

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# LEARNING OBJECTIVES

- UNDERSTAND THE HISTORY OF THE OPIOID CRISIS
- UNDERSTAND OPIOID INDUCED HYPERALGESIA
- UNDERSTAND THE USE OF CANNABINOIDS IN PAIN MANAGEMENT



# HISTORY LEADING UP TO THE OPIOID CRISIS

- 1960. THALIDOMIDE
- 1960's HERSEL JICK: BOSTON UNIVERSITY DATA BASE
- 1979. NEW ENGLAND JOURNAL OF MEDICINE. WITH GRADUATE STUDENT JANE PORTER. HOSPITALIZED PATIENTS GIVEN OPIOIDS AND ADDICTION. ONLY 4 PATIENTS BECAME ADDICTED OUT OF 12,000 PATIENTS.
- A SEED WAS PLANTED.



# HISTORY LEADING UP TO THE OPIOID CRISIS

- 1986 KATHY FOLEY AND RUSSELL PORTENYOY. PAIN.
- NON CANCER PAIN. OPIOID TREATMENT.
- 38 PATIENTS.
- IS ADDICTION A CONCERN?



# HISTORY LEADING UP TO THE OPIOID CRISIS

- AMERICAN PAIN SOCIETY.
- PAIN TREATMENT
- THE RISK OF ADDICTION IS LOW.
- OPIOIDS—NO CEILING.
- PAIN. THE 5<sup>TH</sup> VITAL SIGN.



# HISTORY LEADING UP TO THE OPIOID CRISIS

- JOINT COMMISSION FOR ACCREDITATION OF HEALTHCARE ORGANIZATIONS (JCAHO)
- 1998. PAIN AS THE 5<sup>TH</sup> VITAL SIGN



# HISTORY LEADING UP TO THE OPIOID CRISIS

- PRESS GAINES SURVEYS. PATIENT SATISFACTION.
- PATIENT RIGHTS.
- PURDUE PHARMACY. TIMED RELEASE PAIN MEDICATION.



# HISTORY LEADING UP TO THE OPIOID CRISIS

- 1996 OXYCONTIN RELEASED.
- LESS THAN 1% ADDICTION RATES. LESS PEAKS AND VALLEYS. LESS ADDICTION.
- FDA. ALLOWED THE CLAIM OF LOWER POTENTIAL FOR ABUSE. LESS CRAVING.
- PSEUDO ADDICTION.



# HISTORY LEADING UP TO THE OPIOID CRISIS

- PURDUE PHARMACY.
- DRUG REPS PROMOTED.
- LEGAL THREATS IF MENTION OF ADDICTION.



# OPIOID INDUCED HYPERALGESIA

- CENTRAL NERVOUS SYSTEM PAIN.
- OPIOIDS CAN ACTUALLY WORSEN NEUROPATHIC PAIN STATES.



# OPIOID INDUCED HYPERALGESIA

- 1990's. CASE REPORTS REGARDING REMIFENTANIL.
- POTENT OPIOID METABOLIZED BY PLASMA ESTERASES.
- QUICK ONSET, THEN EFFECT QUICKLY GONE.
- LARGE DOSES INTRA-OP. INCREASED POST-OP REQUIREMENTS OF MORPHINE.



# OPIOID INDUCED HYPERALGESIA

- OPIOID INDUCED HYPERALGESIA IS A CENTRAL SENSITIZATION ISSUE.
- OTHER CENTRAL SENSITIZATION PAIN STATES:
  - FIBROMYALGIA.
  - HEADACHES.
  - BACK PAIN.



# OPIOID INDUCED HYPERALGESIA

- OPTIONS FOR TREATMENT.
  - OPIOID ROTATION.
  - NMDA MEDICATIONS. SUCH AS DEXTROMETHORPHAN OR METHADONE.
  - WEAN OPIOIDS.



# HISTORY OF THE OPIOID CRISIS

- CDC IN 2016.
- OPIOIDS FOR CHRONIC PAIN HAVE NO EVIDENCE OF BENEFIT.
- LARGE AMOUNT OF EVIDENCE FOR HARM.
- 2012 “259 MILLION PRESCRIPTIONS FOR OPIOID MEDICATION”.



# HISTORY OF THE OPIOID CRISIS

- CDC. INCREASE RISK OF DEATH WITH OPIOID USE:
  - MULTIPLE PRESCRIBERS.
  - HIGH TOTAL DAILY OPIOID DOSAGE.
  - OPIOIDS PLUS BENZODIAZEPINES.
  - OPIOID USE DISORDER.
  - SLEEP APNEA. RENAL OR HEPATIC INSUFFICIENCY.
  - MENTAL HEALTH DISORDERS.





PAIN MANAGEMENT  
CONSULT

PATIENT  
ASSESSMENT

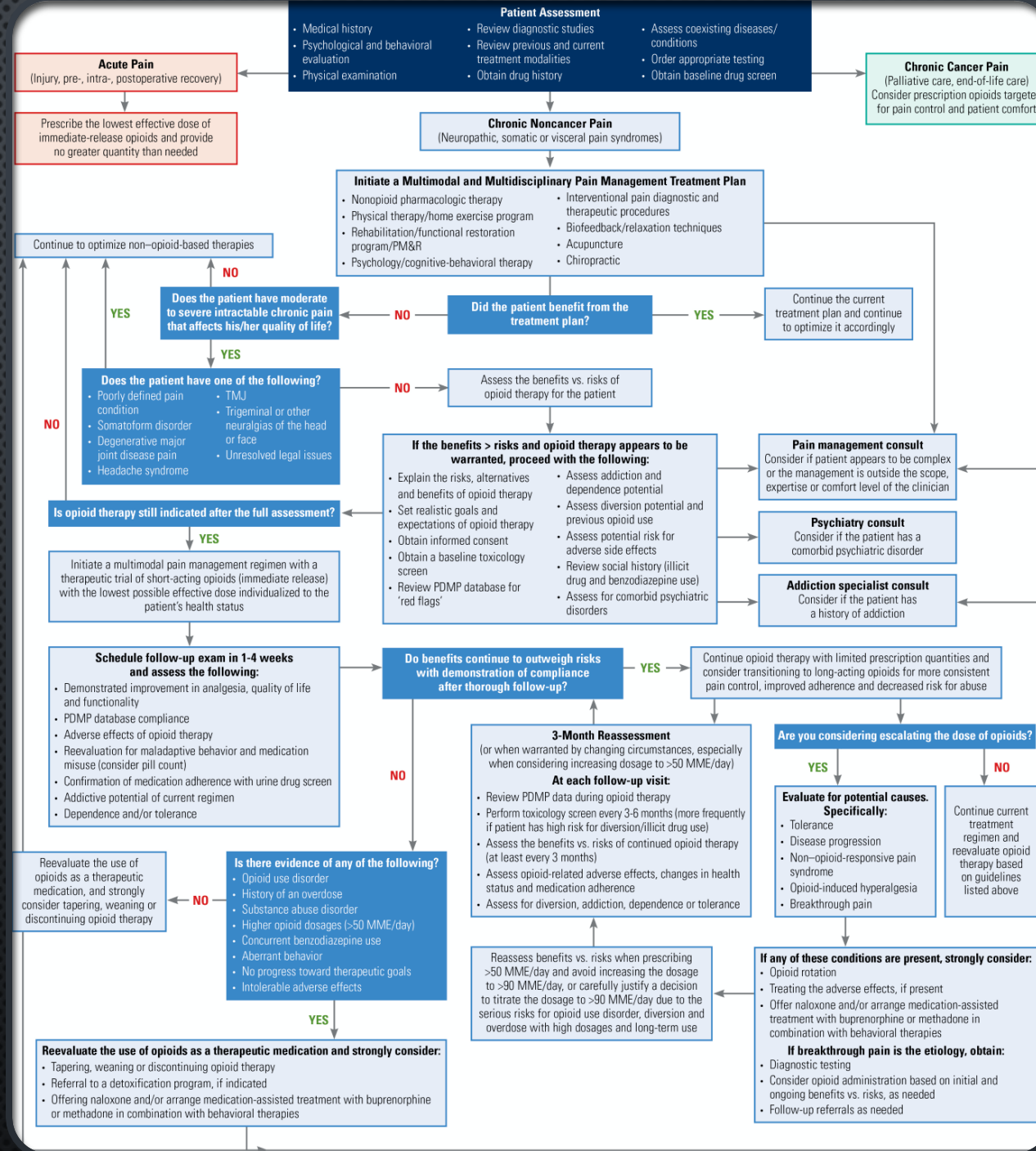
ADDICTION  
SPECIAL  
CONSULT

ACUTE  
PAIN

CHRONIC NON-  
CANCER PAIN

CHRONIC  
CANCER PAIN







# RISK OF ADDICTION TOOLS

- 16 TESTS FOR THE RISK OF ADDICTION
- OPIOID RISK TOOL
  - PUBLISHED IN 2005
  - PERSONAL OR FAMILY HISTORY OF ADDICTION
  - MENTAL HEALTH ISSUES
  - HISTORY OF PREADOLESCENT SEXUAL ABUSE
  - MALE OR FEMALE



# ALGORITHM FOR OPIOID USE

## AVOID OPIOIDS

- POORLY DEFINED PAIN
- HEADACHE SYNDROME
- TMJ
- NEURALGIAS OF THE HEAD OR FACE
- DEGENERATIVE MAJOR JOINT DISEASE PAIN



# ALGORITHM FOR OPIOID USE CONSIDER WEANING

- OPIOID USE DISORDER
- HISTORY OF AN OVERDOSE
- HIGHER OPIOID DOSAGES
- CONCURRENT BENZODIAZEPINE USE
- ABERRANT BEHAVIOR
- NO PROGRESS TOWARD THERAPEUTIC GOALS
- INTOLERABLE ADVERSE EFFECTS



# CANNABINOIDS

- LECTURE BY DR. CALTON LYONS



# CANNABINOIDS

- RECEPTORS
  - CB1-CNS
    - PSYCHOACTIVE
  - CB2-IMMUNE SYSTEM
- ENDOCANNABINOIDS
  - ANANDAMIDE
  - 2-ARACHIDONOLYLGLYCEROL



# CANNABINOIDS

- DELTA 9 TETRAHYDROCANNABINOL (THC)
  - PSYCHOACTIVE
    - RESPONSE BLUNTED BY CANNABIDIOL (CBD)
  - LIPOPHILIC. RAPIDLY ABSORBED.
  - VARIABLE HALF LIFE.



# CANNABINOIDS

- MARIJUANA. CANNABIS SATIVA
  - FEDERAL GOVERNMENT SCHEDULE 1
  - UNREGULATED AND NON-STANDARDIZED
  - SAFETY CONCERNS
    - PESTICIDES
    - MOLDS



# CANNABINOIDS

- CBD. CANNABIDIOL
  - MECHANISM OF ACTION.
    - POSSIBLY BY INHIBITING THE BREAKDOWN OF ENDOCANNABINOIDS
    - BIND RECEPTORS.



# CANNABINOIDS

- WHAT'S LEGAL
  - FEDERAL GOVERNMENT AND INDIANA
  - 2018 FARM BILL
    - HEMP--CANNABIDIOL (CBD)
    - LESS THAN 0.3% THC



# CANNABINOIDS

- FDA REGULATED DRUGS
  - DRONABINOL. THC
    - INDICATIONS FOR ANOREXIA-AIDS
    - INDICATIONS FOR CHEMOTHERAPY INDUCED NAUSEA AND VOMITING
  - EPIDIOLEX. CBD
    - INDICATIONS FOR SEIZURE DISORDERS.



# CANNABINOIDS

- EVIDENCE BASED MEDICINE



# CANNABINOIDS

- THC. SCHEDULE 1.
  - HIGH POTENTIAL FOR ABUSE.
  - NO CURRENTLY ACCEPTED MEDICAL TREATMENT IN THE US
  - LACK OF ACCEPTED SAFETY FOR USE UNDER MEDICAL SUPERVISION
- UNIVERSITY OF MISSISSIPPI
  - UP TO 7% THC



# CANNABINOIDS

- THC CONTENT IN MARIJUANA
  - NATURALLY OCCURRING: 1% (CBD 1%)
  - 1996: 5%
  - NOW: UP TO 40%
- CONCENTRATES
  - UP TO 80-90%
- FEDERAL LIMITS WITH RESEARCH
  - 7%



# CANNABINOIDS

- MARIJUANA USE:
  - OIL
  - PILL
  - VAPORIZED LIQUID
  - NASAL SPRAY
  - SMOKED



# CANNABINOIDS

- MARIJUANA RISKS:
  - ADOLESCENT USE—LATER DEVELOPMENT OF SCHIZOPHRENIA
  - ACUTE INCREASE IN SYMPATHETIC ACTIVITY
    - MI OR STROKE
  - PERIODONTAL DISEASE
  - LOWER SPERM COUNTS
  - HYPEREMESIS SYNDROME



# CANNABINOIDS

- MARIJUANA
  - PSYCHOACTIVE RISKS
    - MOTOR VEHICLE ACCIDENTS
      - ALCOHOL VERSUS THC
  - RISKS FROM COMMERCIALIZATION (REMEMBER PURDUE PHARMACY)
    - 2015 CNN SERIES
    - COLORADO
      - “PRO-WEED LOBBY” (BEN CORT)
  - CONTAMINATION
    - CHICAGO—WARFARIN TYPE SUBSTANCE
    - PESTICIDES



# WHAT TO TELL PATIENTS

- CBD
  - DEFINITE BENEFITS
  - NOT FDA REGULATED
    - PURITY
    - CONTAMINATIONS



# WHAT TO TELL PATIENTS

- MARIJUANA
  - ILLEGAL
    - INDIANA
    - FEDERAL
  - SAFETY CONCERNS