

# Opiates and the Use of Narcan

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# Disclosure

- Nothing to disclose



# Objectives

- Understand where opiates come from and how they are used
- Learn how opiates work and why they are habit forming
- Know when and how to use Narcan



# Opiate Origination

- Opiates come from Opium
  - poppy plant *Papaver somniferum*



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# Opium Harvesting

- [https://youtu.be/tlr\\_w3rXX5o](https://youtu.be/tlr_w3rXX5o)

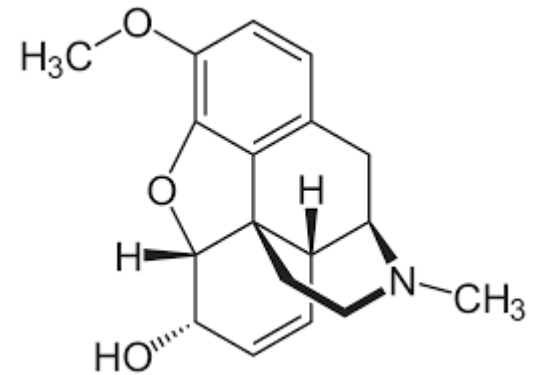
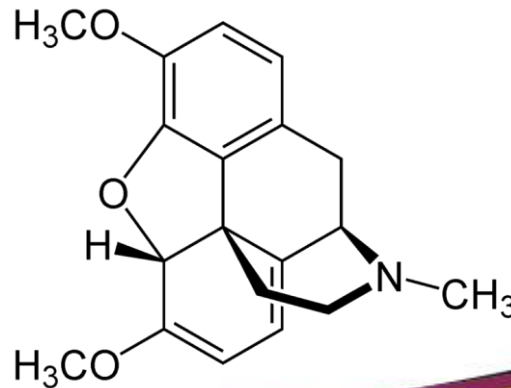
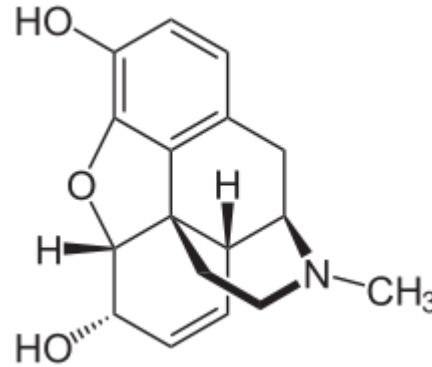


‘Latex’ is harvested, dried and chemically processed to produce morphine.



# Make up of Opium

- Morphine
  - 10%-25
- Codeine
  - 1%-3%
- Thebaine



# Opiates vs Opioids

- The term opiate should be differentiated from the term opioid, which includes all drugs with opium-like effects, including opiates, semi-synthetic opioids derived from opiates and synthetic opioids which are not derived from opiates.





# Opiates vs Opioids

- True opiates
  - Morphine, codeine and thebaine
- Semi synthetics produced from true opiates
  - Heroin (prodrug of morphine), hydrocodone, hydromorphone, oxycodone, and oxymorphone
- Full synthetic
  - Fentanyl, methadone and buprenorphine (subutex)



# Many other names

- Oxy's
- Perc's
- Roxy's
- Hydro's
- B
- Balloon
- Dope
- Smack
- H
- Train
- Thunder
- Tar
- Smack
- Mud
- Black tar
- China whitehorse
- Junk
- Antifreeze
- Brown sugar
- Henry
- Horse
- Skag
- Hero
- Hell dust
- M
- Miss Emma
- Monkey
- White stuff
- Dreamer
- Schoolboy
- Cough syrup
- T-three's (Tylenol #3 with codeine)
- Vikes
- Viko
- Norco
- Hydro
- Ox
- Oxiccotten
- Oxycet



So. . . . .

How are opiates  
used?



# Prescription pills

Hydrocodone  
Percocet  
Oxycodone  
Morphine  
Hydromorphone  
Codeine



# Prescription Heroin?

for prompt control of  
**senile agitation**



**BAYER**  
PHARMACEUTICAL PRODUCTS.  
The largest manufacturing establishment in the world.  
**ASPIRIN**  
The largest and most effective remedy for rheumatism, neuralgia, headache, and all other pains.  
**HEROIN**  
The most powerful and strongest  
**HEROIN HYDROCHLORIDE**  
The most powerful and strongest  
The most powerful and strongest  
The most powerful and strongest  
The most powerful and strongest  
**FABRIKANTENFABRIK OF ELBERFELD CO.**  
40 Stone Street, New York.  
ESTD 1872



# COUGH

The Tests of Clinical Experience Designate Glyco-Heroin (Smith) as a Respiratory Sedative Superior in All Respects to the Preparations of Opium, Morphine, Codeine and Other Narcotics and without devoid of the toxic or depressing effects which characterize the latter when given in doses sufficient to reduce the reflex irritability of the bronchial, tracheal and laryngeal mucous membranes.

## THE PROBLEM

of abolishing cough is great done in such form as will give the maximum amount of relief, but avoid, and will not give the cause of the most serious attack or the most distressing attack.

## HAS BEEN SOLVED BY

the pharmaceutical compound known as

## GLYCO-HEROIN (Smith)

The results attained with Glyco-Heroin (Smith) in the alleviation and cure of cough are attested by numerous clinical studies that have appeared in the medical journals within the past few years.

Scientifically Compounded, Scientifically Conceived, GLYCO-HEROIN (SMITH) simply stands upon its merits before the profession, ready to prove its efficacy to all who are interested in the advances in the art of

# Prescription patches



Illicitly



A Partner of Choice





About 2.5 grams

1 kilo (2.2 lbs)

2 grams



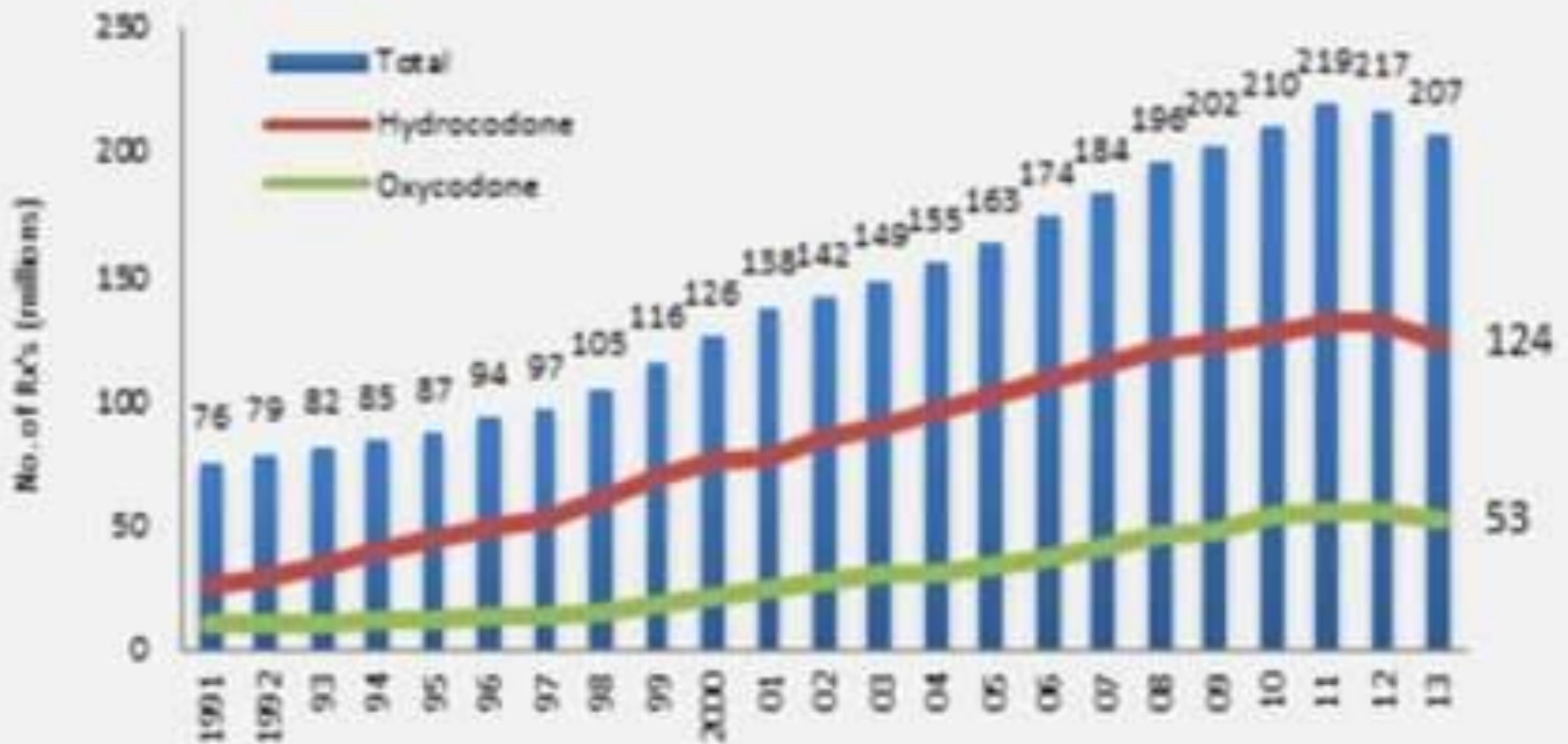
- Heroin is typically sold in "points" (1/10 gram), "8-balls" (1/8 ounce), or a "piece" (1 ounce). A point is about the diameter of a pencil eraser making it very easy to conceal.

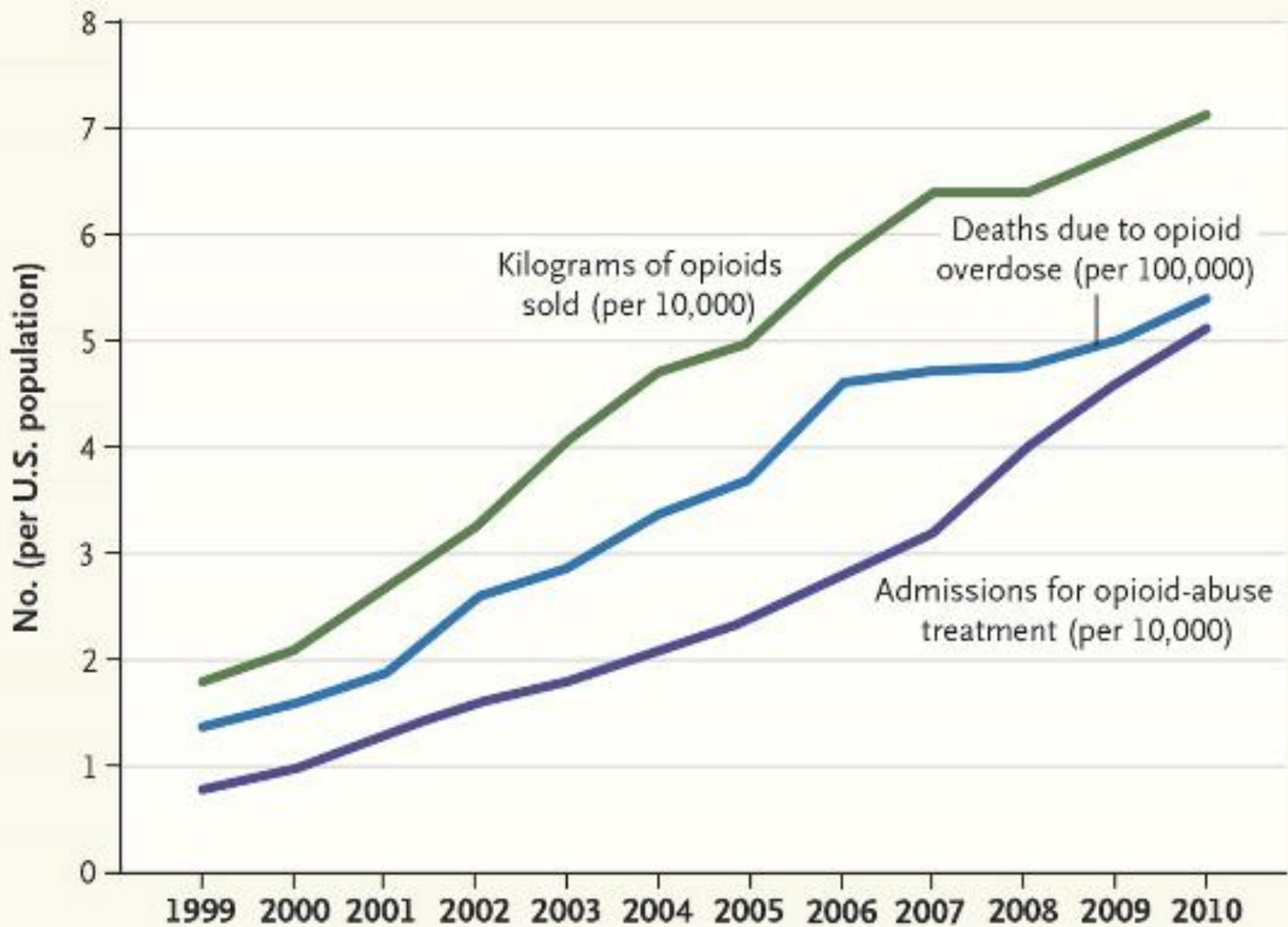


# Rise of Opiate Use in the US—Some Statistics

- The United States makes up only 4.6 percent of the world's population, but consumes 80 percent of its opioids -- and 99 percent of the world's hydrocodone, the opiate that is in Vicodin.



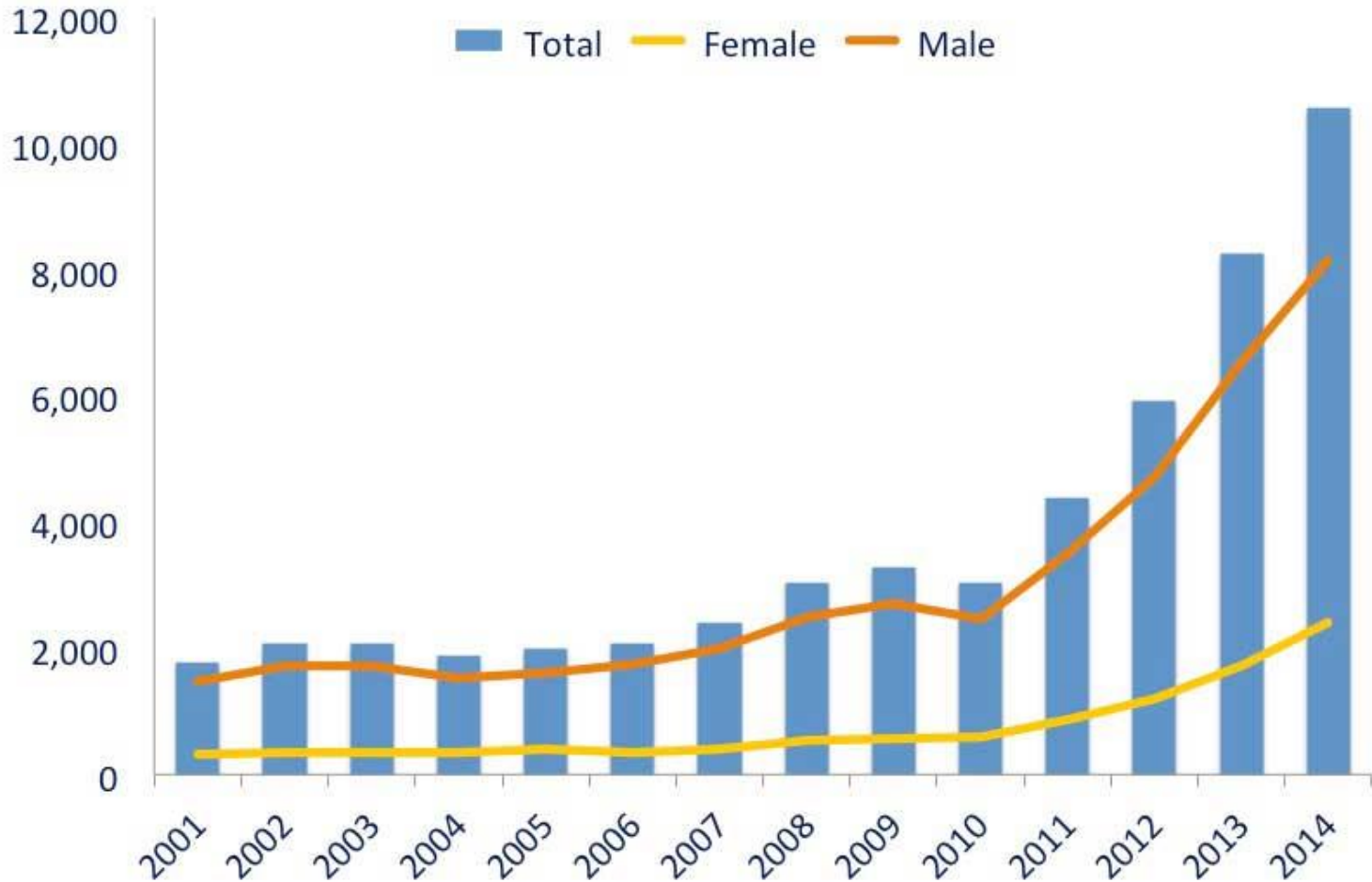






# National Overdose Deaths

## Number of Deaths from Heroin



Source: National Center for Health Statistics, CDC Wonder

# How did we get here?

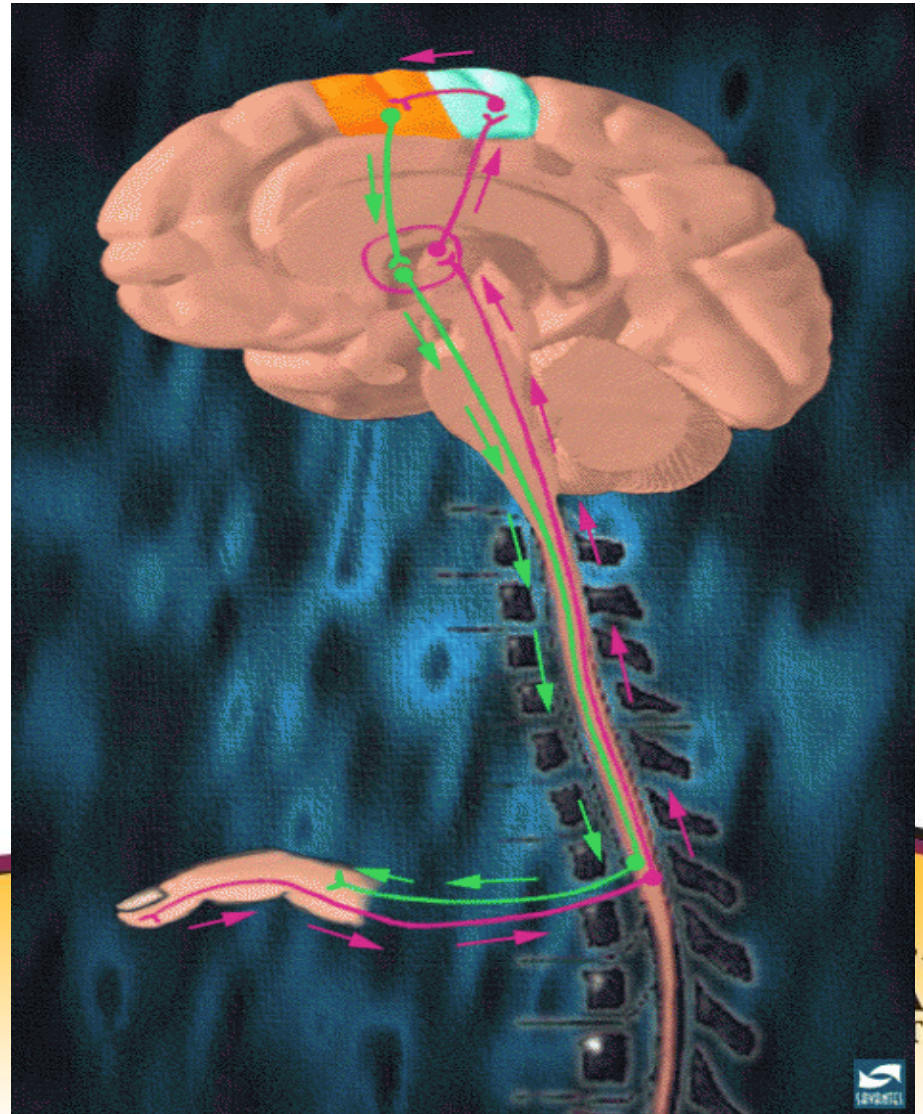
- <http://www.thepoisonreview.com/2012/12/16/the-money-and-influence-behind-pain-as-a-fifth-vital-sign/>



# How do Opiates Work?

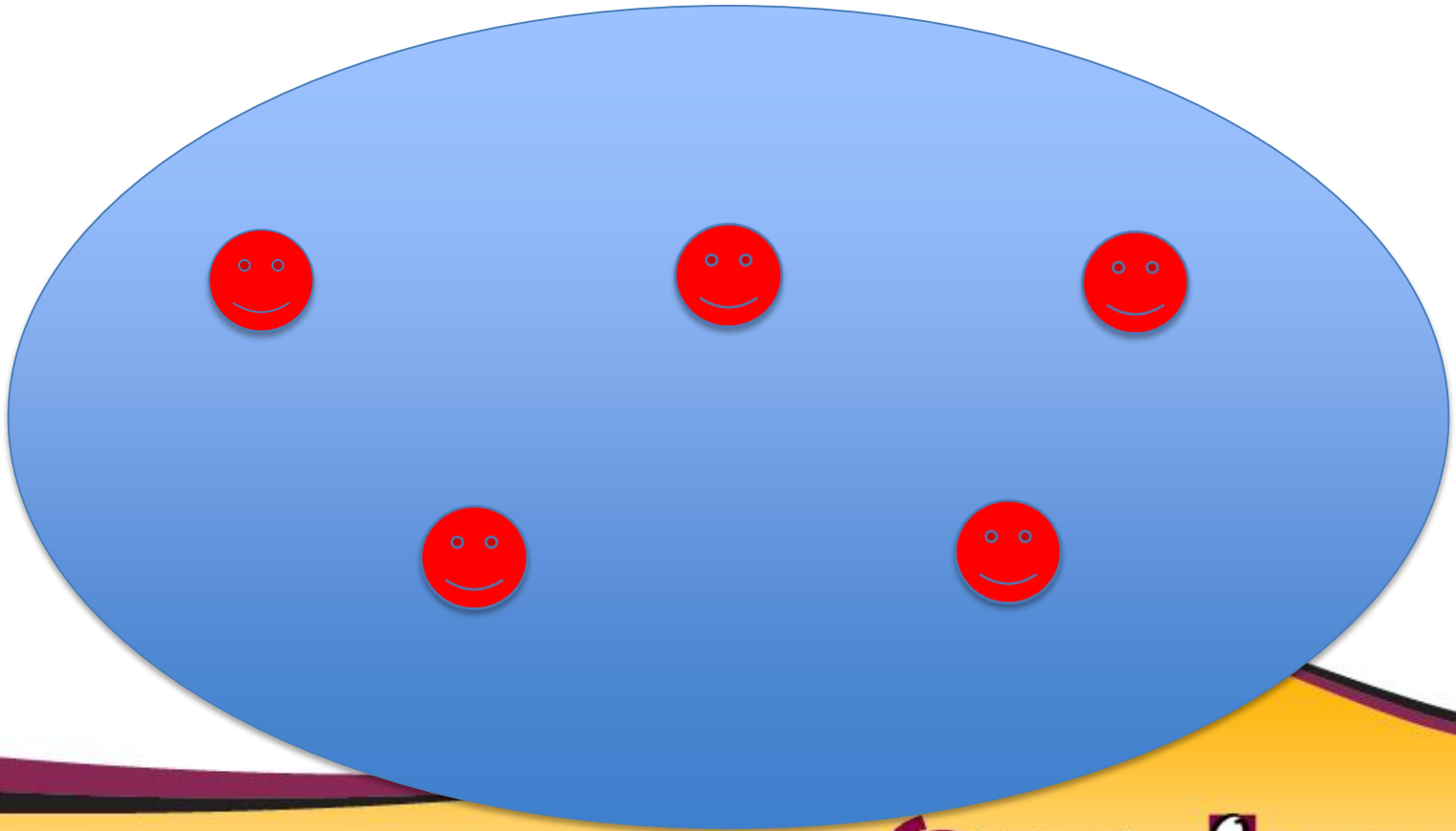
Pain travels to our brain and tells us it hurts.

Our brain, in response, tells us to do something about it!

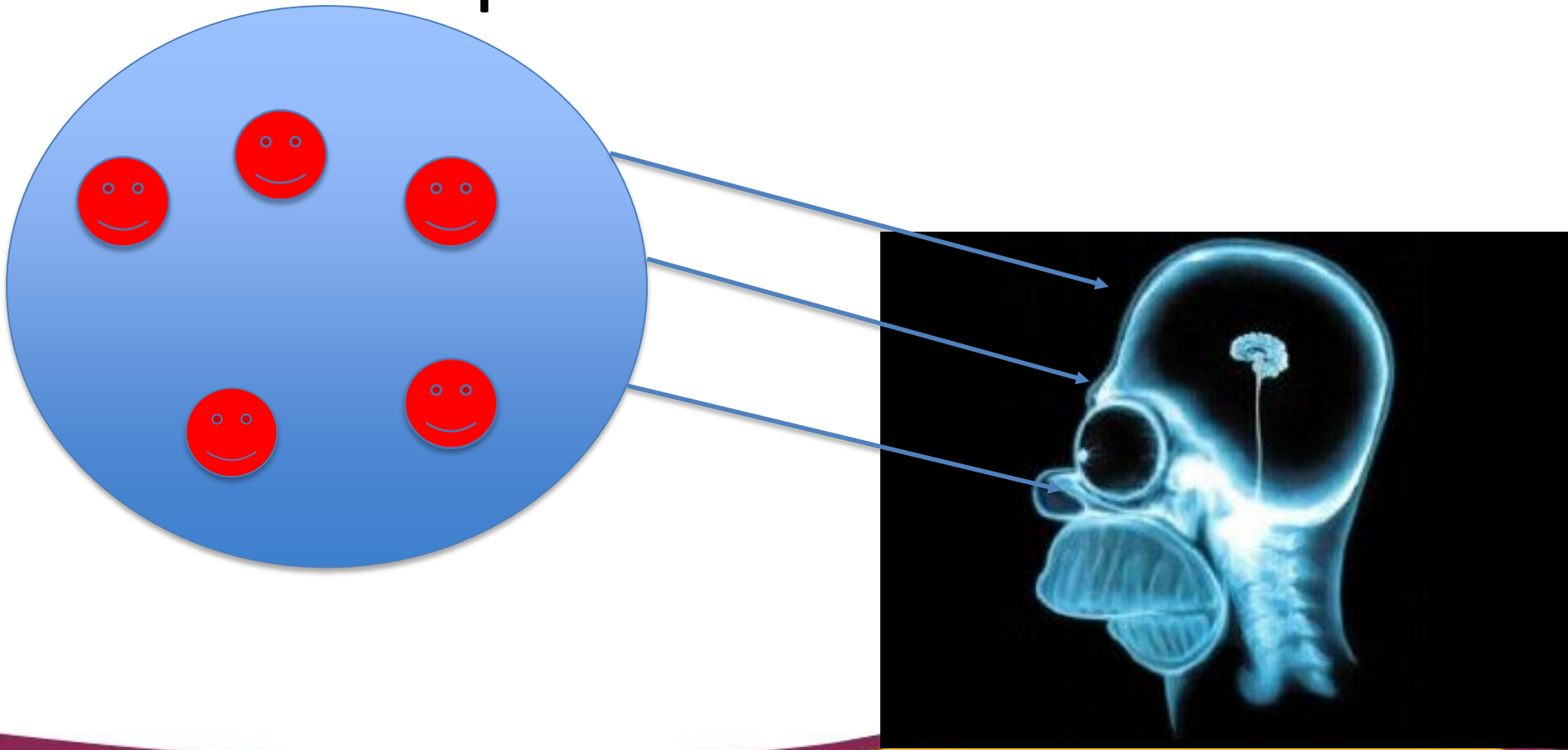




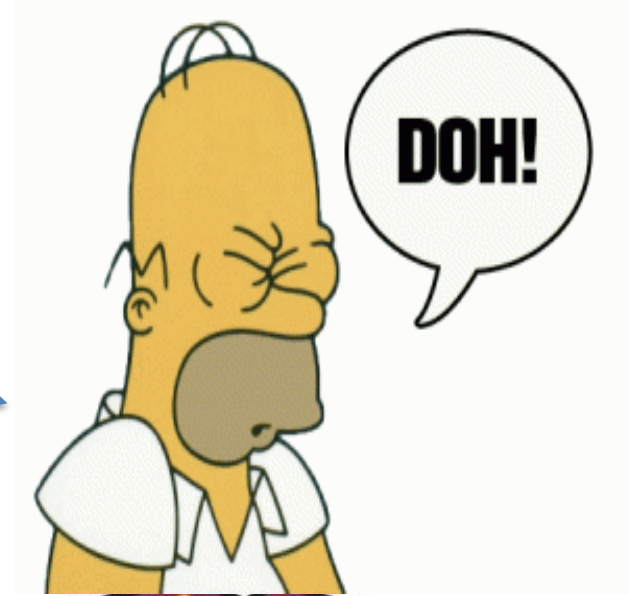
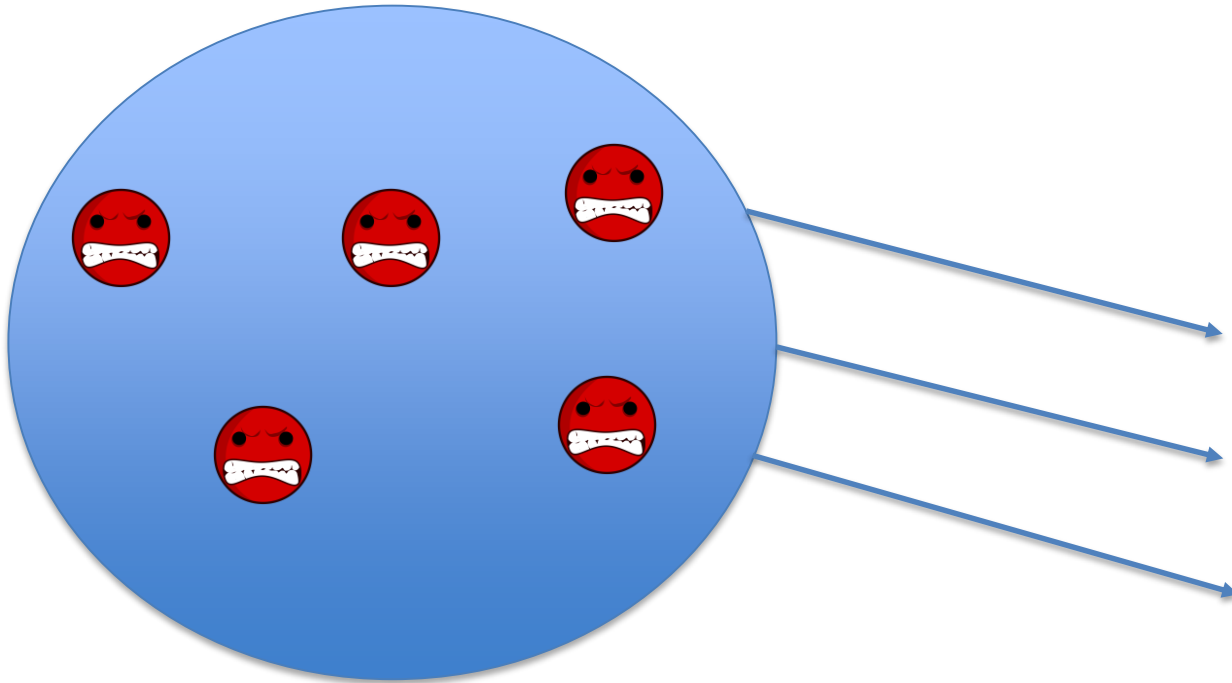
# Opiate Receptors



# Receptor Communication



# Receptor Communication With Pain



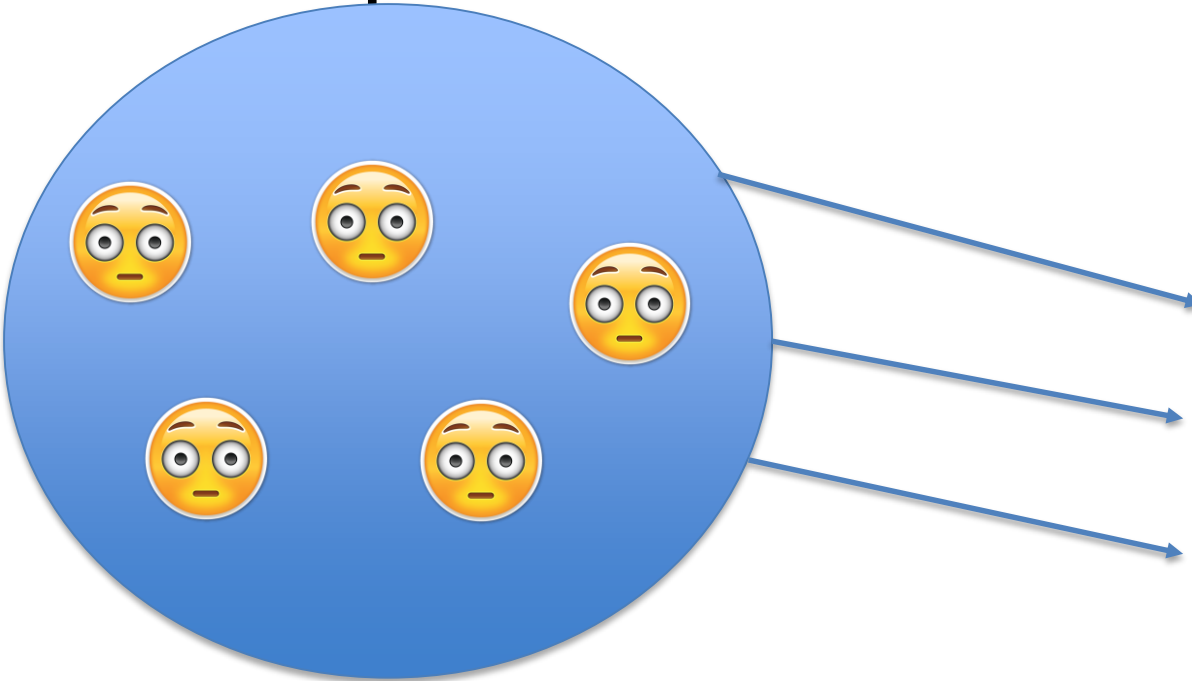
This causes endogenous endorphins to be released to ease the sense of pain.



# How do receptors respond when stimulated by opiates?



# Receptor Communication on opiates

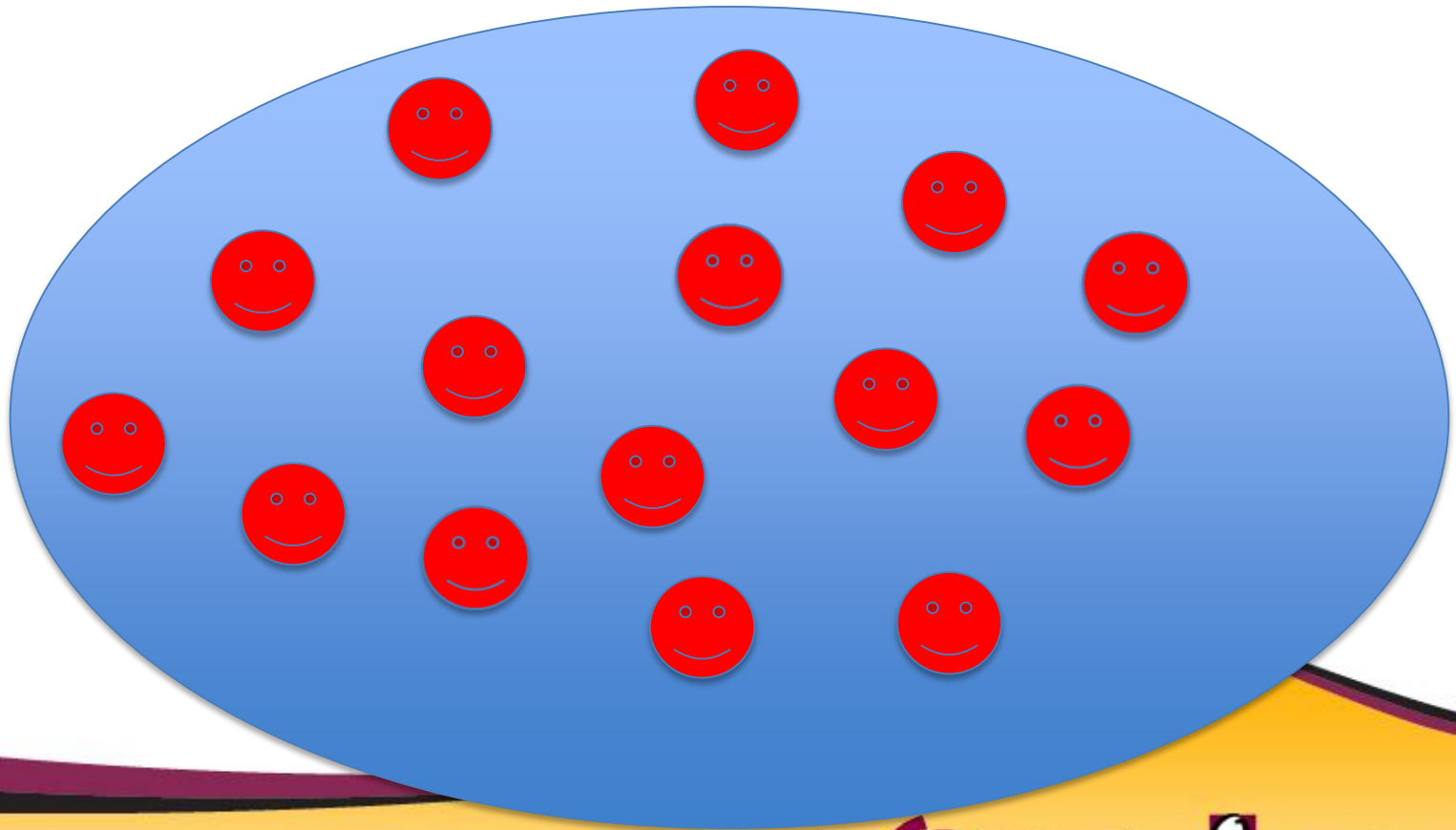


Chronic opiate use will decrease the body's natural endorphin release.

# What if opiates are taken for a prolonged amount of time?



# Body's Response to Opiates

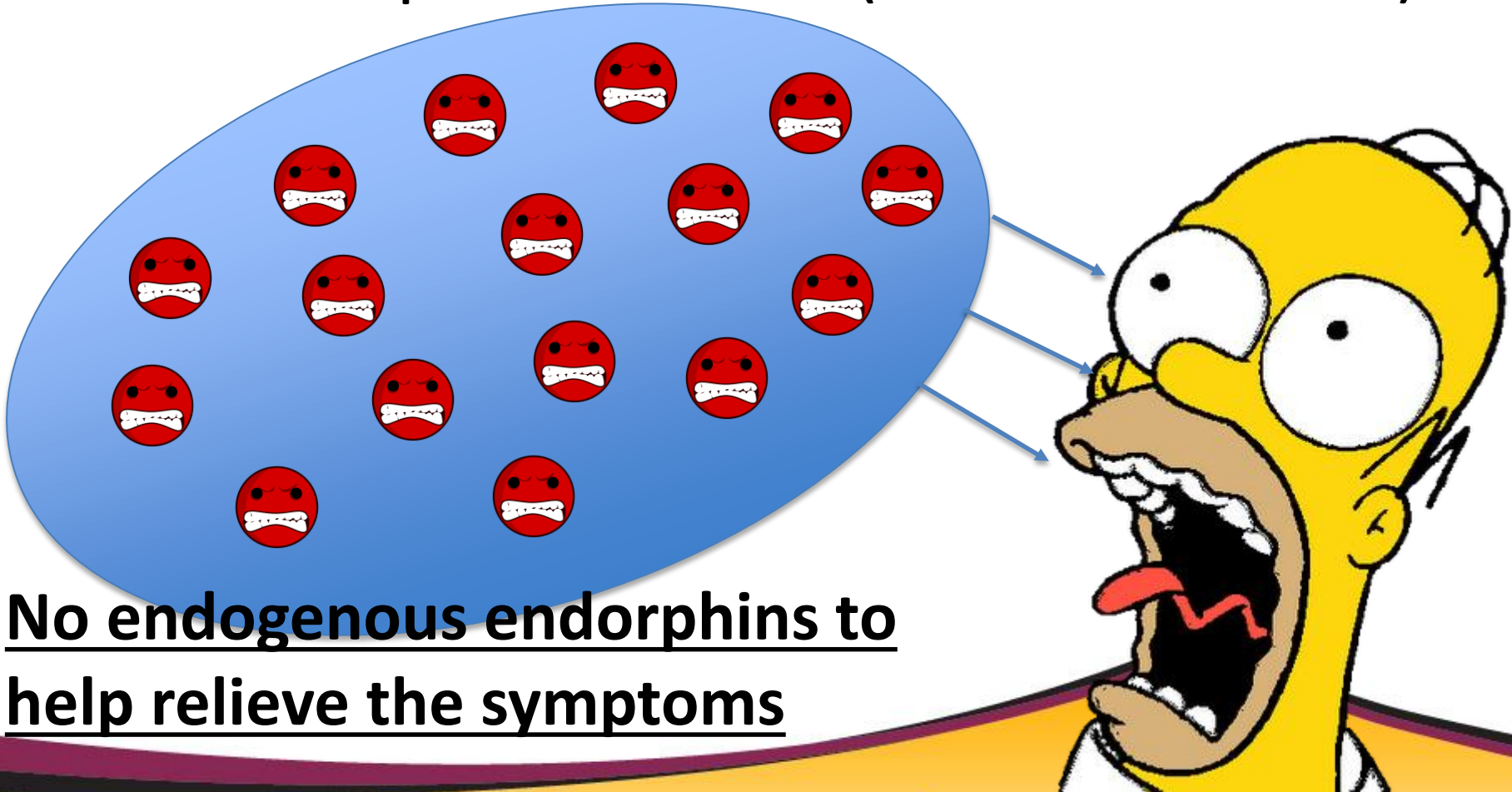


**Now there are more receptors to  
send communication signals to the  
brain.**





# New Response to Pain (and Withdrawal)



No endogenous endorphins to help relieve the symptoms

# Chronic Use and Overdose

- Main side effect from increase in opiate receptor blockade is cognitive decline and respiratory depression.
- <https://youtu.be/dgFFzbIXe9Y>
- Side effects also include narcotic bowel syndrome and opioid induced hyperalgesia



# Why So Addicting?

**Chemical dependence**- without the drug, users have a feeling which is the opposite of euphoria

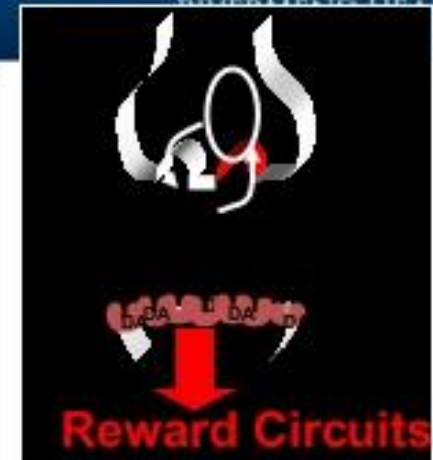
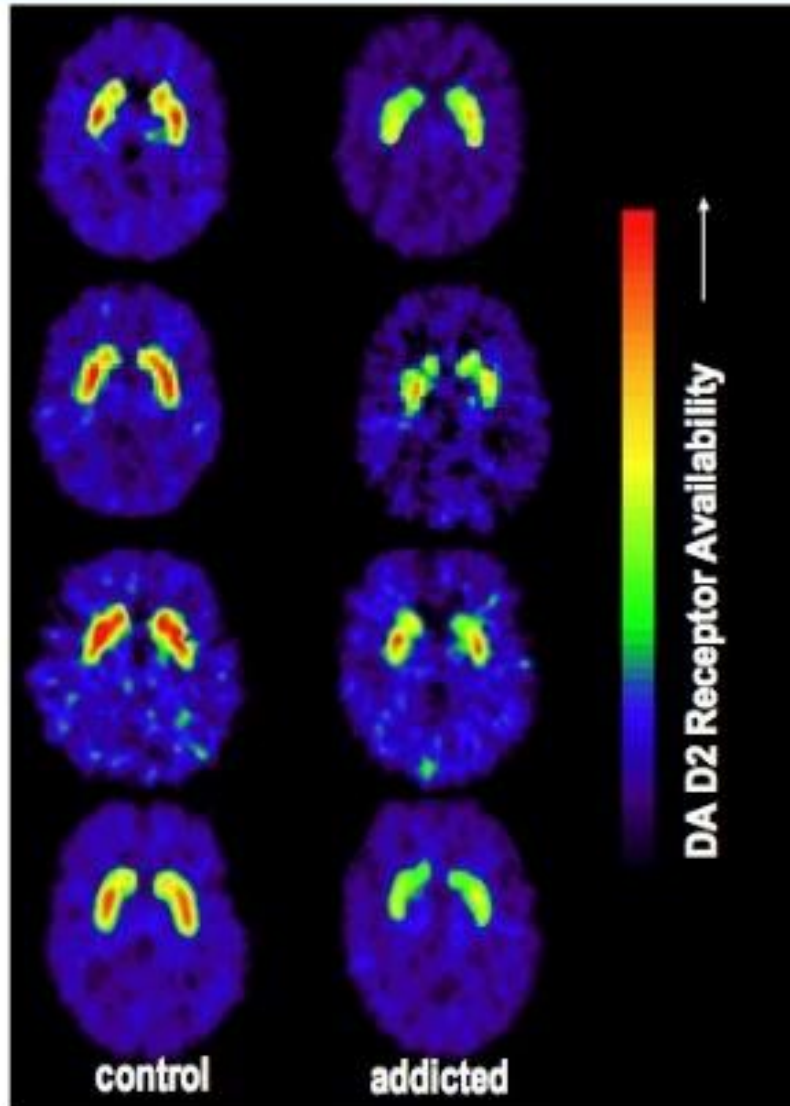
**Psychologic dependence**-addiction, including opiates, causes hardwire changes in the brain



# Dopamine D2 Receptors are Lower in Addiction



UNIVERSITY OF MICHIGAN HEALTH SYSTEM



*Non-Drug Abuser*



*Drug Abuser*

Volkow et al., 2002.

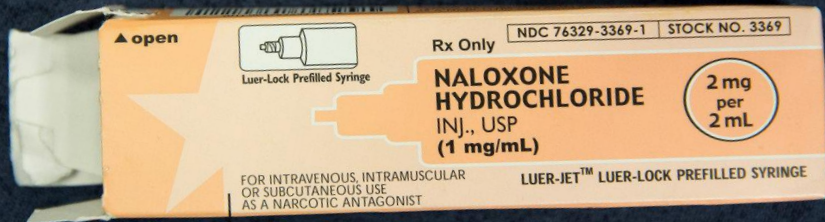
# Options we have for helping opiate abusers and overdosed patients.



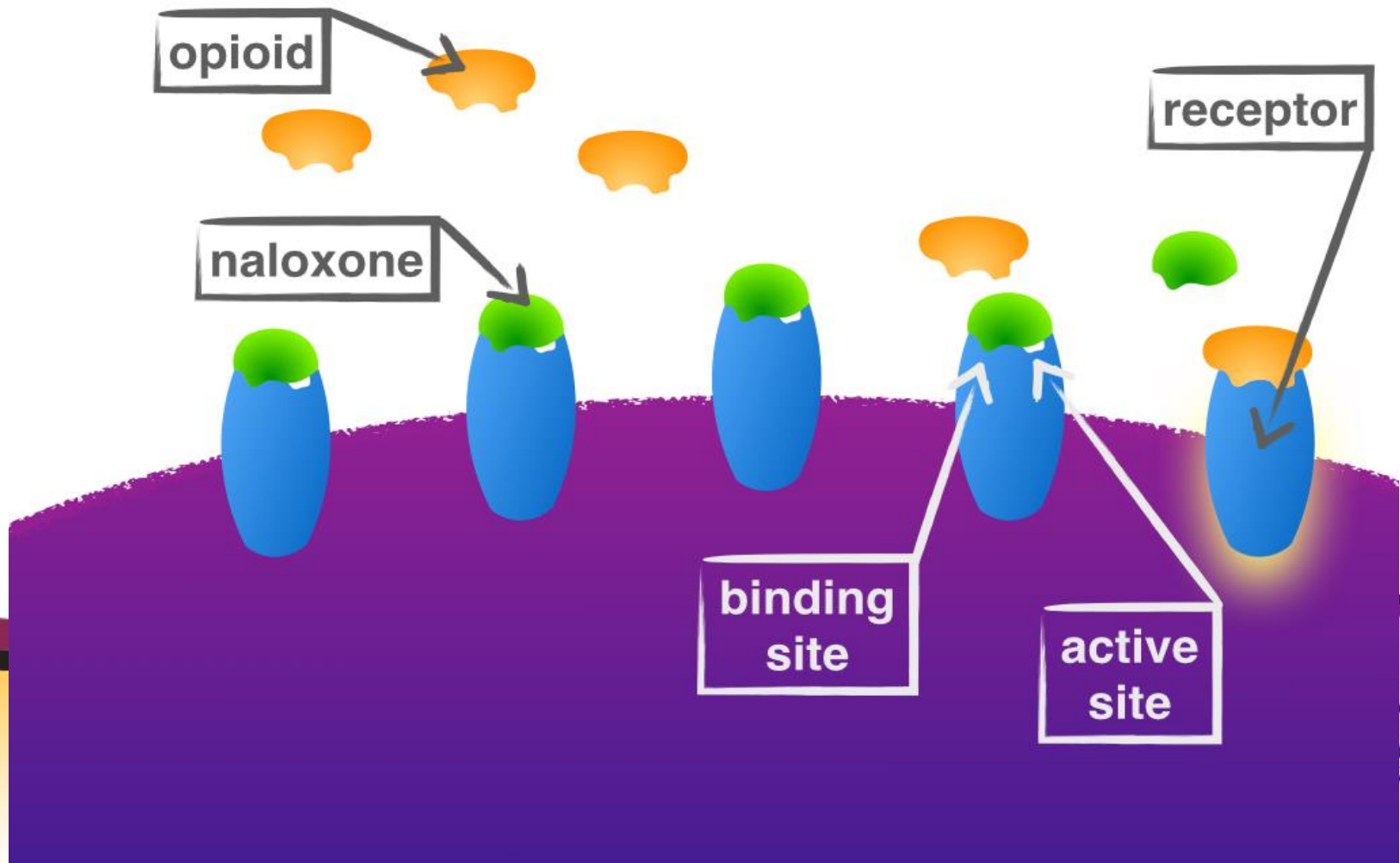
# Short Term and Immediate Life Saving Treatment

# Narcan

(Naloxone)  
Or Naltrexone



# Works by Binding Opiate Receptors



# When to Use Narcan

- Suspected opiate overdose with respiratory compromise
- Be cautious in long term opiate users as it can cause severe withdrawal symptoms.
  - Use with opiate Naïve users will not cause withdrawal symptoms.





# Narcan Offers Quick Results (3-5min)

- Doses
  - IV
    - 0.4-2 mg SC/IM/IV q 2-3 min
  - Intranasal route
    - 1 mg in each nostril X 1. may repeat in 3-5 min
  - ETT route
    - 0.8-5 mg EET q 2-3 min



# Narcan-Latest News



**‘SAVING ADDICTS:  
Narcan to be sold over-  
the-counter’**



# Take Home Points

- Opiates come from opium and they are the basis for prescribed and illegal drug abuse.
- Noticing drug paraphernalia can be a helpful clue into treating obtunded patients.
- Use Narcan liberally.



# Thank You!

