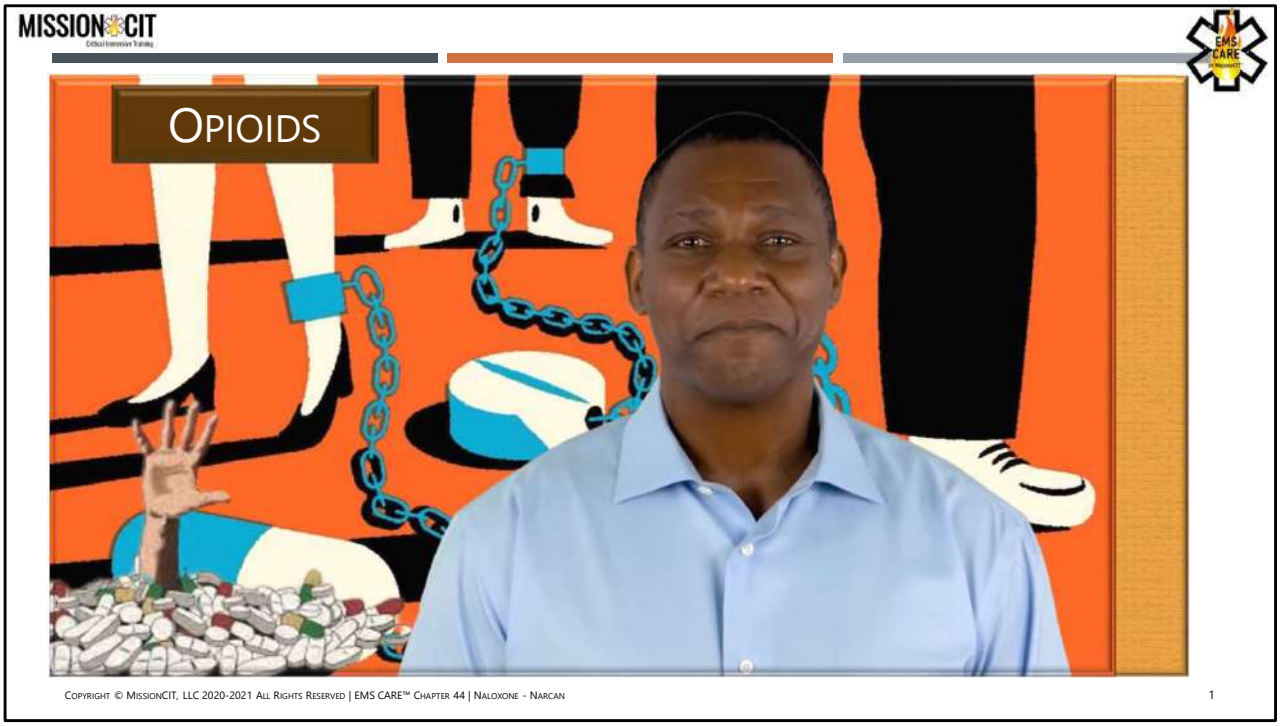
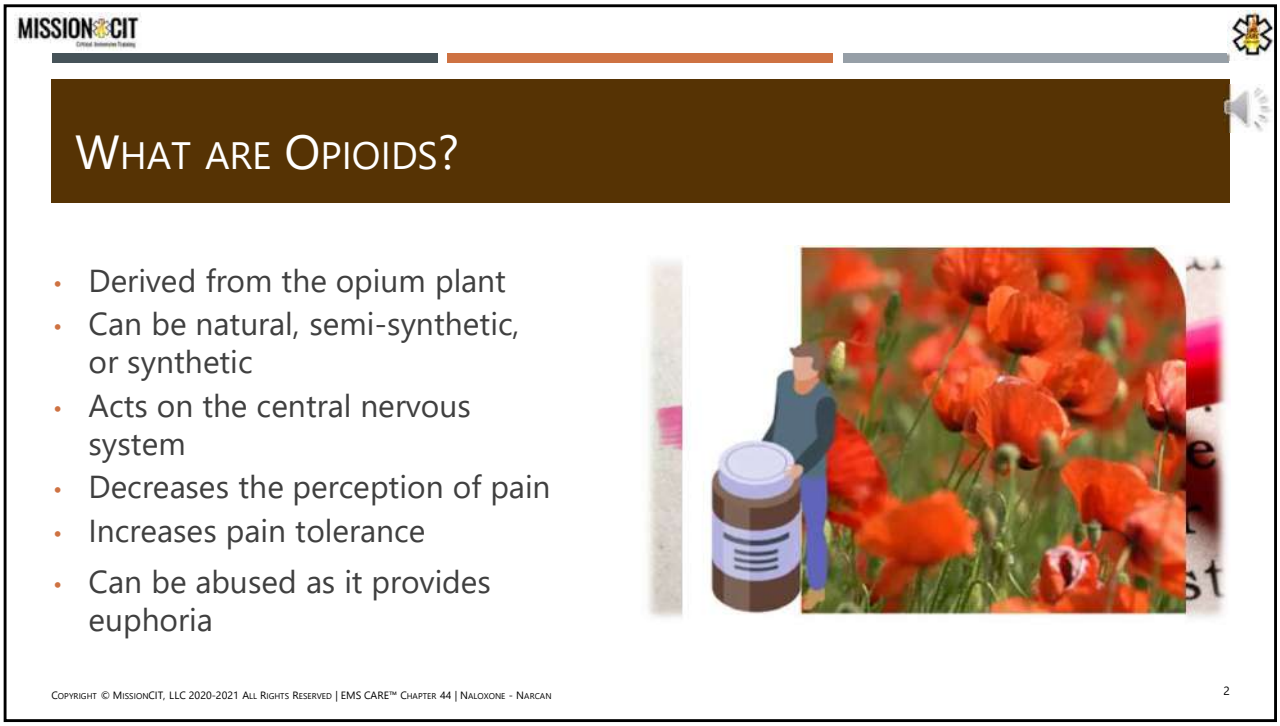


Hello and welcome to the first lesson where we talk about opioids. We will review some basics, including their pathophysiology, signs of usage, and some available treatments.

Good Studying



Opioids are a substance derived from the opium poppy plant. It can come entirely from the poppy plant, or it can be made synthetically in labs to mimic its natural composition. Hence, opioids can be categorized as natural, semi-synthetic, or synthetic.

These opioids are detrimental because it acts on the central nervous system. Specifically, it decreases the perception of pain, reaction to pain, and increases pain tolerance. These pain tolerance capabilities are why opioids are prescribed for acute pain, debilitating pain, and even chronic pain as a part of palliative care for

diseases like cancer.

On the flip side, opioids are also one of the most commonly abused drugs because it gives a euphoria or high. Over time, the body develops a tolerance for these medicines, so patients take more than the prescribed dosage to achieve the same results. And this overdose, is what leads to medication side-effects and addiction.

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COMMONLY USED OPIOIDS

- Medications can be overdosed
  - ✓ Methadone
  - ✓ Morphine
  - ✓ Oxycontin
  - ✓ Fentanyl
  - ✓ Hydromorphone
- Heroin – Common illegal drug
- Some street names
  - Hell Dust
  - Horse
  - Dope
  - Eighth



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Some common medicines that are often over-dosed and abused include Buprenorphine, Butorphanol, or Stadol. Codeine, Fentanyl or Duragesic patch, Hydrocodone or Vicodin, Hydromorphone or Dilaudid, Meperidine or Demerol, Methadone, Morphine, Nalbuphine or Nubain, Oxycodone or Percocet or Percodan, Oxymorphone, Pentazocine or Talwin, Paregoric, and Propoxyphene or Darvon.

Besides these medications, heroin is a common illegal opioid that is snorted or smoked to get the feeling of euphoria. It has many street names, including Big H, Boy,

Capital H, China white, Chiva, Dead on arrival, Diesel, Dope, Eighth, Good HH, Hell dust, Horse, Junk, Mexican horse Mud, Poppy, Smack, Thunder, Train, and White junk.

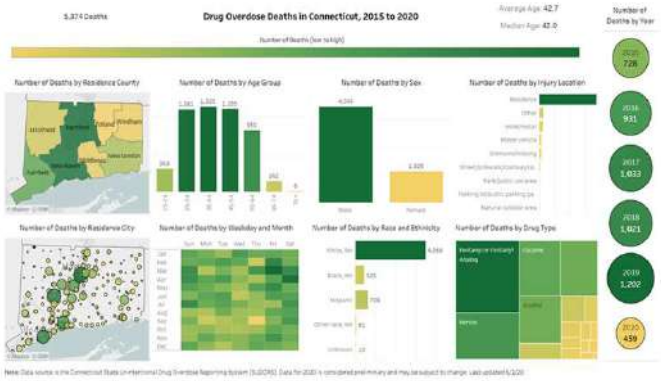
Morphine, oxycontin, and Methadone are other commonly-used opioids.

It's essential to be familiar with these names, so you can quickly identify the overdosed medication.

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STATISTICS ON OPIOIDS USE

- 72,000 deaths in the U.S in 2019
- 13% increase in 2020
- In CT, increased from 728 in 2015 to 1,202 in 2019
- Number of EMT visits increased from 978 in March 2020 to 1079 in Oct 2020



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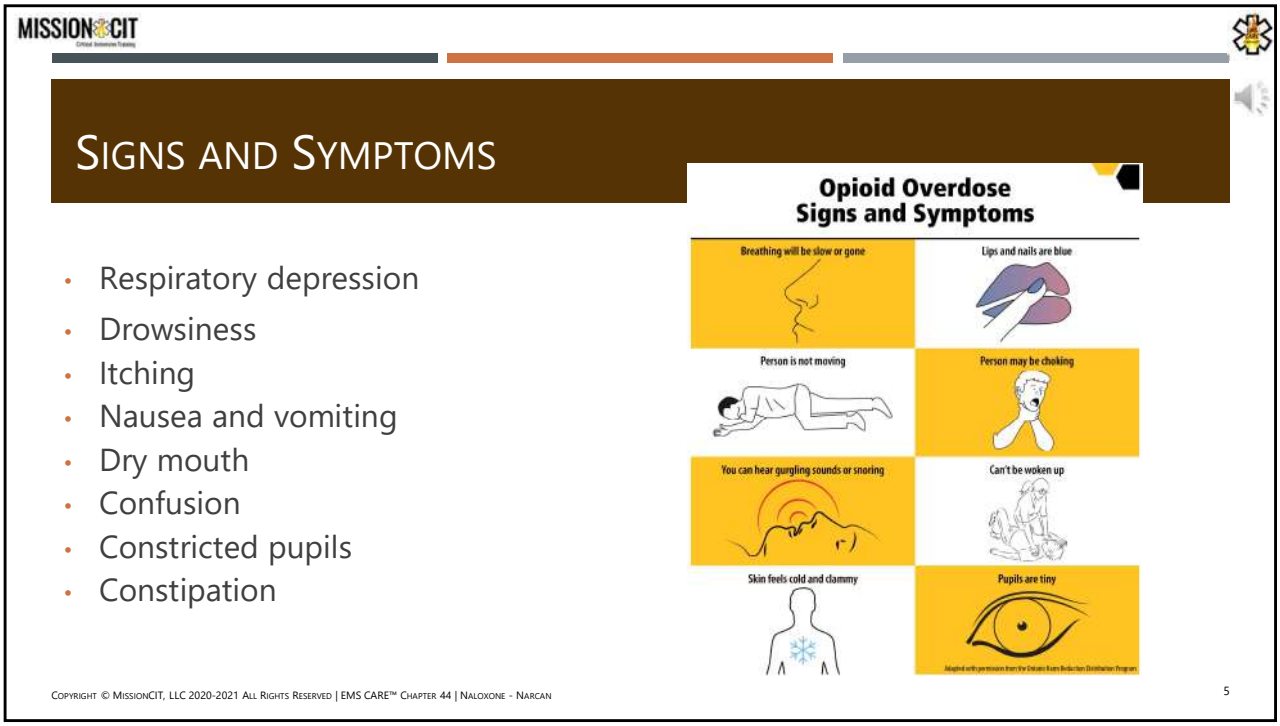
Now, you might wonder why you should be so familiar with these different synonyms and street names.

Just to give you a brief idea of the problem, in 2019 alone, there were about 72 thousand deaths from a drug overdose in the United States. Out of these, about two-thirds were due to opioids. The pandemic has increased the risk of overdose as official agencies estimate that in July 2020, there was a 13 percent increase when compared to 2019.

In Connecticut, the number of deaths due to drug overdose has increased steadily from 728 in 2015 to

1,202 in 2019.

Also, it merits to know that the number of opioid-related visits made by E M Ts has increased from 978 in March 2020 to 1,079 in October 2020. So, you're highly likely to face a situation of a drug overdose in the coming months.

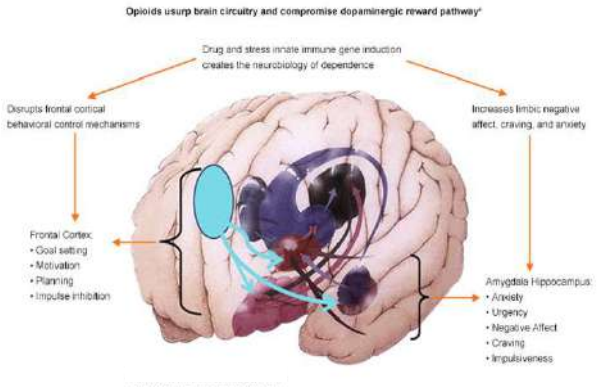


Now that you know the gravity of the problem, here are some signs and symptoms you must look out for to identify an opioid overdose.

- Respiratory depression
- Drowsiness
- Itching
- Nausea and vomiting
- Dry mouth
- Confusion
- Miosis or constricted pupils, and
- Constipation

Pathophysiology of Opioids

- Binds to opioid receptors
- Causes structural changes to the brain
- Leads to cravings
- Impacts memory, learning, motivation, drive, and inhibitory controls



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What essentially happens in an overdose is that, these opioids cause people to stop breathing, resulting in death.

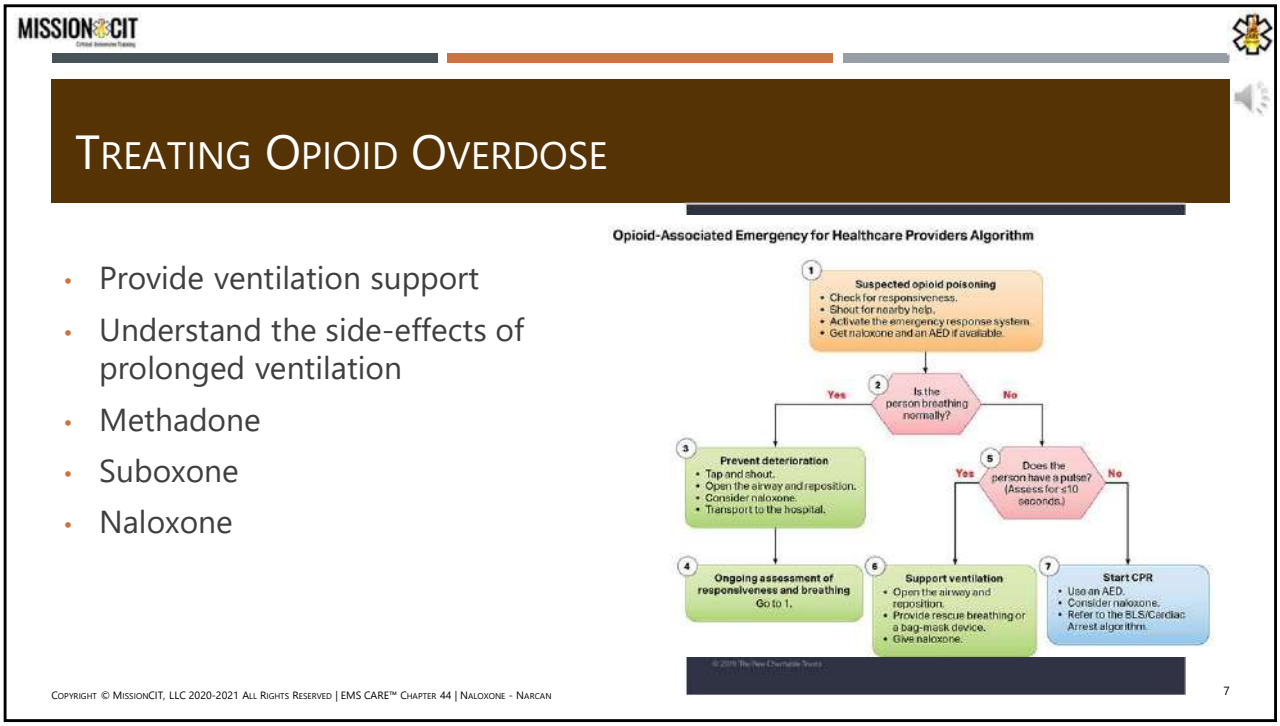
These substances bind themselves to the opioid receptors present in neurons, that are distributed throughout the body.

Over time, repeated use leads to structural changes in the brain, such that even normal functioning requires high doses of these medications.

As a result, a patient experiences cravings when these

opioids are not presented to the brain.

Structural changes also occur in neuronal circuits that are responsible for memory and learning. It impacts control, motivation, and drive as well.



As an EMT, your role is limited to providing ventilatory support to reverse hypoxia, a condition where the tissues don't get enough oxygen to perform bodily functions. While providing ventilatory support, it's important to note that prolonged support can have many side-effects such as hypercarbia, which is the presence of high levels of carbon dioxide concentrations in the blood, aspiration, and possibly even respiratory arrest and death.

The other course of treatment is to provide Naloxone to minimize the effects of opioid withdrawal.

Missah will take you through more about Naloxone in the next lesson.