Opiates

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Addiction

- Addiction is a primary, chronic disease of brain, reward, motivation, memory, and related circuitry.
- Addiction is characterized by an inability to consistently abstain, impaired in behavior control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships and a dysfunctional emotional response.
Chronic Disease

- Like other chronic diseases, addiction often involves a cycle of relapse and remission.
- Without treatment or engagement in recovery activities, addiction is progressive and can result in a disability or premature death.
Opiates and the Brain

- Opiates affect the limbic system (Pleasure Center).
  - The opiates produce increased feelings of pleasure, relaxation and contentment

- Opiates affect the brainstem (Controls things like breathing and heart rate).
  - Opiates can slow breathing and heart rate to dangerous levels

- Opiates affect the spinal cord (pain signals)
  - By acting here the opiates block the pain signals
Understanding the Human Brain

- Part of the individual does want to stop substance use but there is also another part that wants to continue the addictive behavior.
Movie

Addiction
Understanding the Human Brain

- Two parts of the brain are working with each other
- The balance between these two parts determine the quality of life
- Limbic- Emotional (Primitive and instinctive)
- Pre-Frontal – Rational (Morals and Values here)
Brain

SAMHSA Video
Some research suggest that 90 – 95% of our behavior is automatic or comes from the limbic region of the brain.
Limbic System (Basic Instincts)

- Breathing
- Eat
- Drink (Water)
- Reproduction
Limbic System

- Has three Prime directives
  1) Most important is Survival
  2) Avoid Pain (Physical or emotional)
  3) Seek Pleasure

Pleasure centers are found in the limbic system. There is not shame or guilt found in the limbic system. It is not its job to be rational or logical.
Network of Neurons

- The more you do something the brain starts to create networks or shortcuts. When the brain is in distress it will look for something that creates pleasure and gets rid of pain. The individual often falls back into drugs or alcohol.
Survival

- After a while the Limbic System begins to interpret the addictive behavior as a survival need and it becomes part of the survival need process.
Limbic System

- Addiction!!!!
- Breathing
- Eating
- Drinking (Water)
- Reproduction
We can not make the Limbic System to go away

- Trying to quit on sheer willpower is very hard. The limbic system is the first part of the brain that is developed at age 5. The Pre-Frontal part of the brain is not developed until the person is in their 20’s.
B.L.A.S.T

- Bored
- Lonely
- Angry
- Stressed
- Tired

- How often are we in one of these states.
- The limbic system wants to be out of these states and when the disease of addiction progresses often the first thought is drug use to escape these emotions.
Pre- Frontal Cortex

- Higher functioning part of the brain: This is where rationalization and meaning is.
- Rational and logical
- Moral / Values and right or wrong
- Caring about relationships
- Guilt and remorse
- Consequences
Pre-Frontal Cortex

The PFC is one of the most significant areas of the brain, especially to an addict. This is the most evolved system of the brain. The PFC has domain over a number of different brain functions.
(5) major areas of PFC damaged addiction are:

- **1. Behavior** - (controlling one’s actions) – having the ability to think or feel a certain way and acting with appropriate behavior.
- **2. Development of an individual, or social, conscience** - (self-aware, insight) – knowing when something is not right and acting accordingly.
- **3. Decision making** - (think before you act) - gathering of information before acting, the skill of making an informed decision.
- **4. Impulse control** - thinking things through instead of immediately acting on a feeling or thought.
- **5. Focus** - being able to stay with a project or task, the ability to get the job done.
Limbic System.

When crossing into addiction:

The limbic system overpowers the pre-frontal cortex.

Instead of the Pre-frontal cortex calling the shots, the limbic system is in control.
Limbic System

- When the limbic system takes over it shuts off the prefrontal cortex.
  - Lying to loved ones
  - Stealing
  - Robbing
  - Going against morals and values
A goal

- A goal of treatment is to bring the prefrontal cortex back in balance with the limbic system.
Definitions

- **Opium**
  - Fluid obtained from the poppy plant
- **Opiate**
  - a substance derived from opium
- **Opioid**
  - substance with morphine-like actions, but not derived directly from the poppy plant
Street Names

- Bag: Small bag about the size of a pinky nail usually costs about $10-$25.00 and weighs about 1/10 to 1/15 of a gram
- Bundle: Ten bags of heroin
- Tickets
- Stamp
- Balloon
- “H”
- Decks
What Does Heroin Look Like

- It is usually sold in a powder form.
- White or brown
- Bitter smell and taste
- Sometimes sold in other forms known as “Black Tar” which is a sticky tar like substance and hard like coal
- Often not pure-cut with things like sugar, starch, powdered milk, Quinine, make-up, cool-aide, benzodiazepines and other chemicals
Examples of Opiates

- Opium
- Morphine
- Heroin
- Methadone
- Codeine
- Meperidine (Demerol)
- Percodan
- Oxycodone
- Oxycontin
- Hydrocodone (Vicodin)
- Fentanyl (Duragesic)
- Hydromorphone (Dilaudid)
- Propoxypophene (Darvon)
- Ultram (Tramadol)
- Oxymorphone (Opana)
Opiate Statistics

- ‘...in 2012 about 669,000 Americans reported using heroin in the past year,¹ a number that has been on the rise since 2007. This trend appears to be driven largely by young adults aged 18–25 among whom there have been the greatest increases. The number of people using heroin for the first time is unacceptably high, with 156,000 people starting heroin use in 2012, nearly double the number of people in 2006 (90,000)’
  - (NIDA, 2014)

- Heroin use in NYS is still high because the purity of heroin is extremely high (65%) and can be snorted instead of used intravenously.
Opiate-dependent patients are not just using heroin, but other narcotic drugs as well!

- Data from the Drug Abuse Warning Network (DAWN*) revealed that narcotic mentions in ERs were higher than heroin mentions in the last several years. This highlights the fact that the opiate problem is not only related to heroin, but also to narcotic analgesics (pain medications) that are being diverted and abused.
In 2002, 214,000 individuals met criteria for Opioid dependency.

In 2012, 467,000 individuals met criteria for Opioid dependency.
Administration of Substance

- May be taken orally
- Inhaled
- Snorted
- Intravenously
- Smoked
Factors Involved With Increased Heroin Use

- Prescription monitoring system which cuts down on doctor shopping. This makes prescription Opioids harder to obtain illegally on the streets.
- Cheaper
- Stronger
- Overmedication of the population-nearly half of all Heroin users report that they abused prescription pain medication prior to Heroin use.
INTOXICATION OR WITHDRAWAL?

Always look at the pupils; the pupil size can give very good clinical information.
INTOXICATION OR WITHDRAWAL?

Withdrawal

Intoxication
### Under the Influence

<table>
<thead>
<tr>
<th>'DOWN'</th>
<th>'UP'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glossy eyes</td>
<td>Track marks</td>
</tr>
<tr>
<td>‘Nodding’</td>
<td>Visibly energetic</td>
</tr>
<tr>
<td>Track marks</td>
<td>Hyper-focus</td>
</tr>
<tr>
<td>Possible slowed speech</td>
<td>Glossy eyes</td>
</tr>
<tr>
<td>Particularly interested in candy</td>
<td>Particularly interested in candy</td>
</tr>
<tr>
<td>Dulled Affect</td>
<td>Dulled Affect</td>
</tr>
<tr>
<td>Pale coloration</td>
<td>Pale coloration</td>
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</tbody>
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**What to Look For**
Physical Signs & Symptoms

- Dramatic Weight Loss
- Dental Issues- Brittle teeth, cracked
- Dark circles under eyes
- Hepatitis C diagnosis
- Excessive Itching
- Appear tired
- Droopy posture & extremities
In general, opiate withdrawal signs and symptoms are the same for all opiates; what differs is the time of onset and the length and intensity of withdrawal.

The withdrawal is divided into early, middle and late phases to show the progression of symptoms when the patient is not treated.
Withdrawal

- Have you ever had the flu?
- Flu symptoms are often aching, fever, sweating, shaking, or chills. These are similar to early withdrawal symptoms of opiates.
- Another comparison to illustrate withdrawal; What would happen if you did not eat for days? First stomach would hurt, loose concentration, feel weak, irritable, eventually it would feel like the body is shutting down.
OPIATE WITHDRAWAL - EARLY

- Lacrimation (eyes water)
- Yawning
- Rhino rhea (runny nose)
- Sweating
OPIATE WITHDRAWAL - MIDDLE PHASE

- Restless sleep
- Dilated pupils (mydriasis)
- Anorexia
- Gooseflesh
- Irritability
- Tremor
OPIATE WITHDRAWAL - LATE PHASE

- Increase in all previous signs and symptoms
- Increase in heart rate
- Increase in blood pressure
- Nausea and vomiting
- Diarrhea
- Abdominal cramps
- Labile mood
- Depression
- Muscle spasm
- Weakness
- Bone pain
• CAN LAST UP TO 9 MONTHS WITH SOME OR ALL OF THE FOLLOWING:
  • Weight gain
  • Increased basal metabolic rate
  • Decreased temperature
  • Increased respiratory rate
  • Increased blood pressure
  • Menstrual irregularities (secondary to increased prolactin hormone levels)
P.A.W.S
(Post Acute Withdrawal Symptoms)

- Begins a few weeks after cessation, and can last up to two years
- Less prevalent physical symptoms, more prevalent psychological, and emotional symptoms
- Caused by brain-chemistry corrections

Characterized by:
- Mood swings
- Anxiety
- Irritability
- Tiredness
- Variable energy
- Low enthusiasm
- Variable concentration
- Disturbed sleep

* Without appropriate counseling, treatment, or meeting attendance, users are likely to relapse, due to the stress and constancy of these symptoms.
Opiate Toxicology

- UDS-Traditionally will not show up as Heroin in a urine drug screen. But will show up as Morphine or Codeine depending on how it is metabolized.

- Poppy seeds, if eaten, can show up as a positive urine drug screen for morphine and codeine
  - Depends on the amount of poppy seeds consumed and the content of morphine and codeine in that particular type of seed
Opiate Toxicology

Not all opiates contain or metabolize into morphine and/or codeine, a fact that is occasionally not known by a patient when he/she is trying to explain a positive drug test result.

- Drugs/medications that do not metabolize to morphine and codeine include:
  - Hydrocodone (Lortab, Vicodin)
  - Hydromorphone (Dilaudid)
  - Methadone
  - Oxycodone (Oxycontin, Percodan*)
Opiate Toxicology

- Fentanyl and Tramadol do not show up for an Opiate and will require special requests from toxicology labs.
Treatment

● Like other chronic diseases (diabetes, asthma, heart disease) opiate dependency can be managed but not cured

● Chronic disease requires ongoing long term treatment with medication and behavior change.

● Most opiate dependent individuals need several months of treatment to reduce opiate misuse
RATIONALE FOR MAINTANACE TREATMENT

**OPIOID MAINTANANCE TREATMENT**

- Most effective treatment for opioid dependence
  - Controlled studies have shown significant
- Decreases in illicit opioid use
- Decreases in other drug use
- Decreases in criminal activity
- Decreases in needle sharing
- Improvements in pro-social activities
- Improvements in mental health
Maintenance Treatment

- **BUPRENORPHINE / NALOXONE (SUBOXONE)**
  - Helps reduce cravings and withdrawal
  - Helps deter relapse and misuse

- Suboxone is to be used for opiate dependency as part of a treatment plan. It is to be used in conjunction with counseling and psychosocial support groups.
SUBOXONE

- How Suboxone Works
Suboxone

- How Suboxone is Administered
NALTREXONE

- **Naltrexone** is used primarily in the management of **opioid dependence** as an opiate blocker – preventing the euphoric feelings of opiate abuse.
  - Pill form or a once – Monthly injectable shot

- Naltrexone should not be confused with **naloxone** (which is used in emergency cases of opioid **overdose**).
Who might benefit from naltrexone?

- Highly motivated individuals
- Former opiate-dependent individuals who are employed and socially functioning
- Those recently detoxed from methadone/buprenorphine maintenance
- Those who are leaving prison
- Those who are leaving residential treatment settings
- Those who sporadically use opiates but are not on methadone/buprenorphine maintenance
- Those not eligible for methadone/buprenorphine maintenance
- Those in a long waiting period for methadone/buprenorphine maintenance
- Those wishing to prevent relapse
- Adolescents not wishing to go on methadone/buprenorphine maintenance
- Healthcare professionals not wishing to go on methadone/buprenorphine maintenance
Naloxone

- **Naloxone** is a drug used to counter the effects of opioid overdose, for example heroin or morphine overdose.
- Naloxone is specifically used to counteract life-threatening depression of the central nervous system and respiratory system.