OUTLINE

• ADDICTION – WHAT IT IS AND WHAT IT IS NOT
• NEUROCHEMISTRY OF ADDICTION – THIS IS OUR BRAIN ON DRUGS
• MEDICATION ASSISTED THERAPY – THE GOOD, THE BAD, THE UGLY
• HOW TO HANDLE OVERDOSE – WHAT YOU NEED TO KNOW
• MAT MYTHS – HOW TO EDUCATE PUBLIC ON OPIOID ADDICTION
• TREATMENT CENTERS IN NORTH DAKOTA

OPIOIDS EFFECTS ON THE BRAIN

HTTPS://WWW.PBS.ORG/NEWSHOUR/SCIENCE/BRASS-GETS-HOOKED-OPIOID
ADDICTION – WHAT IT IS

IT IS A DISEASE.
• IT IS A CHRONIC PHYSICAL DISEASE THAT ATTACKS THE BRAIN, DAMAGING KEY PARTS OF THE CEREBRAL CORTEX AND LIMbic SYSTEM. IT IS OFTEN RELAPSING AND CAUSES COMPULSIVE DRUG SEEKING AND USE, DESPITE HARMFUL CONSEQUENCES TO THE ADDICTED INDIVIDUAL AND TO THOSE AROUND HIM OR HER.
• LIKE DIABETES, HEART DISEASE AND CANCER, ADDICTION IS CAUSED BY A COMBINATION OF BEHAVIORAL, ENVIRONMENTAL AND BIOLOGICAL FACTORS.
• THIS DAMAGE CAN NOT BE REVERSED BY TALK THERAPY – ONLY SELECT MEDICATIONS AND CONTINUED SOBRIETY CAN DO THAT – COMBINED WITH MEDICATIONS AND TALK THERAPY – SUCCESS RATES INCREASE AND RECOVERY CAN OCCUR!


ADDICTION – THE DISEASE

Addiction is similar to other chronic medical problems.
• Treatment can remove or reduce the symptoms, but does not affect the root cause of the disease.
• Treatment requires significant changes in lifestyle and behavior on the part of the patient to maximize the benefits of treatment.
• Relapses are likely.
• Treatment should involve regular monitoring of medication adherence as well as encouragement and support of pro-health changes in lifestyle.

GENETICS

Genetic risk factors account for about half of the likelihood that an individual will develop addiction (National Center on Addiction and Substance Abuse, 2-17).

ADDICTION DOES NOT DISCRIMINATE

OPIOID ADDICTION THROUGH THE EYES OF AN ADDICT


WHAT IS THE DIFFERENCE BETWEEN ILLICIT OPIOIDS?
According to the National Survey on Drug Use and Health (2017):

• In 2016, 28.6 million people aged 12 or older used an illicit drug in the past 30 days, which corresponds to about 1 in 10 Americans overall (10.6 percent) but ranges as high as 1 in 4 for young adults aged 18 to 25.

• Among people aged 12 or older, 24.0 million were current marijuana users and 3.3 million were current misusers of prescription pain relievers.

• In 2016, approximately 20.1 million people aged 12 or older had a substance use disorder related to their use of alcohol or illicit drugs in the past year.

The basal ganglia plays an important role in positive forms of motivation, including the pleasurable effects of healthy activities like eating, socializing, and sex, and are also involved in the formation of habits and routines.

These areas form a key node of what is sometimes called the brain's "reward circuit."

Drugs over-activate this circuit, producing the euphoria of the drug high; but with repeated exposure, the circuit adapts to the presence of the drug, diminishing its sensitivity and making it hard to feel pleasure from anything besides the drug.
Extended Amygdala

The extended amygdala plays a role in stressful feelings like anxiety, irritability, and unease, which characterize withdrawal after the drug high fades and thus motivates the person to seek the drug again.

This circuit becomes increasingly sensitive with increased drug use. Over time, a person with substance use disorder uses drugs to get temporary relief from this discomfort rather than to get high.

The Prefrontal Cortex

The prefrontal cortex powers the ability to think, plan, solve problems, make decisions, and exert self-control over impulses.

This is also the last part of the brain to mature, making teens most vulnerable. The combination of effects between this area, the basal ganglia and extended amygdala make a person with substance use disorder seek the drug compulsively without impulse control.

DOPAMINE

- Dopamine – regulates movement, emotion, motivation and feelings of pleasure
- Drugs mimic the brain’s own chemicals and lead to abnormal messages being transmitted through the network
- Drugs of abuse target the brain’s reward system by flooding the circuit with dopamine producing euphoria
- When the reward circuit is activated, the brain triggers a memory and teaches us to repeat that behavior
DOPAMINE

• WITH CONTINUED EXPOSURE TO HIGH LEVELS OF DOPAMINE, THE BRAIN DOWN REGULATES THE NUMBER OF RECEPTORS AND NATURAL DOPAMINE RELEASE
• LESS RECEPTORS MEANS THE PERSON’S ABILITY TO EXPERIENCE ANY PLEASURE IS REDUCED
• THIS LEADS TO ONGOING DRUG ABUSE IN ORDER TO TRY AND INCREASE THE LEVELS OF DOPAMINE

https://www.drugsabuse.gov

DOPAMINE

• AVERAGE BRAIN – 50 NG/DL DAILY OF DOPAMINE
• TOBACCO – 450 NG/DL
• MARIJUANA – 650 NG/DL
• HEROIN – 975 NG/DL
• METHAMPHETAMINE – 1100 NG/DL

PRESCRIPTION OPIOIDS AND HEROIN

• IN 2013 OPIOIDS KILLED MORE THAN 33,000 IN THE UNITED STATES, IN 2017 - 70,200 PEOPLE IN THE US WERE KILLED
• DRUG OVERDOSE DEATHS INVOLVING PRESCRIPTION OPIOIDS ROSE FROM 3,442 IN 1999 TO 17,029 IN 2017.
• DRUG OVERDOSE DEATHS INVOLVING HEROIN ROSE FROM 1,960 IN 1999 TO 15,482 IN 2017.
• THE NUMBER OF DEATHS INVOLVING HEROIN IN COMBINATION WITH SYNTHETIC NARCOTICS HAS BEEN INCREASING STEADILY SINCE 2014 AND SHOWS THAT THE INCREASE IN DEATHS INVOLVING HEROIN IS DRIVEN BY THE USE OF FENTANYL.
MEDICATION ASSISTED TREATMENT

- Evidence-based practice that combines pharmacological interventions with substance abuse counseling and support
- It is not
  - replacing one drug for another
  - keeping someone sick
  - keeping someone from achieving recovery

MEDICATION ASSISTED TREATMENT

- Has been shown to increase survival
- Increase retention in treatment
- Decrease illicit opioid use
- Decrease hepatitis and HIV seroconversion
- Decrease criminal activities
- Increase employment
- Improve birth outcomes
MEDICATION ASSISTED TREATMENT

- METHADONE
- BUPRENORPHINE (SUBUTEX, SUBLOCADE)
- BUPRENORPHINE/NALOXONE (SUBOXONE, ZUBSOLV, BUNAVAIL)
- NALTREXONE (REVIA, VIVITROX)
- NALOXONE (NARCAN)

METHADONE - BINDS TO RECEPTORS IN BRAIN AS FULL AGONIST. DUE TO LONG HALF LIFE, THERE IS STABILITY IN THE RECEPTORS, THEREBY ALLEVIATING CRAVINGS AND WITHDRAWAL.

NALTREXONE - BINDS TO OPIOID RECEPTORS 100 TIMES MORE STRONGLY THAN OPIOIDS THEREFORE BLOCKING ANY PLEASURABLE EFFECTS FROM OPIOIDS

BUPRENORPHINE - HAS BOTH AGONIST AND ANTAGONIST EFFECTS ON OPIOID RECEPTORS

NALOXONE - IS OPIOID ANTAGONIST USED IN TREATMENT OF OPIOID OVERDOSE

METHADONE AND BUPRENORPHINE BOTH RAISE DOPAMINE TO NORMAL LEVELS OF 40-60 NG/ML IN THE BRAIN

PATIENTS WITH LOWER DOPAMINE LEVELS HAVE EXTREMELY LOW RETENTION RATES FOR TREATMENT (LESS THAN 10%).

MORTALITY RATES FOR PATIENTS WHO PURSUE ABSTINENCE BASED RECOVERY IS 10 TIMES HIGHER THAN INDIVIDUALS WHO RECEIVE MAT

MAT COMBINED WITH PSYCHOSOCIAL TREATMENT IS SUPERIOR TO DRUG ONLY OR PSYCHOSOCIAL TREATMENT ALONE.

National Institute on Drug Abuse
MEDICATION ASSISTED THERAPY

• MAT IS GROSSLY UNDERUTILIZED
• LESS THAN 10% OF PATIENTS SEEKING TREATMENT FOR OPIOID USE DISORDER RECEIVE MAT
• ONLY 23% OF PUBLICLY FUNDED TREATMENT PROGRAMS REPORT OFFERING ANY FDA APPROVED MEDICATIONS
• THERE IS A SIGNIFICANT NEED FOR MORE PRESCRIBERS OF MAT IN THIS STATE AND REGION
• 23 MD/DO AND 10 PA/NP ON SAMHSA LOCATOR FOR NORTH DAKOTA THOUGH MANY ARE NOT PRESCRIBING OR ARE CASH ONLY

OPIOID OVERDOSE

• DRUG OVERDOSE DEATHS ARE THE LEADING CAUSE OF INJURY RELATED DEATH IN THE US
• HEROIN OVERDOSE DEATHS AMONG WOMEN HAVE TRIPLED IN LAST FEW YEARS
• EVERY DAY MORE THAN 115 AMERICANS DIE AFTER OVERDOSE ON OPIOIDS
• OCTOBER 26, 2017, PRESIDENT TRUMP DECLARED THE OPIOID EPIDEMIC A NATIONAL PUBLIC HEALTH EMERGENCY
• CDC ESTIMATED THAT MORE THAN 63,000 PEOPLE DIED IN 2016 FROM OPIOID OVERDOSES

NARCAN – OVERDOSE REVERAL AGENT FOR OPIOIDS

• ALSO KNOWN AS NALOXONE
• 47 STATES HAVE EXPANDED ACCESS TO NALOXONE
• SAFE, NO SIDE EFFECTS, INEXPENSIVE
• CAN BE GIVEN IV, SQ, IM, IN, IO
NARCAN ADMINISTRATION

HTTPS://WWW.YOUTUBE.COM/WATCH?v=A6M0BZL5FWK
NARCAN.SAVE A LIFE

NARCAN CAN SAVE LIVES
WHEN IN DOUBT, ADMINISTER NARCAN – THERE ARE NO SIDE EFFECTS AND WILL SAVE PEOPLE FROM OVERDOSE

ND TREATMENT CENTERS
WHERE TO SEND PATIENTS WHO ASK FOR HELP
ND OPIOID TREATMENT PROGRAMS

There is a need for more rehabilitation services that incorporate medication assisted therapy. Currently, we have four available locations – Bismarck, Cando, Minot and Fargo that are able to prescribe both buprenorphine and methadone.

THE HEARTVIEW FOUNDATION

Heartview Foundation is the most experienced private, non-profit alcohol/drug treatment and education program in the region. Since 1964, Heartview has served over 28,800 patients and families from all over the US and Canada. Heartview has two locations to serve individuals, Cando and Bismarck, North Dakota.

TAKE HOME POINTS

- Addiction is a CHRONIC disease of the brain.
- Brain chemistry is changed with addiction.
- We are in the midst of a public health crisis.
- More than an opioid epidemic, we are facing an addiction epidemic.
- Recovery is an individual process and may involve the use of medications.
- Naloxone is effective and safe in an overdose situation.
- The stigma associated with addiction is costing us more than 197 lives each day.
THE END

REFERENCES


