

Teenage Prescription Drug Abuse

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Conflict of Interest Disclosure

- Dr. Fiori has no relevant disclosures

NIDA

- Superb resource for professionals, parents and teenagers
- Reporting and funding research, and
- Communicating findings to the treatment community and public at large
- Much of the information and photographs of this talk come from the NIDA website

Common Misconceptions About Prescription Drug Abuse

- Mistakenly thought to be safer than illegal drugs by both teenagers and parents

Data for what works in Teenagers

- Teenagers are not just young adults
- What is know about treatment and disease in adults, does not necessarily apply to teenagers
- We must conservative and appropriately skeptical about what we think

Common opiates include:

- Oxycodone (OxyContin, Percodan, Percocet)
- Hydrocodone (Vicodin, Lortab, Lorcet)
- Morphine (Kadian, Avinza, MS Contin)
- Codeine
- Fentanyl (Duragesic)
- Hydromorphone (Dilaudid)
- Methadone

Opiates

- Studies have shown that if taken ***exactly as prescribed by a medical professional, opioids are safe, can manage pain effectively, and rarely cause addiction. The problem occurs when they are abused. In fact, painkillers are one of the most commonly abused drugs by teens after tobacco, alcohol, and marijuana***

What is Prescription Substance Misuse/Abuse?

- Taking pills not as intended or prescribed
- Taking pills not prescribed for you
- Mixing medications with other drugs or alcohol

How common is substance misuse?

- 14% of teens (about 1 in 7) in a recent study reported using prescription pain relievers not prescribed for them in the past year, and 9% (about 1 in 11) reported doing so in the past month.
- As many as 1 in every 5 teens in America say they have taken a prescription drug that was not prescribed for them.

What are teens abusing?

- After marijuana, the most common drugs teens are using to get high are prescription medications.
- 12-17 year olds abuse prescription drugs more than ecstasy, heroin, crack/cocaine and methamphetamines combined.

What prescription drugs are being abused?

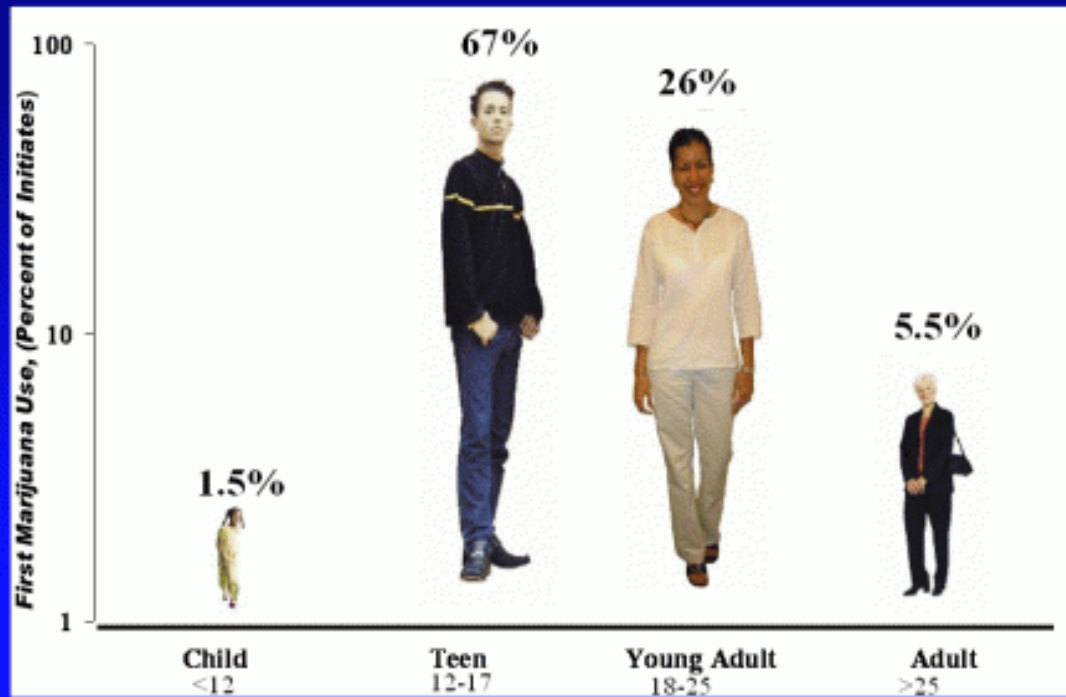
- The most commonly abused prescription drugs are pain medications, sleeping pills, anti-anxiety medications and stimulants (used to treat attention deficit/hyperactivity disorders).

When do people begin to misuse substances?

- Substance misuse can begin at any age, but commonly reported to begin around age 12-14

What age does Misuse Begin

Addiction is a Developmental Disease: It Starts Early



Where do teens get the drugs?

- More than 70% of people 12 and older who abuse prescription drugs say they get them from a friend or relative.

How Are Opioids Abused?

- Opioids usually come in pill form. People who abuse opioids may take a medication that was not prescribed to them, often in larger doses than are typically prescribed or combined with alcohol or other drugs.

How are opioids abused?

- Sometimes people crush the pills into powder and snort or inject the drug, causing it to enter the bloodstream and brain very quickly. Taking opioids in this way increases risk of both addiction and overdose.

Who is at Risk for Addiction

- Young
- Male
- History of addiction
- Family history of addiction
- Co-occurring psychiatric disorders
- Hx of pre-teen sexual abuse

Public Health Crisis

- Dramatic increase in unintentional drug OD death rates, apparently driven by the increased usage of opioid analgesics.
- Opioid analgesic caused deaths by OD, are larger than heroin and cocaine combined.

Opiates per Person

- 1997—96mg of morphine per person
- 2007---700mg of morphine per person
- That's enough for everyone in the U.S. to take 5mg of Vicodin every 4 hours for 3 weeks per year

Why are opiates flooding into society?

- Acute Pain—for example post op or post fracture
- End of life pain and pain associated with cancer
- Chronic pain

Addiction plus Chronic Pain

- It must be stressed again, that for most patients who have demonstrated clear signs of drug misuse or addiction, the level of vigilance and risk management needed for continuation of long term opioid dosing, often exceeds the abilities/resources for the average prescriber.

Fishman 2012

Greatest Predictor of Opioid Misuse

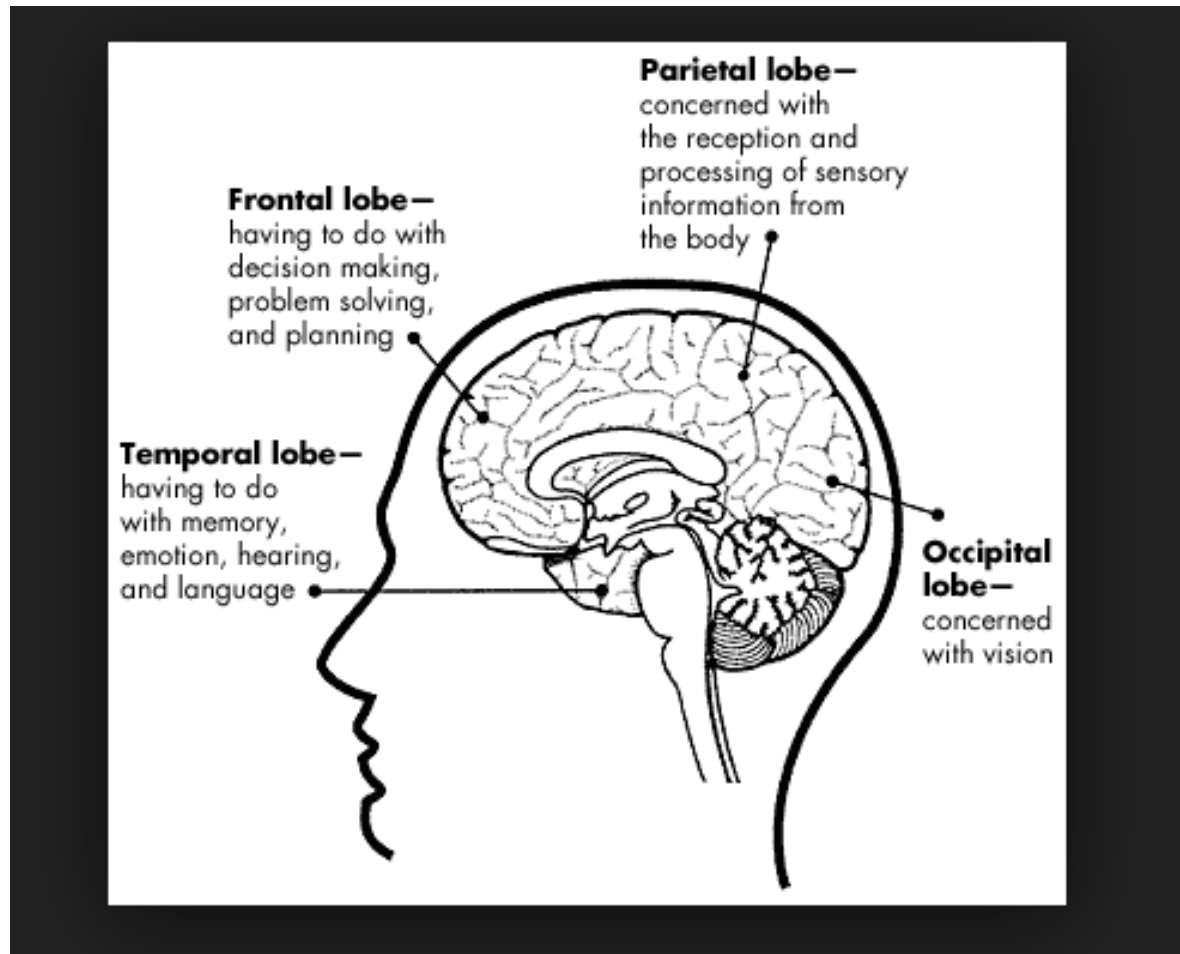
- Personal History of Substance Abuse
- Family History of Substance Abuse

---no one is born an “addict”

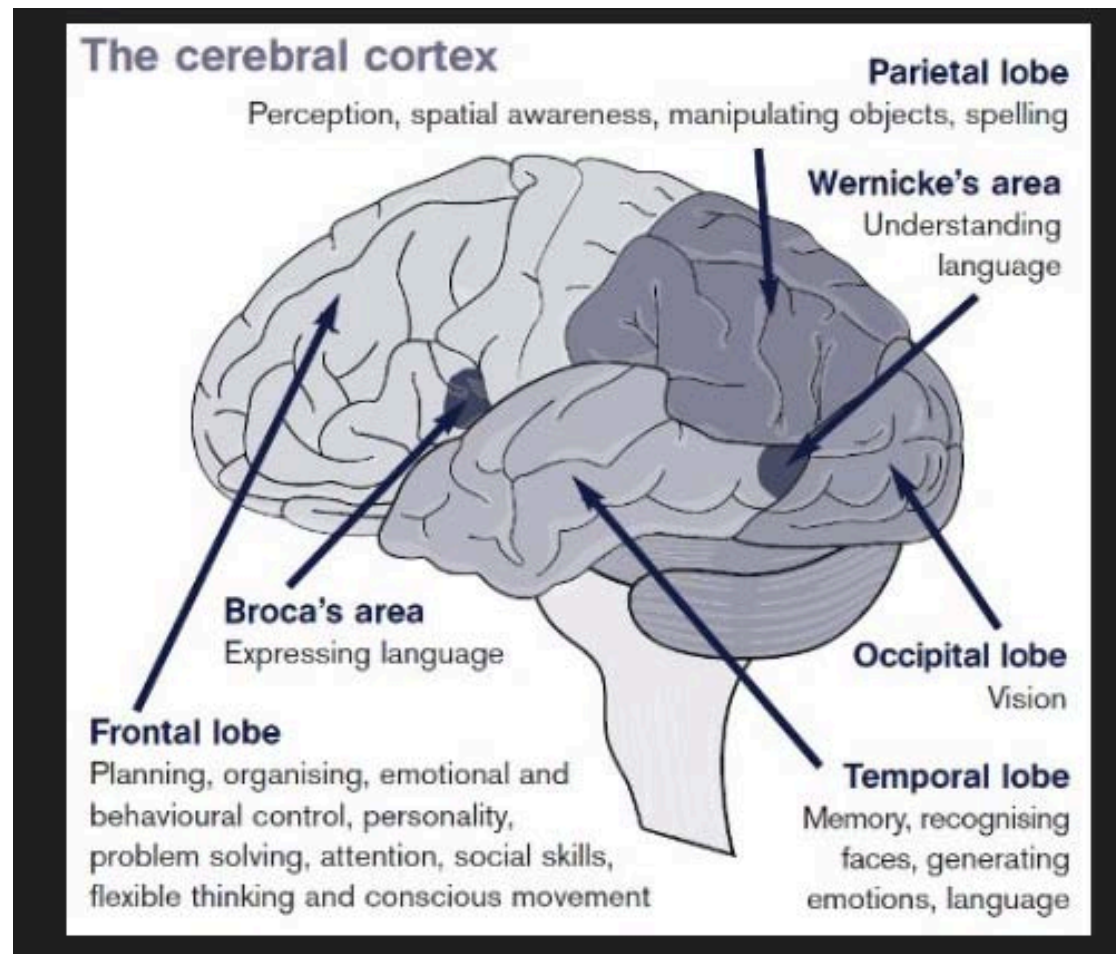
---clinical examples of how to take a history

1. establish family history first, then
2. ascertain personal history

Gross anatomy and function of brain



Focus on Frontal Lobe Hypo function



Substance Dependence is a CHRONIC
Disease of the BRAIN

What parts of the brain are effected?

- We all know of the pleasure pathway which is hijacked by all types of addictions

Frontal Lobe Dysfunction

- The most developed part of the human brain
- Executive functioning
 - *Inhibits our impulses
 - *Appreciation of consequences

Frontal Lobe Dysfunction

- Pet Scan and fMRI data corroborate, that:

WHEN AN ADDICT IS CRAVING OR IN
WITHDRAWAL, THEIR FRONTAL LOBE
IS ASLEEP

Frontal Lobe Dysfunction

- So, when a patient's pleasure pathway is firing---that is, when they are most in need of functioning executive system,---that is when their frontal lobe is asleep

Nobody chooses to become an alcoholic or an addict

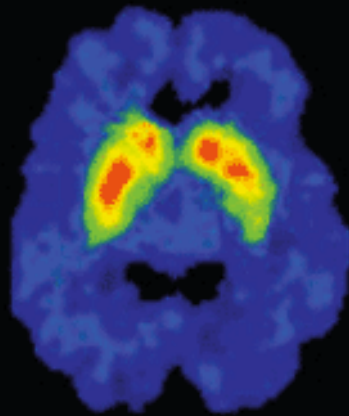
- It is a combination of a heritable predisposition to addiction, coupled with repeated exposures, that leads to the brain changes which we call addiction.
- This takes time---it is not instantaneous

The brain never returns completely to normal

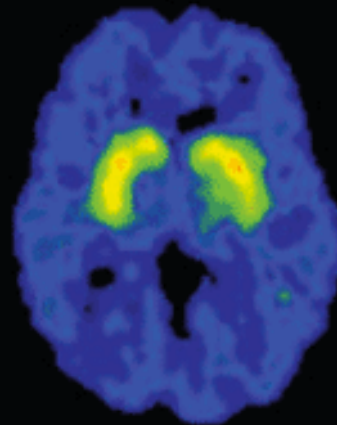
- The brain improves and becomes more like a non addict's brain over time, but it never goes back completely to normal.

Pet Scan of Brain Changes

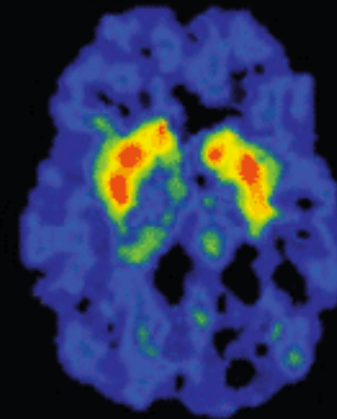
RECOVERY OF BRAIN FUNCTION WITH PROLONGED ABSTINENCE



Healthy Control



METH Abuser
1 month abstinence



METH Abuser
14 months abstinence

It is as if the addicts' brain is "kindled"

Re-exposure to addictive substances can rapidly lead to loss of control and relapse*

The sober, non craving addict knows this

Then why do they re-expose themselves to
the substance?

**This time it will be OK
***This time it'll be just one
***I can get away with this
***This will make me better
***I can control this

ALL EVIDENCE IS TO THE CONTRARY

Those “thoughts” are illogical and over time and experience, are proven to be absurd and false, yet the addict continues to repeat---why?

What were you thinking??!!

THEY ARE NOT THINKING OF CONSEQUENCES

- The biology of impaired frontal lobe functioning, makes it very difficult for even the adult patient to think---

Nobody adult thinks:

- I'll have this drink even though I'll lose my:
job
spouse
mental and physical health
child custody

THEY ARE NOT THINKING OF CONSEQUENCES WHEN
CRAVING OR IN WITHDRAWAL

For Adolescents it is even more difficult

HALT

- AA notes addicts are at greater risk if they are: hungry, angry, lonely and tired.

Frontal Lobe Dysfunction

- Gives us a fresh way of understanding the wisdom of AA
- Of why patients must avoid “triggers”
- Of why it is clinically unwise to “test” oneself
- Of how people with long term sobriety can relapse
- Of why people perpetually need reminders about the consequences of their illness

Addiction is a chronic disease affecting the whole person and everyone who is in contact with this person.

The concept of frontal lobe dysfunction, gives us a clinically meaningful perspective to help guide treatment.

Frontal Lobe Dysfunction helps us
to understand the potential for
relapse after detoxification

How does this apply to our opiate dependent patients?

Acute opioid withdrawal

- Fear, irritability, agitation
- Nausea and vomiting
- Yawning, gooseflesh, rhinitis,
- Mydriasis (pupillary dilatation)

Opioid Abstinence Syndrome

- This is a very common and powerful state
- Lasts for months and longer
- Includes dysphoria, anhedonia, lack of energy, insomnia,
- **THIS DELAYED ABSTINENCE SYNDROME LEADS TO CRAVING**

The opioid delayed abstinence syndrome

- This causes a frontal lobe dysfunction
- This contributes to our relapse rates post detoxification

Outpatient psychosocial interactions

- Are aimed at helping patients with these problems succeed
- Is there a role for medications in the treatment of Adolescent patients?
- Much less data on methadone, suboxone, and naltrexone maintenance

Adolescents are not little adults

- In calm situations, teenagers can rationalize almost as well as adults. The frontal lobes help put the brakes on a desire for thrills and taking risk -- a building block of adolescence; but, they're also one of the last areas of the brain to develop fully.

Summary Slide-1

Substance misuse is a developmental disease
which commonly begins in early adolescence

There is an epidemic of opiate misuse leading to
huge increase in opiate over dosages/ER visits

The vast majority of abused opiates come from
friends and family

Summary Slide-2

- Nobody is born an addict—repeated exposure necessary
- Teenagers with a biological family history of alcohol and drug abuse at highest risk for problems

Summary Slide-3

- There are well documented brain changes with repeated exposure to substances of abuse
- The pleasure pathways of the brain are stimulated by all drugs of abuse
- We have emphasized today the hypo functioning frontal lobe of both normal adolescents and substance abusers

The hope for the future

- As our knowledge of what is going on in both the healthy and the diseased brain, and as knowledge of the attitudes of teenagers and their families increases, then we can hopefully tailor our treatments and prevention strategies more effectively