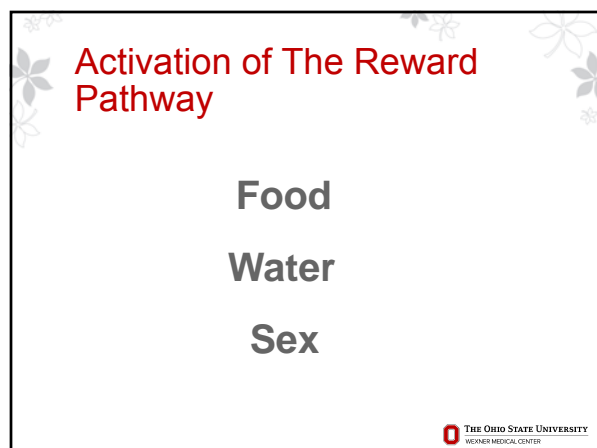


The reward pathway is primarily involved in
addiction.



Rats allowed to self-stimulate the reward pathway
will do so to the exclusion of food, water and sex.
The drive is so strong the rats will continue this
behavior to the death.



The natural function of the reward pathway is to
release dopamine when we do something that
supports our survival, setting up a drive to repeat
that behavior.

The Pleasure Principle

The brain is built to repeat any behavior that stimulates this part of the brain

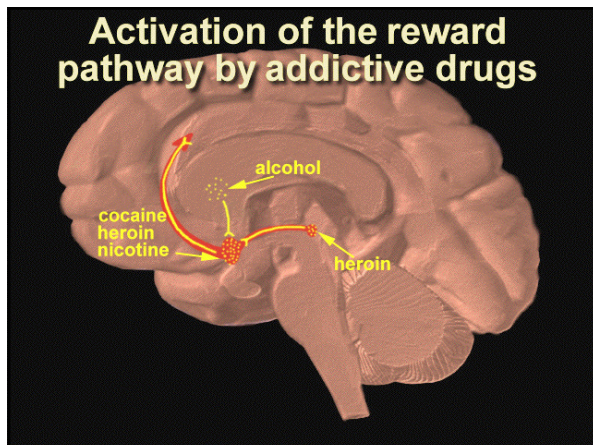
"If it feels good, it must be good for me."

... and it must be repeated

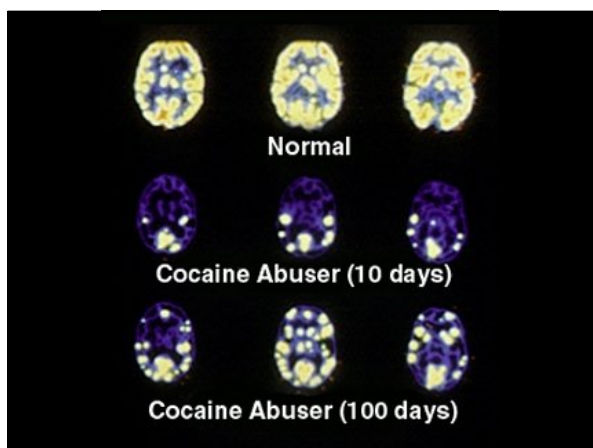
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This is the basic law of survival. It works well with
animals, but not quite so well with human beings.

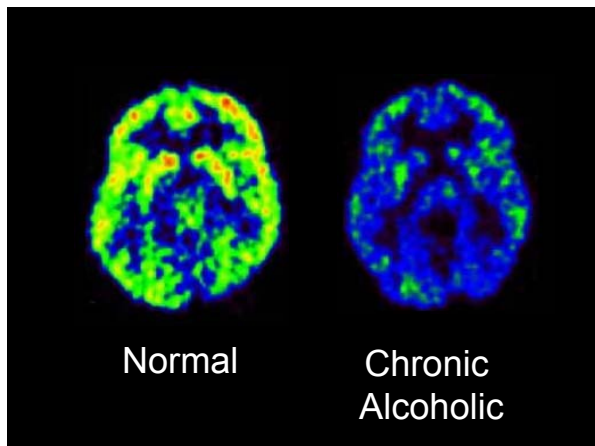
Activation of the reward pathway by addictive drugs

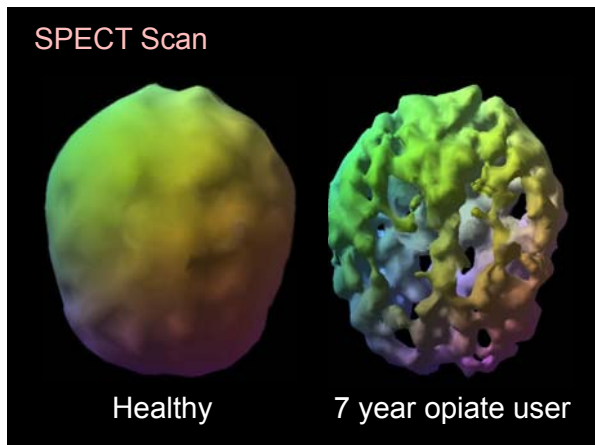


The thing that drugs of abuse have in common is
they stimulate the reward pathway, tricking us into
thinking we did something important for our survival.

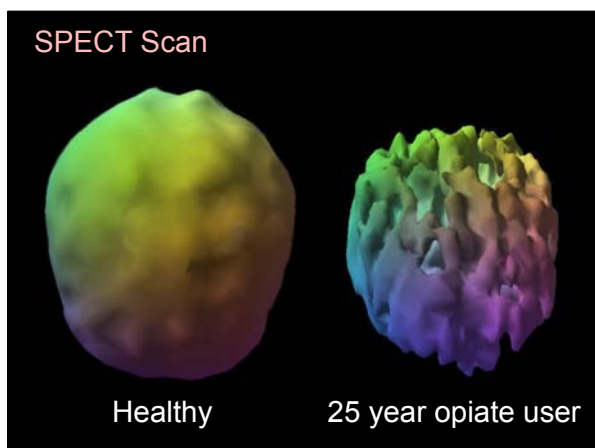


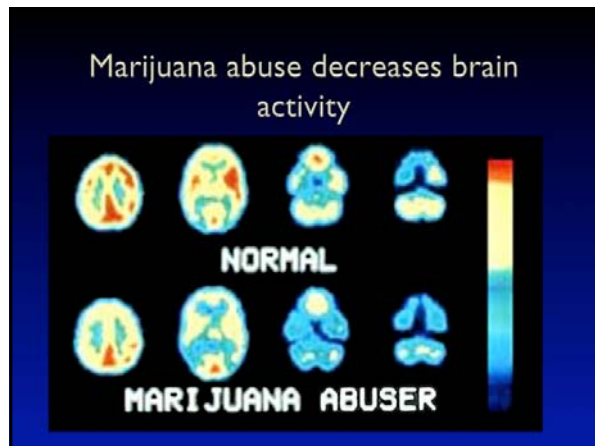
Brain scan of someone using cocaine. The light
areas show high activity, the darker areas show low
activity.





A SPECT scan. A healthy brain shows a smooth pattern of energy. Low blood flow and poor functioning appear as "holes".





Neurotransmitter Imbalances

Imbalances of...	Results in:
Serotonin	Depression/Anorexia
Dopamine	Schizophrenia
Norepinephrine	Anxiety/Depression
Glutamate	OCD/PTSD
GABA	Anxiety/Panic

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Unbalanced brain chemistry is mental illness. Alcohol and drug use causes unbalanced brain chemistry.

Someone using alcohol or drugs is functioning the same as someone with a mental illness.



Introduced to a new environment, our brains adapt to make us function more easily.



Nerve cells disconnect, branch out, and connect to other nerve cells making permanent changes to the brain.

Adaptation To Drug

- Consistent drug use is a “new environment” - adaptation occurs
- The reward system is “re-engineered”
- The drug takes on the properties of the activities that naturally create sensations of pleasure (food, water, sex)

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ASAM Definition

- The American Society of Addiction Medicine (ASAM) - August 2011
- Defines Addiction as a “Chronic Brain Disease”

*“Addiction is a primary, chronic disease of brain reward, motivation, memory and related **circuitry**.”*

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The problem is “circuitry” not “bad behavior”.

Must be treated, managed and monitored over a person's lifetime

- As a **chronic disease**, periods of relapse are a common feature of addiction [however] the return to drug use is not inevitable
- In addiction there is a significant impairment of executive functioning that manifests itself in problems with perception, learning, impulse control, compulsivity and judgment

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1. Adaptive changes are permanent. No one is ever "cured" of addiction; it can only be put into remission.

2. The classification of "chronic disease" puts addiction into the same category as hypertension and diabetes.

The Adolescent Brain

- Major growth occurs in the PFC between ages 13 - 26
- Adolescents can become addicted 5x faster than adults
- People who start using as teenagers have immature PFC's

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Goals of Treatment

- Cessation and abstinence from all dopamine-surging chemicals
 - Including nicotine
- Physical stabilization
- Stimulate neuroadaptation to recovery
- Eliminate/reduce environmental triggers
- Become comfortable with not using

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Coerced Treatment

- Evidence shows that substance abuse treatment for people that are court ordered to treatment equally effective as for voluntary participants
- “Pressure” to stay in treatment helpful to patients’ long-term success

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Coercion can come from courts, family, employers,
or others.

1. The greatest problem we have working with alcoholics and addicts is our own beliefs and expectations
2. The addict is always doing the best they can

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REMEMBER

Love and
acceptance go a
long way

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