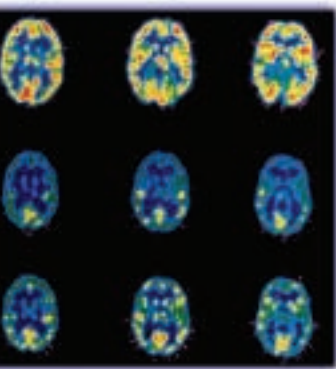


## Understanding addiction.

**How opioids work in the brain:** Specialized receptors in the brain accept opioid molecules and, by a biochemical process, release dopamine – a chemical that makes people feel good. Dopamine is also released naturally through exercise, sex, or eating a good meal. To feel 'normal', a certain amount of opioid receptors always need to be occupied. In a normal healthy person, the body regulates this naturally by manufacturing the right amount of opioid-like chemicals. Endorphins are one example. The body strives for a state of balance and avoids feeling too good or too bad. High doses of opioid drugs, however, can flood the receptors causing a very high release of dopamine, much more than could ever be released naturally, causing feelings of extreme euphoria.



**Tolerance, physical dependence, addiction:** As a person takes opioids for an extended period of time, the *opioid receptors* become less sensitive as the body tries to maintain normal dopamine levels. This is called **tolerance**. As a result, the person needs to continually increase the amount of opioids to get the same level of opioid effect.



In early tolerance, if opioids are abruptly discontinued, the body can manufacture enough natural opioid-like chemicals to compensate, thus preventing the person from feeling bad. As tolerance increases,

the body reaches a point where it can no longer manufacture enough natural opioids to compensate for the increased need of the less sensitive receptors. When this happens, the body has become dependent on the external source of opioids. This stage is appropriately called **physical dependence**, also defined as a physiological

state of adaptation to a substance, the absence of which produces symptoms and signs of withdrawal.

Both tolerance and physical dependence are normal physiology, and, alone, not reasons for treatment. Both can be resolved with a slow taper off of the opioids.

**Addiction** is something different and only develops in a fraction of the people who take opioids. Addiction is a behavioral disorder caused by specific brain adaptations and characterized by the repeated, compulsive seeking and/or use of a substance despite adverse social, psychological, and/or physical consequences. It is the consequences of the addictive behavior that ruins lives and the reason people seek treatment. Addiction is often (but not always, as with an addiction to gambling) accompanied by tolerance, physical dependence, and withdrawal syndrome.

## Opioid addiction is a brain disease.

Opioid addiction develops from fundamental, long-term changes to the structure and functioning of the brain. Scientists classify addiction as a chronic disease because areas of the brain are altered from the normal healthy state in long-lasting ways. These are physical changes to the brain that influence behavior – not caused by poor morals, controlled by willpower, nor cured by good advice. It's a disease as is diabetes or cancer, and it is treatable.

## The Drug Addiction Treatment Act of 2000.

DATA 2000 enables qualified physicians to prescribe and/or dispense opioid medications for the purpose of treating opioid addiction from an office-based practice. This presents a very desirable treatment option for those who are unwilling or unable to seek help from stigmatizing drug treatment clinics. One medication doctors may now prescribe is buprenorphine.



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