

This page was formulated by UHCL Counseling & Mental Health Center because you are not alone, lots of people suffer from behavioral addictions. We are here to remove the shame or stigma of them and help you recognize how to get support and help to take control of your life, and live it in the healthy, happy, purposeful way you would like.

If the topics below affect you or someone you know, call 281-283-2580 or visit Student Services and Classroom Building (SSCB) 3103 for an appointment to get help and support

What are Addictive Behaviors?

Any activity, substance, object, or behavior that has begun to harm the individual or others physically, mentally, or socially is considered an addictive behavior. It is a chronic dysfunction of the brain system that involves reward, motivation, and memory. This can include but is not limited to: Use of social media, use of the internet, use of porn, overeating (particularly of processed foods), gambling and video gaming. When you look at the reason some things are so addictive it's often because they are using the neural pathways that are required for us to propagate the species, they are literally hijacking our survival mechanisms! It's why we are so sensitive and vulnerable to them, it is part of our evolution and therefore very hard to control.

What could create addictive behaviors?

Lots of things could become addictive behaviors, for instance eating is a normal and required biological drive for survival but when we eat things that are not naturally available to us and have been formulated to become a "supernormal stimulus" (discussed below) then we can find ourselves addicted.

When is an addiction?

When using our previous example of porn-induced brain changes, it is hard to ignore that the brain is always learning, changing and adapting to our environment. Even small amounts of supernormal stimulation can quickly create changes in the brain and their associated behavioral changes.

In one study it only took 5 days to create marked sensitization to video games in healthy young adults. They weren't addicted, but their elevated brain activity was in line with cravings to play. Similarly, some rats given cafeteria type food to binge on, did that to obesity, and within a few days the number of Dopamine receptors they had decreased, making their satisfaction with the food less, so they ate even more to try to get that same original feeling.

What about pornography? Because of its high value, studies have shown that 16% of high school students who use porn more than once a week show abnormally low sexual desire, compared to 0% of those not using porn. Over 70 studies have reported the more porn used results in decreased sexual and relationship satisfaction. Studies showed that while not yet addicted, brain related addiction changes take place in the brain cumulatively, that means, the more porn usage = more addiction related brain changes.

Drug addictions aren't the only addictions

Most people know that dopamine increasing substance like alcohol or cocaine can be addiction forming. Only about 10 - 20% of people using addictive drugs become addicted, this can be due to a combination of genetics and adverse childhood events/trauma.

Taking junk food as an example, it is high in fat, sugar and salt. A number of studies have shown it to be more addictive than cocaine and the brain and behaviour changes reflect those of drug addicts.

This explains why 39% of adult Americans are obese and why 75% or more are overweight. The artificially created foods with high caloric value and mixture of sugar, salt and fat creates a supernormal stimulus. These override our brain's satiation mechanisms (the thing that tells us we are full) and this is because it taps into those survival circuits, it's a high value stimulus. Food and sex are part of our evolutionary drivers, so resisting those is very hard.

How do you tell if you are addicted?

When looking to assess if something is an addiction there are some things to consider:

4 C's

Compulsion - Do you feel like you have to do it, even if you feel or think you don't want to? (Doom scrolling is an example of this recently in the media) Do you try to stop but you feel you can't?

Continued use despite consequences - Is it negatively impacting your health, your sex drive, your relationships, your work? But you carry on doing it.

Inability to Control use - Do you feel unable to control it? Are you finding yourself doing it in public bathrooms? Are you hiding it in some way from your friends/family?

Craving - These can be both psychological & physical - Are you thinking about it all time? At inappropriate moments? Do you start to feel more annoyed with people the longer you haven't done it? Can you not fall asleep without doing it? Can you not socialize without having done it? Are you getting headaches or feeling tired if you haven't done it? Are you feeling, stressed, anxious or depressed if you try to stop doing it?

Is there a link between trauma and addiction?

Mental health professionals and addiction specialists have long studied the connection between trauma and addiction. Unsurprisingly, the researchers found a profound link between those who have experienced trauma and those addicted to substances or other addictive behaviors such as gambling or sex addiction.

Trauma can lead to a dysregulated stress system and create depersonalization and numbness, which may increase vulnerability to addictive behaviors.

Helpful links:

[Why Trauma Can Lead to Addiction](#)

[Understanding Trauma and Its Roots in Addiction](#)

[How Society & Culture can Lead Us Down A Path Of Trauma & Addiction](#)

What do all these things have in common?



Food

(Fair use <https://depositphotos.com/stock-photos/binge-eating.html>)



Pornography

(Fair use <https://ladderout.com/>)



Social media

Fair use (<https://medium.com/@turnerreese22/how-social-media-addiction-is-ruining-our-youth-f0597ba65423>)



Internet

Fair Use (<https://www.cnn.com/2017/08/29/us-addresses-internet-addiction-with-funded-research.html>)



Drugs

Fair use (<https://www.cnn.com/2022/07/25/health/marijuana-potency-addiction-study-wellness/index.html>)

The evolutionary drive to propagate the species and pass on our genes are behind our need for sex, love, social connection, food, and novelty (aka Coolidge effect). These induce dopamine in our evolutionary reward circuitry in our brains, meant for survival. The more dopamine that is produced by these stimuli, the more those things induce a 'seeking' behavior from us.

This is a way for us to be able to survive, propagate the species and pass on our genes.

Helpful links:

[Love, Actually: The science behind lust, attraction, and companionship](#)

[How an Addicted Brain Works](#)

Things that are 'natural reinforcers' of this loop are things like sex, food, love, friendship and novelty. The more dopamine an item elicits the more you want it the higher value it is. Kale does not produce a lot of dopamine,

things that are sweet, salty, and fatty produce more dopamine! Sex is right at the top of this list as it is needed for the species to survive.

Coolidge effect explanation

The Coolidge effect works to encourage us to look for "new" mating partners once our duty of fertilization seems to be finished, to help propagate our genes. It functions by creating ennui or tolerance to the same stimuli or individual. Their presence gradually stops being as "rewarding" to the primitive brain. Over time, our desire for the same things just diminishes.

[The Coolidge Effect | Your Brain on Porn | Animated Series](#)

Supernormal stimulus effect

A supernormal stimulus is an artificial stimulus that produces in us or other animals a behavioral response is stronger than would normally be evoked by the natural stimulus it looks like.

Let's take social media as an example. In evolutionary terms, communicating with others and maintaining strong relationships are critically important for our survival. But our evolutionary heritage did not prepare us to be interacting at all hours on our social network whose members are not physically present, can number in the thousands (or more), and are scattered throughout the globe. Social media can be viewed as an exaggerated version of our biological need to establish and maintain social relationships.

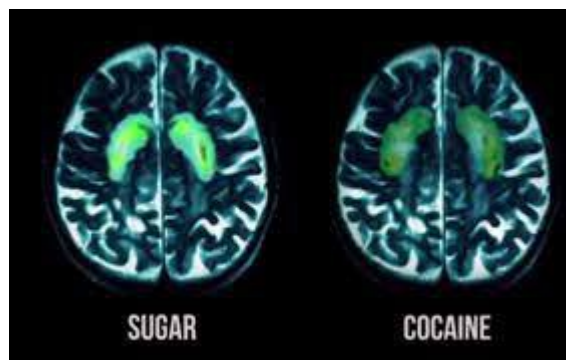
[The Seductive Pull of Screens That You Might Not Know About](#)

[What the Internet is Doing to Our Brains](#)

How foods – particularly formulated and processed foods, impact our brains

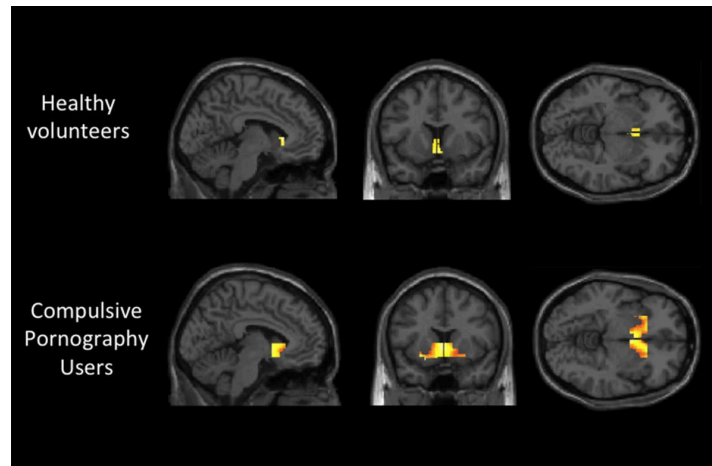
(fMRI on brain comparing sugar and cocaine stimulating centers in the brain)

(fair use <https://snowholistichealth.com/can-you-be-addicted-to-sugar/>)



[This Is Your Brain On Sugar](#)

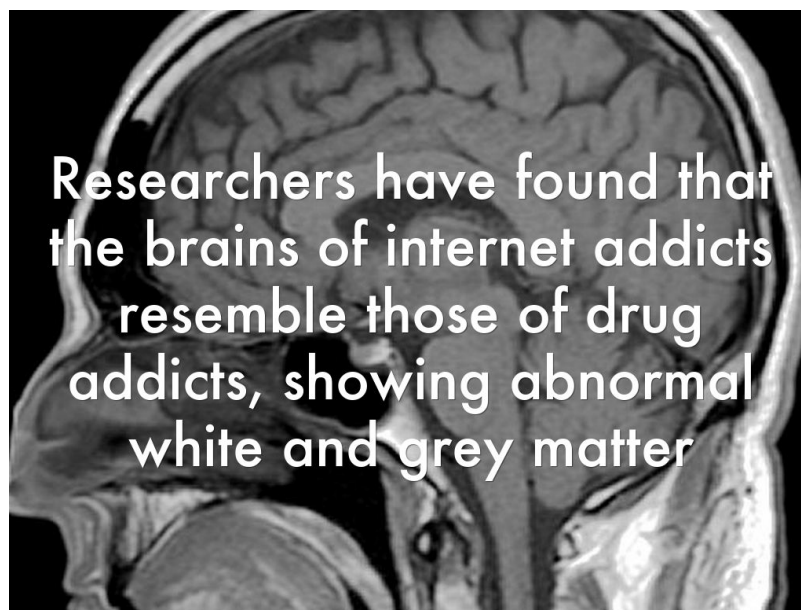
Pornography - printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate erotic rather than aesthetic or emotional feelings.



(fair use <https://www.independent.co.uk/life-style/health-and-families/health-news/pornography-addiction-leads-to-same-brain-activity-as-alcoholism-or-drug-abuse-study-shows-8832708.html>)

[Your Brain on Porn | Animated Series](#)

Screen based addiction which can include social media, internet browsing, or gaming



(fair use <https://www.haikudeck.com/social-media-abuse-a-mental-disorder-uncategorized-presentation-BdHqcvyZL0#slide0>)

[How Is Your Phone Changing You?](#)

[How Gaming Affects Dopamine Reward Circuitry](#)

[Is Social Media Hurting Your Mental Health? | Bailey Parnell](#)

They all tap into our evolutionary reward circuits

Taking pornography as an example...

Pornography and other screen-based stimuli, are unique because they are available all the time, you can use it in the privacy of your own home and often they are free or near free, i.e. all accessible for the cost of your internet connection.

This results in unlimited novelty keeping the levels of dopamine high for much longer than could naturally be achieved!

This makes porn tap into our highest driver, the urge to procreate and have sex. That makes porn particularly addictive and makes adolescents particularly vulnerable to it as they are just developing their sex stimuli circuitry.

There can be continuous seeking, and more and more shocking and surprising things are needed to reach the same dopamine response, as our naturally balancing systems, autoregulate our sensitivity to an overload of dopamine.

If done early enough this can condition our sexual preferences, impacting neuroplasticity (the brain's ability to change) particularly during adolescence, the natural gateway to sexual maturity.

Unlike static photos, videos have been shown to impact the ability to creatively imagine someone when self-stimulating; and decrease pleasure from real life encounters, to the point of being unable to enjoy real in person sex.

Unfortunately, porn can be retrieved from your memory whenever you choose to do so. For food and pharmacological agents there are limits based on physical consumption. But similarly, to other screen-based addictions like gaming, or "doom scrolling" we never developed a way to restrict this genre of addictive substance, because there's nothing like it in nature!

For a deeper dive into the science: How addiction changes your brain:

In adolescence, humans (and other animals) produce more of the sensitivity protein as a result of stimuli. This is why it is an important time in our brain structuring. An accumulation of a protein in the brain causes the increase in the number of special receptors for something called glutamate leading to sensitization.

Particularly, sexual arousal uses the same pathways as drug addiction raising the levels of this sensitivity protein.

Further explanation:

[Special sensitivity protein building up increasing glutamate receptors](#)

When the brain's reward center adapts to be hypersensitive to glutamate, the neurotransmitter that passes information from important areas of the brain to the reward center. Those changes increase sensitivity to input from any of our senses, that relate to sexual activity.

High levels of the sensitizing protein creates molecular changes that rewire the brain to crave whatever the stimulus is, drugs or sexual activity.

Chronic overconsumption (any of our high value stimuli) → Dopamine → Sensitivity Protein Accumulation → Sensitization

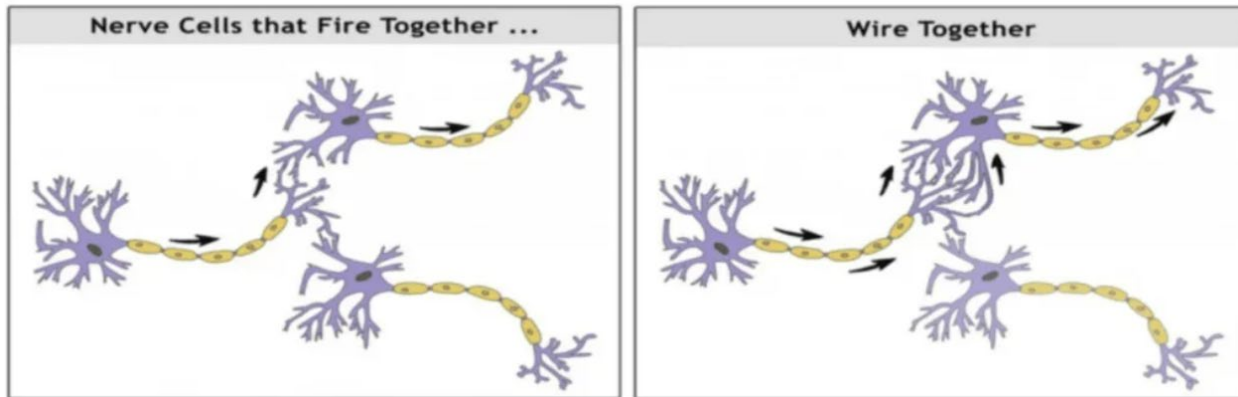
fMRI studies on people addicted to cocaine and a control population showed that the brain activation patterns of watching porn and watching someone smoke crack cocaine elicited the same response pathway. Whereas when doing something pleasurable that was natural like watching a sunset, did not use create those same brain activation patterns or use those pathways.

Behavioral & chemical addiction similarities

Explaining addiction conditioning:

In conditioning, you can have what was described earlier as shaping our preferences. Porn conditions us to think that people have and *should* have sex a certain way. It also affects what is arousing to us, which can become unreal, making actual sex insufficient for the Coolidge effect mentioned earlier.

There are also physical changes to the brain mentioned above where our brain becomes more sensitive to the stimulus. This is the same as seen in pharmacological addiction and is called sensitization. Once sensitized, we can have really hard to ignore cravings, for whatever we are sensitized to.



(Fair use <https://rewardfoundation.org/brain-basics/neuroplasticity/>)

Inducing high levels of dopamine by bingeing on any reward tells your brain this is very important, and we should repeatedly do this. Naturally the things that hijack our survival propagation pathway will have the highest value. Our brain will wire to compel us to repeat this, so our genes survive.

The special sensitivity protein dissipates over a period of about 2 months so if you stop using the stimuli for this period cravings should decrease and diminish.

But because the special sensitivity protein and the increase in glutamate receptors are meant to assist rewiring of the brain, the pathological habitual learning for the stimulus can last much longer. That's why people struggle to stop smoking for much longer than the addictive substances in cigarettes are in their system.

Sensitization (cue-reactivity & cravings)

Cues are things that remind us of an addictive behavior (this could be something innocuous as a napkin, for a food cue, or something more clearly linked like walking down the street where all the baked goods shops are).

Cue reactivity is how sensitive we are to that cue, in the case of addiction that's hyper-sensitive. In comparison to a sensitivity to sugar, we might see a cake shop and feel compelled to cross and look in the window, whereas someone without cue hypersensitivity would not.

This results in a need/want/craving for the stimulus, that also correspondingly brings us less and less pleasure. (following on this might mean we really feel driven to buy and eat something sweet, but soon one éclair is not enough, and even 5 éclairs don't bring us the same pleasure as the first éclair did. This really is about desensitization that follows)

Desensitization (decreased reward sensitivity & tolerance)

Desensitization is when the system becomes less sensitive to pleasure. This happens as the repetition of the pleasurable behavior causes a continuous increase in dopamine. When our physiological systems notice an abundance of something, they often decrease the number of receptors for that substance to prevent us from being overstimulated. Unfortunately, this homeostasis (balancing) mechanism creates desensitization (also called habituation) to dopamine. The resultant effect is called tolerance, this means we need a higher dose or greater stimulation of whatever it is we used to get the same response as before. This can lead to obsessive behaviors to attempt to achieve this, preoccupation with the topic, in the example of porn it can require things that create more shock, surprise or anxiety.

Brain changes (weakened willpower + hyper-reactivity to cues)

These changes in the physiological systems we discussed above, can result in weakened willpower, and greater cravings. This can create a conflict where you don't want to do the behavior in the higher and more complex thinking areas of your brain, but the sensitized addiction pathways are compelling you to seek the reward and usually those win. These changes in the brain mean you are likely to end up doing things you didn't choose to do, but felt you had to and then you may feel shame about, or feel it is somehow your fault that you couldn't resist. Whereas here you can see, it is difficult to resist biological and behavioral changes, which progressed slowly over time, so it would be hard to notice, until it became a problem, and are difficult to resist or rectify without support.

Altered Stress response (greater cravings & withdrawal symptoms)

At this point, there can be alterations in the stress systems in the body that are dysfunctional, increasing adrenaline and cortisol. This means even minor stressors lead to cravings and make it more likely to relapse into doing the behavior because it helps you feel less stressed temporarily, even if it is really reinforcing the cause of the problem. In trying to stop, stress is increased. This can result in irritability and mood swings. High stress also inhibits the higher brain functions (because in time of stress evolutionarily we would have needed our survival functions most). This decreases willpower and decreases our ability to properly understand the consequences of our actions.

Rewiring - How to do it?

To "rewire" ourselves, we need to restore the sensitivity of our reward circuitry to dopamine, by exercising control, and giving our system a rest from supernormal stimulation. This means stopping the original stimulus, be that eating processed foods or watching porn.

This can mean you feel the effects of withdrawal for a while and need to find ways to help yourself self soothe and gain support physiologically using other systems, like the systems that create serotonin or oxytocin.

Things that help use "feel good" in a different way are exercise (increases serotonin) and connection with others (a 30 second hug releases the relaxing hormone oxytocin).

Things to avoid would be all types of cues, like being home alone, sexy images or food websites depending on the supernormal stimulus. This way you can "unwire" those neurons that wired together and decrease habits that got them to be that way in the first place.

Rewiring to real people and real food.

It's important to spend time with real people. Affection and time with friends activate those other (serotonin/oxytocin) feel good pathways, as well as walks in nature and spending time with pets.

You want to replace the addictive behavior with naturally rewarding activities. These replacement behaviors will help you feel better and form new healthy habits.

Benefits of rewiring - Why do it?

Helping yourself be able to have choices in your life is a big main reason. Other reasons are the impact of the use on your life and being able to increase your quality of life and certainly when looking at obesity and food, the longevity of life as well.

We are here to help you. It can feel very overwhelming and upsetting to realize you have a behavioral addiction, it can feel like you are alone and you can feel ashamed to talk about it.

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Some helpful links:

<https://westcoastrecoverycenters.com/how-to-reset-your-brains-dopamine-balance-after-addiction/>

<https://www.covenanteyes.com/2022/09/28/porn-and-stress-how-to-relieve-stress-without-relapsing/>

<https://www.sustainrecovery.com/pornography-addiction-and-the-brain/>

12 step behavioral addiction websites.

<https://www.gamingaddictsanonymous.org/>

<https://internetaddictsanonymous.org/>

<https://saa-recovery.org/>

<https://www.sa.org/>

<http://www.texasga.org/>

<https://oa.org/>

<https://www.foodaddicts.org/>

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https://www.researchgate.net/publication/332525485_A_Study_on_Prevalence_of_Behavioural_Addictions_among_College_Students

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<https://psychscenehub.com/psychinsights/social-networking-addiction/>

<https://www.sciencedirect.com/science/article/pii/S0924977X15002667>

<https://rewardfoundation.org/health/behavioural-addiction/>

<https://journals.sagepub.com/doi/pdf/10.1177/0004867419828496>

<https://www.cnn.com/2022/07/25/health/marijuana-potency-addiction-study-wellness/index.html>

<https://files.eric.ed.gov/fulltext/EJ1290691.pdf>

<https://www.independent.co.uk/life-style/health-and-families/health-news/pornography-addiction-leads-to-same-brain-activity-as-alcoholism-or-drug-abuse-study-shows-8832708.html>

<https://dl.acm.org/doi/10.4018/IJCBPL.304906>

<https://go.gale.com/ps/i.do?id=GALE%7CA567426493&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=09742719&p=AONE&sw=w&userGroupName=txshracd2589>

<https://www.bbc.com/worklife/article/20170417-the-addiction-thats-worse-than-alcohol-or-drug-abuse>