

# Addiction: A Chronic Brain Disease

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# Abdullah\*

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\*Name and identifying information has been changed

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# Outline

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- What is addiction?
- What causes addiction?
- What are the protective factors?
- What are some common types of addictions?
- What are the effects of addiction?
- How is addiction treated?
- How can I help someone with an addiction?

# What is Addiction?

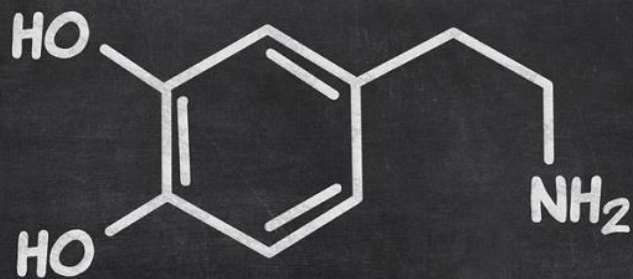
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- Addiction is a long-term disease of the brain (changes occur in the brain)
- It can cause several dysfunctions in multiple areas of the brain.
- These dysfunctions lead to biological, psychological, social and spiritual manifestations.
- The substance or behaviour starts off as rewarding (“the high”) and with repeated use, it can lead to psychological and physical dependence.
- Like other long-term disorder, it has cycles of decline and improvement.
- Long term treatment needed due to changes in the brain

# DOPAMINE = BRAIN REWARD PATHWAY

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Dopamine



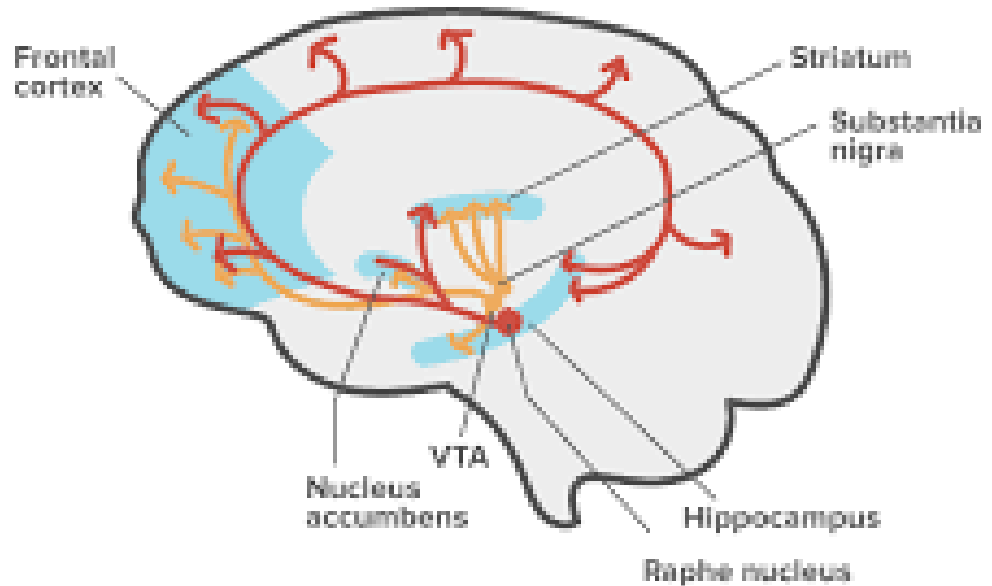
# Addiction: A Brain Disease

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## Dopamine Pathways

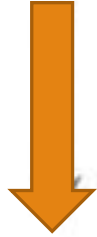
### Functions:

- Reward (motivation)
- Pleasure, euphoria
- Motor-function (fine-tuning)
- Compulsions
- Perseverations

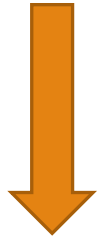




**eat tasty food**



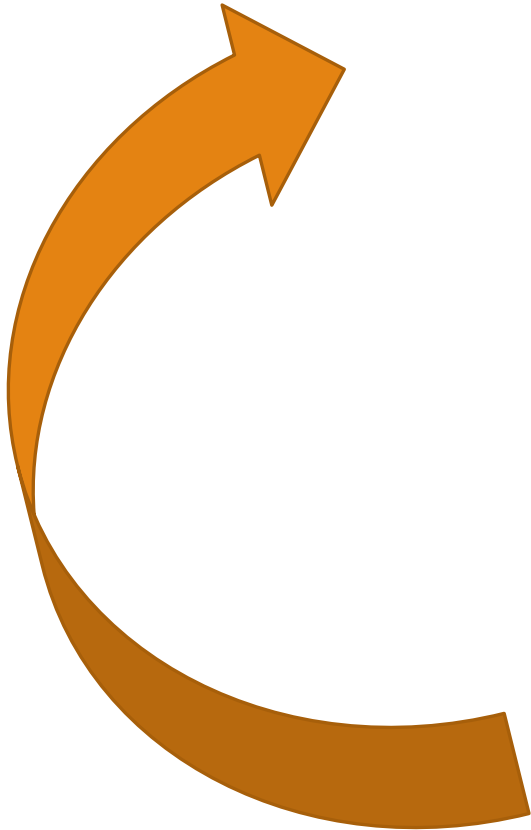
**dopamine**



**reward**



**eat more**



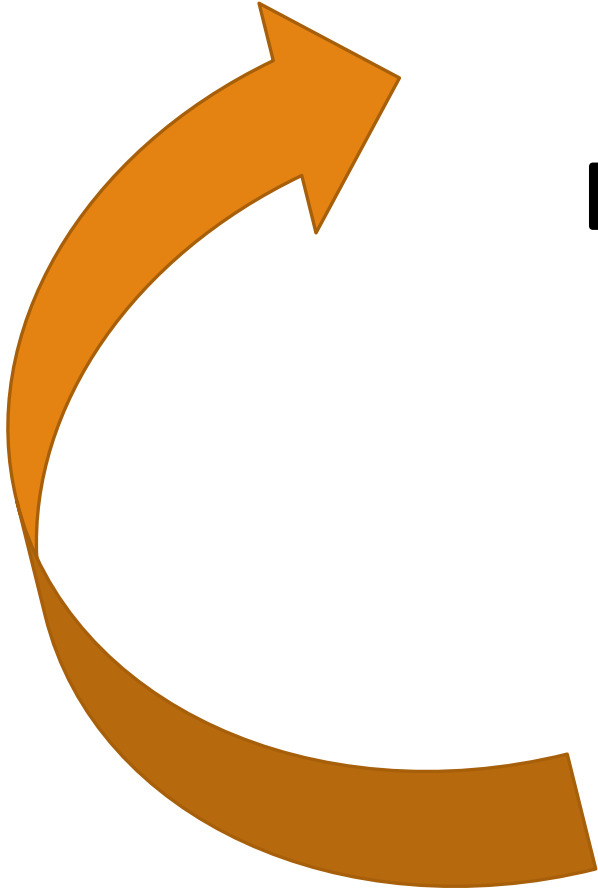
# Addictive Behaviour/Substance



**Dopamine (increased)**

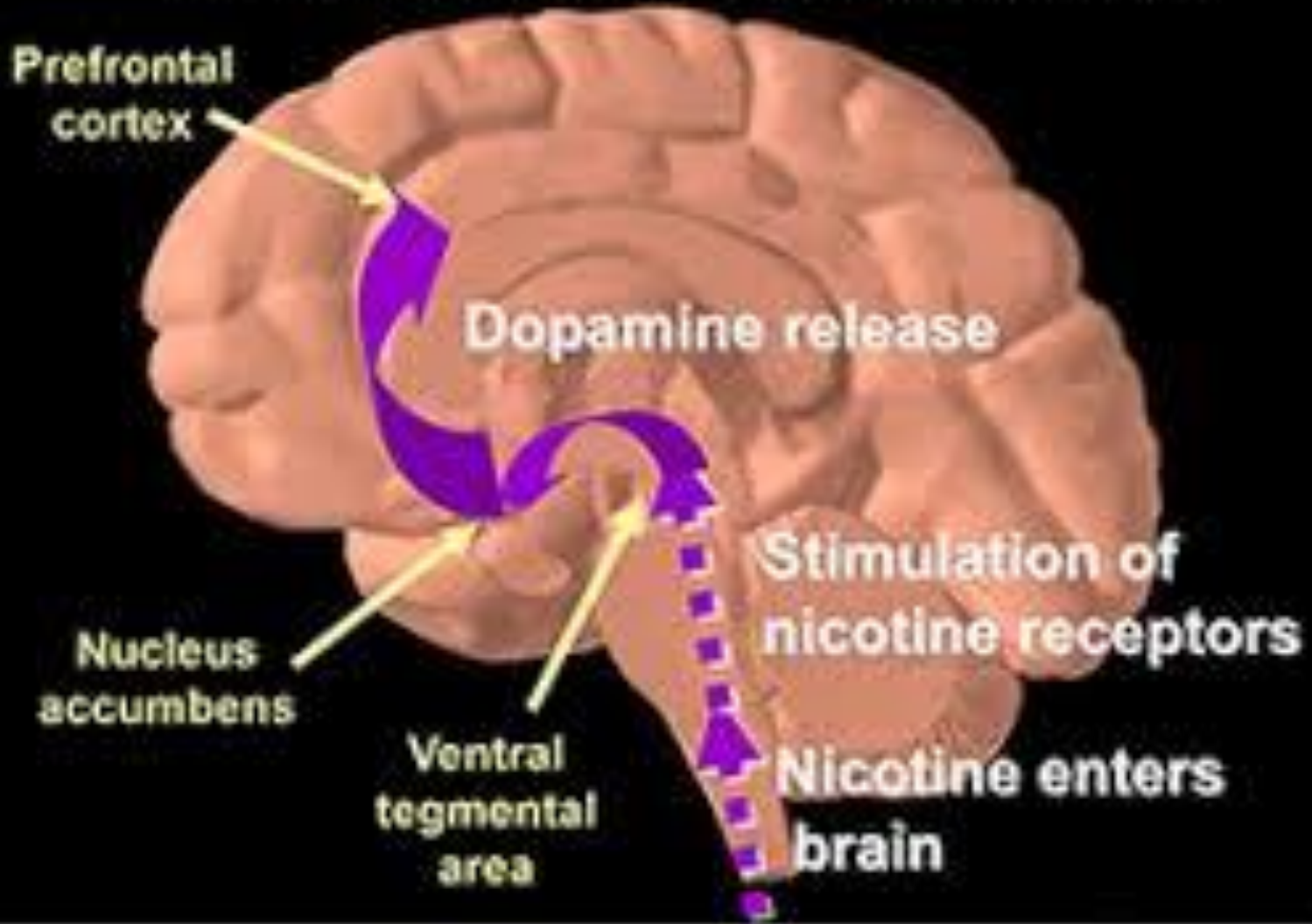
**Reward (increased)**

**Engage in more of behavior/substance**





# DOPAMINE REWARD PATHWAY



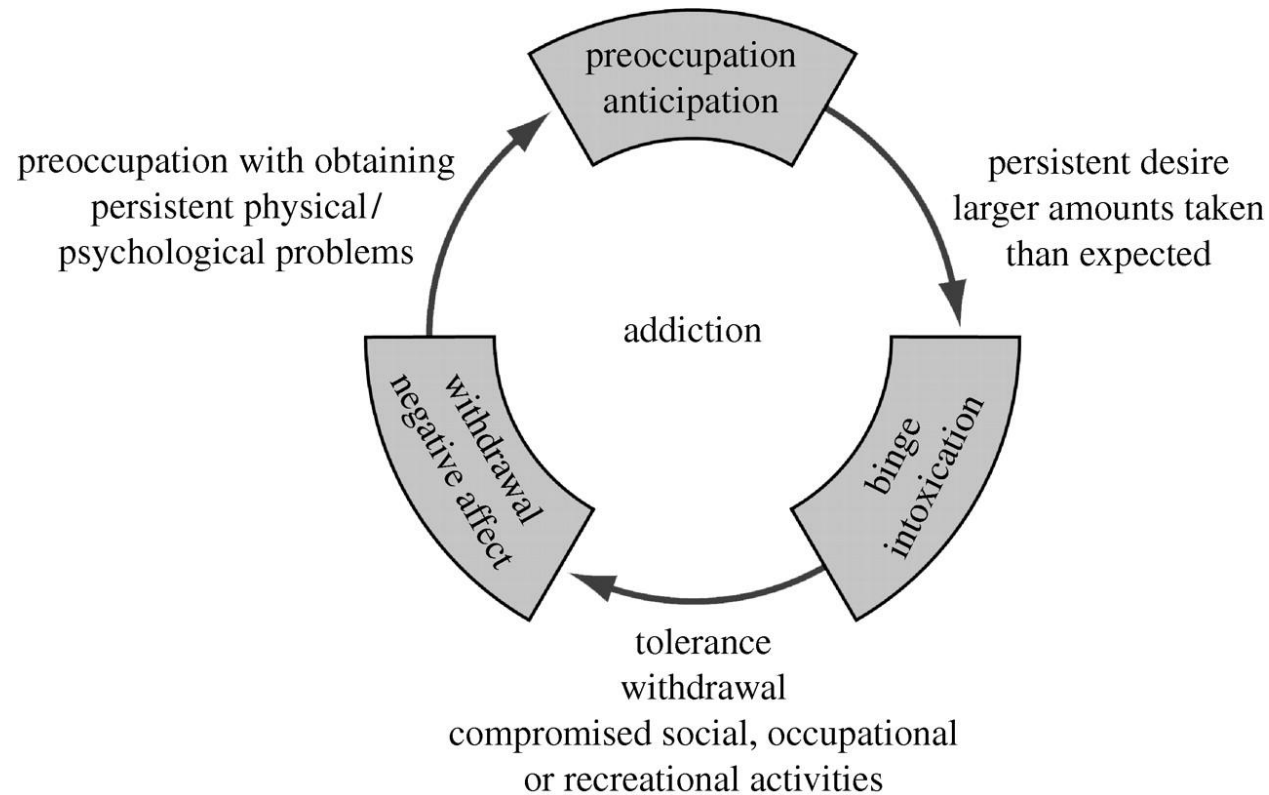
# What happens to your brain?

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- Addiction : Reward => High levels of dopamine
- Brain response: Produces less dopamine/reducing number of receptors
- Natural Pleasurable Activity (eating) => Decreased pleasure experienced (abnormally low impact of dopamine on the reward system)
- Person with addiction: Flat/depressed/Unable to enjoy things they previously enjoyed
- Feels they need to keep taking the drug/doing the behaviour to feel pleasure and bring dopamine back up to normal
- Often need to take larger amounts of the drug to produce the same dopamine high and pleasurable effect (tolerance)

# Addiction: A Vicious Cycle

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# What is the Difference Between a Habit and an Addiction?

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Addiction is characterized by the **four C's**:

- **CRAVING**: craving or increased “hunger” for drugs or rewarding experiences.
- Loss of **CONTROL**: lack of control of substance/behavior: the person cannot stop the substance use or the activity, despite trying to stop again and again
- **COMPULSION**: the substance or the activity has become the focus of the person’s life.
- **CONTINUED** use despite negative consequences: the person continues the use or activity despite severe negative consequences, (e.g., relationship problems, school failure, money loss, negative health affect or financial disaster).

# Islamic Views on Addiction

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- The prophet Mohammed (PBUH) once was asked about using alcohol as a medicine and he said, “It’s a disease, not a medicine”.
- The prophet Mohammed (PBUH) advised a man to seek medical treatment and explained, “Because Allah, the exalted, has let no disease exist without providing for its cure”.

# Addiction is a chronic disease

Addiction	Diabetes Type 2
Genetics risk: 40%-60%	Genetic risk: 20%-80%
Return of the condition chance after treatment : 40%-60%	Return of the condition chance after treatment: 45%-76%
Initial choices: alcohol/drug	Initial choices: food/low-activity
Potential persistent body damage (physiology)	Potential persistent body damage (physiology)
Abstinence and medication help but not necessarily cure	lifestyle and medication help but not necessarily cure

# Why Do People Use Drugs?

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## Coping Mechanism

- Stress
- Peer-pressure
- Loneliness
- Family- conflict
- Parental substance abuse
- Depression
- Anxiety

# What Causes Addiction?

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- Addiction is a process.
- No one chooses to become addicted.
- Addiction is not simply due to personal weakness, character flaws or weak religion.



# What Increases the risk of Addiction?

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- **Many will try, few will be addicted**
- Genetics
- Drug exposure in in the womb (pregnancy)
- Exposure at young age

# What Are Some Protective Factors?

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- Strong relationship with parents, family and friends.
- Good parental/guardian supervision. Parent/guardian as role model.
- Being part of a **positive** community – religious, cultural, school , extra-curricular.
- Personal goals and aspirations.
- Participating in structured and meaningful activities (e.g. sports, volunteer work)
- Avoiding social groups or situations where one would feel pressure to use substances or other addictive behaviours.

# Types of Addictions

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Substances of Abuse	Behavioural Addictions
Alcohol	Gambling
Tobacco/Nicotine (Cigarettes)	Compulsive shopping
Cannabinoids (Marijuana)	Social media
Opioids (Percocets, Codeine, Heroin)	Video games
Stimulants (Cocaine, Crystal Meth, Adderall)	Pornography
Hallucinogens (LSD)	Sexual behaviour
Inhalants (glue-sniffing)	
Steroids (testosterone, TSH)	

# Substances vs. Addictive Behaviours

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“Satan wants to provoke strife and hatred among you through intoxicants and gambling, and to prevent you from the remembrance of God, and from prayer. Will you not desist?” (Quran, 5:91 , Surah Al-Ma'idah)

- Both substances of abuse and gambling can affect the brain in a similar way.
- Both can lead to addictive disorders
- Similar neuro-imaging findings - decreased brain response to natural rewards and increased response to the addictive cues
- Share similar clinical symptoms (e.g. craving and loss of control)
- Both can lead to negative emotional reaction (e.g. depression)

# Pop Quiz

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True or false:

Addictions happen immediately.

Answer:

**False.**

Remember, addictions is a process. It takes time to develop.

# What Happens When You Quit Suddenly/Abruptly?

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- Alcohol withdrawal can cause seizures and can be fatal.
- Benzodiazepine (e.g. lorazepam, clonazepam) withdrawal can cause seizures and can be fatal.
- Opioids (e.g. Percocet, codeine, heroine) withdrawal can be very painful.

# What Are Possible Consequences of Addiction?

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- Driving/machinery accidents
- Relationships problems
- Child neglect/abuse
- Unemployment, poverty and homelessness
- Problems with the law
- Lack of connection with God and Islam
- Health consequences
- Coma, unconsciousness or even death
- Suicide

# Health Consequences

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- **Alcohol** – Liver disease, cognitive impairment, trouble with balance.
- **Tobacco** – Lung cancer, head and neck cancer
- **Marijuana** – Memory deficits, link to psychosis/schizophrenia, adolescents are particularly at risk of these
- **Cocaine** – Irregular heart beat, heart attack, stroke
- **Opioids** – Respiratory depression, recent rise in overdoses



# Abdullah

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- Has not attended school in the last 8 months (difficulty concentrating)
- Mother and Father – conflict at home (financial, marital, older brother)
- Father unemployed – smokes cigarettes and marijuana
- Mother working two jobs – struggling with depression, feeling isolated and stressed
- Older brother – conflict between older and younger brother
- Grandmother recently moved out of the home (Abdullah was close to her)
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# Islam's Gradual Stance on Addictions

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1) "They ask you about intoxicants and gambling. Say, there is gross sin in them, and some benefits for people, but their sinfulness outweighs their benefit" (Quran, 2:219).



2) "O you who believe! Do not approach the prayer while you are drunk, so that you know what you say" (Quran, 4:43).



3) "O you who believe! Intoxicants, gambling, idolatry, and divination are abominations of Satan's doing. Avoid them, so that you may prosper." (Quran, 5:90).

# How is Addiction Treated?

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- An assessment by a physician is necessary to diagnose an addiction and to access medical treatment.
- Treatment goals will be tailored to the individual needs. No single treatment works for everyone.
- There are medications, psychotherapies, self-help groups and medical withdrawal centers.
- **Relapse is a natural part of recovery.**

# Treatment options

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- Inpatient medical detoxification.
- Rehabilitation Centres.
- Individual and group therapy.
- 12-step
- Medications (anti-craving medication, maintenance program).
- What medication is NOT: substitute “one addiction to another”.

# Islamic Rituals to Facilitate Successful Recovery

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- **Repentance (Tawba)**
- **Increasing God-consciousness (Taqwa):** “What is Al-Ihsan (doing what is good)?” The prophet Mohammed (SAW) replied, “It is to worship God as if you could see Him, but if you cannot see Him, then learn that He does see you.” (As cited from Abu-Huraira).
- **Accountability and practice (Muhassaba):** “Fear Allah wherever you are, and follow up a bad deed with a good one and it will wipe it out, and behave well towards people.” (As cited from Moaz bin Jabal (Al-Turmozi)).
- **Prayers**
- **Du’aa**
- **Fasting**
- **Patience**

(source:Counseling Muslims, Ahmed & Amer)

# How Can I Help Someone with an Addiction?

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- Raise your concerns with the person gently. Let them know you are available to listen. **Don't** argue with them.
- Get rid of the stigma. Use words such as “people with substance problems” instead of “addicts”. **Don't** judge the person. Avoid name calling.
- Encourage change, express confidence and reflect the positives. Celebrate small successes. **Don't** focus on negatives.
- Educate yourself about the problem and find an available treatment program and tell the person about it.



# Islam's Views on Dealing with Persons with Addiction Issues

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- “O, you who believe! No people shall ridicule other people, for they may be better than they. Nor shall any women ridicule other women, for they may be better than they. Nor shall you slander one another, nor shall you insult one another with names” (Quran, 49:11).
- A man got repeatedly got drunk and Prophet Mohammed (PBUH) heard other Muslims saying “May Allah disgrace you!” to that man. The Prophet said to them, “Do not say so. Do not help the devil against him”.

# Remember:

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- Addiction is an illness that can be treated just as any other illness.
- It is more than a personal choice.
- The sudden quitting of certain substances can cause withdrawal symptoms that can be painful and sometimes fatal.
- Relapse is part of the illness. They should not be viewed as failures but rather, as part of the disease.

# Where Can I Start?

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- Talk to your family physician
- Talk to your imam if they have some training in mental health
- Call/contact treatment centers (next slide)

# Resources

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- Access CAMH : 416-535-8501, press 2
- CAMH's Nicotine 416-535-8501, press 2 OR 77400.
- Metro Addiction Assessment Referral Service (MAARS): 416-599-1448
- Drug and Alcohol Helpline: [www.drugandalcoholhelpline.ca](http://www.drugandalcoholhelpline.ca)
- Mental Health Helpline: [www.mentalhealthhelpline.ca](http://www.mentalhealthhelpline.ca)
- For family members of those who have an alcohol addiction: [www.al-anon.alateen.on.ca](http://www.al-anon.alateen.on.ca)
- Ontario Problem Gambling Helpline: 1-888-230-3505 [www.opgh.on.ca](http://www.opgh.on.ca)