



## Biological Addictions Treatment

Psychology 470

Introduction to Chemical Addictions

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### Many Types of Approaches

- Detoxification approaches
- Withdrawal prevention approaches / Agonist Pharmacotherapy
- Reinforcement blocker approaches / Antagonist Pharmacotherapy
- Negative Reinforcement Approaches using avoidance approaches
- Other Techniques

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### Approaches

- Past
  - Cold Turkey
  - Want the person to feel the pain
  - Problem
    - Lots of relapse
- Today
  - Try to reduce the symptoms while the person is coming off the compound
  - Reduce the immediate medical side effects of withdrawal
    - Seizures
    - Death

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### Compounds Used for Alcohol Withdrawal

- Benzodiazepines [Diazepam (Valium)]
- Past, used on a strict regime
  - Reduce 10-20% each day
- Today, used when symptoms indicate the person is entering major withdrawal
- Haloperidol
  - Is an antipsychotic
  - Is used when a person in withdrawal begins to experience hallucinations
- Alcohol
  - Is used in dosages on a descending curve over 2-4 days
  - Only used in supervised settings

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### Drug Treatment for Alcohol Dependence

- Several types
- Disulfiram (Antabuse)
  - Interferes with the metabolism of acetaldehyde to acetic acid in the liver
  - Person avoids drinking alcohol so they will not become sick (nausea, vomiting)
  - Is used in a negative reinforcement model

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### Issues

- Should not be used with individuals having serious medical problems
  - Ulcers
  - Cardiac problems
- Has a variety of side effects
  - Skin rashes
  - Fatigue
  - Peripheral neuropathies
  - Can die if you consume alcohol
  - Others
- Does not stop the craving to drink

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### Other issues

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- Full effect only lasts 24-48 hours after dosage
- Is eliminated from the body in 7-10 days
- Need to take some every day to keep the effect
- Can react with other over the counter medications (cough syrup)
- Some centers have clients drink small amount of alcohol so the client will experience the effects
  - Done under controlled conditions

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### Additional Side Effects

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- Increases serotonin levels
  - may increase cravings
- MI/Strokes in older patients
- Kidney Failure
- Depression
- Drug interactions
  - Dilantin, Diazepam, Antidepressants, others
- May interfere with male sexual performance

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### New Phenomenon

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- Take a small amount of disulfiram
- Drink alcohol
- Get a rush-type feeling

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### Lithium

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- Used in the treatment of Bi-Polar Disorder
- Was hypothesized to
  - reduce relapses
  - decrease the level of intoxication
- Problem, was about as good as placebos
- Little evidence that it was effective for alcoholism

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### Naltrexone Hydrochloride

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- Research indicated alcohol causes the release of endogenous opiates
- Causes pleasure
- Idea, block these sites (e.g., mu receptor in the medulla), reduce the pleasure, and consumption should decrease
- Result, detoxified alcoholics experienced less craving than placebo subjects

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### Implications

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- Decreases pleasure in the reward system
- Reduces craving
- Makes alcohol less rewarding for people who relapse

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### Other Medications

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- Metronidazole (Flagyl)
  - Causes nausea and vomiting when mixed with alcohol
  - Problem
    - Has a lot of side effects
  - Is not used much today for alcoholism treatment
- SSRI's
  - Has been shown to decrease alcohol intake
  - Needs more research

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### Opiate Treatment

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- Naltrexone
  - Same effects as discussed for alcohol
  - Blocks reward centers
  - Stops the person from feeling good after taking opiates (about 72h)
  - Often causes the user from even taking the opiate
  - Problem – Cravings return after naltrexone is discontinued
  - No extinction occurs to the opiate.

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### Other Points

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- Should only be taken after the person has detoxified from the drug
- Lots of opiate dependent people will stop taking the naltrexone when they are in treatment
- Is not a magic pill
- Works well with short term with clients who want to using
- Long term results are inconclusive
- Best to use with other treatment models

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### Methadone

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- Has been contended that opiates (even one dose) cause permanent brain changes at the cellular level
- If narcotics are removed from the brain, the person may continue to experience cravings (even for years)
- Causes the person to feel weird
- Cravings will then cause the person to relapse
- Person uses the drug to make them feel normal
- Use methadone to substitute for the drug and make the person feel normal
- Decrease IV narcotic use.

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### Initially

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- Use methadone as part of a larger treatment program for rehabilitation
  - Problem – Did not occur
  - Many programs only became drug distribution centers
- Studies indicate when used in combination, is quite successful and more cost effective than just methadone alone

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### Other studies

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- Helps reduce other drug related criminal activity
  - Creates a large cost saving
- Helps reduce the spread of HIV

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### Problem With the Hypothesis

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- Narcotics causing permanent damage has not ever been proven
- One could take methadone for years and still may not see brain changes

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### Problems With Usage

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- Many clients use multiple compounds to get high besides methadone
- Some drugs speed up the metabolism of methadone
  - Alcohol
  - Cocaine
  - Causes early stages of withdrawal
- Some programs have high drop out rates

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### Other Drugs

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- Methadone does not work on all opiate receptors
- Other drugs may cause euphoria when taken even when the person is on methadone
  - Darvon, Darvocet-N

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### Conclusion

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- While some problems with methadone programs exist, programs are cost effective
- Family physicians have recently been approved to give methadone
  - May cause more people to enter treatment
- Can be very effective when used in a total rehabilitation package

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### Buprenorphine

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- Blocks euphoric effects of narcotics
- Has been proposed as an alternative to methadone
- Give daily like methadone
- Blocks all aspects of opiates in relation to reward and euphoria
- Withdrawal is not as bad as methadone
- New protocols have been developed

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### LAAM L-alpha-acetylmethadol (Orlamm)

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- Prevents withdrawal symptoms
- Need only to take every 2-3 days (methadone daily)
- Withdrawal is easier than methadone

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### Issues with Detoxification

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- Person will experience some withdrawal symptoms regardless of the drug use
- Causes may clients to drop out
  - Need to warn your clients

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### How Bad is Detoxification?

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- Depends on the drugs used, duration, etc.
- Withdrawal is usually not life threatening
- Usually like a bad flu
- Can be assisted with giving some drugs over a 4-5 day period
  - New experimental program (24 hours)

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### Points to Note

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- Detoxification is just the first step
- Some people stop forever after withdrawal
- Others need longer therapy
- Detoxification with rehabilitation therapy is a good combination
- May need to use other things as well
  - Social services
  - Employment services
  - Etc.

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### Cocaine

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- Many substances have been used
  - Antidepressants (Imipramine)
  - Bupropion (Wellbutrin)
  - Bromocriptine (Parlodel)
  - All have not demonstrated major effectiveness or have other medical problems
- Flupenthixol
  - Available in Europe, and other locations
  - Not available in the US
  - Decreases but does not eliminate cravings

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### Buprenorphine

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- Has shown some effectiveness in controlling cravings
- Needs more research

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### Pharmacologic Interventions for Cocaine??

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- Satel et al.
- Investigated the cocaine withdrawal process
- Results
  - Data failed to demonstrate the emergence of SEVERE withdrawal symptoms following the initiation of abstinence
  - Some craving for cocaine
    - Decreased after first 3 weeks of recovery
- Conclusion
  - Don't need routine pharmacological support

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### Side Note

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- Since cocaine is a stimulant
- Most withdrawal symptoms should be related to lethargy and slowing down of the nervous system
- Will experience recovery after about a week
- Cravings are often stimulated by environmental factors through Classical Conditioning

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### Nicotine Replacement Therapy

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- Is used for nicotine addiction provided through
  - Cigarettes (most frequent)
  - Chewing products
- Is the hardest addiction to kick
  - Half life's for some substances are 6 months
- Gum
  - Gives about 1/3 - 2/3 amount of nicotine as a cigarettes
  - Can cause a variety of side effects
    - Sore gums
    - Salivation
    - Nausea

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### Results

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- Are mixed
  - Gum is helpful
  - Other studies - Gum has same effectiveness as a placebo
    - Little value
- May be beneficial when used with counseling
- Patient/Client expectations of the treatment are very important

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### Patches

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- Used to give the person a moderately high level of nicotine
  - Gradually reduce over time
- Reduces (but does not eliminate all) cravings
- Are a good adjunct in the treatment process

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### Problems

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- Side effects
  - Nicotine toxicity
  - Cardiovascular effects (is a stimulant)
  - Weird dreams
  - Diarrhea
  - Burning sensation
- Many users drop out and begin smoking again

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### Results

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- Many people relapse even with pharmacologic interventions
- Patches also do not deliver the same amount of nicotine as cigarettes
  - Use gum as well

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### Other Treatments and Drugs for Nicotine

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- Nasal Sprays
- Clonidine
  - Should not be a first choice
- Silver Acetate
  - Works like Disulfiram
  - Causes an bad taste in the mouth
  - Stops using the cigarette
  - Is also dangerous
  - Not approved for use in the US but is used in Europe

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### Buspirone (Buspar)

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- When use in limited trials
  - Clients report
    - less fatigue and anxiety
    - No weight gain

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### Regardless of the Approach

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- No single substance has been proven effective to treat nicotine withdrawal beyond any reasonable doubt (Doweiko)

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### Conclusions to Biological Approaches

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- Wide variety of approaches
- Most are used to control withdrawal
- Some have more effectiveness than others
- Need to be used in conjunction with talk-therapy approaches to get the best long-term effects
- There is no magic bullet to stop the addictions process at this time

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