HEROIN

Use in Teens and Young Adults

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Reason Teens Report Using Prescription Pain Medication

- Easy to get in medicine cabinets 62%
- Available everywhere 52%
- Not illegal 51%
- Easy to get with other people's prescriptions 50%
- Can claim to have a script if you get caught 49%
- Safer than illegal drugs 43%
- Less Shameful than street drugs 33%
- Easy to purchase on internet 32%
- Fewer side effects than street drugs 32%
- Parents don't care as much if you get caught 21%

(7216 7th to 12th grades)

Teens Who Did Not Use Opiates Report:

- **Their parents often checked their homework**
- **They received frequent praise from parents**
- **Perceive strong disapproval of marijuana use from parents**

(Partnership for Drug Free America. Partnership Attitude Tracking Study 2008.)

Profile of a Heroin User

- **Young: 18-25- 22 year old have highest percentage**
- **Male**
- **Caucasian – 65% of heroin addicts**
- **Wealthy**
- **College bound or college enrolled**
- **Marijuana long histories**
- **Extensive adolescent histories of marijuana use, alcohol use, poly drug use**

Trends and Patterns of Heroin/Opiate Use in Teens and Young Adults

- **Non-medical opiate use was associated with the largest number of new users than any other category of illicit drug use**
- **Prescription medication was misused by adolescents more than any other drug besides marijuana and alcohol**
- **1 in 8 high school seniors reporting using opiates**
- **Almost half (44%) of New recreation use of pain killers in 2001 was by people younger than 18**

- **18 – 25 year olds admitted to treatment for opiates doubled from 1993 to 2002**

- **Treatment admissions for opiate addiction in 2006 was secondary only to alcohol**

(National Survey of Drug Use and Health)

- **In all populations, males account for 75% of heroin addicts, females account for 25%**

- **In all populations, except adolescent males, heroin users are much more likely to inject heroin. However, adolescent females are 3.9 times more likely to inject heroin than male adolescents**

- **Male heroin addicts are more likely than females to abuse alcohol heavily, use wider variety of other drugs more often than female**

- **90% of teen and young adult females report their initial use of heroin was with a male (usually a boyfriend)**

- **Hydrocodone products most commonly used PPR**

- **Middle school "purple drank" cough syrup codeine. In some areas 8% middle school students report use**

- **In 2006 estimated 2.2 million first time non-prescribed users of PPR in 12 months compared to 2.1 million new marijuana users**

- **Girls report more use of PPR in last 12 months than guys**

- **Adolescent users of non-prescribed PPR use initiate use of PPR at mean age of almost all other drugs. These teens more likely to become addicts**

- **80% of world's heroin supply is used in the United States**

UNDERSTANDING

HEROIN USE/ABUSE

How Does It Work?

- **Drug is taken**
  - * **IV injection: peak rush 7-8 seconds**
  - * **Intra-muscular injection rush 5 to 8 minutes**
  - * **Smoke, snort, inhale (sniffing liquefied heroin in nasal spray bottle rush 10 – 15 minutes)**
  - * **Rapidly crosses the blood brain barrier – 100% faster than morphine**
  - * **Is eventually synthesized into morphine**
  - * **Hyper stimulates production of dopamine large amounts, quickly, over long period of time**
  - * **Depresses central nervous system – slows heart rate, brain stem, respiration**

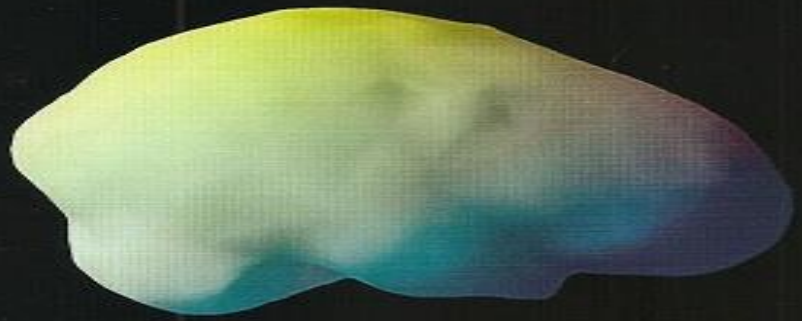
* Creates intense euphoric tranquility, ecstasy stage, contentment, “nodding” moving between awake and sleep, restricts pupils, heavy feeling in limbs, mental clouding
* Last 4 – 5 hours

HOW DOES IT

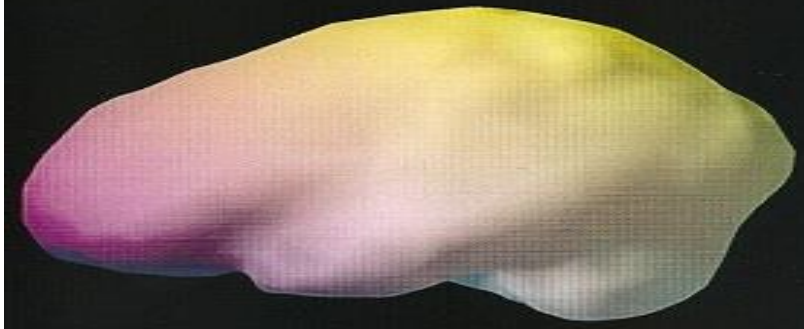
IMPACT THE BRAIN?

HEALTHY SPECT SURFACE VIEW

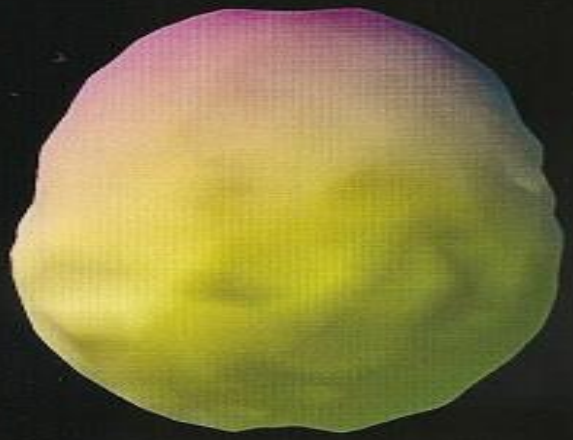
UNDERSIDE SURFACE VIEW



RIGHT SIDE SURFACE VIEW

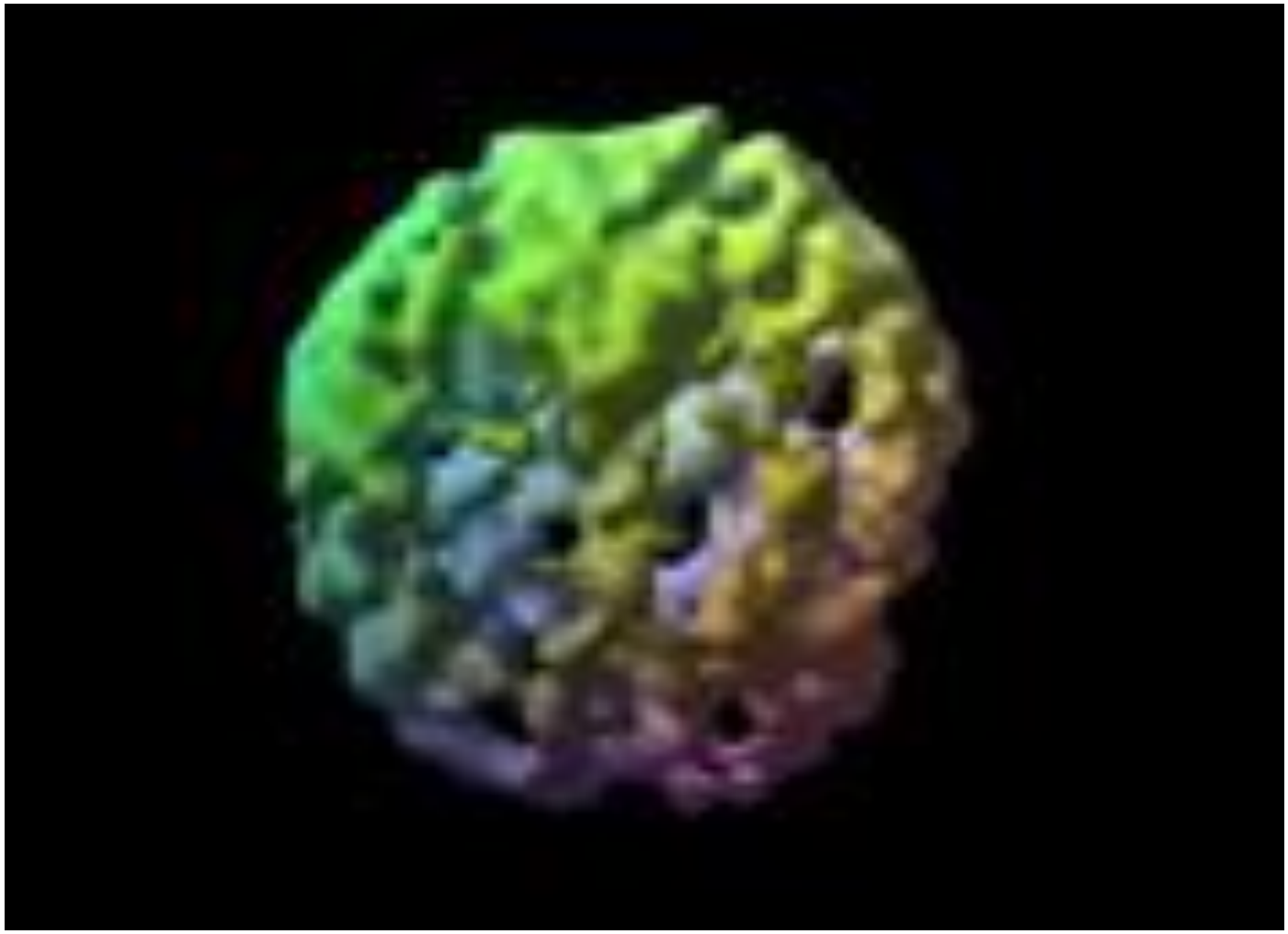


LEFT SIDE SURFACE VIEW



TOP DOWN SURFACE VIEW

Heroin Addicted Brain



- **Dopamine receptors are so flooded that receptor sights become worn out and die off. Tolerance develops as brain needs more**

- **Destroys GABA which regulates and suppresses dopamine production**

- **Dopamine helps us feel, pleasure in eating, sex, as well as accomplishment, and achievement**

- **Brain restructures hierarchy of need and thinks the most important thing for survival is the drug. Brain becomes obsessed with obtaining it. Ignores all else. Overrides logical thought.**

- **Brain experiences a lack of oxygen as a result of suppressed respiration, especially during overdose situations : effects plasticity of brain**

- **Brain of deceased heroin addicts look like victims of Alzheimer's**

- **Dopamine helps us learn from our surroundings and experiences; therefore, neural pathways are cued which presents more intense desire for drug**

- **Dopamine is responsible for:**
  - * **attentiveness**
  - * **motivation**
  - * **learning**
  - * **remembering**
  - * **enjoying**
  - * **learn from our surroundings and experiences**

- **There is a shared physiological linkage between opioid systems and stress axis**

- **Reduces plasma concentration of testosterone and cortisol**

- **Some research suggests that certain functions in the brain, may not recover**

  (Study published in Neuropyschopharmacology in May of 2006 compared active heroin addicts, non-users of heroin, and addicts with 1-8 year clean time in tasks that measured executive and memory function, visual spacial functioning, and set shifting. No significant difference between current on past users, control group did significantly better.)

Withdrawal:

What goes down must come up!

Early acute withdrawal starts 6 to 12 hours after last use, peak 1-3 days, subside 5 to 7. May experience withdrawal for 4 weeks:

Early Withdrawal Symptoms

- Agitation
- Anxiety
- Muscle aches
- Tearing
- Runny nose
- Sweating

Over production of bodily fluids

- Yawning
- Insomnia

Late Symptoms

- Abdominal cramps
- Diarrhea
- Dilated pupils
- Goose bumps
- Nausea
- Vomiting
- Aches and pains(rebound)
- Restlessness
- Restless legs

Post Acute Withdrawal:

- Mood swings
- Anxiety
- Irritability
- Tiredness
- Low motivation
- Concentration problems
- Disturbed sleep
- Pain sensitivity
- Restless leg
- Cognitive difficulties

(With heroin addicts they seem to experience consistent vs. intermittent PAWS symptoms)

Detox Process:

Typically involves substituting a short action opiate with a long acting opiate such as Suboxone for several days or weeks, then tapered off over period of days or weeks

Medication Management

Antagonist:

Binds to the cell receptor but does not trigger a response, like bubble gum in a door lock. It can't unlock door, but prevents key from being put in.

Naltrexone prevents morphine from attaching to receptor

Taken in daily oral form or through monthly injection of 380mg Vivitrol

Decreases craving

Blocks euphoria

Works within 2-3 days

Agonist:

Binds to the cell receptor and triggers a response. A key that fits the lock and opens the door.

Suboxone/Subutex – partial agonist

Methadone: Agonist replacement

They are Detoxed: Now What?

Primary goal is to assist clients early in recovery to feel better, mentally as well as physically

Psychiatric symptoms emerge quickly after withdrawal

Assessing and addressing early are critical to relapse prevention

Restless Leg:

* Uncomfortable sensations, creep crawlies, ticklish
* Motor restlessness, need to move – especially when reclining

Cause:

Abnormality of dopamine or iron

Treatment:

Blood work to check iron. Gabapentin – 100-900 mg 3 times daily (also helps treat sleep, anxiety)

Stretching and exercise

Made Worse By: SSRI and SNRI's, antipsychotics, antihistamines

Tremors:

Treat with gabapentin, beta blockers, propranolol

Anxiety, Panic Disorders, Social Anxiety

Cause:

Disruption of dopamine system

Rebound from pain and anxiety

receptors being blocked

Hyper sensitivity to anxiety

Treatment:

Yoga, relaxation, breathing

Basic Anxiety Education:

* Self soothing skills
* Medication: Gabapentin, Buspirone (Wellbutrin) Hydroxyzine (Visterol)

Mood Disorders:

Causes: Pre-existing Co-morbidity

* 57% Bipolar clients have substance abuse issues
* Pre-existing depression: Assess by asking about longest period of time clean, last two years and how did you feel
* Dopamine dysregulation
* Emotional exhaustion and despair about addiction and consequences

Treatment: Mood stabilizers, antidepressants

- **Sleep Disorders: Insomnia**

Cause: **Disruption in sleep cycles**

Poor sleep hygiene

Not sleeping interferes with cognitive function and makes anxiety, mood, bipolar issues worse

Treatment: **Melatonin**

Trazadone 50-150mg

Prazosin 1-2mg

Teach sleep hygiene

Evening magnesium

VITAMINS TO

IMPROVE BRAIN

RECOVERY

(Decrease psychiatric symptoms)

B-1 At risk: Heroin addicts are typically malnourished because they loose interest in food. Heavy Alcohol Users – Korsakoff psychosis (confabulation, lack of insight, amnesia, apathy) Wernicke encephalopathy – confusion – stems from Brains inability to oxidize glucose to energy

B-2 Low intake of dairy products, meat, excessive alcohol intake. Marginal levels more prevalent in depressed patients. Insufficient amounts found in 95% adolescent females; heavy alcohol users

B-6 Higher levels associated with lower prevalence of depression in adolescents

B-9 (Folic Acid) Requisite in synthesis of serotonin, norepinephrine, dopamine, and DNA. Common among patients with mood disorders. Low levels in patients experiencing first episode of psychosis.

- **Folate can enhance antidepressant treatment**
- **Found in 50% of depressed patients**
- **Deficiency found in heavy alcohol use, 19% adolescent females**

B-12 Needed to produce monoamine neurotransmitters and maintain myelin. Deficiency found in up to a third of depressed patients, and compromises response to antidepressants. Higher levels of B-12 are associated to better treatment out comes. Deficiency can cause depression, irritability, agitation, psychosis, obsessiveness, increase risk of cognitive decline, and 5-fold increase in brain atrophy, increase risk of psychiatric disorders.

Medications such as omeprazole interfere with absorption

Deficiency found in smokers

<u>Vitamin C:</u> Vital for synthesis of serotonin and norepinephrine. It is an antioxidant in the brain. Patients with poor diets as a result of drug and alcohol use and eating disorders are at risk

<u>Vitamin A:</u> Linked to excessive alcohol use, rigid dietary restrictions, chronic diarrhea

Vitamin D: Important role in brain function and development. Neuronal cells have vitamin D receptors in hippocampus, prefrontal cortex, hypothalamus, thalamus. These areas are linked to pathophysiology of depression. Important in biosynthesis of dopamine, norepinephrine, epinephrine provides resistance to neurotoxins.

Low vitamin D levels linked to schizophrenia, psychotic symptoms, impairment in memory, orientation, executive functions.

(Source: Vitamin D deficiency and Psychiatric Issues, Current Psychiatry Vol. 12 No. 4)

Vitamin E Deficiencies:

Found in depressed patients

(Source: Vitamin Deficiencies and Mental Health: How are they linked. Drew Ramsey, M.D., Philip Muskin, M.D., Current Psychiatry Vol 12, No. 1

Omega 3's: **EPA and DHA's lower risk for major depression, Bipolar. EFA's assist in production of serotonin, dopamine, and brain cell fluidity and are preventative for patients with high risk psychiatric symptoms**

Provide brain with high doses of nutrition that assist brain in recovery from trauma and toxins and provides anti-inflammatory benefits.

Brain Recovery: The Early Months

Unfortunate opiate fiends lost their dopamine machines and don't know where to find them

- **Leave them alone**
- **And they will come home**
- **Along with the receptors that bind them**
- **In order for their brains to recover, they have to abstain from all mood altering change**

Addiction is a brain disease. Addicts brains and central nervous systems are damaged. They need time, attention, and appropriate intervention to recover

Treatment strategies need to match brain deficits

For the First 1 – 3 Months

I. They need information about brain recovery!!

They need to understand what can be done to help their brains recover

II. Address Triggers and Neural Cues

* Completely change room or whatever place they got high
* Avoid whenever possible all triggers that you can identify
    * songs, movies, Netflix video games, places, routes you take to get places, pictures on phone, old text, movies, "high seats"
* Clean out phone and change your number
* Have plan for unexpected cueing of neural pathways

III. Cognitive Recovery:

1 to 3 months clean. Work on repairing your brain

- Lower, slower, take a little longer
- Read 15-20 minutes a day (even if you can't remember what you read)
- Rigorous physical activity, at least 30 minutes a day
- Challenge your brain (15-20 minutes) a day
  - Puzzles
  - Tanagrams
  - Word Search
  - Word Scramble
  - Sudoko
  - Memory Games
  - Lumosity Brain Training
  - Limit Screens

Education:

If you are not enrolled in school – don't go back now. If you are in high school, ramp it down

Work:

Simple job 20 hours a week

IV. Build A New Life

* **Therapy: Intensive outpatient**
  Individual

Build Recovery:

* **Daily meetings**
* **Social interaction with program people**
* **Sponsor**
* **Step One (Living the powerlessness)**
* **Find home group**
* **Do service work**

<u>It Works:</u> **Study of 200 NA members have been clean and involved with NA for 3 years. Anxiety and self-esteem rates similar to comparison group of 60 college students (Christo and Sutton).**

V. Build Structure:

Every day:

* Get up
* Clean up
* Dress up
* Show up
* Don’t give up

Daily Schedule Every Day:

* What do I need to do
* Who do I need to contact
* When will I get this done
* What are the steps I need to take

VI. Self Care:

* Feed self
* Take vitamins
* Take medication
* Sleep cycles
* Physical recovery – stretching, yoga, breathing
* Do something fun

DON'T FORGET: All these things provide dopamine bumps, so does satisfaction or accomplishing, achieving and finishing

VII. Emotional Skills:

Only focus on skills they need to learn right now. Do CBT but keep it simple and direct

Teach self soothing and distraction skills to manage cravings, anxiety

Experience Emotions

Acknowledge

Identify

Accept

Sit with it

Let it pass

Don’t attempt to:

Block

Suppress

Dump

Push

Hold on

Give it too much significance

(*Tom Drummond, North Side Community College)

Vocabulary of Emotions

	Happiness	Caring	Depression	Inadequateness	Fear	Confusion	Hurt	Anger	Loneliness	Remorse
STRONG	**Delighted** **Ebullient** **Ecstatic** **Elated** **Energetic** **Enthusiastic** **Euphoric** **Excited** **Exhilarated** **Overjoyed** **Thrilled** **Tickled pink** **Turned on** **Vibrant** **Zippy**	**Adoring** **Ardent** **Cherishing** **Compassionate** **Crazy about** **Devoted** **Doting** **Fervent** **Idolizing** **Infatuated** **Passionate** **Wild about** **Worshipful** **Zealous**	**Alienated** **Barren** **Beaten** **Bleak** **Bleeding** **Dejected** **Depressed** **Desolate** **Despondent** **Dismal** **Empty** **Gloomy** **Grieved** **Grim** **Hopeless** **In despair** **Woeful** **Worried**	**Blemished** **Blotched** **Broken** **Crippled** **Damaged** **False** **Feeble** **Finished** **Flawed** **Helpless** **Impotent** **Inferior** **Invalid** **Powerless** **Useless** **Washed up** **Whipped** **Worthless** **Zero**	**Alarmed** **Appalled** **Desperate** **Distressed** **Frightened** **Horrified** **Intimidated** **Panicky** **Paralyzed** **Petrified** **Shocked** **Terrified** **Terror-stricken** **Wrecked**	**Baffled** **Befuddled** **Chaotic** **Confounded** **Confused** **Dizzy** **Flustered** **Rattled** **Reeling** **Shocked** **Shook up** **Speechless** **Startled** **Stumped** **Stunned** **Taken-aback** **Thrown** **Thunderstruck** **Trapped**	**Abused** **Aching** **Anguished** **Crushed** **Degraded** **Destroyed** **Devastated** **Discarded** **Disgraced** **Forsaken** **Humiliated** **Mocked** **Punished** **Rejected** **Ridiculed** **Ruined** **Scorned** **Stabbed** **Tortured**	**Affronted** **Belligerent** **Bitter** **Burned up** **Enraged** **Fuming** **Furious** **Heated** **Incensed** **Infuriated** **Intense** **Outraged** **Provoked** **Seething** **Storming** **Truculent** **Vengeful** **Vindictive** **Wild**	**Abandoned** **Black** **Cut off** **Deserted** **Destroyed** **Empty** **Forsaken** **Isolated** **Marooned** **Neglected** **Ostracized** **Outcast** **Rejected** **Shunned**	**Abashed** **Debased** **Degraded** **Delinquent** **Depraved** **Disgraced** **Evil** **Exposed** **Humiliated** **Judged** **Mortified** **Shamed** **Sinful** **Wicked** **Wrong**
MEDIUM	Aglow Buoyant Cheerful Elevated Gleeful Happy In high spirits Jovial Light-hearted Lively Merry Riding high Sparkling Up	Admiring Affectionate Attached Fond Fond of Huggy Kind Kind-hearted Loving Partial Soft on Sympathetic Tender Trusting Warm-hearted	Awful Blue Crestfallen Demoralized Devalued Discouraged Dispirited Distressed Downcast Downhearted Fed up Lost Melancholy Miserable Regretful Rotten Sorrowful Tearful Upset Weepy	Ailing Defeated Deficient Dopey Feeble Helpless Impaired Imperfect Incapable Incompetent Incomplete Ineffective Inept Insignificant Lacking Lame Overwhelmed Small Substandard Unimportant	Afraid Apprehensive Awkward Defensive Fearful Fidgety Fretful Jumpy Nervous Scared Shaky Skittish Spineless Taut Threatened Troubled Wired	Adrift Ambivalent Bewildered Puzzled Blurred Disconcerted Disordered Disorganized Disquieted Disturbed Foggy Frustrated Misled Mistaken Misunderstood Mixed up Perplexed Troubled	Annoyed Belittled Cheapened Criticized Damaged Depreciated Devalued Discredited Distressed Impaired Injured Maligned Marred Miffed Mistreated Resentful Troubled Used Wounded	Aggravated Annoyed Antagonistic Crabby Cranky Exasperated Fuming Grouchy Hostile Ill-tempered Indignant Irate Irritated Offended Ratty Resentful Sore Spiteful Testy Ticked off	Alienated Alone Apart Cheerless Companionless Dejected Despondent Estranged Excluded Left out Leftover Lonely Oppressed Uncherished	Apologetic Ashamed Contrite Culpable Demeaned Downhearted Flustered Guilty Penitent Regretful Remorseful Repentant Shamefaced Sorrowful Sorry
LIGHT	Contended Cool Fine Genial Glad Gratified Keen Pleasant Pleased Satisfied Serene Sunny	Appreciative Attentive Considerate Friendly Interested in Kind Like Respecting Thoughtful Tolerant Warm toward Yielding	Blah Disappointed Down Funk Glum Low Moody Morose Somber Subdued Uncomfortable Unhappy	Dry Incomplete Meager Puny Tenuous Tiny Uncertain Unconvincing Unsure Weak Wishful	Anxious Careful Cautious Disquieted Goose-bumpy Shy Tense Timid Uneasy Unsure Watchful Worried	Distracted Uncertain Uncomfortable Undecided Unsettled Unsure	Let down Minimized Neglected Put away Put down Rueful Tender Touched Unhappy	Bugged Chagrined Dismayed Galled Grim Impatient Irked Petulant Resentful Sullen Uptight	Blue Detached Discouraged Distant Insulated Melancholy Remote Separate Withdrawn	Bashful Blushing Chagrined Chastened Crestfallen Embarrassed Hesitant Humble Meek Regretful Reluctant Sheepish

Teaching Emotional Regulation Skill

(Think About What You Can Do To Calm Yourself)

I. Self Soothing Skills

1. Sight
2. Sound
3. Taste
4. Smell
5. Touch
6. Soothing action
7. Relaxation
8. Breath work
9. Awareness meditation
10. People
11. Movement

II. Distractions

1. Through action
2. Cognitive distraction
    * take break
    * Clear mind
    * thought stopping
    * refocus thoughts
3. Other Focus –vs- Self centered focus

III. Prevention

1. Preventive breathing
2. Identify something you do because you love it

IV.

1) Change your language:
    * It's a challenge vs. it's overwhelming
    * It's hard vs. it's too hard

2) Pay attention to and focus on "language of change"
3) Concept of "normal people feelings" emotionally

V. Listen to your talk:
    * How many times a day do you say.....stupid, annoying, hate, etc.?

VI. Listen to your internal self speak – it regulates behavior

If words going through your head are negative – feeling will be negative

VII. Three to Six Months Clean:

* More complex CBT but move slowly
* Work a little more at more difficult jobs
* Yes, they still feel weird
* Transfer recovery to self help
* Work Step 2 and 3
* Do a step workshop

VIII. Six Months:

* Take a class with expectation you will just do the best you can and that's good enough
* Get career counseling
* Work Step 4 and 5

X. **Nine months:**

Take 2 classes, work full time, work step 5 and 6

Read Drop the Rock

Twelve months:

Be back to school full time

Work steps 8 – 9

Remember that recovery for heroin addicts is not pretty, is not easy and is not smooth. They will likely have several tries, learning more with each go around.

PARENTS:

Parents need to understand the concept of Brain Recovery and be on board with the process we just outlined.

Parents need to understand the pace of recovery

Discuss parallel process of despair

Help parents find ways to assist their young adult children that are healthy, i.e., assistance that helps the young adult move toward a goal.

Parents need to lay out expectations for recovery activities

Appropriate ways to increase young adults responsibility

Appropriate levels of monitoring

Respectful ways to communicate

Alanon

* If they are young adults, treat them that way

* Call them by their name

* Don’t refer to them as kids, or babies, or little guys

* Foster their independence

* Allow them to shop for self, make appointments, keep their calendars