

Cognitive Behavioral Therapy with Nicotine Addiction

October 2nd, 2011

CBT

- ▶ **Cognitive-behavioral therapy does *not* exist as a distinct therapeutic technique.** The term "cognitive-behavioral therapy (CBT)" is a very general term for a classification of therapies with similarities. There are several approaches to cognitive-behavioral therapy, including Rational Emotive Behavior Therapy, Rational Behavior Therapy, Rational Living Therapy, Cognitive Therapy, and Dialectic Behavior Therapy.

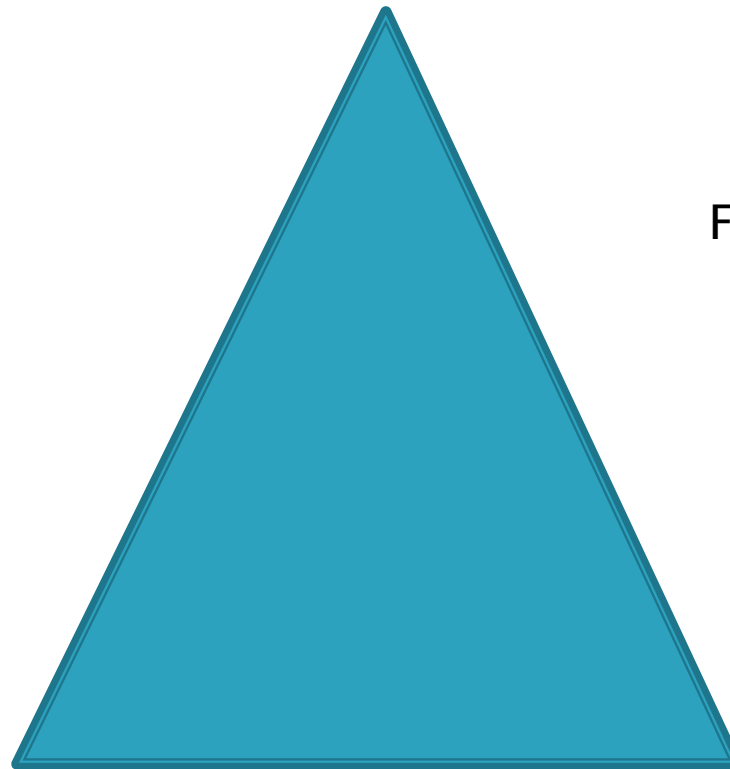
CBT

- ▶ CBT is based on the Cognitive Model of Emotional Response.
- ▶ Cognitive-behavioral therapy is based on the idea that our *thoughts* cause our feelings and behaviors, not external things, like people, situations, and events.
- ▶ The benefit of this fact is that we can change the way we think to feel / act better even if the situation does not change.

CBT

Thoughts

Feelings



Behavior

- ▶ **BT is Briefer and Time-Limited.**
- ▶ Cognitive-behavioral therapy is considered among the most rapid in terms of results obtained. The average number of sessions clients receive (across all types of problems and approaches to CBT) is only 16.

CBT

- ▶ What enables CBT to be briefer is its highly instructive nature and the fact that it makes use of homework assignments. CBT is time-limited in that we help clients understand at the very beginning of the therapy process that there will be a point when the formal therapy will end. The ending of the formal therapy is a decision made by the therapist and client. Therefore, CBT is not an open-ended, never-ending process.

CBT

- ▶ **A sound therapeutic relationship is necessary for effective therapy, but not the focus.**
- ▶ Some forms of therapy assume that the main reason people get better in therapy is because of the positive relationship between the therapist and client.
- ▶ Cognitive-behavioral therapists believe it is important to have a good, trusting relationship, but that is not enough.
- ▶ CBT therapists believe that the clients change because they learn how to think differently and they act on that learning.
- ▶ Therefore, CBT therapists focus on teaching rational self-counseling skills.

CBT

- ▶ **CBT is a collaborative effort between the therapist and the client.**
- ▶ Cognitive–behavioral therapists seek to learn what their clients want out of life (their goals) and then help their clients achieve those goals. The therapist's role is to listen, teach, and encourage, while the client's roles is to express concerns, learn, and implement that learning.

▶ **CBT is based on aspects of stoic philosophy.**

Not all approaches to CBT emphasize stoicism. Rational Emotive Behavior Therapy, Rational Behavior Therapy, and Rational Living Therapy emphasize aspects of stoicism. Beck's Cognitive Therapy is not based on stoicism.



- ▶ Cognitive-behavioral therapy does not tell people how they should feel.
- ▶ However, most people seeking therapy do not want to feel the way they have been feeling.
- ▶ The approaches that emphasize stoicism teach the benefits of feeling the feeling
- ▶ at worst, *calm* when confronted with undesirable situations.

- ▶ They also emphasize the fact that we have our undesirable situations whether we are upset about them or not.
- ▶ If we are upset about our problems, we have two problems –
- ▶ the problem, and our upset about it.

CBT

- ▶ Most people want to have the fewest number of problems possible. So when we learn how to more calmly accept a personal problem.
- ▶ Not only do we feel better, but we usually put ourselves in a better position to make use of our intelligence, knowledge, energy, and resources to resolve the problem.

CBT

- ▶ **CBT uses the Socratic Method.**

Cognitive-behavioral therapists want to gain a very good understanding of their clients' concerns. That's why they often ask *questions*. They also encourage their clients to ask questions of themselves, like, "How do I really know that those people are laughing at me?" "Could they be laughing about something else?"

CBT

- ▶ **CBT is structured and directive.**
- ▶ Cognitive-behavioral therapists have a specific agenda for each session.
- ▶ Specific techniques / concepts are taught during each session. CBT focuses on the client's goals.
- ▶ We do not tell our clients what their goals "should" be, or what they "should" tolerate.

CBT

- ▶ We are directive in the sense that we show our clients how to think and behave in ways to obtain what they want.
- ▶ Therefore, CBT therapists do not tell their clients *what* to do -- rather, they teach their clients *how* to do.

CBT

- ▶ **CBT is based on an educational model.**
- ▶ CBT is based on the scientifically supported assumption that most emotional and behavioral reactions are learned.

CBT

- ▶ Therefore, the goal of therapy is to help clients
 - ▶ *unlearn their unwanted reactions*
 - ▶ and to learn a new way of reacting.

CBT

- ▶ The educational emphasis of CBT has an additional benefit –
- ▶ it leads to long term results. When people understand **how and why** they are doing well, they know what to do to continue doing well.

CBT

- ▶ CBT theory and techniques rely on the Inductive Method.
- ▶ A central aspect of *Rational* thinking is that it is based on *fact*.
- ▶ Often, we upset ourselves about things when, in fact, the situation isn't like we think it is.
- ▶ If we knew that, we would not waste our time upsetting ourselves.

CBT

- ▶ Therefore, the inductive method encourages us to look at our thoughts as being hypotheses or guesses that can be questioned and tested.
- ▶ If we find that our hypotheses are incorrect (because we have new information), then we can change our thinking to be in line with how the situation really is.

CBT

- ▶ Goal achievement (if obtained) could take a very long time if all a person were only to think about the techniques and topics taught was for one hour per week.
- ▶ That's why CBT therapists assign reading assignments and encourage their clients to practice the techniques learned.

Nicotine Addiction

- ▶ Tobacco use has had a definite swing in fashion from the early to mid 1900's. Currently, it is the leading cause of preventable disease in the United States [1]. Deaths attributed to tobacco use account for approximately 20% of the total number of deaths each year in the United States [2]. Importantly, as noted by Bates in the British Medical Journal, most smokers are disenchanted with smoking and would not smoke

Nicotine Addiction

- ▶ Similar to intravenous opiate use in an addicted person, nicotine is not the primary cause of significant medical consequences or death in the smoker, instead the morbidity and mortality is a side effect of repetitive use of a contaminated drug delivery system [4]. Nicotine is simply the primary addictive agent

Nicotine Addiction

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Nicotine Addiction

- ▶ In general, the decline in risk from all causes of smoking – related mortality starts soon after quitting and will continue for the next 10 – 15 years

Nicotine Addiction

- ▶ Tobacco is a vegetable that when smoked contains over 4000 chemicals including carbon monoxide, nitric oxide, lead cyanide, 43 known carcinogens and nicotine in the inhaled vapor [6].
- ▶ Nicotine is a colorless to pale yellow, water-soluble chemical.
- ▶ Tobacco smoke inhalation is the fastest and the most efficient method of nicotine delivery to the brain.
- ▶ In less than 10 seconds after inhalation approximately 25% of the nicotine reaches the brain, **a rate that is almost twice as fast as intravenous delivery [7].**

Nicotine Addiction

- ▶ Nicotine has a chemical structure that enables it to produce the same type of addictive effects as heroin and cocaine.

Nicotine Addiction

- ▶ Nicotine administration, via any route, can produce psychoactive effects, mood alterations, positive reinforcement, physical dependence and tolerance [8].

Nicotine Addiction

- ▶ The presence of nicotine causes subsequent activation of the "pleasure center," positive reinforcement, arousal and enhanced cognitive functioning [9,10]. Nicotine exerts an effect on dopamine, serotonin, endogenous opioid peptides, pituitary hormones, catecholamines and vasopressin [11]. A current theory is that nicotine may not be the only psychoactive component in tobacco smoke.

Nicotine Addiction

- ▶ **Tests to determine tolerance**
- ▶ Like the myriad of tests available to determine dependence to a specific drug or chemical, the test used to determine dependence on nicotine was developed by Dr. K. Fagerstrom and presented in a paper in 1978. The Fagerstrom Tolerance Test, as it became known, is composed of 8 questions, with points for each positive response. The range is 0 – 11 points; 0 points indicate minimum physical dependence and 11 points indicates maximum dependence [14].

Nicotine Addiction

Nicotine withdrawal

- ▶ The signs and symptoms of nicotine withdrawal include: irritability, anger, anxiety, depression, hostility, drowsiness, fatigue, restlessness, decreased alertness, lightheadedness, headache, chest tightness, body aches, hunger, urges to smoke, weight gain, decrease in heart rate, insomnia, constipation and sweats [15]. The popularity and success of nicotine replacement therapy is based on the reduction of these signs and symptoms.

Nicotine Addiction

- ▶ As in all addiction treatment, patient readiness and motivation to change is a marker of success or failure
- ▶ **Five A's of Addiction Treatment**
- ▶ **Ask**: identify all tobacco users
- ▶ **Advise**: urge all smokers to quit
- ▶ **Assess**: evaluate the willingness or motivation to quit
- ▶ **Assist**: help set a quit date and encourage nicotine replacement therapy
- ▶ **Arrange**: schedule follow up

Nicotine Addiction

- ▶ **Nicotine cessation therapy**
- ▶ Nicotine dependence can be treated with or without the use of medication, though it is most frequently addressed with a multi-component plan. Behavioral treatments remain the cornerstone of all nicotine cessation treatment programs as nonpharmacologic factors (drug – seeking behaviors, reinforcement by the drug and the environment) contribute heavily to the addictive process and continuation of this behavior

Nicotine Addiction

- ▶ Medical regimens have included nicotine replacement products and non-nicotine medications. The rationale for using nicotine-replacement agents is that as an agonist, the drug replacement enables the smoker to reduce the amounts of nicotine previously obtained from cigarettes while using a system that has reduced toxicity (there is an elimination of the carcinogens and gases associated with smoking). This new delivery system does not allow as rapid an entry of nicotine into the brain, thus decreasing the almost immediate reward associated with smoking. The reduction in withdrawal allows the patient time to develop coping skills and alternative behaviors so as to remain smoke free [18].

Nicotine Addiction

- ▶ **Behavioral approaches**
- ▶ Self-help and support groups have been an integral part of all addiction treatment. In a small study by Sperber et al in Israel, they found that a quit rate of 33% in one-year follow up period was possible using this modality, but that importantly, a belief in one's ability to quit, satisfaction with group meetings and spousal support significantly improved success rates [19]. Self-help materials that are provided as part of health advice or nicotine replacement therapy show no evidence of additional benefit according to the Cochrane Database review [20].

Nicotine Addiction

- ▶ Other behavioral therapeutic approaches include:
- ▶ brief interventions
- ▶ reduced (gradual taper) smoking
- ▶ nicotine fading
- ▶ scheduled smoking
- ▶ contingency management
- ▶ relapse prevention
- ▶ cue exposure
- ▶ aversion therapy
- ▶ hypnosis

Nicotine Addiction

- ▶ **Nicotine Replacement Therapy**
- ▶ Nicotine replacement therapy is a safe, effective and standard treatment of tobacco dependence [40]. Nicotine replacement therapy products were sold only by prescription until 1996, when nicotine gum and 2 of the 4 brands of nicotine patches became available without prescription [41].

Nicotine Addiction

- ▶ Nicotine gum, which was approved by the FDA in 1984, is marketed under the trade name Nicorette®. The gum is available in 2mg and 4mg strengths and comes in classic, mint or citrus flavors.
- ▶ The gum is chewed in a "chew and park" technique and the amount absorbed is affected by the chewing rate and the amount and pH of the saliva, with a lower pH (more acid) inhibiting absorption. The user should start with 2mg and can chew one piece every 1 – 2 hours to a maximum of 30 pieces per day

Nicotine Addiction

- ▶ The 4-mg strength is indicated for the treatment of the highly dependent smoker who smokes more than 25 cigarettes per day or has a Fagerstrom test score of greater than 6.
- ▶ Nicotine gum has been shown to improve smoking cessation outcomes and a meta-analysis of 39 studies by Silagy [44] reported that the odds of abstinence at 6 months was 1.6 times higher for gum users than controls and that combined with behavioral therapy it afforded the best quit rates. Adverse effects of gum use include jaw pain, mouth soreness, dyspepsia and hiccups [45].

Nicotine Addiction

- ▶ **Nicotine patch–transdermal systems (habitrol[®], nicoderm cq[®], nicotrol[®])** The nicotine patch–transdermal system was first approved by the FDA in 1991 and several of the patches were approved for nonprescription use in 1996. The patches differ by construction, the amount of nicotine and the duration of use ranges from 16 – 24 hours. All patches deliver at approximately the same rate of .9 mg of nicotine per hour.

Nicotine Addiction

- ▶ The recommended course of treatment is 8–18 weeks with a slow reduction of the patch dose.
- ▶ Advantages of the patch over other forms of replacement appear to be ease of application and steady state dosing, with mild side effects
- ▶ A controversial approach has been to use higher than normal patch strength for those who are heavier smokers, i.e. 44 mg (2 patches). One study revealed better results [53] and one showed no difference between the 44-mg and the 22-mg results [54], thus making a case for individualized treatment.

Nicotine Addiction

- ▶ • **Nicotine inhaler (nicotrol inhaler ®)** The nicotine oral inhaler, which became available in 1998, is a cigarette holder-shaped instrument that has replaceable cartridges that each contain 10mg nicotine and 1 mg of menthol.
- ▶ Each individual cartridge will deliver up to 400 puffs of nicotine with each puff containing 13 micrograms of nicotine. Eighty (80) puffs are required to obtain the nicotine delivered by one cigarette [56]. The nicotine appears to be deposited in the mouth and the pharynx and not in the lung [57]. In many clinical trials, subjects used the inhaler frequently, with up to 4 –6 inhalers used per day [58] and the efficacy has been reported to be 15% in the first year as compared to 5% in a placebo group [59]. The inhaler does allow flexible dosing as an advantage, though absorption is affected by puff rate, temperature, saliva and pH of the oral cavity, much like that seen in nicotine gum use. The inhaler can be used for 6–12 weeks of successful tobacco cessation, and is then followed by a 25% taper of maximum use every month over the next 3 months [60].

Nicotine Addiction

- ▶ **Nicotine spray (nicotrol ns[®])** The nicotine spray was introduced in Europe in the early 1990's and approved for use by the FDA in 1996. The spray is another form of nicotine delivery that allows for flexible dosing, though at a faster rate of delivery than the gum or the patch [61]. One dose (one inhalation into each nostril) delivered by the release of a mist delivers 1 mg of nicotine (0.5 mg in each nostril) . The average amount of use is 13 to 20 doses per day, with easier reported use than the gum. As needed (PRN) dosing for the relief of craving is an advantage. The one-year abstinence rates were shown to be 26% in the treatment group vs. 10% in the placebo group, with behavioral therapy being available for all subjects [62].

Nicotine Addiction

- ▶ Nicotine lozenges have been recently approved by the FDA in 2mg and 4 mg doses. Early work with lozenges revealed that they were not well tolerated due to strong local reactions on the mucous membrane of the mouth

Nicotine Addiction

- ▶ **Bupropion (Zyban®)** Bupropion was originally marketed as an antidepressant (Wellbutrin®). Bupropion was found to aid in tobacco-cessation therapy and it was approved for use by the FDA as Zyban® in 1997. It is a non-nicotine treatment modality and is sold with a recovery plan (Zyban Advantage Plan®).

Nicotine Addiction

- ▶ Bupropion has been successful as a cessation modality with 27% abstinence at 6 months compared to 16% in the placebo group as reported by Hurt et al [68]. The dosing recommendations are to start with 150 mg a day for three days, then increase to 150 mg twice a day. A quit date for tobacco products should be set for approximately 1–2 weeks after bupropion treatment starts and the duration of treatment can be up to 12 weeks.

Nicotine Addiction

- ▶ Bupropion did not appear to relieve all withdrawal symptoms, though the symptomatology was less with bupropion than with placebo. Weight gain was lessened by the use of the nicotine patch in combination with bupropion as compared to the patch and a placebo pill [69]. Bupropion is well tolerated.
- ▶ Adverse effects include dry mouth and occasional insomnia. It should be noted that bupropion is contraindicated in patients with a seizure history, anorexia, bulimia, current use of other antidepressant agents which contain bupropion, and the use in patients on MAO inhibitors within the previous 14 days.
- ▶ 9

Nicotine Addiction

- ▶ Burling reported that tobacco dependence is seen in 85 – 100% of users of alcohol, opioids and cocaine [98] while Kalman reported at slightly more modest estimate of 74–88% [99]. Whatever the exact number is, the health toll of cigarette use on this population of patients is devastating with Hurt and colleagues finding that 50.9% of deaths in a cohort study of addiction treatment patients was due to tobacco related diseases [100]

Nicotine Addiction

- ▶ The relationship of alcohol and nicotine dependence is delineated by Gulliver who demonstrated that in a group of alcohol-dependent patients, the urge to smoke is positively correlated with the urge to drink and exposure to alcohol cues will result in an increased urge to smoke [101]. One of the reasons for not addressing tobacco use in the drug/alcohol using population is the fear, which has largely been shown to be unfounded, that if tobacco dependence is addressed it could lead to other drug relapse. Shoptaw found, in a small study, that there was a positive correlation between smoking abstinence and reduced cocaine use [102]. In a prospective study, Stuyt went one step farther and showed significantly better recovery rates for non- – tobacco users than tobacco users in 12-month recovery rates. This was especially true if the drug of choice was alcohol or narcotics [103].

Nicotine Addiction

- ▶ • Mental health disorders In general, some basic guidelines for managing nicotine-dependence treatment in the patient with a mental health diagnosis need to be considered. Assessment and treatment should be carried out by a team knowledgeable in Addiction Medicine and Psychiatry. Relapse can occur during periods of increased psychiatric symptomatology. As with all treatment groups, motivation and abstinence increase success and medications should be chosen with an eye on possible drug -drug interactions [107].

Nicotine Addiction

- ▶ **Depression** It has been shown that nicotine alleviates the negative affect in patients with major depressive disorders [108]. Major depression has been associated with heavy cigarette use and poor smoking-cessation outcomes especially in the dual-diagnosed patient with comorbid alcohol dependence [109]. Mood management must be an integral part of cessation programs in this group of patients. Smokers with a history of major depression were more likely to report depressed mood during cessation than smokers with no history (75% versus 30%) [110]. Bupropion may be the appropriate first line medication to use in this patient group

Nicotine Addiction

- ▶ **Schizophrenia** There is an association between nicotine use and schizophrenia, though different from the association seen in depression. High rates of smoking in patients with schizophrenia can be explained by the neuromodulatory effects of nicotine in these patients, as it appears that a defect in sensory gating is improved by nicotine. This defect is expressed as negative symptomatology

Nicotine Addiction

- ▶ According to the work of Dalack et al, schizophrenic patients have significantly higher rates of cigarette use (58% – 88%) as compared to the general population (25%) [111]. George et al in their research found that the use of atypical antipsychotic medications (clozapine, risperidone, olanzapine and quetiapine) plus the nicotine patch were superior to typical antipsychotic medication (fluphenazine, haloperidol, perphenazine, chlorpromazine and thiothixene) when combined with the nicotine patch. Risperidone and olanzapine were associated with the highest quit rates. At ten weeks 55.6% in the atypical agent group versus 22.2% in the typical agent group were abstinent [112]. Zeidonis and George reported a 10-week smoking cessation program for schizophrenic patients, which included: nicotine patch or patch and nicotine gum, cognitive therapy, motivation enhancement and education.

Nicotine Addiction

- ▶ • Gender issues Women who smoke can not be treated the same as men. According to the work of Perkins, women may smoke less for the nicotine effect and more for non-nicotine effects, such as seeing and smelling smoke, the social pleasures and the rituals involved. Thus, it may be prudent to tailor therapy in women to increase the use of behavioral modalities and not rely as much on nicotine replacement [117].
- ▶ It has also been noted that women attempting to quit tobacco use are affected by depression, lack of social support and worries about weight gain to a greater degree than men [118]. Women also tend to have a heightened degree of withdrawal symptomatology as compared to men [119] and as previously noted, clonidine may work well in this group, especially if there is a significant degree of anxiety and/or agitation associated with cessation.

Nicotine Addiction

- ▶ **Racial groups** There is a paucity of research pertaining to smoking cessation interventions among minority populations. It has been noted that African – Americans smoke fewer cigarettes, use a higher percentage of mentholated brands and prefer the use of higher tar and nicotine cigarette brands. When compared to white study patients, African – American smokers have an increase in quit attempts and are approximately one-third less successful [45]. However, when four racial/ethnic groups were evaluated (African –American, American Indian/Alaska natives, Asian Americans/Pacific Islanders and Hispanics),

Nicotine Addiction

- ▶ **African – American men have the highest health risks of these four groups and show a death rate from lung cancer that is 50% higher than in whites. Other tobacco–related cancers are also particularly high among African – American men [125]. Overall, all approved therapies can be used and can be effective in racial and ethnic minorities. It is essential that all materials and explanations are conveyed in the patient’s language.**

Nicotine Addiction

- ▶ Implementation
- ▶ Assessment Process:
 - ▶ How many cigarettes do you smoke a day?
 - ▶ Do you smoke cigars?
 - ▶ What about snuff?
 - ▶ What about Chewing Tobacco?
 - ▶ Do you want to quit?
 - ▶ Have you tried before?
 - ▶ How many times have you tried?
 - ▶ Have you ever used medications to quit? If so which ones?
 - ▶ How long was your abstinence?
 - ▶ Have you tried support groups?
 - ▶ Have you tried working with a professional?
 - ▶ Have you tried a combination of medications, professional and support group?
 - ▶ Does anyone else at home smoke?
 - ▶ Will they support your desire to quit?

Nicotine Addiction

- ▶ Understanding the clients perspective
- ▶ What do you think the benefits of quitting are?
- ▶ What are the *benefits* for not quitting?
- ▶ When did you start to smoke?
- ▶ Tell me about the first time? Were you alone?
- ▶ Were you with friends?
- ▶ Was any other substance used that first time?
- ▶ What does smoking do for you?
- ▶ When do you smoke the most?
- ▶ When do you smoke the least?
- ▶ When do you have your first cigarette of the day?
- ▶ What is your attitude toward the restriction of smoking in public places?
- ▶ What is your favorite part of the process?
- ▶ Do you have any health problems as a result of smoking?
- ▶ Are there other people in your house? How about children?
- ▶ Does any one else in the house have Asthma?

Nicotine Addiction

- ▶ Precontemplation Stage
- ▶ This is when the person says I want to quit
- ▶ Contemplation Stage – I am thinking about it sometime in the near future. At this stage it is realistic to begin to assist the client in setting a quit date for themselves.
- ▶ Determination – The client is actively considering cessation and is already making attempts to quit.
- ▶ Action Phase – The client is involved in the therapy and has quit within the last six months
- ▶ Maintenance – The client is Nicotine Free for six months

Nicotine Addiction

- ▶ Preparations for quitting
- ▶ Inform family, friends and coworkers
- ▶ Avoid smoking in the home
- ▶ Avoid smoking in the car
- ▶ Review Prior Attempts. What did not work? What contributed to the relapse?
- ▶ Anticipate withdrawal symptoms

Nicotine Addiction

- ▶ The Five R's in promoting motivation to quit
- ▶ Relevance
- ▶ Risks
- ▶ Rewards
- ▶ Roadblocks
- ▶ Repetition

Nicotine Addiction

- ▶ Three Psychosocial elements to successful smoking cessation
- ▶ SOCIAL SUPPORT
- ▶ PHARMACOLOGIC THERAPY
- ▶ SKILLS TRAINING OR PROBLEM SOLVING TECHNIQUES

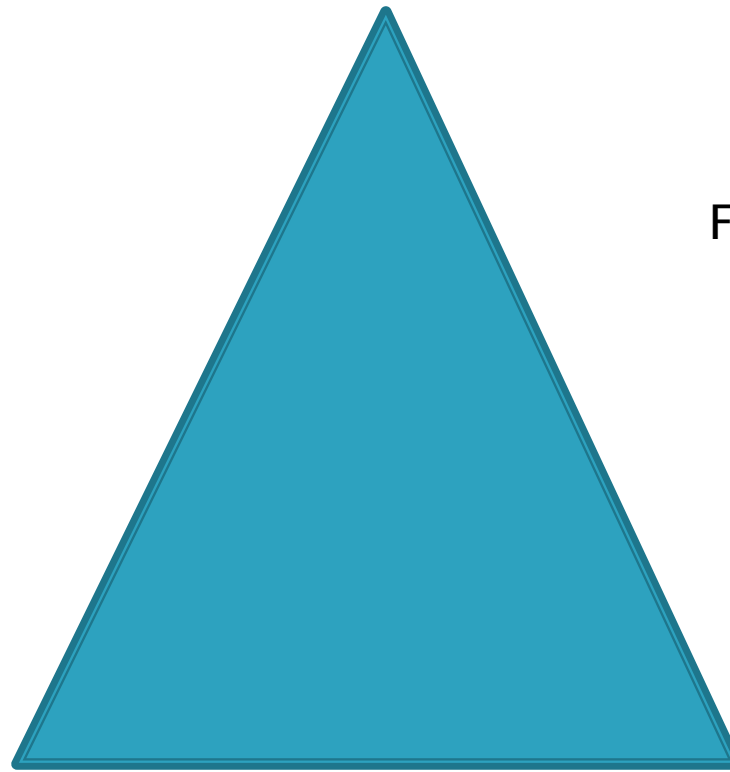
Nicotine Addiction

- ▶ DURING THE COURSE OF TREATMENT
- ▶ IT IS IMPORTANT TO CONGRADULATE TIME, Effective Risk Reduction, and Problem Solving Techniques
- ▶ Discuss challenges that presented
- ▶ Lack of family, friend or coworker support
- ▶ Prolonged withdrawal symptoms

CBT

Thoughts

Feelings



Behavior

OUR CBT GROUP

- ▶ ESTABLISH A TIME FRAME 10 WEEK GROUP SESSIONS
- ▶ DEVELOP A GROUP STRUCTURE
- ▶ ½ HOUR INFORMATION SESSIONS (HEALTH EFFECTS OF SMOKING, SYMPTOMS OF WITHDRAWL/MANAGING WITHDRAWL, HOW TO GET SUPPORT, HOW TO HANDLE LACK OF SUPPORT, STRESS WHAT DO I DO NOW?, PROBLEM SOLVING SKILLS, ETC)
- ▶ 50 MIN GROUP