

Cognitive Behavioral Therapy

- Psychoeducation
- Increased awareness of irrational cognitions, and cognitive restructuring.
- Identification of gambling triggers and the development of non-gambling sources to compete with the reinforcers associated with gambling.

A

Thoughts/
Feelings

B

C

Antecedent
(Triggers)

Behavior

Consequence

Particular people

Environment

Feelings

e.g., urges,
argument with
spouse,
boredom, anxiety

Gambling/alternate behavior

e.g., I drove by the bar, next
think I knew it was last call

Abstinence

e.g., I thought about the effect
it would have on my family,
and took a different route
home

Positive

e.g., I gambled and I
forgot about that argument
with my wife

Negative

e.g., the next day, I felt
like I'm a failure.

Groups

- Cognitive restructuring
- Coping skills/identification of high-risk situations.
- Imaginary exposure with response prevention.
- Financial limit setting and activity scheduling of leisure activities.
- Problem-solving training
- Relapse prevention

Brief Interventions

- Single-session interventions, workbooks, bibliotherapy, or motivational interviewing.
- Workbooks include CBT and motivational enhancement techniques.
- CBT workbook, a workbook plus a telephone motivational enhancement intervention, or a wait-list.

Imaginal Exposure

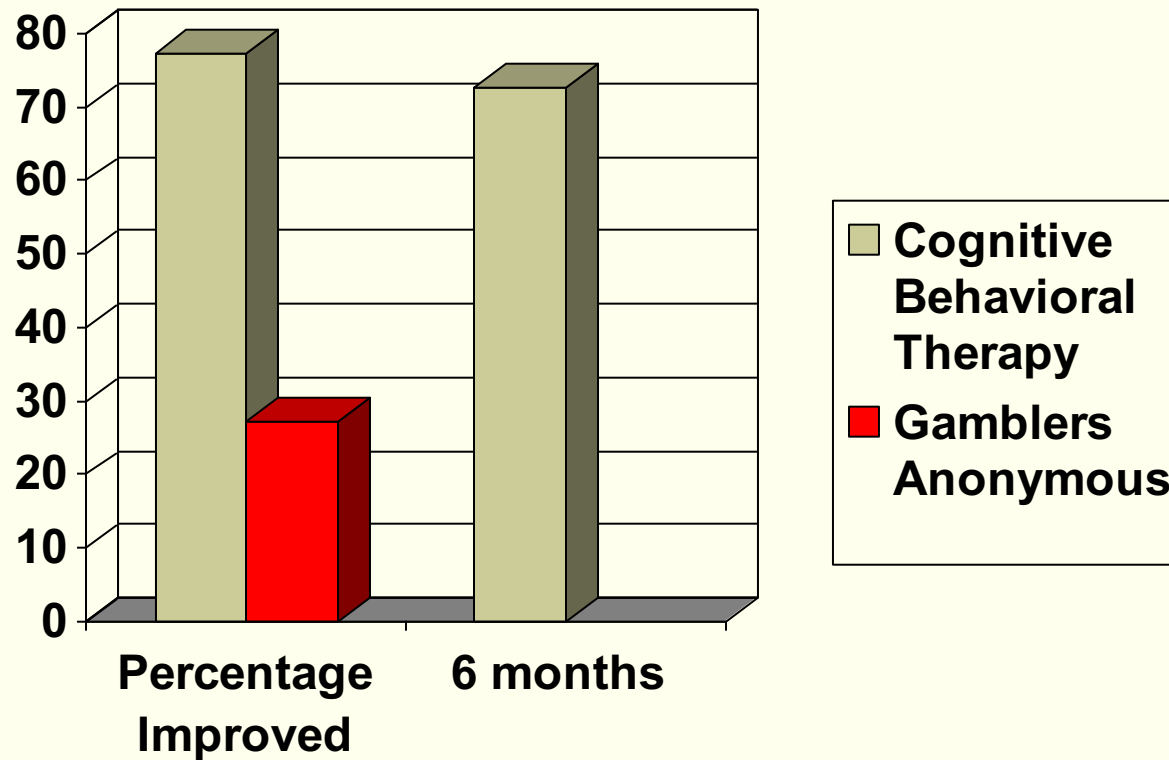
Client and Therapist develop an imaginal exposure script that includes all the relevant internal and external triggers that relate to the behavioral addiction

Urges or cravings can be activated using exposure to triggering events via imaginal exposure exercises.

Imaginal Exposure

“It’s Friday and I have been looking forward to gambling all week. As I am thinking about gambling right now, my urge = 75. Work has been quite stressful and it will feel good to escape for a while and have some fun at the casino. I am bringing \$200 and I have to leave the casino when that is gone, maybe 2-3 hours. I hope the money can last a little while so I don’t have to leave so soon. I notice my heart flutter slightly, have butterflies in my stomach, and I can hardly wait to get there. I am hoping my favorite machine is available and the traffic on the way to the casino is not too bad.”

Motivational Interviewing Plus Imaginal Desensitization



Relapse Prevention

- Variant of cognitive-behavioral therapy; main approach is:
 - Identification of “triggers” to resume use
 - Planning and rehearsal of avoidance
 - Planning and rehearsal of escape
- “Slip” not equal to relapse

Motivation to Quit Behavioral Addictions

1) <u>Positive</u> aspects of impulsive behavior (what are the positive things behavioral addiction gives me?)	2) <u>Negative</u> aspects of quitting (what do I lose if I stop behavioral addiction?)
3) What are the <u>negative</u> consequences of behavioral addiction (current and future?)	4) What are the <u>advantages</u> of quitting behavioral addiction (what do I have to gain?)

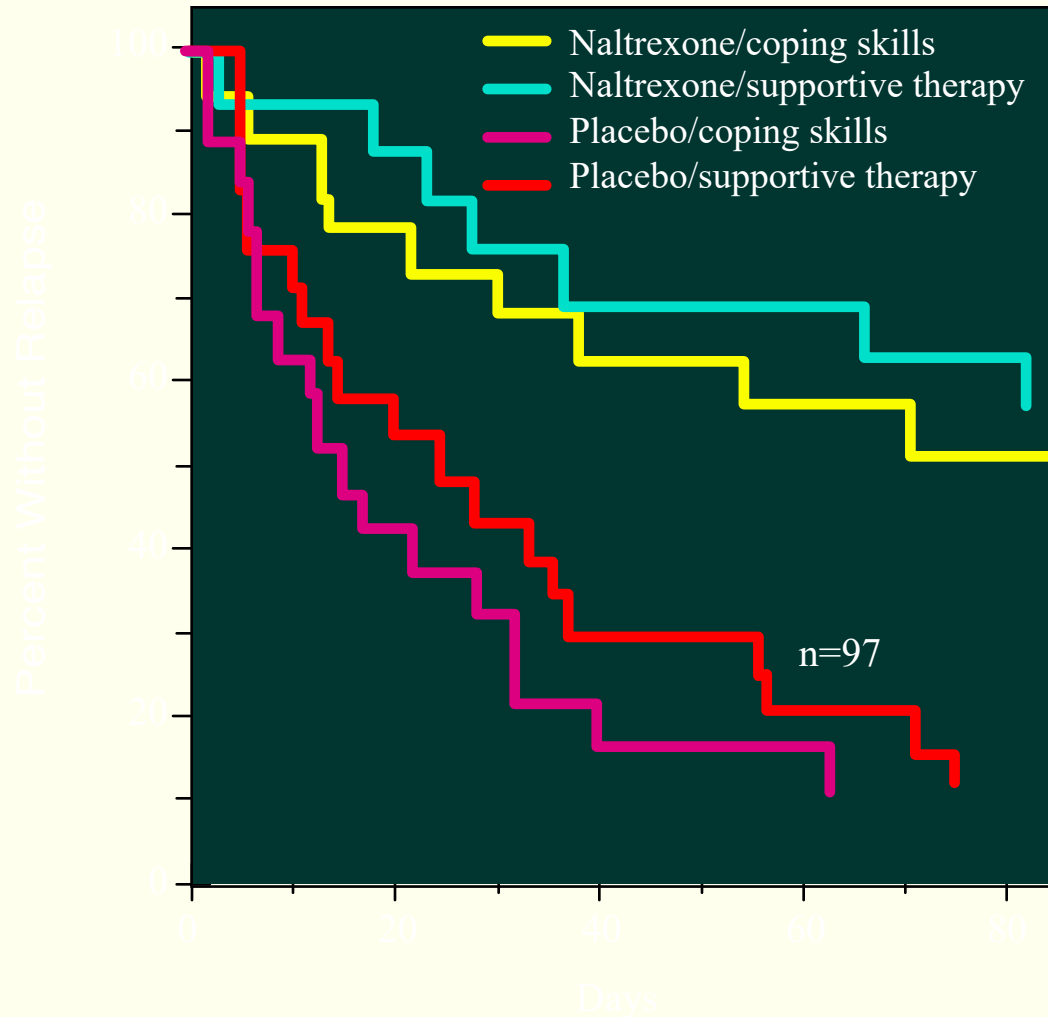
Biochemistry – Opioid System

- The endogenous opioid system influences the experiencing of pleasure.
- Opioids modulate mesolimbic DA pathways via disinhibition of γ -aminobutyric acid input in the ventral tegmental area.
- Gambling or related behaviors have been associated with elevated blood levels of the endogenous opioid β -endorphin.

Opioid Antagonists

- The mu-opioid system:
 - underlies urge regulation through the processing of reward, pleasure and pain, at least in part via modulation of dopamine neurons in mesolimbic pathway through GABA interneurons.

Rates of Never Relapsing According to Treatment Group (n=97)



Naltrexone for Gambling Disorder

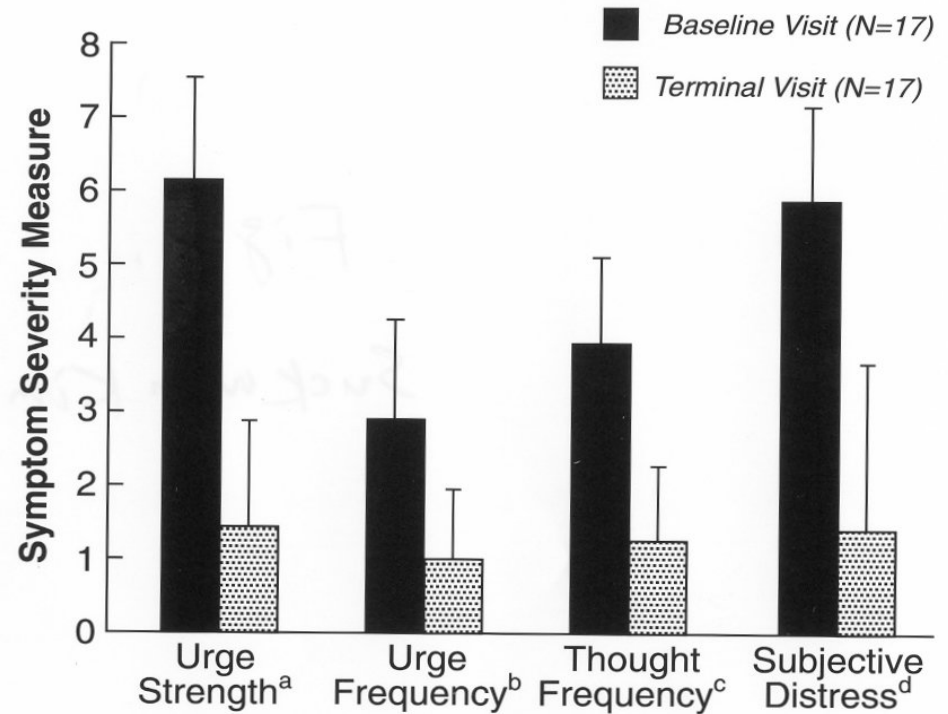
METHODS

- n=77 with GD
- Double-blind, placebo-controlled
- 11-weeks
- Dose titration: 25mg/d – 250mg/d

RESULTS

- Significant benefit in CGI-Improvement (both patient and clinician-rated) and Gambling Symptom Rating Scale

Figure 1. Baseline and Terminal Visit Gambling Symptom Ratings
(Carry Forward Paired t-test)



^a 0=None, 2=Mild, 4=Moderate, 6=Severe, 8=Extreme. Significantly different ($t=14.28$, $p<0.05$)*.

^b 0=None, 1=Once a day, 3=Three times a day, 5=Five times a day, 6=More than five times a day. Significantly different ($t=7.29$, $p<0.05$)*.

^c 0=None, 1=Once a day, 3=Three times a day, 5=Five times a day, 6=More than five times a day. Significantly different ($t=5.25$, $p<0.05$)*.

^d 0=None, 2=Mild, 4=Moderate, 6=Severe, 8=Extreme. Significantly different ($t=8.68$, $p<0.05$)*.

* Bonferroni corrected

***N*-acetylcysteine (NAC)**

- Amino-acid and antioxidant
- Potentially modulates brain glutamate transmission
- Levels of glutamate within the nucleus accumbens mediate reward-seeking behavior
- Lacks significant side effects

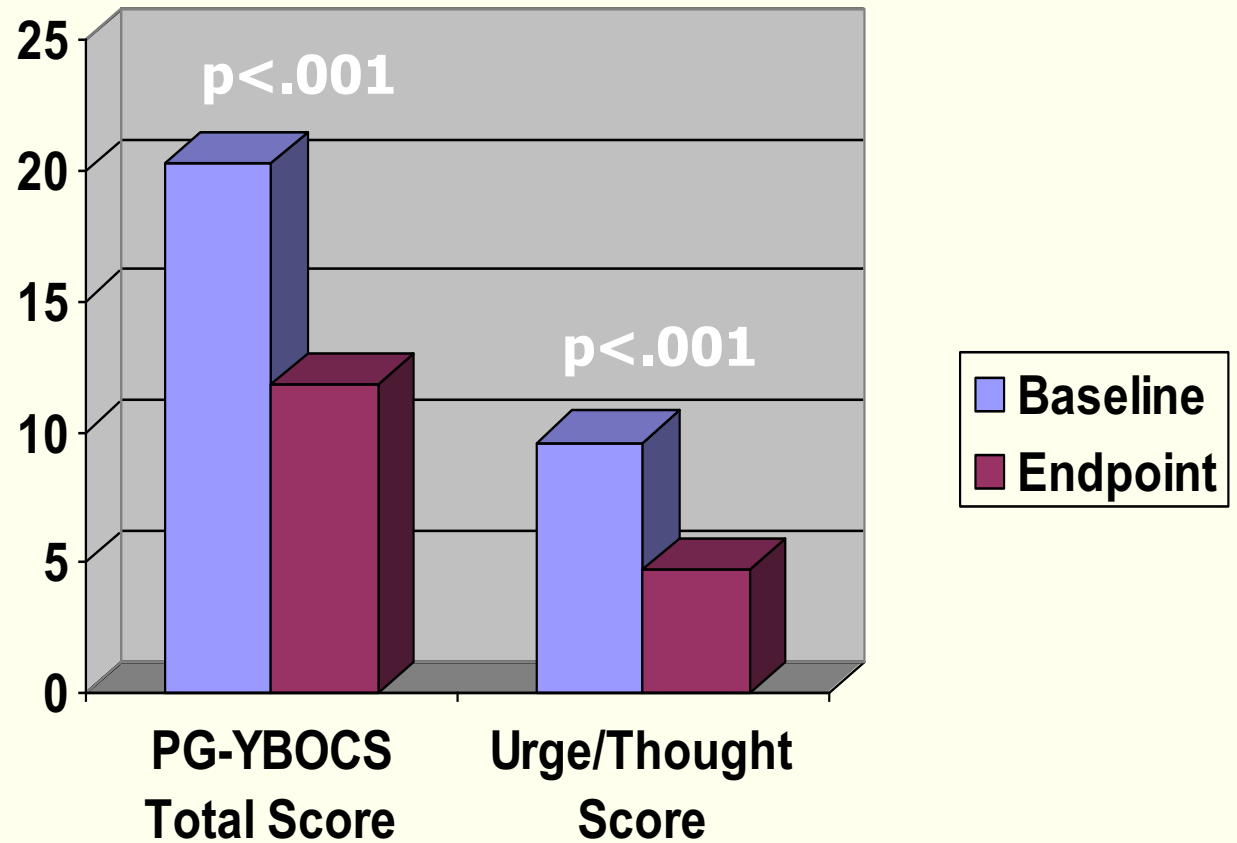
Open-Label study of NAC in Gambling Disorder

- n=27 subjects, mean age 50.8 years, 44.4% female
- Dose titration from 600mg/d to 1800mg/d
- Required to have moderate cravings to gamble

Open-Label Study of NAC in GD

RESULTS

- YBOCS: Scores decreased 41.9% from baseline to endpoint



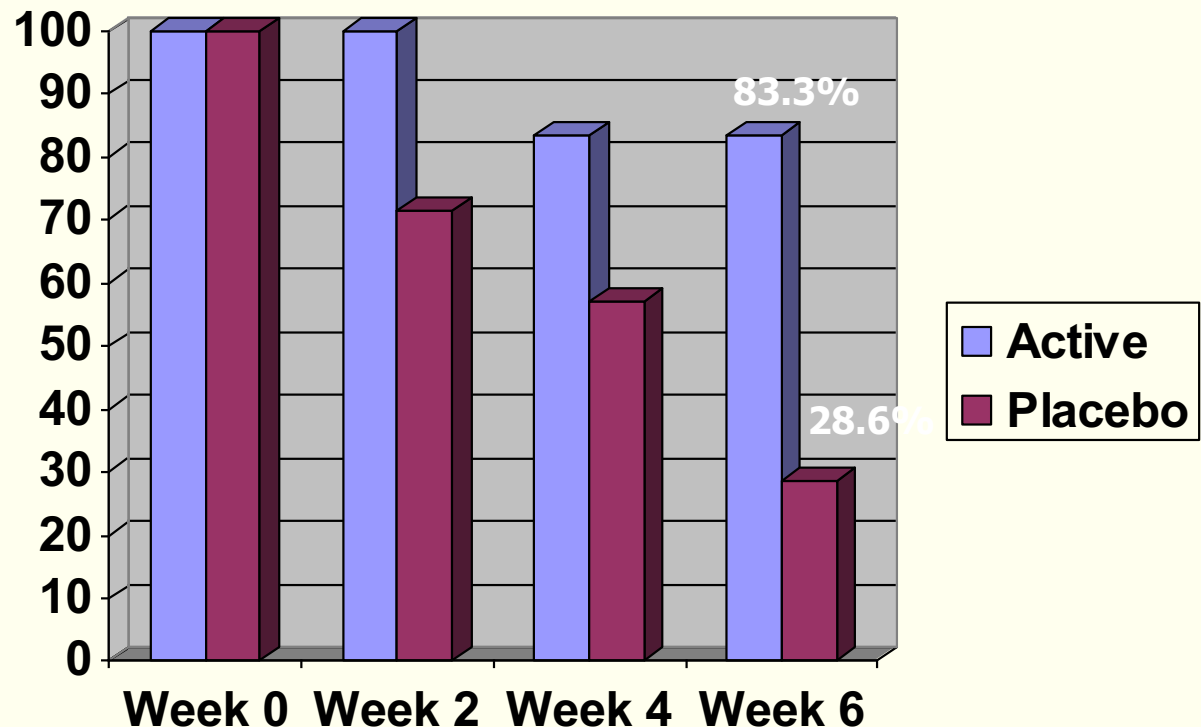
Open-Label Study of NAC in GD

Responders ($\geq 30\%$ decrease in PG-YBOCS and “Much” or “Very much” improved on CGI-I scale) randomized to NAC or placebo for 6-weeks

RESULTS

- N=16 (59.3%) met responder criteria
- Mean effective dose: 1476.9 (± 311.3) mg/d

Figure. Percentage of subjects meeting responder criteria each week of the double-blind discontinuation phase



Case Example

Bank Robber

- 22 year old Caucasian
- No prior legal problems
- Worked in a bank
- Problem gambling onset at age 20
- Ran up debts; borrowing from family
- Impulsively “robbed” a bank

Case Example

Bank Robber

- Court-ordered for an examination
- Results reveal no other psychopathology other than PG
- Neurocognitive testing showed attentional and impulsivity impairments
- No brain imaging

Case Example Bank Robber

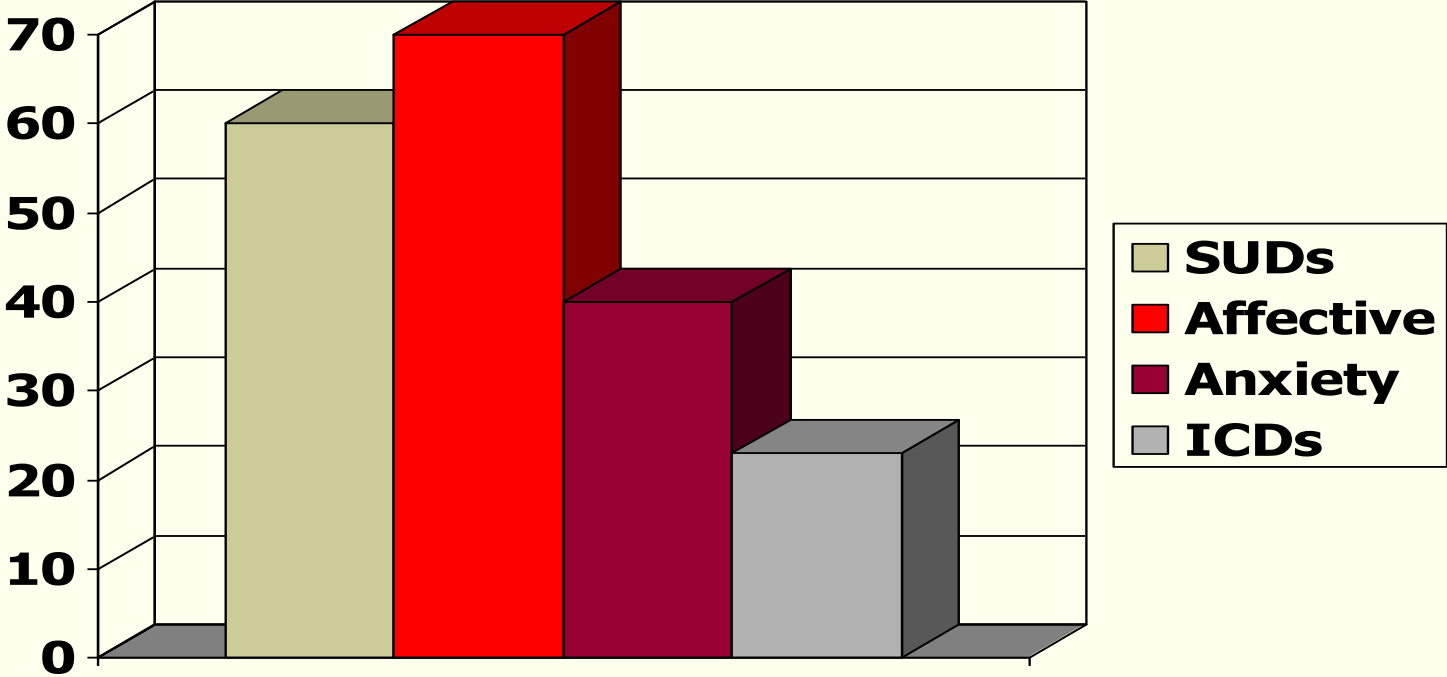
- Very personable to interview
- Accepts guilt
- Wants “treatment” instead of incarceration
- States he won’t gamble ever again

Public Health Significance

Gambling associated with High Rates of:

- Divorce
- Poor General Health
- Mental Health Problems
- Job Loss and Lost Wages
- Bankruptcy, Arrest and Incarceration

Co-Occurring Disorders



Special Concerns

Suicide Ideation

Suicide Attempt

Threat of Violence to Others

Significant Loss/Grief

Traumatic Event

Social/Personal Consequences

- **Family dysfunction and domestic violence**
- **Alcohol and other drug problems**
- **Significant financial problems**
 - bankruptcy, unemployment, poverty)
- **Criminal behavior**
 - theft, prostitution, homicide, fraud, embezzlement)

Other Health Issues

Health concerns of gamblers:

Heart disease

Liver disease

Hypertension

Obesity

Problems with Youth Gambling

Poor grades	OR=3.9
Tobacco use	OR=2
Marijuana use	OR=2
Moderate and heavy alcohol use	OR=2.3
Drug use	OR=3.2
Depression	OR=1.8
Serious fights	OR=2.5
Carrying a weapon	OR=2.1

Evidence-Based Integrated Treatments

- Family
- Legal
- Health
- Psychological
- Pharmacological
- Financial
- Developmental

Case Example - Donna

- Donna is a 50 year old, working professional who successfully completed treatment. She has been abstinent from gambling for two months. Work stress was her main trigger to engaging in slot machine gambling.
- She recently was required to go on a work cruise which had a casino onboard.
- She wants to know:
 - Should she go on the work trip?
 - What can she do to help prevent relapse?
- Donna gambles the first day on the cruise ship.
 - What should she do now?

QUESTIONS?



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