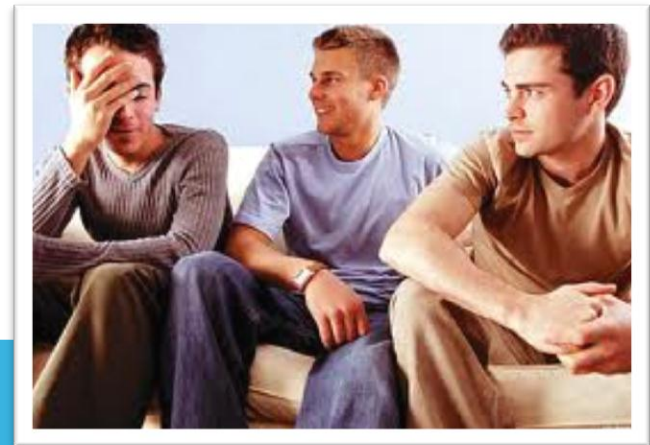
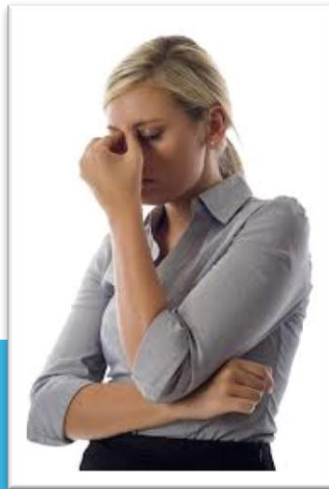


FUNDAMENTALS OF TREATING ANXIETY SENSITIVITY

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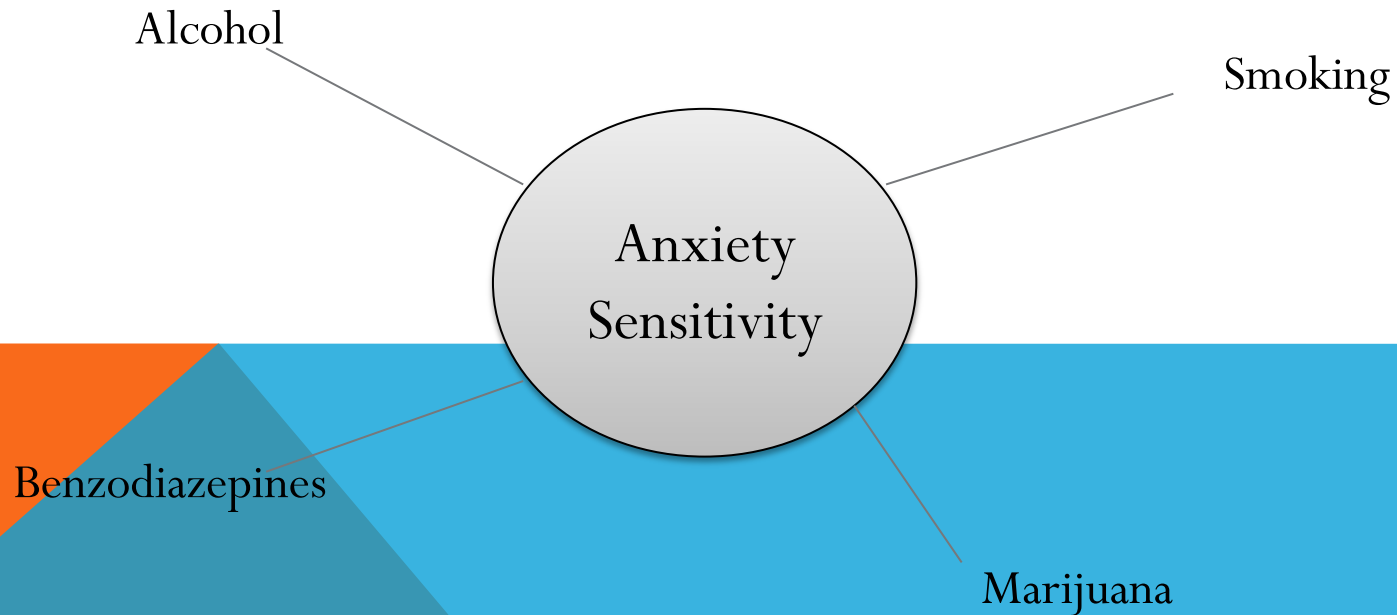
ANXIETY SENSITIVITY

Enduring fear of anxiety-related physiological sensations arising from the belief that they will have serious physical, psychological, or social consequences (Reiss, 1991; Reiss & McNally, 1985)



LINKS TO SUBSTANCE USE/MISUSE

- Anxiety sensitivity and motives
- Anxiety sensitivity and expectancies
- Anxiety sensitivity and sensitivity to anxiolytic drug effects



ANXIETY SENSITIVITY INTERVENTION

- Based on “Overcoming the Fear of Fear: How to Reduce Anxiety Sensitivity”

By Margo C. Watt & Sherry H. Stewart (2008). Oakland: New Harbinger

- Evidence of Efficacy in:
 - Watt, Birch, Stewart, & Bernier (2006). Journal of Mental Health.
 - Watt, Stewart, Lefaivre, & Uman (2006). Cognitive Behaviour Therapy
 - Watt, Stewart, Conrod, & Schmidt (2008). In S. H. Stewart & P. J. Conrod (Eds), Anxiety and substance use disorder: The vicious cycle of comorbidity. New York: Springer.
- 3 Trials:
 - A) Watt et al.
 - B) Sabourin et al.
 - C) Olthuis et al.

Brief CBT for high anxiety sensitivity decreases drinking problems, relief alcohol outcome expectancies, and conformity drinking motives: Evidence from a randomized controlled trial

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STUDY DESIGN


- Participants (university women) selected for high and low AS status
 - Randomly assigned to CBT treatment or NST control
 - Intervention: three one-hour group sessions (psychoeducation, cognitive restructuring, interoceptive exposure)
 - Assessments conducted at pre-treatment and 10 weeks post-treatment
 - Anxiety sensitivity (ASI)
 - Drinking quantity and frequency
 - Alcohol-related problems (RAPI)
 - Drinking Motives (DMQ-R)
 - Alcohol Expectancies (ACQ)
- 

Table I. Descriptive statistics for pre-intervention variables of interest as a function of AS Group (HAS vs. LAS).

	High AS (<i>n</i> = 106) M (SD)	Low AS (<i>n</i> = 113) M (SD)	F [χ^2]	<i>p</i>
Drinking frequency	1.22 (0.91)	1.01 (0.76)	2.32	0.07
Drinking quantity	4.87 (2.36)	4.80 (2.45)	0.28	–
High consequence drinking	32%	12%	[13.25]	0.001
Coping motives	11.00 (4.44)	8.31 (3.21)	26.15	0.001
Conformity motives	9.00 (4.29)	6.37 (2.04)	34.47	0.001
Social motives	18.30 (4.82)	16.69 (5.03)	5.27	–
Enhancement motives	15.72 (5.66)	14.37 (4.74)	2.69	–
Relief expectancies	20.58 (12.35)	13.07 (5.69)		0.001
Reward expectancies	22.36 (10.12)	20.35 (7.90)	1.85	–

Notes: Drinking frequency = drinking occasions per week; Drinking quantity = alcoholic beverages per drinking occasion; High consequence drinking = Proportion of participants scoring above clinical cut-point on Rutgers Alcohol Problem Index [RAPI; White & Labouvie, 1989]; Coping motives, Conformity motives, Social motives, and Enhancement motives = subscales of the Drinking Motives Questionnaire-Revised [DMQ-R; Cooper, 1994]; Relief Expectancies and Reward Expectancies = expectancy subscales of the Alcohol Cognitions Questionnaire [ACQ; Singleton et al., 1994].

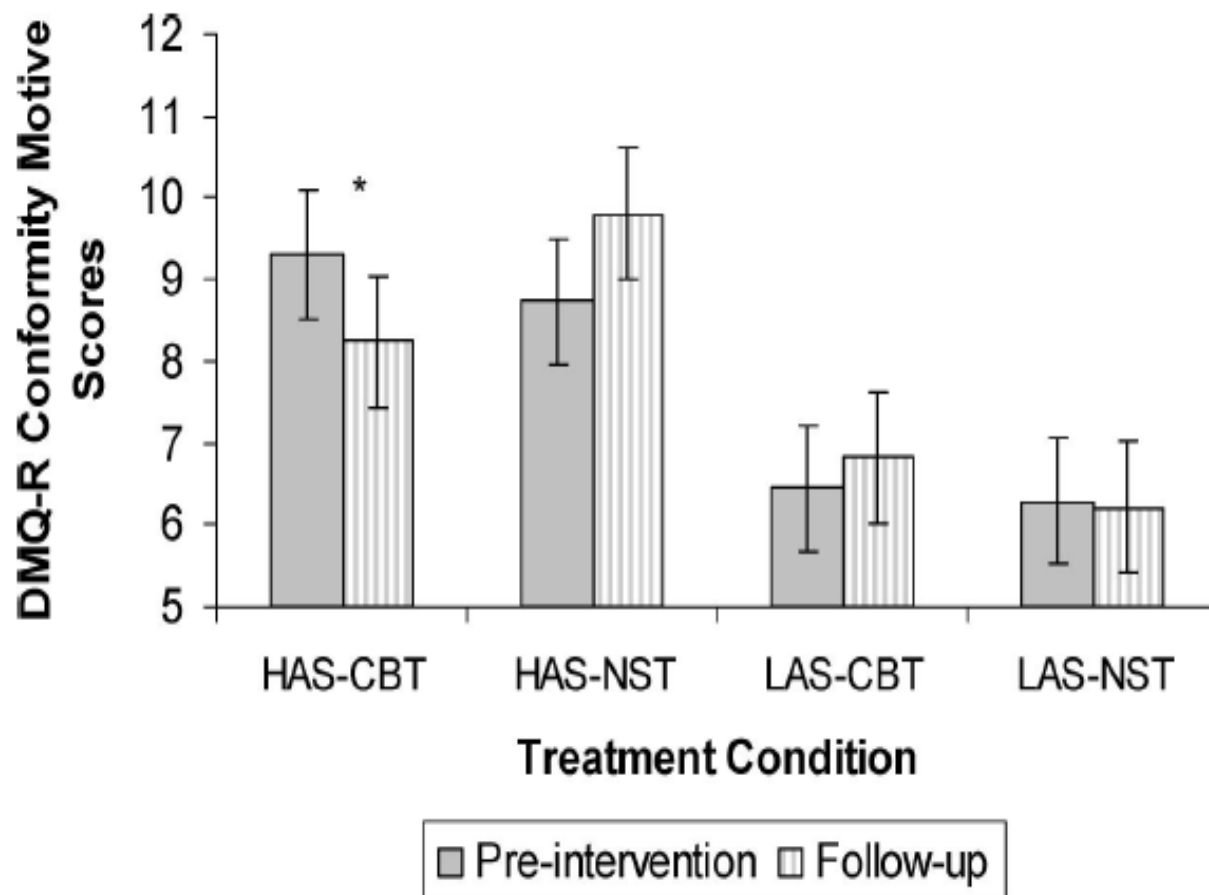


Figure 2. Change in DMQ-R Conformity Motive Scores from Pre-intervention to Follow-up for HAS and LAS groups in each Treatment Condition (Bars represent Standard Errors; Asterisk indicates significant difference at $p < .05$).

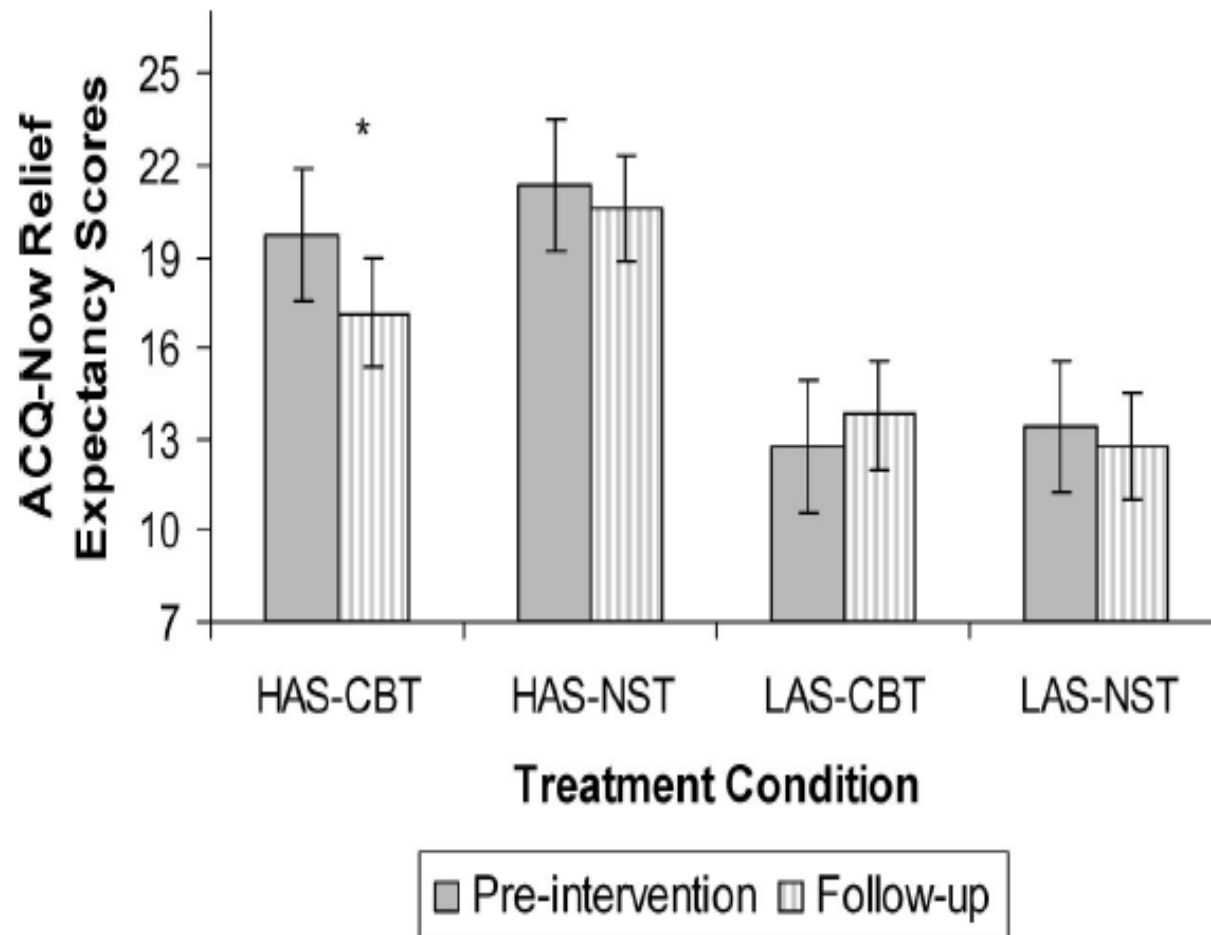


Figure 3. Change in ACQ-Now Relief Expectancy Scores from Pre-intervention to Follow-up for HAS and LAS groups in each Treatment Condition. (Bars represent Standard Errors; Asterisk indicates significant difference at $p < .01$).

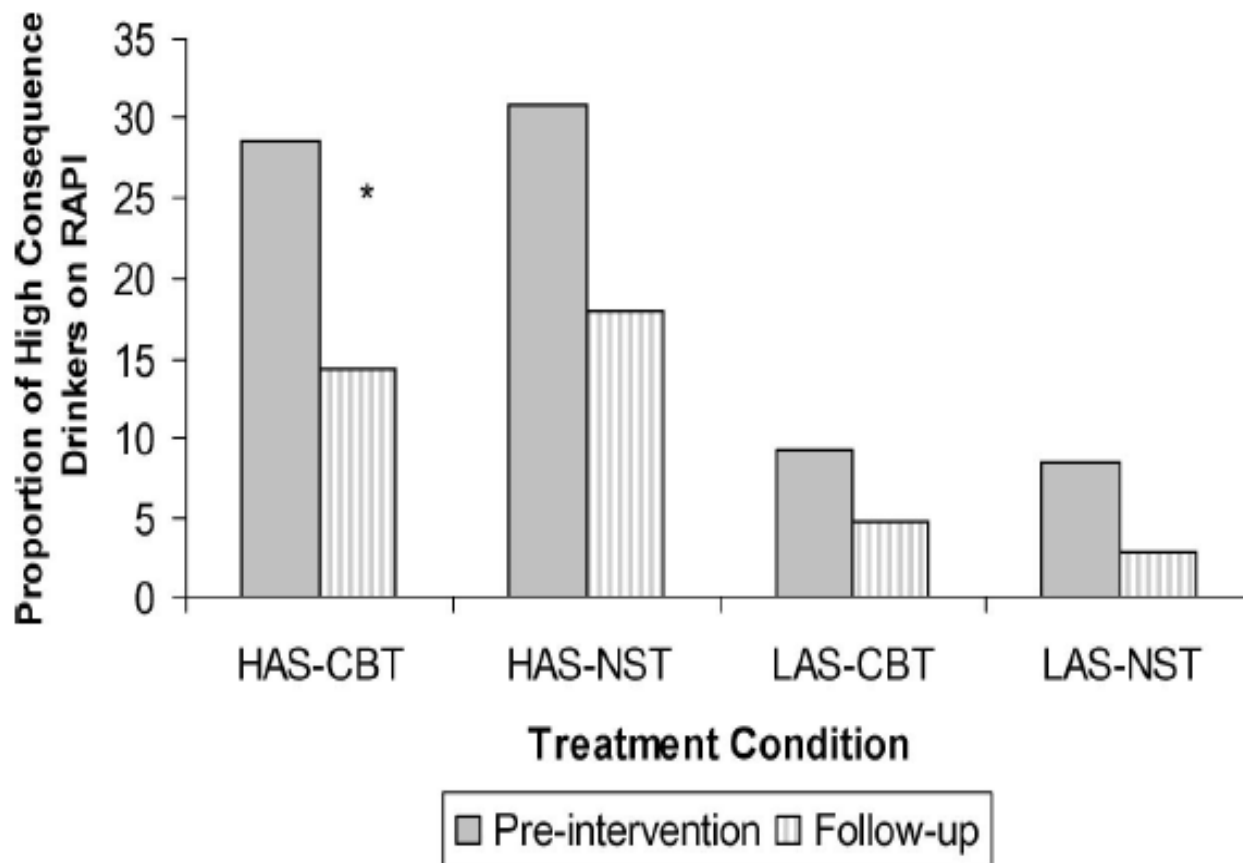


Figure 1. Proportion of “high consequence” drinkers in high AS and low AS groups in each Treatment Condition at Pre-intervention and at Follow-up. (Asterisk indicates marginally significant difference at $p = .06$, one-tailed McNemar test).

EFFICACY OF AS TREATMENT AS DISTANCE TREATMENT: TELEPHONE DELIVERY

Janine Olthuis, Margo Watt, & Sherry Stewart

Funding: Nova Scotia Health Research Foundation



PURPOSE & HYPOTHESES

Objective: test efficacy of distance-delivered CBT in reducing anxiety sensitivity *and* related anxiety and substance use symptoms

Hypotheses:

- CBT will reduce high anxiety sensitivity
- CBT may generate related decreases in anxiety and substance use variables

Sample	Pretreatment score <i>M</i> (SD)	Post-treatment score <i>M</i> (SD)	Change score <i>M</i> (SD)
<i>Treatment-seeking</i>			
Treatment conditions	31.18 (10.29)	20.28 (9.89)	10.89 (3.14)
Control conditions	31.89 (9.71)	30.74 (10.51)	1.15 (3.15)
<i>At risk</i>			
Treatment conditions	23.48 (7.83)	16.56 (5.40)	6.92 (2.54)
Control conditions	23.98 (7.87)	19.66 (5.40)	4.32 (3.61)

METHOD: PARTICIPANTS

Recruited via media/community advertisements

Telephone screening completed to determine eligibility

Inclusion Criteria:

- aged 18+
- high AS: >23 on the ASI – 3 ($M = 12.8$, $SD = 10.6$; Taylor et al., 2007; Reiss et al., 2008)

Exclusion Criteria:

- contraindications to physical exercise
- suicidal ideation or unremitted psychosis
- no access to a telephone
- illiteracy
- engagement in current psychotherapy or fluctuating pharmacological treatment

Randomly assigned to treatment or waiting list control

METHOD:TREATMENT

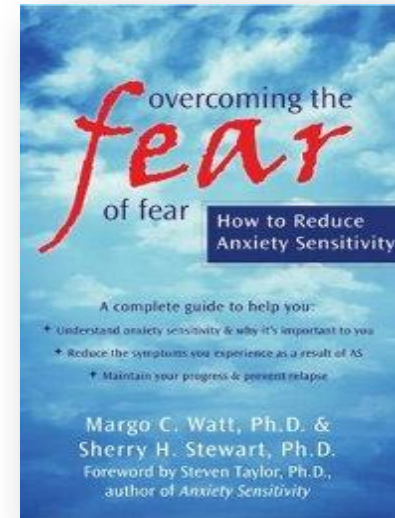
Manualized 8 week program

Weekly reading (incl. activities and homework)
supplemented by 60 min. individual telephone
therapy sessions

- **Session 1:** Psychoeducation – Anxiety Sensitivity
- **Session 2:** Psychoeducation – Anxiety Sensitivity and Mental Health
- **Sessions 3 & 4:** Cognitive Restructuring Parts I and II
- **Sessions 5 & 6:** Interoceptive Exposure Parts I and II
- **Session 7:** Stress Management
- **Session 8:** Relapse Prevention & Extending Treatment Gains

1 month continuation of exercise program

- Run/walk 3x each week, for 10 minutes each time



Watt & Stewart, 2008



MEASURES

Anxiety Sensitivity:

- Anxiety Sensitivity Index — 3 (Taylor et al., 2007)

Alcohol Use Motivations:

- Modified Drinking Motives
Questionnaire, Revised (Grant et al., 2007)

182 individuals contacted study to express interest in participating

n=25 did not complete screening
n=39 did not qualify for participation: low AS, other treatment, can't exercise

109 qualified for participation

n=6 did not consent to participate
n=23 did not complete pre-treatment assessment

80 completed pre-treatment assessment and were randomized

n=40 randomized to treatment condition

n=2 did not start

n=27 completed session 8
(2 terminated at session 3, 1 at session 4, 3 at session 5, 2 at session 6, 1 at session 7, 2 at session 8)

n=23 completed post-treatment questionnaires
•Lost in mail: 2
•Not returned: 2

n=40 randomized to waiting list control

n=36 completed 8 weeks
(1 passed away, 1 started new treatment, 1 started new medication, 1 we lost contact with)

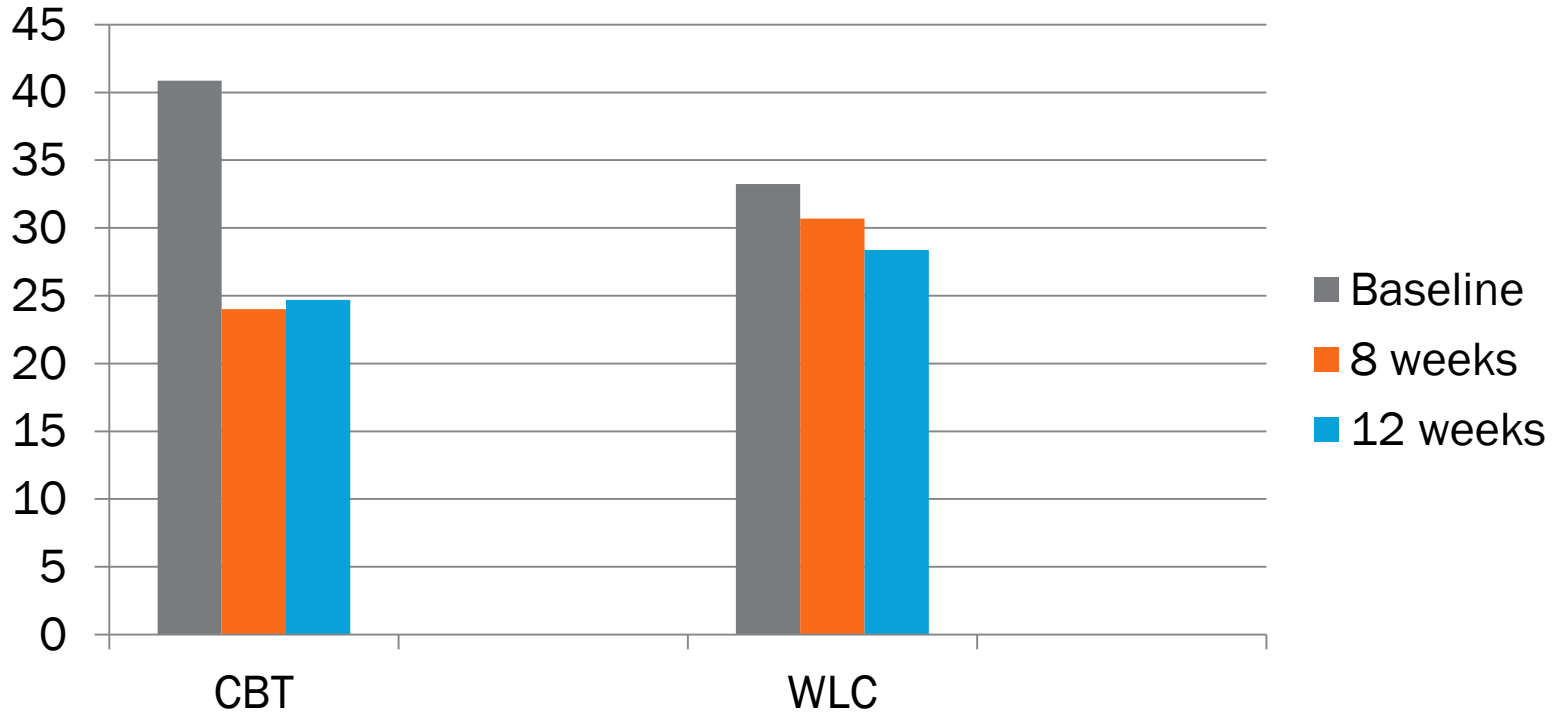
n=32 completed post-control questionnaires
•Lost in mail: 3
•Not returned: 1

RESULTS: PARTICIPANTS

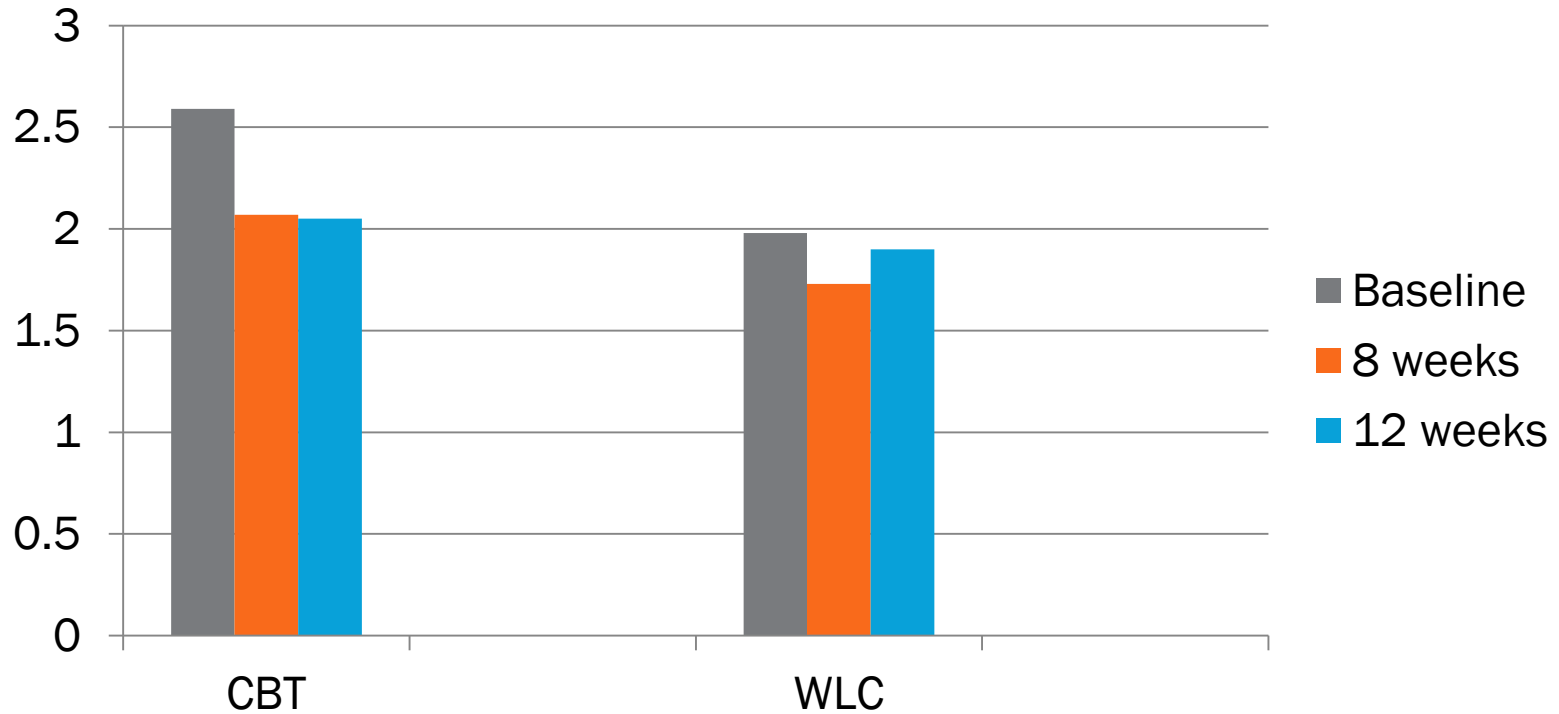
Characteristic	Total Sample N=80	Waiting List Control n=40	Treatment n=40
Age at Pre-Treatment	M=36.3 (11.3)	M=36.5 (10.4)	M=36.2 (12.2)
Range	18 to 65 years	20 to 58 years	18 to 65 years
Sex	78.8% women	72.5% women	85% women
Taking Medication	37.5%	37.5%	37.5%
Education Level			
<i>Some High School</i>	1.3%	0.0%	2.5%
<i>High School/GED</i>	12.5%	12.5%	17.5%
<i>Community College/Trade School</i>	17.6%	20%	15.0%
<i>Some University</i>	6.3%	0%	12.5%
<i>University</i>	60.0%	67.5%	52.5%
Income			
< \$35,001	36.3%	30.0%	42.5%
\$35,001 - \$60,000	22.5%	27.5%	17.5%
\$60,001 - \$85,000	10.0%	10.0%	10.0%
> \$85,000	17.3%	27.5%	25.0%
<i>Not Reported</i>	5.0%	5.0%	5.0%
Ethnicity			
<i>Native Canadian</i>	2.5%	2.5%	2.5%
<i>Black/African Canadian</i>	1.3%	2.5%	0.0%
<i>Caucasian/Euro Canadian</i>	76.3%	75.0%	77.5%
<i>Asian/Asian Canadian</i>	2.5%	5.0%	0.0%
<i>Mixed</i>	7.5%	2.5%	12.5%
<i>Not Reported</i>	10.0%	12.5%	7.5%

Diagnosis	Current	Partial Remission	Past History
Panic Disorder	15	4	4
Social Phobia	13	1	0
GAD	11	0	0
MDD	6	6	8
Agoraphobia	5	0	0
Dysthymia	4	0	0
Specific Phobia	2	0	0
ADNOS	2	0	0
OCD	2	0	0
PTSD	1	1	1
Pain Disorder	1	0	0
Hypochondriasis	1	0	0
Eating Disorder	0	2	1
Substance Disorder	0	0	9

RESULTS: ANXIETY SENSITIVITY LEVELS (ASI-3 SCORES)



RESULTS: COPING WITH ANXIETY DRINKING MOTIVES (MODIFIED DMQ-R)



DISCUSSION

Explored the efficacy of a treatment targeting anxiety sensitivity, a known risk factor for anxiety disorders and substance abuse

Anxiety sensitivity scores decreased from baseline to 8 and 12 weeks significantly more for participants in the treatment vs. control groups

Similar outcomes emerged for measures of disorder-specific anxiety symptoms, and general measures of stress and anxiety

Importantly, coping motives related to drinking to deal with anxiety decreased significantly more for the treatment group than the control group; these are the motive most associated with alcohol problems longitudinally (Grant et al., 2007)

INTERVENTION COMPONENTS

1. Anxiety Psychoeducation
2. Cognitive Restructuring
3. Interoceptive Exposure



ANXIETY PSYCHOEDUCATION

- Learning to identify the components of anxiety
- Learning about the inter-relations between anxiety components



RECOGNIZING CONNECTIONS AMONG PHYSICAL SENSATIONS, THOUGHTS, FEELINGS, AND ACTIONS

Anxiety specialists agree that anxiety consists of the following four major components:

1. **Physical sensations:** Muscle tension, rapid pulse, difficulty breathing, upset stomach, sweating, trembling, headaches, stomachaches, and so on
2. **Thoughts:** Thinking the worst, and being very convinced that this horrible outcome is likely to happen
3. **Feelings:** Subjective state of fear, dread, and apprehension
4. **Actions:** Actions that disrupt our performance, such as escaping from social situations, procrastinating in the face of a looming deadline, or avoiding talking to certain people because of our anxiety about how we might be evaluated

PHYSICAL SENSATIONS

I feel dizzy!
My heart's racing!
I can't breathe!
My face is red!



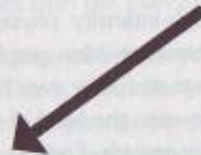
THOUGHTS

I'm going to die!
This is terrible!
I can't handle this!
They're laughing at me!



FEELINGS

Fear
Dread
Panic
Anxiety
Apprehension



ACTIONS

Escape/Avoidance	Positive Self-talk
Distraction	Relaxation
Drugs/Alcohol	Breathing
Physical Exercise	

COGNITIVE RESTRUCTURING

-Two types of thinking errors common to high AS individuals:

- a) Overestimation errors
- b) Catastrophizing errors



MODIFY YOUR SELF-STATEMENTS: WHAT ARE THE CHANCES?

Thoughts	Examine the Evidence
I could faint the next time I panic.	What are the chances of fainting? What is the probability on a 0- to 100-point scale? How many times have I actually fainted in the past?
I could have a car accident when I feel dizzy.	How many times have I felt dizzy when driving? How many times have I had a car accident when feeling dizzy?
If I'm left alone, I'll really lose it and go crazy.	What has happened to me in the past when I've been left alone? Have I ever tested out my prediction to see what would happen if I were alone? I might feel anxious, but what evidence do I have that I would go crazy?

The pains in my chest must mean that I'm having a heart attack.

What's the evidence against this possibility?
What were the results from my last medical checkup?

How many times have I felt pain in my chest?

Have I ever had a heart attack?

How likely is it for a person of my age and sex to have a heart attack?

(Conrod 2000; Conrod et al. 2000)

Now you try challenging your own overestimation errors:

Thoughts	Examine the Evidence

MODIFY YOUR SELF-STATEMENTS: WHAT IF? SO WHAT?

CATASTROPHIZING ERRORS What If?	DE-CATASTROPHIZING So What?
What if I did faint in front of a lot of people? That would be terrible!	If I fainted, there would be a reason and my body would use fainting to reestablish balance. The people around me wouldn't know what was going on. They'd try to help. What if they did think I fainted because I was nervous? So what? I'd still survive.
What if I shook terribly when talking to other people? What if they thought I was crazy?	Do I know these people? If they were strangers, would it matter what they thought? If they were friends, no matter what they thought at that time, we would still be friends. In any case, embarrassment isn't fatal.

What if I were trapped in the elevator for an hour and panicked the whole time? I couldn't cope!

Yes, I might feel anxious for the whole time, but what else could happen? So what if I were anxious? It wouldn't last forever.

My whole life is terrible. I can't go on. One day I'll just collapse and that will be the end.

Let's say I did reach a point of physical and mental exhaustion, and collapsed, meaning that I'd become withdrawn and immobile. After a period of recovery, I'd be back up again. I'd survive.

(Conrod 2000; Conrod et al. 2000)

Now you try challenging your own catastrophizing errors:

CATASTROPHIZING ERRORS What If?	DE-CATASTROPHIZING So What?

WHAT ELSE CAN I THINK?

Now, let's try putting it all together. What if your heart starts racing and you begin to think you are having a heart attack? As you've learned, if you continue to think that way, your anxiety will increase and could lead to a panic attack. What are the chances that you are having a panic attack versus a heart attack? What could you say to yourself to reduce your anxiety? What if you said to yourself, "It's unlikely that I'm having a heart attack. This is probably anxiety, and the best thing I can do for myself right now is to breathe and try to relax. I shouldn't fight my body but should work with it. I can just ride it through."

INTEROCEPTIVE EXPOSURE

- **High AS people tend to avoid or escape from feared arousal sensations**
- Avoiding activities/states associated with arousal (e.g., avoidance of caffeine, sexual activity, exercise; e.g., Sabourin et al., 2011)

- **Exposure is a key principle in treatment of anxiety**
- Interoceptive exposure refers to exposure to internal arousal sensations such as rapid heart rate, dizziness, sweating to allow for fear extinction
- Drawn from treatment for panic disorder (Barlow & Craske's {2007) Mastery of your Anxiety and Panic)

Interoceptive Exercise	Symptoms Most Strongly Elicited
<p>Head shaking</p> <p>✦ Shake head from side to side for thirty seconds.</p>	<ol style="list-style-type: none"> 1. Dizziness or faintness 2. Pounding or racing heart 3. Breathlessness or smothering sensations
<p>Spinning</p> <p>✦ Spin around while standing for one minute, or spin in an office chair.</p>	<ol style="list-style-type: none"> 1. Dizziness or faintness 2. Pounding or racing heart 3. Breathlessness or smothering sensations
<p>Hyperventilating</p> <p>✦ Breathe deeply and quickly for one minute at a pace of about one breath every two seconds, as if blowing up a balloon.</p>	<ol style="list-style-type: none"> 1. Breathlessness or smothering sensations 2. Dizziness, faintness, feelings of detachment or unreality 3. Pounding or racing heart

Straw breathing

- ◆ Breathe through a narrow drinking straw for two minutes. Combine with running on the spot or stair climbing to evoke more intense sensations.

1. Breathlessness or smothering sensations
2. Pounding or racing heart
3. Choking

Running in place

- ◆ Run in place for two minutes. Lift your knees as high as you can to enhance the effect.

1. Pounding or racing heart
2. Breathlessness or smothering sensations
3. Chest pain or tightness

Tongue depressor

- ◆ Place a tongue depressor at back of tongue for thirty seconds.

1. Choking
2. Breathlessness or smothering sensations
3. Nausea or abdominal distress

USE INTEROCEPTIVE EXERCISES TO INDUCE AND RATE YOUR SYMPTOMS

Following are instructions for how to proceed with interoceptive exposure (IE) and symptom assessment. These instructions have been derived from various sources, including Antony and colleagues (2006), Wald (forthcoming), Lickel and colleagues (forthcoming), and Barlow and Craske (2007).

1. Begin with the exercise that seems most appropriate for bringing on your particular set of feared anxiety symptoms. For example, if you're particularly bothered by sensations of breathlessness or smothering, then you might want to start with hyperventilation or breathing through a straw.
2. After completing each exercise, fill in the following table. In the first column, write down the name of the exercise you did, and then in the second column, write down all the sensations you experienced. Using a scale of 0 to 10, with 0 meaning no anxiety and 10 meaning extreme anxiety, rate your peak level of anxiety while performing the exercise, and write the number in the third column. Using a scale of 0 to 10, with 0 meaning no similarity to real-life panic and 10 meaning exactly the same as real-life panic, rate how similar the induced sensations were to those you typically feel when anxious, and write the number in the last column.

Exercise	Sensations Experienced	Peak Level of Anxiety 0 (none) to 10 (extreme)	Degree of Similarity 0 (none) to 10 (exactly)

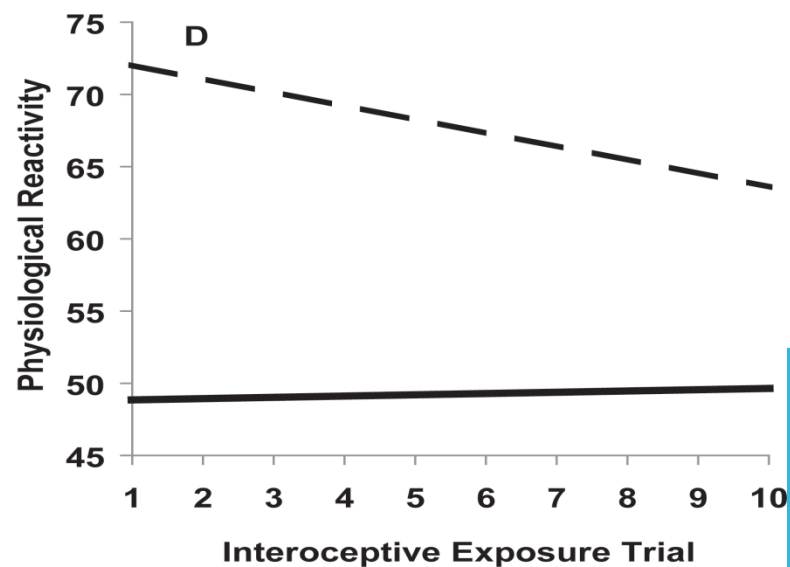
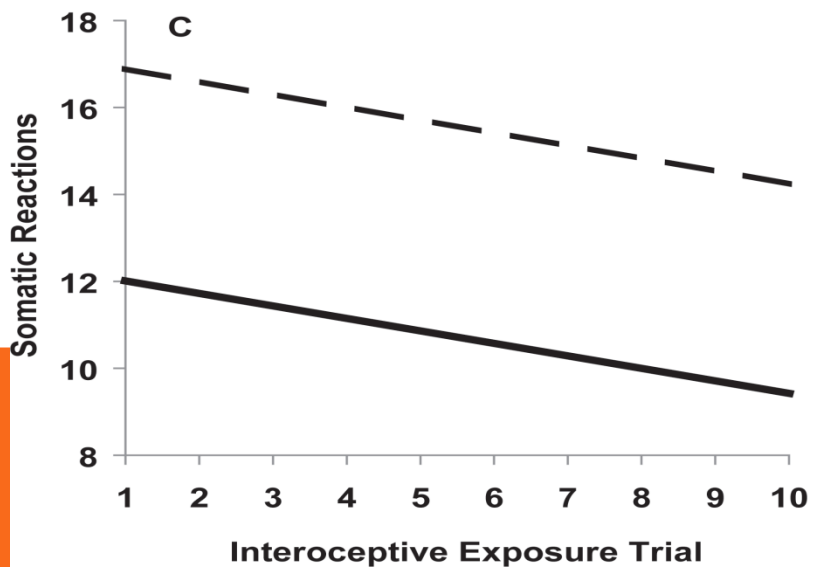
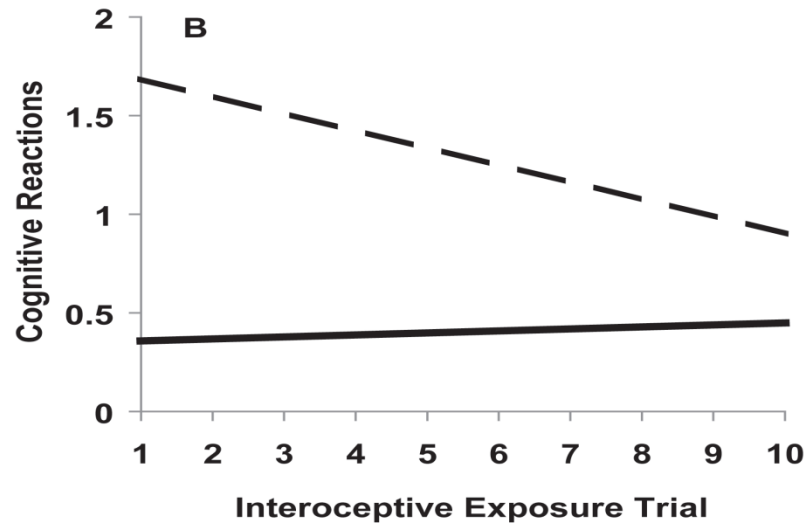
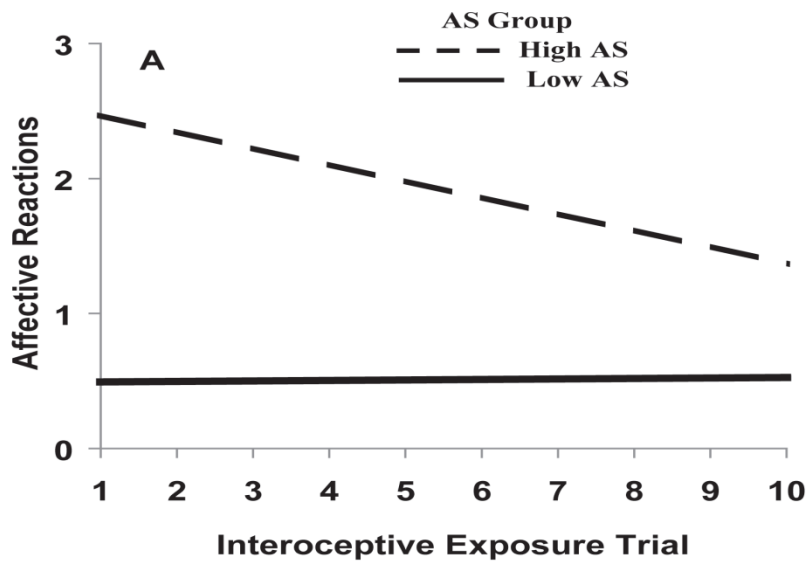
3. Review your ratings of anxiety for those exercises with some similarity to your real-life anxiety. Now, create your own exposure hierarchy (see the next table) by listing the exercises in order of least anxiety provoking to most anxiety provoking. To learn that the physical sensations associated with anxiety are not harmful and that you can manage these sensations effectively, you need to practice these exercises beginning with the least fearful (easiest to tolerate) IE exercise and progressing to the most fearful.
4. Jaye Wald (forthcoming) advises that before you do each exercise, identify a specific catastrophic belief about the potential negative consequences of the feared sensations associated with the exercise, as well as an alternative non-catastrophic prediction about the outcome. Rate the strength of both beliefs (on a scale from 0 to 100%).

Exposure Hierarchy	Anticipated Sensations	Catastrophic Belief 0 to 100%	Non-Catastrophic Belief 0 to 100%

- After each exercise, record the peak anxiety you experienced during the exercise and the strength of your two predictions, catastrophic (maladaptive) and non-catastrophic (adaptive). Repeat each exercise until your peak anxiety rating shows at least a 50 percent reduction from pre-exercise levels. This reduction should be maintained over three consecutive trials. Once this is achieved, you can proceed to the next exercise on the hierarchy.

Note: The main goal in doing exposure exercises is to learn new ways to respond to your own physiological sensations. To achieve this goal, it's important that you not try to escape or avoid the induced sensations (by distracting yourself or taking fewer and more shallow breaths during hyperventilation) while performing each exercise. Such avoidance strategies will diminish your chances of success in learning to confront feared bodily sensations.

In our own research, we employ running as an interoceptive exposure technique for helping anxiety-sensitive people. To begin, we have high-AS participants engage in a running exercise for ten minutes in a gymnasium. Running triggers some of the same physical sensations we experience when anxious, such as a pounding heart, breathlessness, and sweating. Moreover, running is considered by some to be a more real-to-life interoceptive exposure exercise than activities such as chair spinning



RELEVANCE FOR SMOKING CESSATION

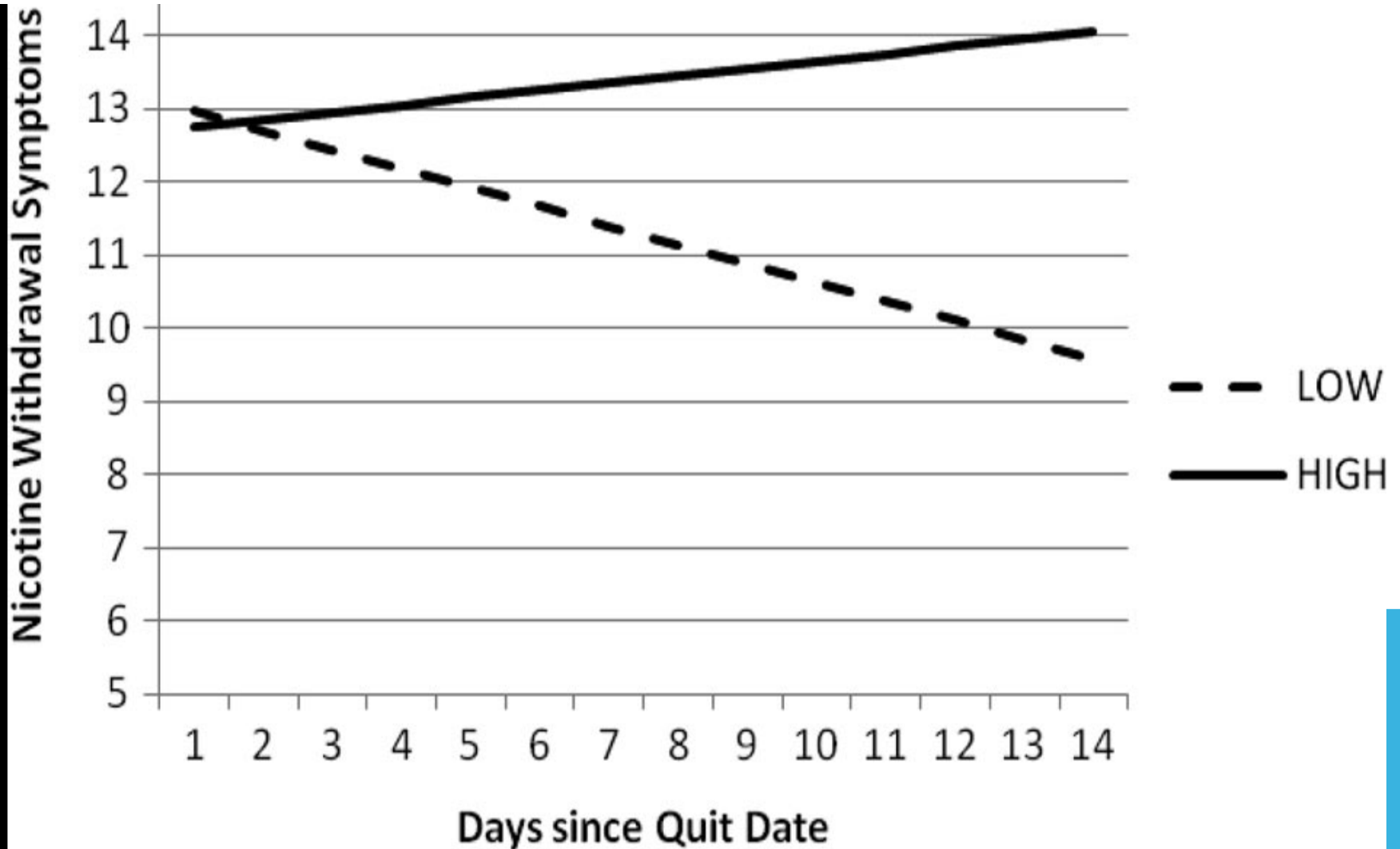
AS related to many aspects of tobacco use (Zvolensky, Schmidt, & Stewart, 2003):

- Smoking motives (e.g., Battista et al., 2008)
- Outcome expectancies (e.g., Zvolensky et al., 2004)
- Perceived barriers to quitting (Zvolensky et al., 2007)

AS related to problems quitting:

- AS associated with increased rate of smoking lapse during first week of quit attempt (Brown et al., 2001)
- AS associated with increased rates of smoking lapse at days 1, 7, and 14 of quit attempt after controlling effects of anxiety, depression, and nicotine dependence (Zvolensky et al., 2009)
- In prospective study, AS related to increased relapse by one month post-cessation (Mullane et al., 2008)
- AS smokers' longest lifetime quit attempt is only 1 week (Zvolensky et al., 2006)

NICOTINE WITHDRAWAL SX – GROWTH CURVES OVER FIRST TWO WEEKS OF CESSATION IN HIGH & LOW AS SMOKERS (JOHNSON ET AL., 2012)



ADAPTATION OF AS INTERVENTION FOR SMOKING CESSATION

Dr. Michael Zvolensky and colleagues (University of Houston) have developed an AS targeted intervention designed to simultaneously reduce risk for anxiety/panic psychopathology and assist smokers in smoking cessation (Zvolensky et al., 2008 book chapter)

Components:

- a) Psychoeducation
- b) Cognitive Behavioral Therapy (cognitive restructuring, distress tolerance, interoceptive exposure)
- c) Relapse Prevention for Smoking

Crucial Element: graded exposure to planned nicotine withdrawal prior to cessation date as a part of interoceptive exposure plan

Evidence –Base: Case series (e.g., Zvolensky et al., 2008)

Promising but RCT required.

QUESTIONS/DISCUSSION

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