



Mindfulness-Based Interventions for Physical Conditions

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Division of Psychosocial
Oncology

Helping You Live Well With Cancer



Outline

- What is mindfulness?
- MBIs
- MBCR
 - Description
 - Research
- Other Health Conditions
- Curriculum
- Instructor Training

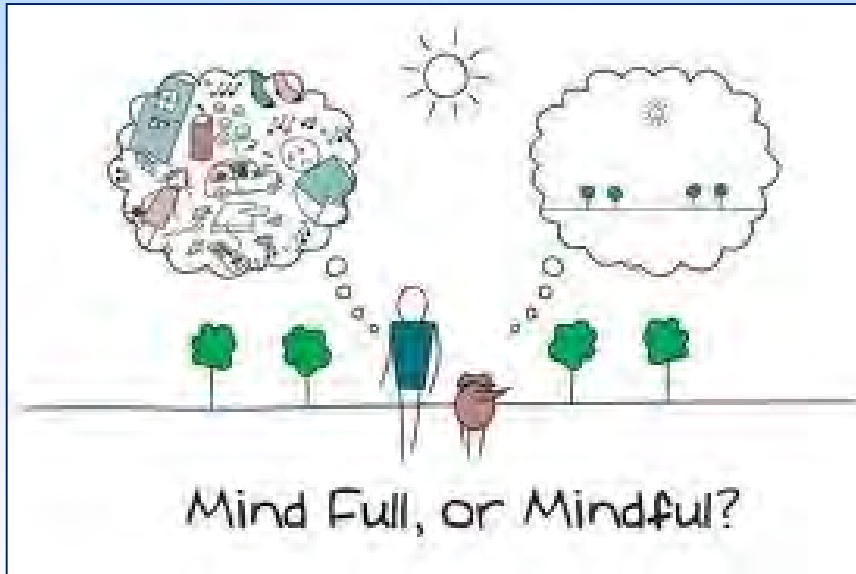


What is Mindfulness?



What is Mindfulness?

- Paying attention on purpose in the present moment with an open and accepting attitude
- A way of BEING in the world
- A PRACTICE



What is your mind doing instead?

- 50,00-70,000 thoughts per day!
- 46.9% are NOT in the present moment (mind wandering)



- Happier when in the present moment





now

tomorrow

yesterday

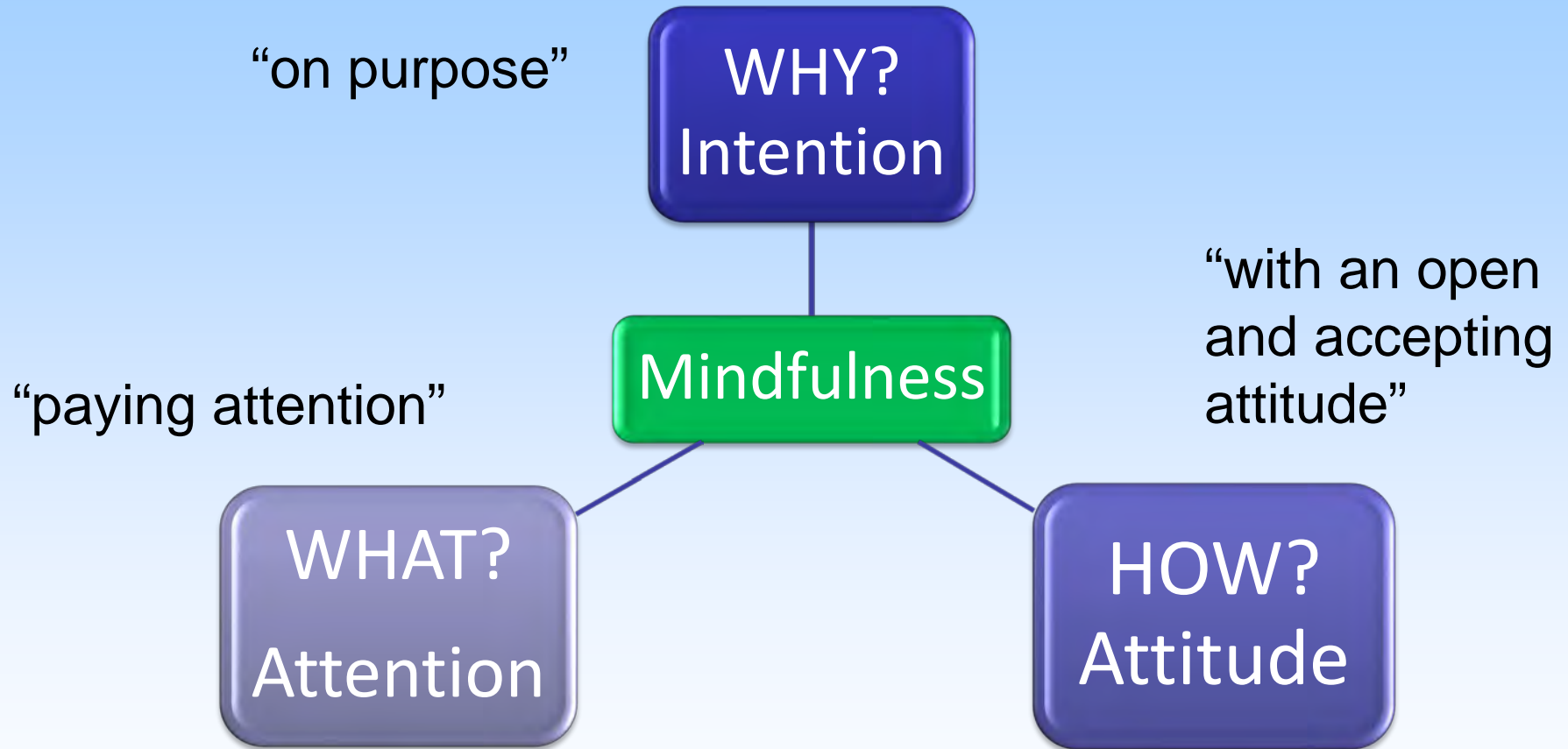
Mindfulness

*I went to the woods because I wished to live deliberately,
To front only the essential facts of life.
And see if I could not learn
What it had to teach,
And not, when I came to die,
Discover that I had not lived*

- Thoreau -



Components of Mindfulness



Shapiro & Carlson, 2009; 2016



Mindful Attitudes

- Non-judging
- Patience
- Acceptance
- Letting go
- Non-striving
- Trust
- Beginners Mind



OR - you can be a
judgmental,
impatient, rejecting,
grasping, striving,
suspicious know-it
all!



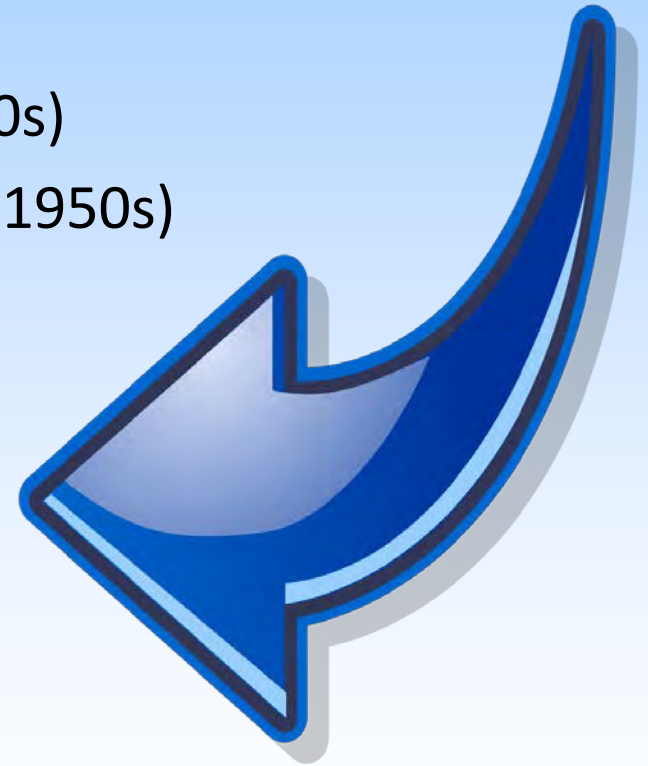
What mindfulness is *NOT*

- Not relaxation
 - Not hypnosis
 - Not prayer
 - Not religious
-
- Not clearing your mind of all thoughts
 - Not always peaceful/calm



Where does mindfulness “fit”?

- Development of psychological therapies:
- Psychodynamic (Freud; Jung: 1800s)
- Behavioral (Skinner; Pavlov: early 1900s)
- Cognitive-Behavioral (CBT; Beck; Ellis: 1950s)
- Humanistic (Rogers: 1960s)
- “Third-Wave” therapies:
 - Acceptance-based therapies
 - Mindfulness-based therapies
 - MBIs



Why Mindfulness?

The only certainty in life is change

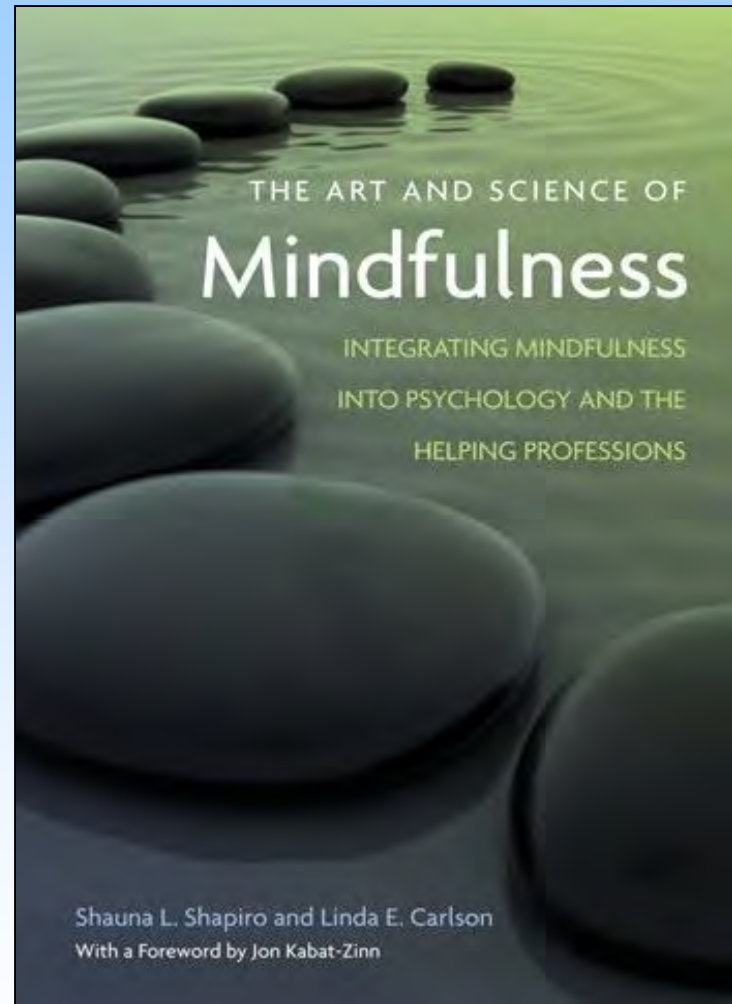
The unwillingness to acknowledge and act upon this reality is the root cause of all suffering

Mindfulness is one process by which we face and accept this inevitability



Book: The Art and Science of Mindfulness

- Shapiro and Carlson 2009
- Clinician training manual
- Includes chapters on theories of mindfulness, the mindful therapist, mindfulness-based therapies and mindfulness-influenced therapy



The Guest-House



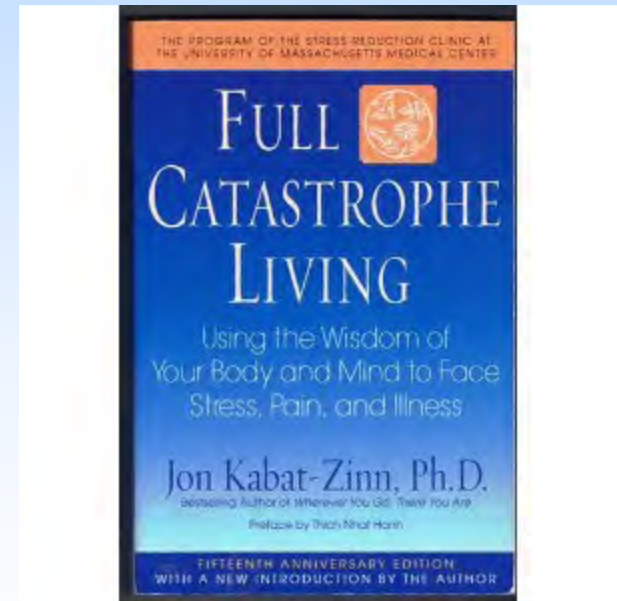
*This being human is a guesthouse
Every morning a new arrival.
A joy, a depression, a meanness,
Some momentary awareness comes
As an unexpected visitor.
Welcome and entertain them all!
Even if they're a crowd of sorrows,
Who violently sweep your house
Empty of its furniture.
Still, treat each guest honourably.
They may be clearing you out
For some new delight.
The dark thought, the shame, the malice,
Meet them at the door laughing,
And invite them in.
Be grateful for whoever comes,
Because each has been sent
As a guide from beyond.
- Rumi -*



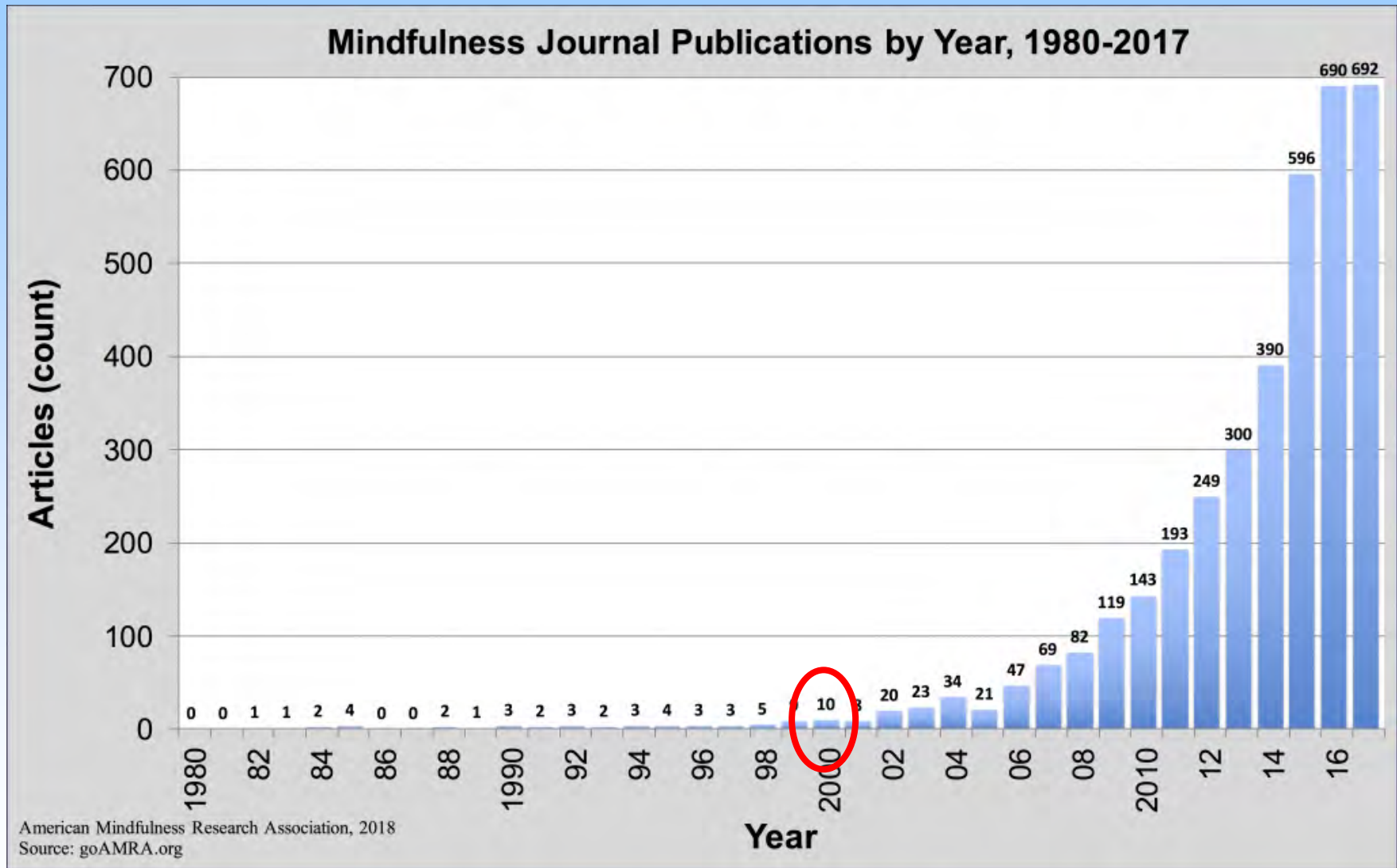


Mindfulness-Based Stress Reduction

- Program developed in late 1970's by Jon Kabat-Zinn and colleagues at the UMass Med Centre, Worcester
- Combines stress reduction with mindfulness meditation techniques
- MBSR has been shown effective for a wide range of physical and psychological disorders and symptoms: see goamra.org for comprehensive research summaries

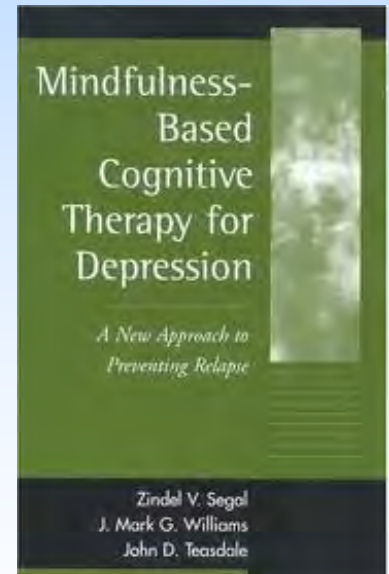


Mindfulness research studies



Mindfulness-Based Cognitive Therapy (MBCT)

- Developed for the treatment of depression relapse
- Zindel Segal, Williams and Teasdale: *MBCT for depression: A new approach to preventing relapse*
- Based on a blend of CBT and MBSR
- Mindfulness helps recovered depressives see more clearly when they are falling into dangerous patterns of thinking
- Become “decentered” from thoughts
- Change ones *relationship* to thoughts

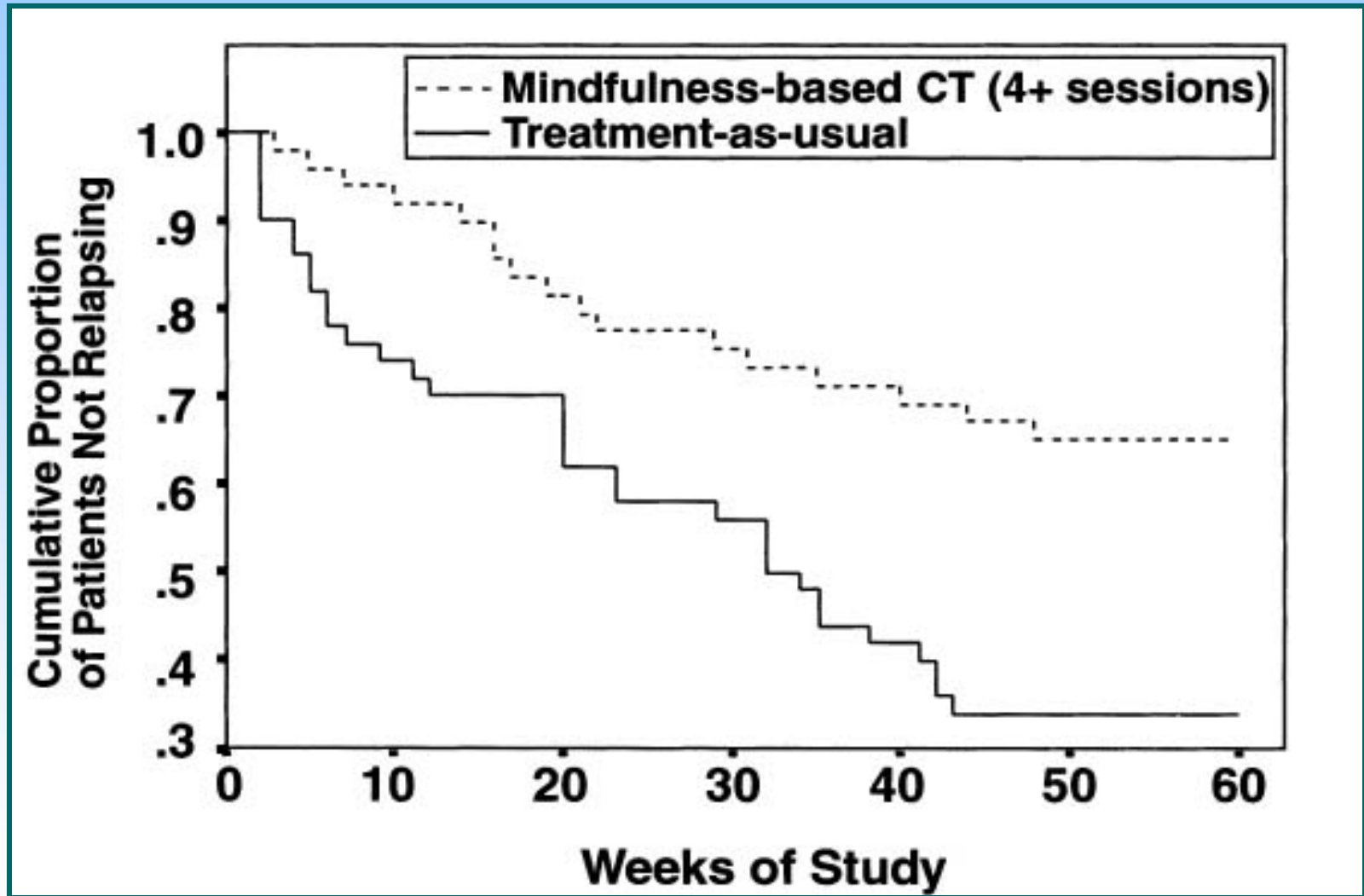


MBCT Research

- Teasdale et al, 2000.
- RCT 145 recovered depressed pts.
- MBCT vs. Treatment as usual (meds, counselling, outpatient support)
- 1-year follow-up for relapse
- Rate of relapse ***halved*** for those with 3 or more previous episodes of depression (77% of sample)



MBCT Depression Relapse



Other MBIs

- Mindfulness-based Relapse Prevention (MBRP)
 - Mindfulness-based Eating Awareness Training (MB-EAT)/
Mindful Eating Conscious Living
 - Mindfulness-based Art Therapy
 - Mindfulness-based Childbirth and Parenting (MBCP)
 - Mindful Self-Compassion (MSC)
 - Mindfulness at Work (MAW)
-
- See UCSD centre for mindfulness for training schedules:
<http://cme.ucsd.edu/mindfulness/index.html>



Mindfulness Research Areas

Mental Health	Physical Health	Outcomes in Healthy Populations
Depression Anxiety PTSD/Trauma Bipolar Disorder Social Phobia Eating Disorders Obesity Personality Disorders Substance Abuse/Smoking cessation Insomnia Psychotic Disorders/Schizophrenia	CVD/Hypertension HIV/AIDS Cancer Hot flashes/menopause Irritable bowel syndrome Solid organ transplant Pain Asthma Diabetes Fibromyalgia Headache/Migraine Multiple Sclerosis Skin Diseases/Psoriasis Stroke Tinnitus Emphysema/COPD	Inflammation/Immune function Attention Stress (Acute/Chronic) Cognition Health status Seniors Health Wound Healing Infectious Diseases/Colds

The Art and Science of Mindfulness, 2nd Ed. Shapiro & Carlson. APA books..(2016)



Mindfulness-Based Cancer Recovery



The cancer experience




The cancer experience

- Life threat/mortality
- Loss of control
- Loss of certainty/predictability/routine
- Grief, fear, anger, depression
- Symptoms: pain, fatigue, sleeplessness
- Fear of recurrence

Attitudes of ACCEPTANCE,
LETTING GO (Non-Attachment),
PATIENCE and NON-STRIVING
can help



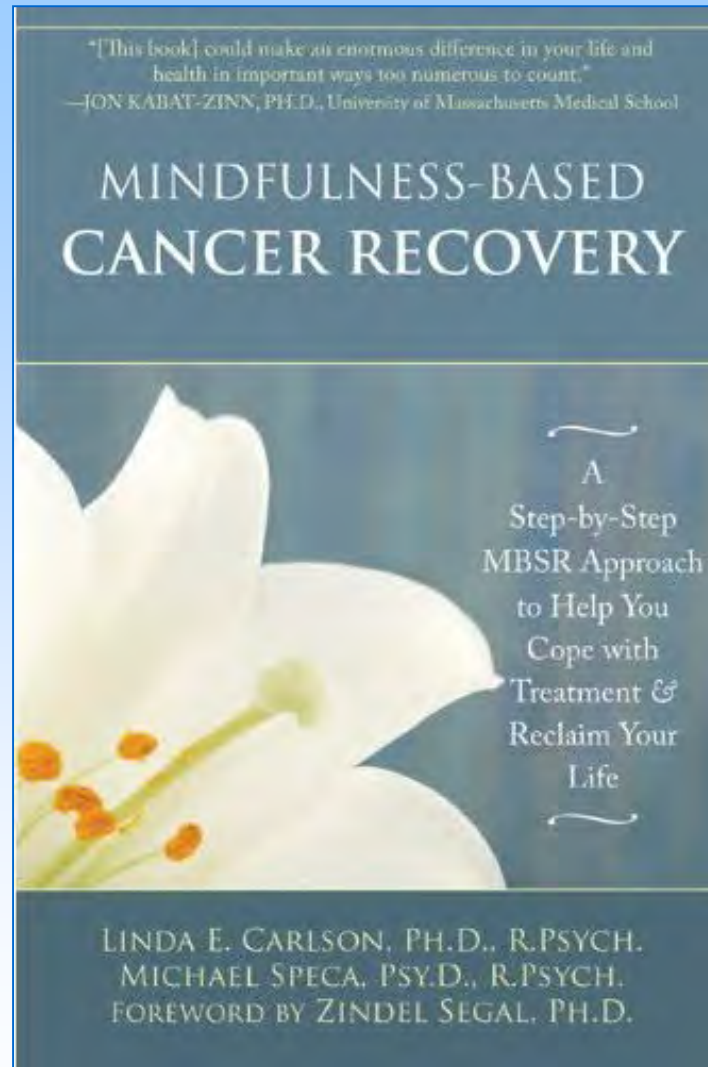
TBCC MBSR Program

- Developed in 1996 by Michael Speca, Maureen Angen and Eileen Goodey
 - Based on personal yoga/meditation practices
 - Refined based on the UMass Model ~ 1998
- 
- Open to cancer patients and family members
 - 2,500 participants
 - Ongoing clinical program with research studies embedded



Book: Mindfulness-Based Cancer Recovery

- Carlson & Speca
- Published Feb 2011
- Patient-centered
- Covers full MBCR curriculum with detailed exercises



Program Design

- 8 (9)-week intervention
 - 1.5hr (1hr45min) weekly meetings with 2 instructors
 - Discussion followed by mindful yoga and meditation (body scan, sitting, walking)
 - Follow booklet which outlines the program/ includes a bibliography
 - Daily meditation practice encouraged and monitored -formal and informal (CD provided)
- Homework log of time spent in meditation
 - 6-hour silent “retreat” between weeks 6 and 7



Program Components

- Mindfulness – overarching theme
- Relaxation – abdominal breathing
- Gentle yoga
- Mind-body connection
- Visualization/Imagery
- Cognitive Coping Strategies
- Personal Empowerment
- Social Support



Research Results

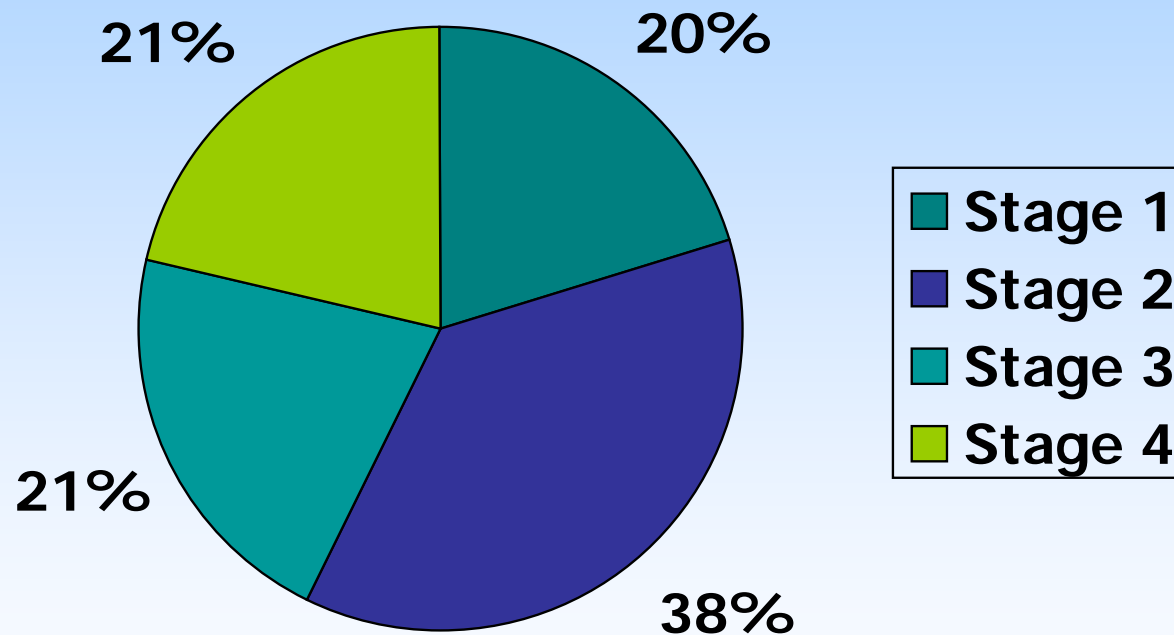


TBCC program research

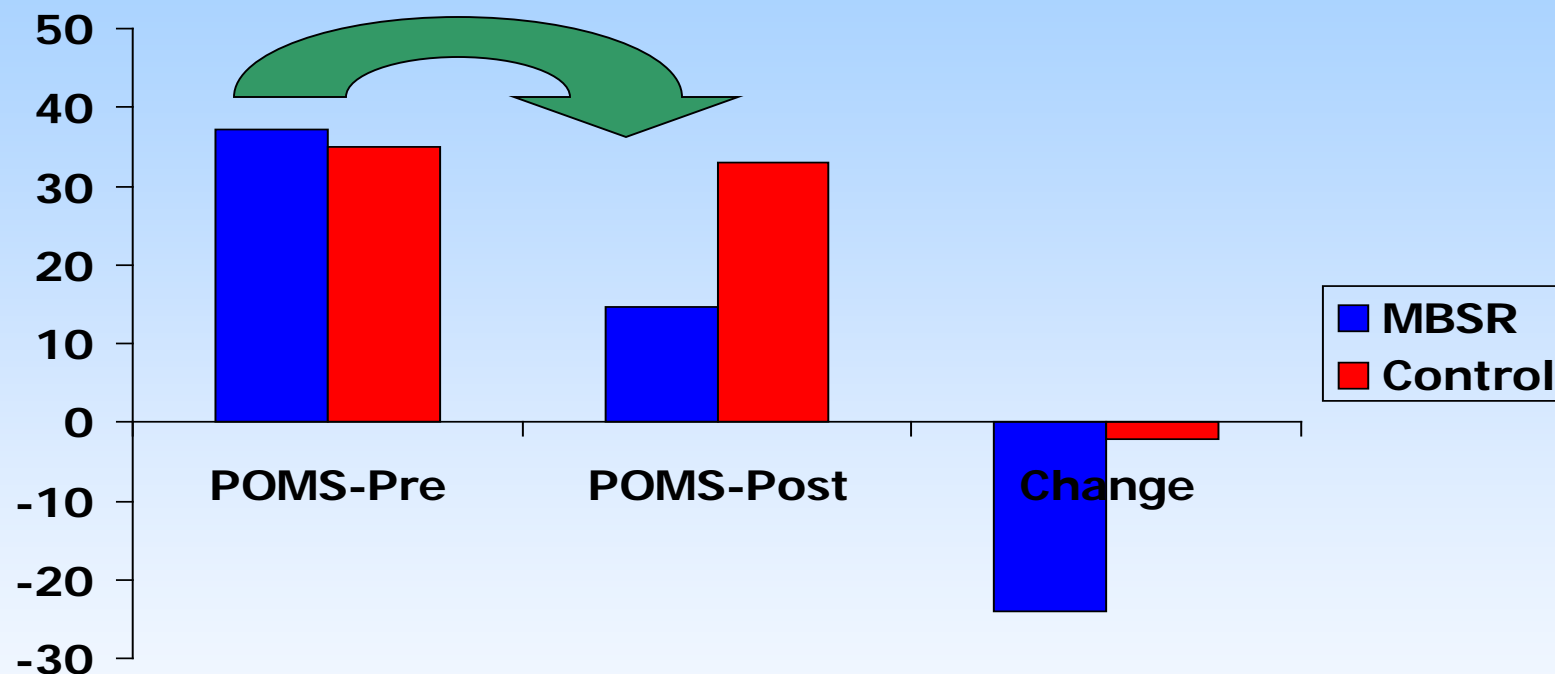
- Study 1 – Randomized controlled trial:
 - 89 patients with mixed cancer diagnoses
 - On or off treatment
 - MBSR or wait-list
- Improved symptoms of stress and less mood disturbance (Specia 2000)
- Maintenance of these improvements over 6-months (Carlson 2001)



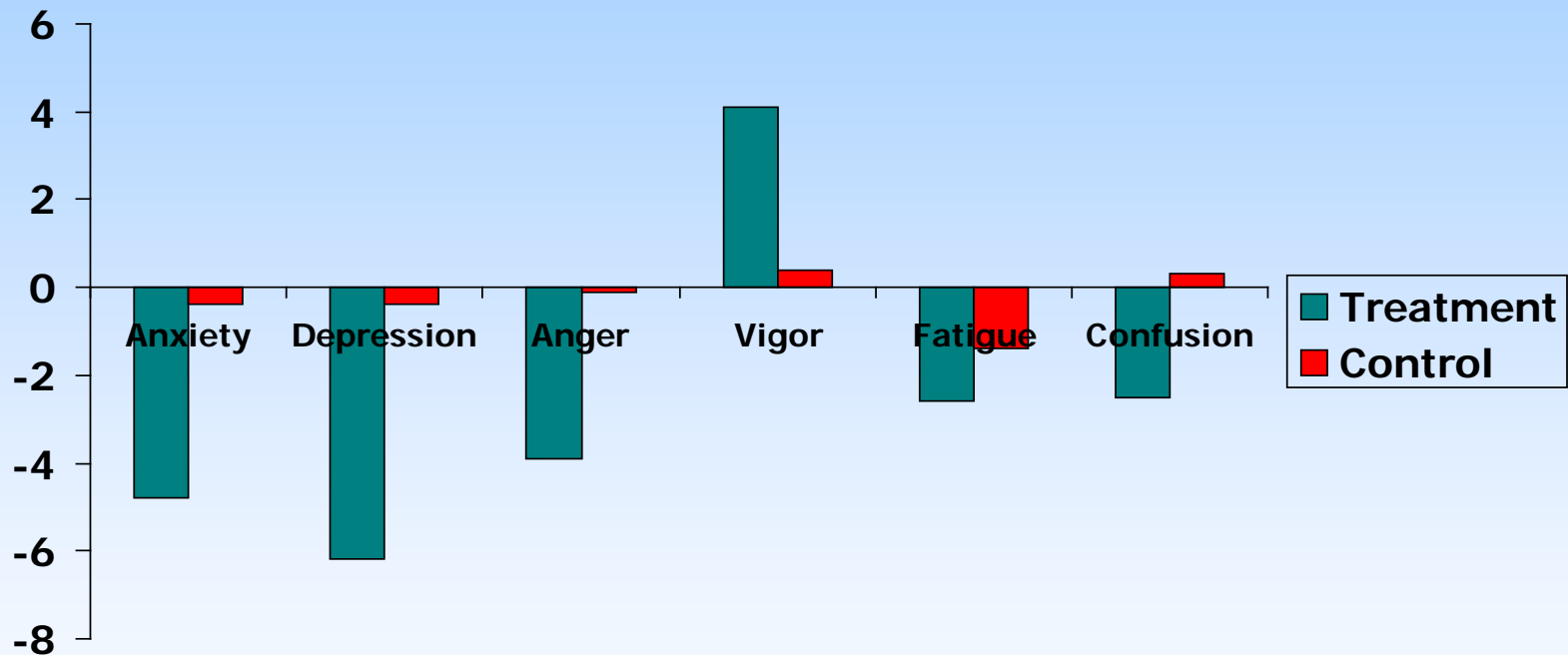
Stage of Cancer - Both Groups



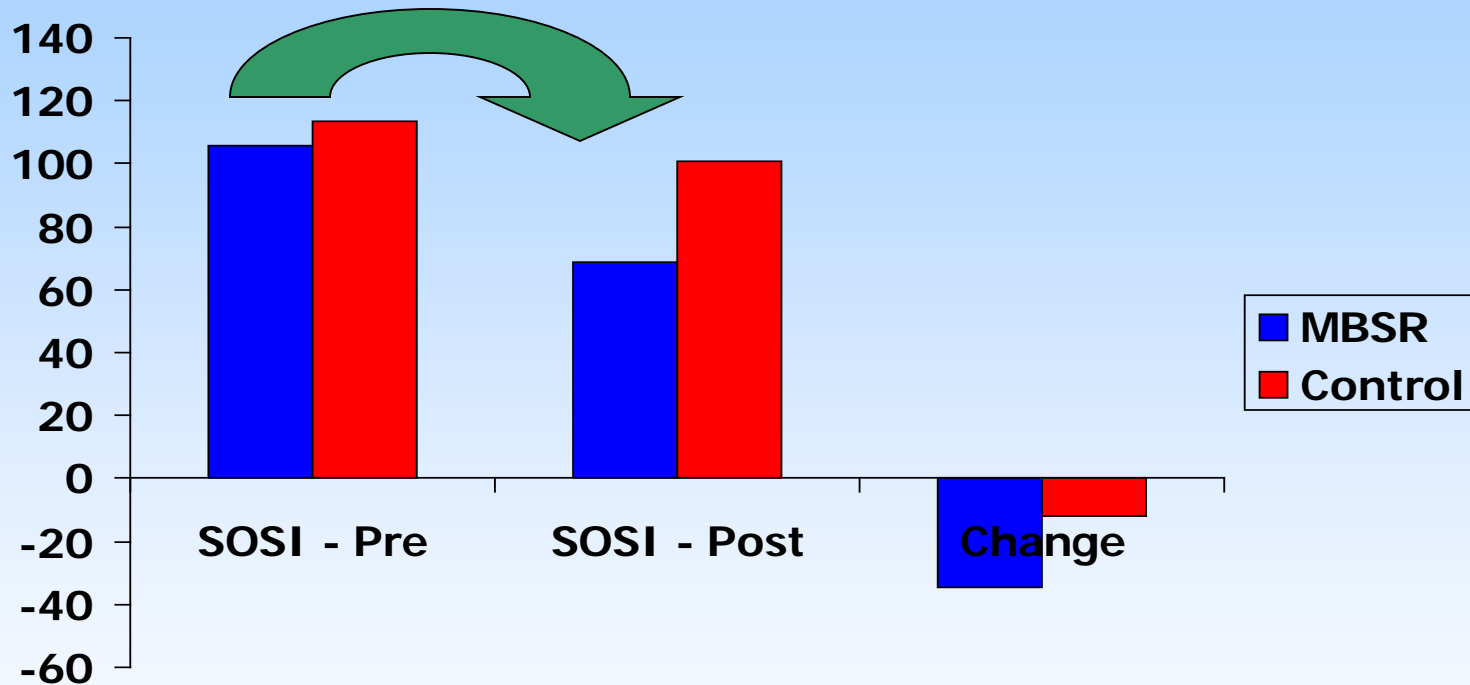
Profile of Mood States - Total Mood Disturbance



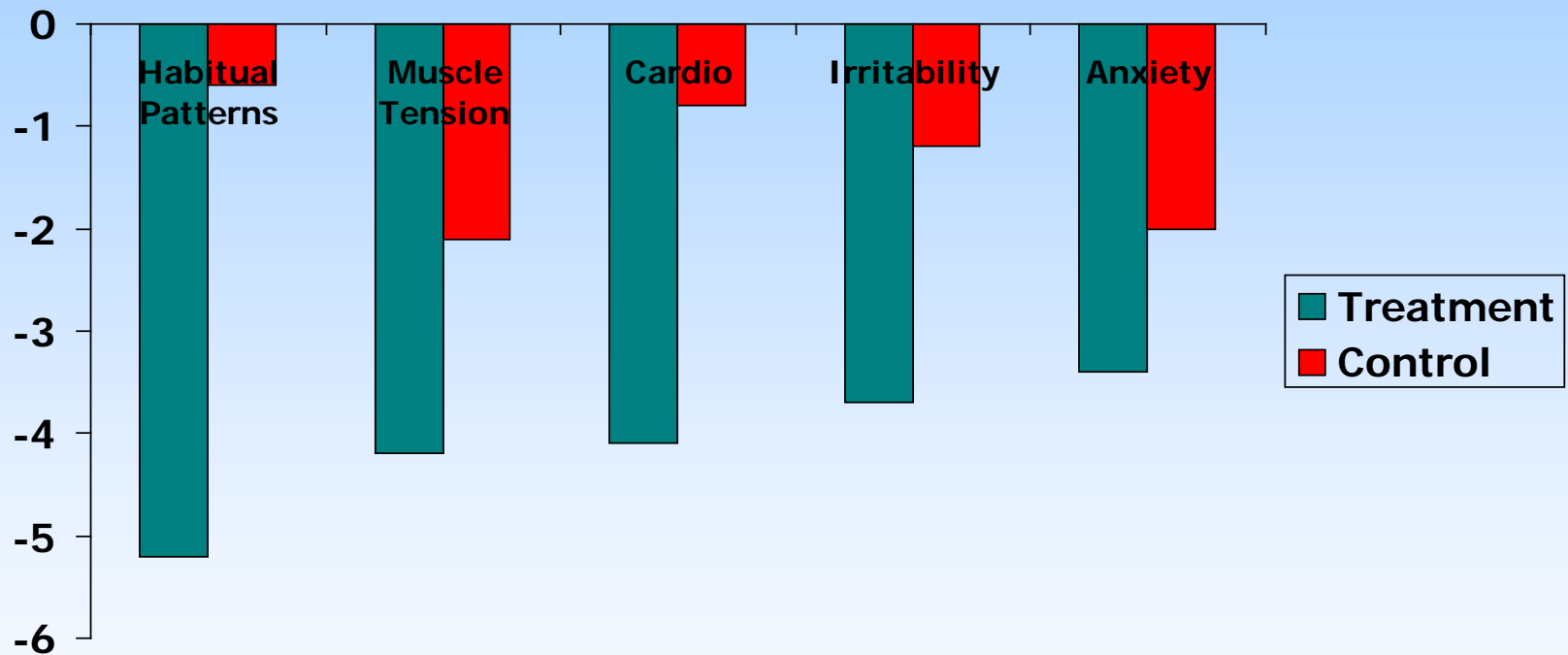
POMS Subscale Change scores



Symptoms of Stress Inventory Total Symptom Score



SOSI Subscale Change Scores



MBCR Research results...

- Improved **symptomatology**

- Stress symptoms
- Mood, anger, anxiety, depression
- Sleep, fatigue
- Rumination, worry
- Similar improvements in partners

- Improved **psychological well-being**

- Quality of life
- Spirituality
- Post-traumatic growth
- Overall mindfulness

-Over 40 publications;
see www.lindacarlson.ca



- Improved **biological functions**

- Decreases in systolic blood pressure
- Normalized cortisol rhythms
- Less inflammation
- Maintains Telomere Length



Randomized Controlled Trials

- Completed
 1. MINDSET
 2. I CAN-Sleep
 3. eCALM
- Ongoing
 1. MATCH
 2. One-MIND
 3. SEAMLESS



MINDSET Study



Innovations in MINDSET

- Included only distressed participants
- Comparative effectiveness of two empirically supported treatments
- Included 3rd control arm → re-randomized
- Psychological and biological outcomes
- Powered for moderator analyses
- Followed up for a full year
- Largest study of its kind (multisite)



Supportive-Expressive Group Therapy (SET)

- Developed by Spiegel and Yalom – 1970s
- Principles of emotional expression and engendering mutual support. Topics discussed include:
 - enhancing openness and emotional expressiveness
 - integrating a changed self and body image into the view of self,
 - improving coping skills and doctor-patient relationships
 - detoxifying feelings around death and dying.



MINDSET Research Questions

- 1) What are the ***comparative changes*** pre- to post-intervention among the three groups on the primary **psychological** outcome variables?
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- 3) What ***baseline factors*** are related to improvements on primary outcomes for participants in each of the two interventions?
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Baseline Measures

- Distress thermometer (DT)
- Demographics
- Disease Characteristics
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 - Personality:
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 - Patient Preferences



Psychological Outcome Measures

- Mood
 - Profile of Mood States (POMS)
- Stress
 - Calgary Symptoms of Stress Inventory (C-SOSI)
- Quality of Life
 - Functional Assessment of Cancer Treatment – breast (FACT-B)
- Spirituality
 - Functional Assessment of Chronic Illness Therapy – Spirituality (FACIT-Sp)
- Social Support
 - Medical outcomes survey social support scale (MOS-SSS)
- Benefit-finding
 - Post-traumatic growth inventory (PTGI)



Biological outcome measures

- Salivary cortisol slopes
 - 3 days of collection, 4 times/day
- Telomere Length
 - T/S ratio
- Cytokines
 - Multiplex assays

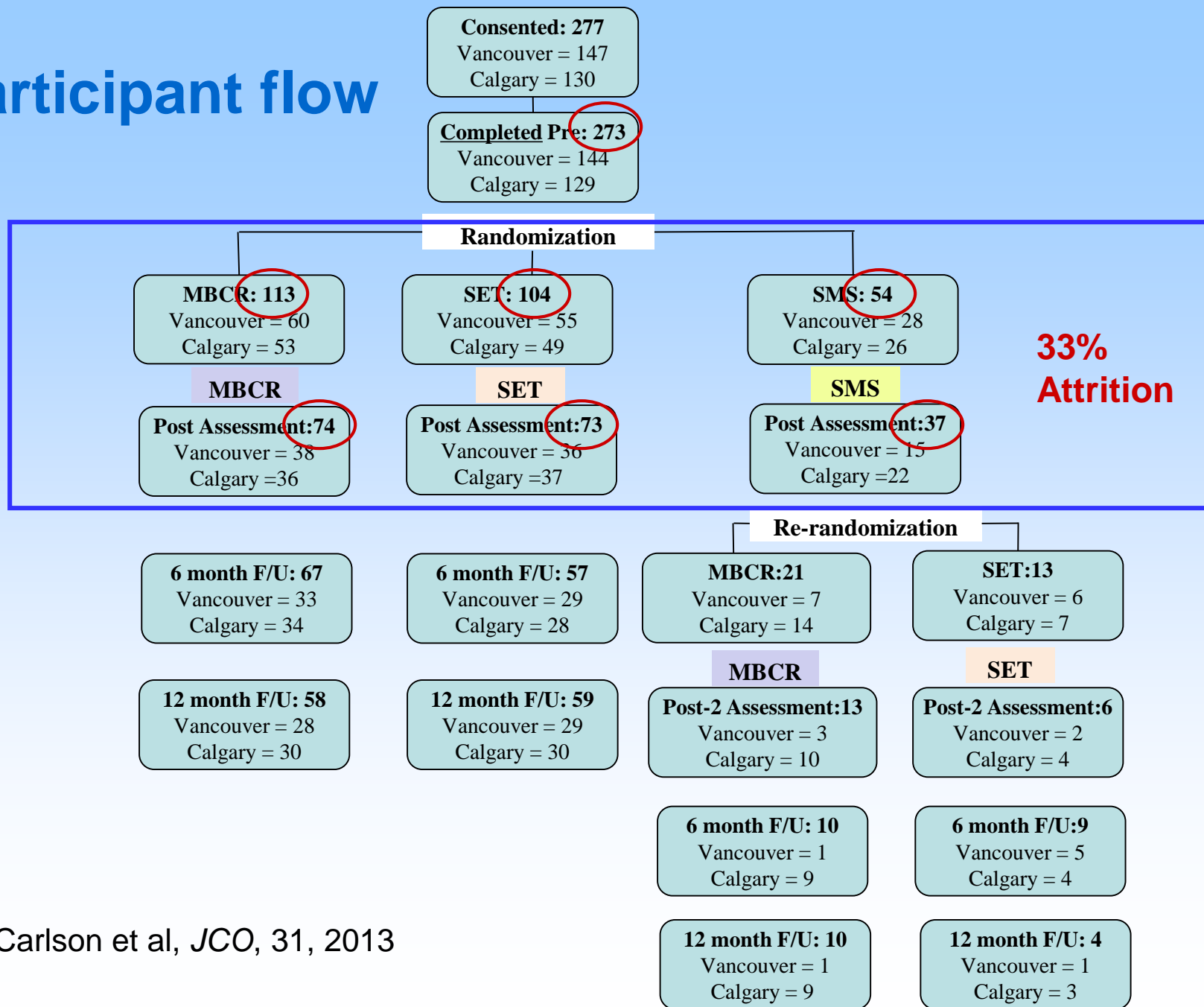


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Participant flow



Results - Demographics

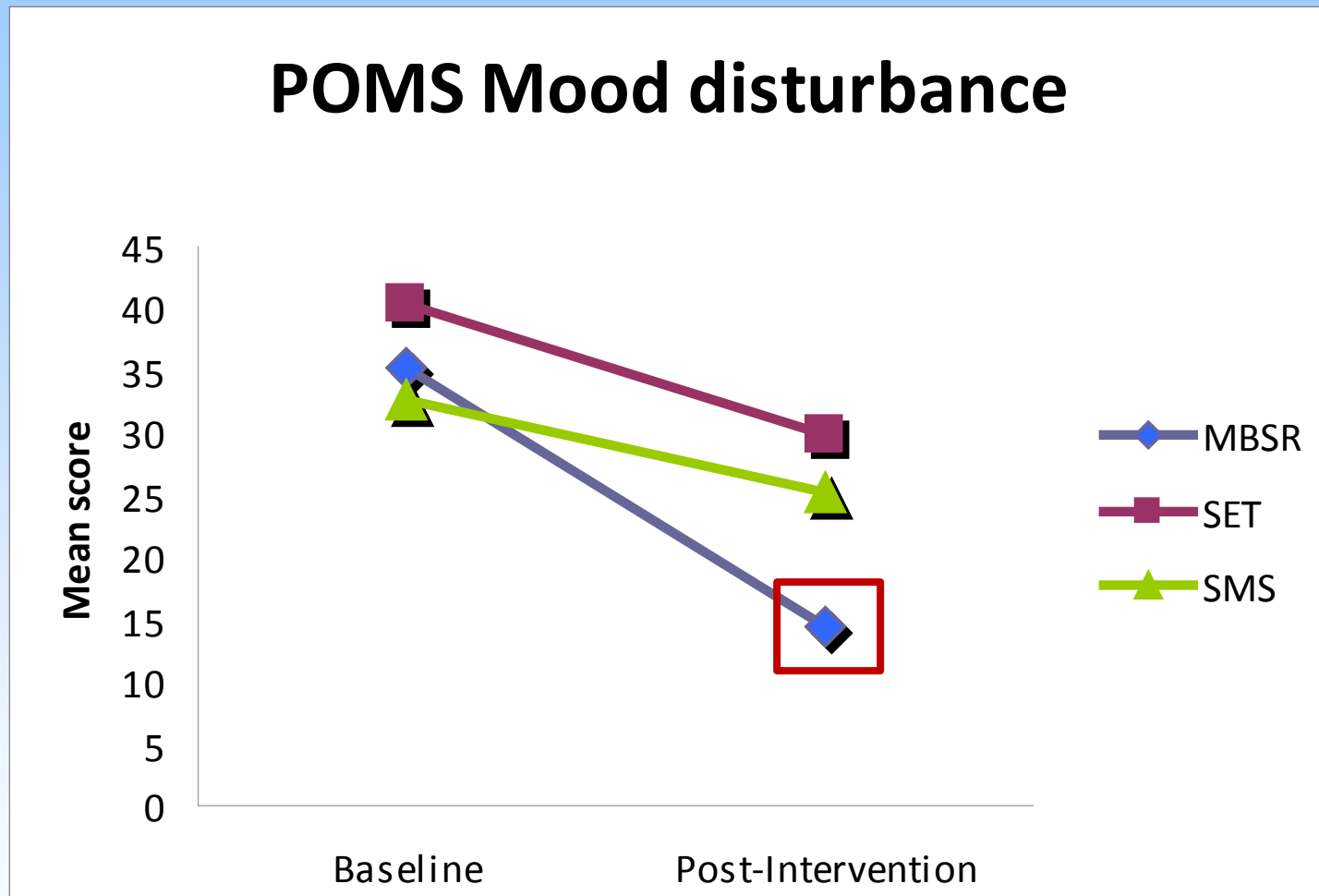
N=249/272		Conditions		
		SET (N=93)	MBSR (N=106)	Control (N=50)
Age <i>M</i> (SD)		53.78 (9.66)	54.27 (9.52)	55.75 (10.60)
Months since diagnosis <i>M</i> (SD)		28.32 (38.10)	26.56 (25.08)	22.96 (15.06)
Marital status <i>N</i> (%)				
	Single	15 (16.1%)	18 (17.0%)	6 (12.0%)
	Cohabiting/ Married	63 (67.7%)	64 (60.4%)	33 (66.0%)
	Divorced/ Widowed /Separated	15 (16.2%)	24 (22.8%)	11 (22.0%)
Employment status <i>N</i> (%)				
	Full-time	30 (32.3%)	43 (40.6%)	19 (38.0%)
	Part-time	23 (24.7%)	25 (23.6%)	8 (16.0%)
	Unemployed	10 (10.8%)	14 (13.2%)	7 (14.0%)
	Retired/ Disability	30 (32.2%)	24 (22.6%)	16 (32.0%)
Highest education <i>N</i> (%)				
	Primary/ Secondary/ High school/ GED	10 (10.8%)	13 (12.3%)	13 (24.0%)
	Some university/ College/ Technical school	45 (48.4%)	49 (46.2%)	22 (44.0%)
	University degree	29 (31.2%)	33 (31.1%)	13 (26.0%)
	Post-graduate/ Masters/ Doctoral degree	9 (9.6%)	11 (10.2%)	3 (6.3%)
Stage of cancer <i>N</i> (%) Total N=227				
	Stage 0	1 (1.1%)	3 (3.3%)	2 (4.2%)
	Stage I	40 (46.0)	39 (42.4%)	21 (43.8%)
	Stage II	31 (35.6%)	40 (43.5%)	16 (33.3%)
	Stage III	13 (14.9%)	9 (9.8%)	9 (18.8%)
	Stage VI	2 (2.3%)	1 (1.1%)	0 (0%)

2 yrs

60%

3/4

Primary outcomes: Intent-to-treat

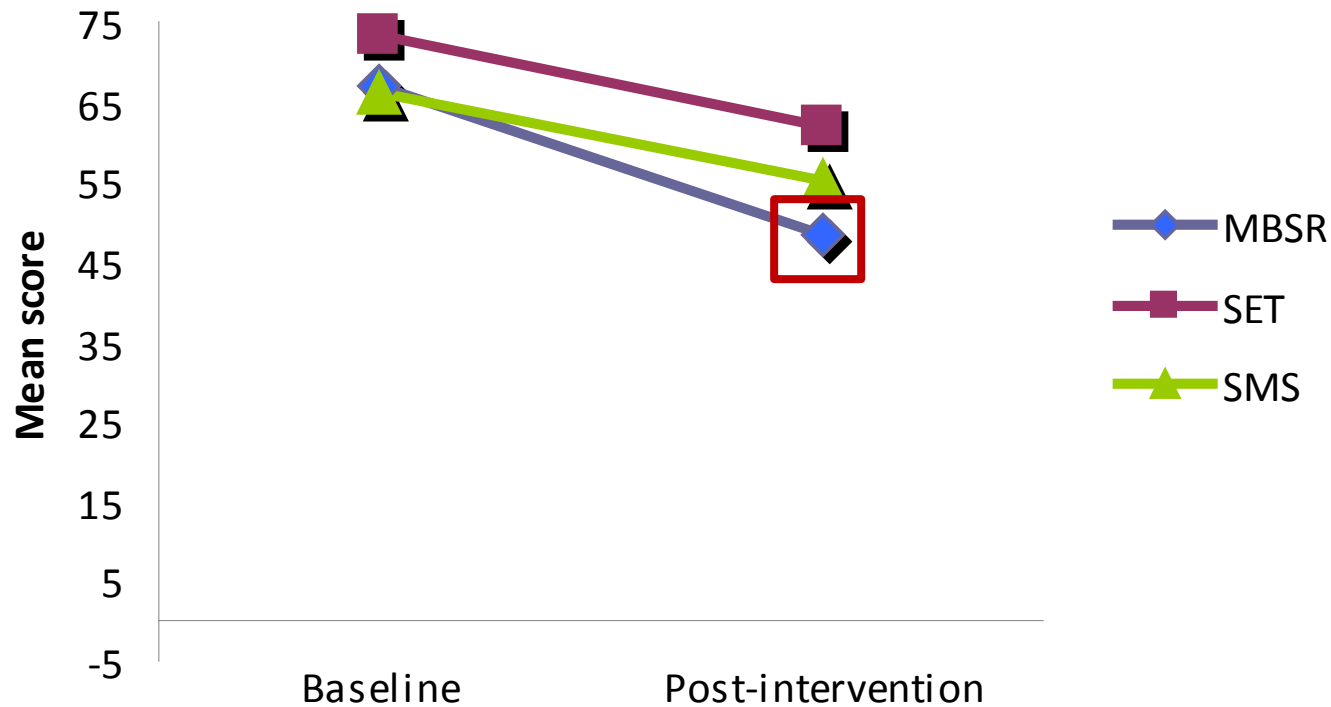


Main effect of Time. Interaction: MBSR > SET and control, $p < .05$



Intent-to-treat

C-SOSI Stress symptoms

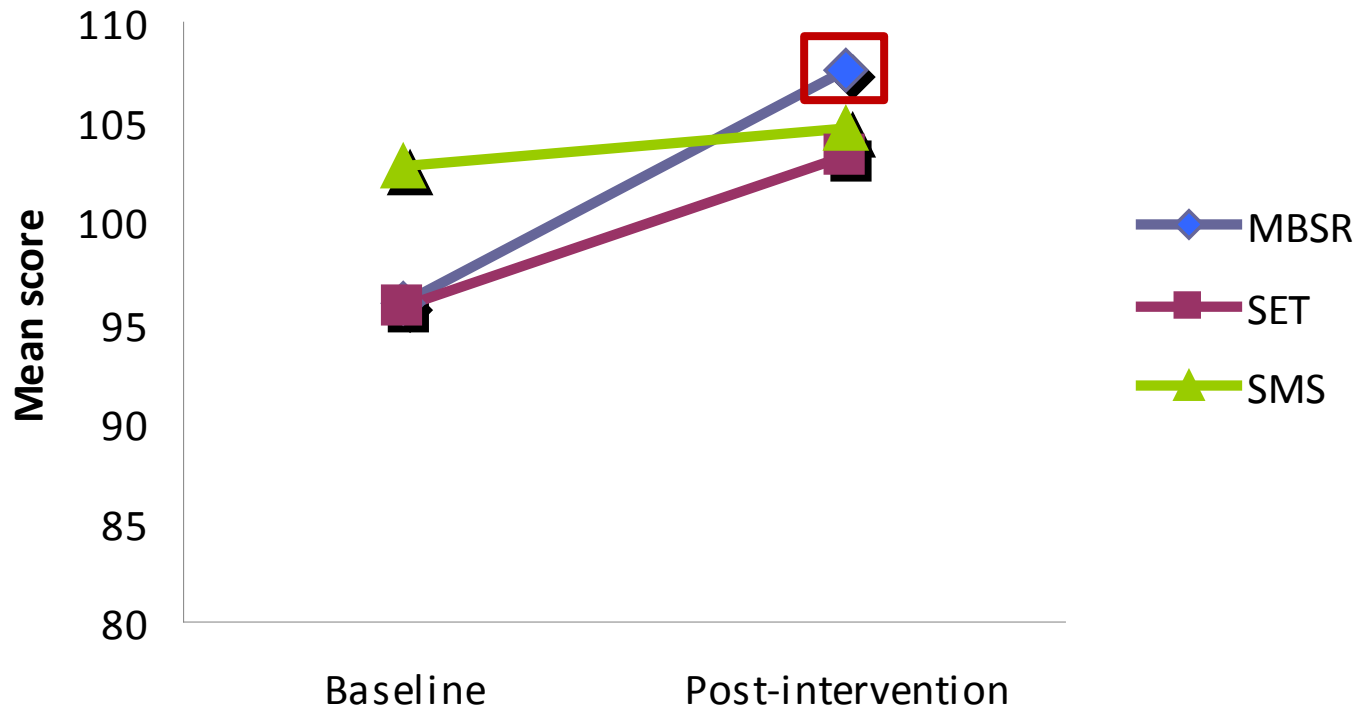


Main effect of time. Significant Interaction: MBSR>SET and control, $p < .05$



Per-Protocol

FACT-B Quality of Life



Main effect of time. Interaction: MBCR>Control, $p < .05$



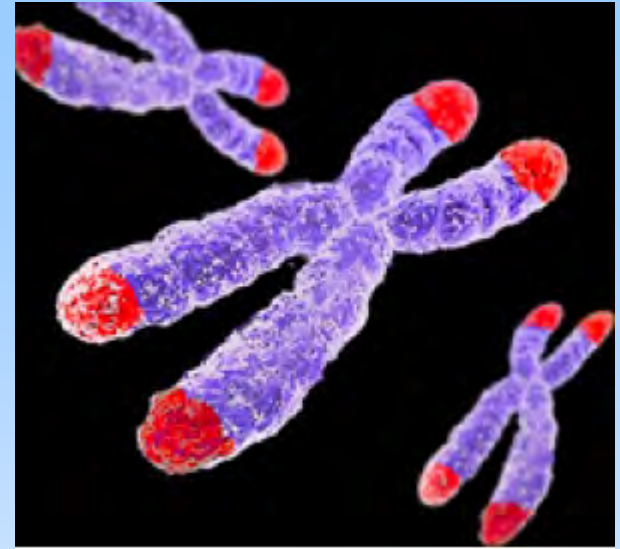
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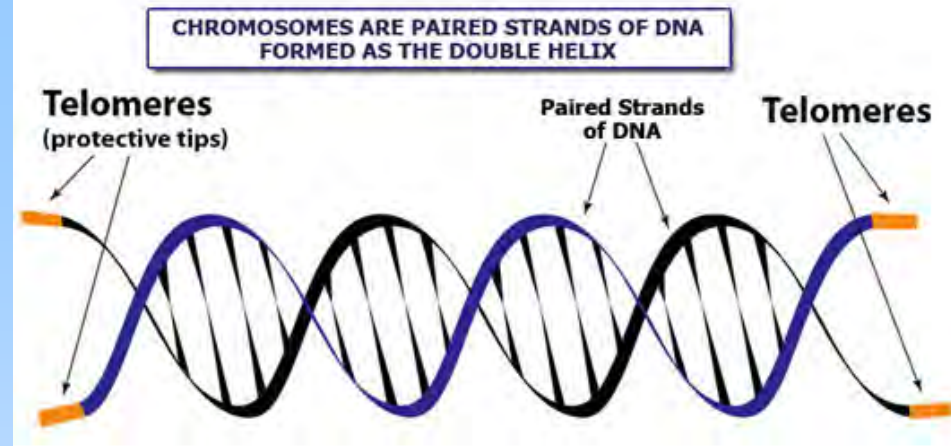


Telomere Length (TL)

- Telomeres are protein complexes that form the ends of chromosomes
- Provide genomic stability
- Shorten with aging
- Dysfunction may result in DNA damage or cell death
- TL associated with many diseases; CVD, diabetes
- In cancer, shorter TL associated with \uparrow risk and \downarrow survival
- TL associated with life stress



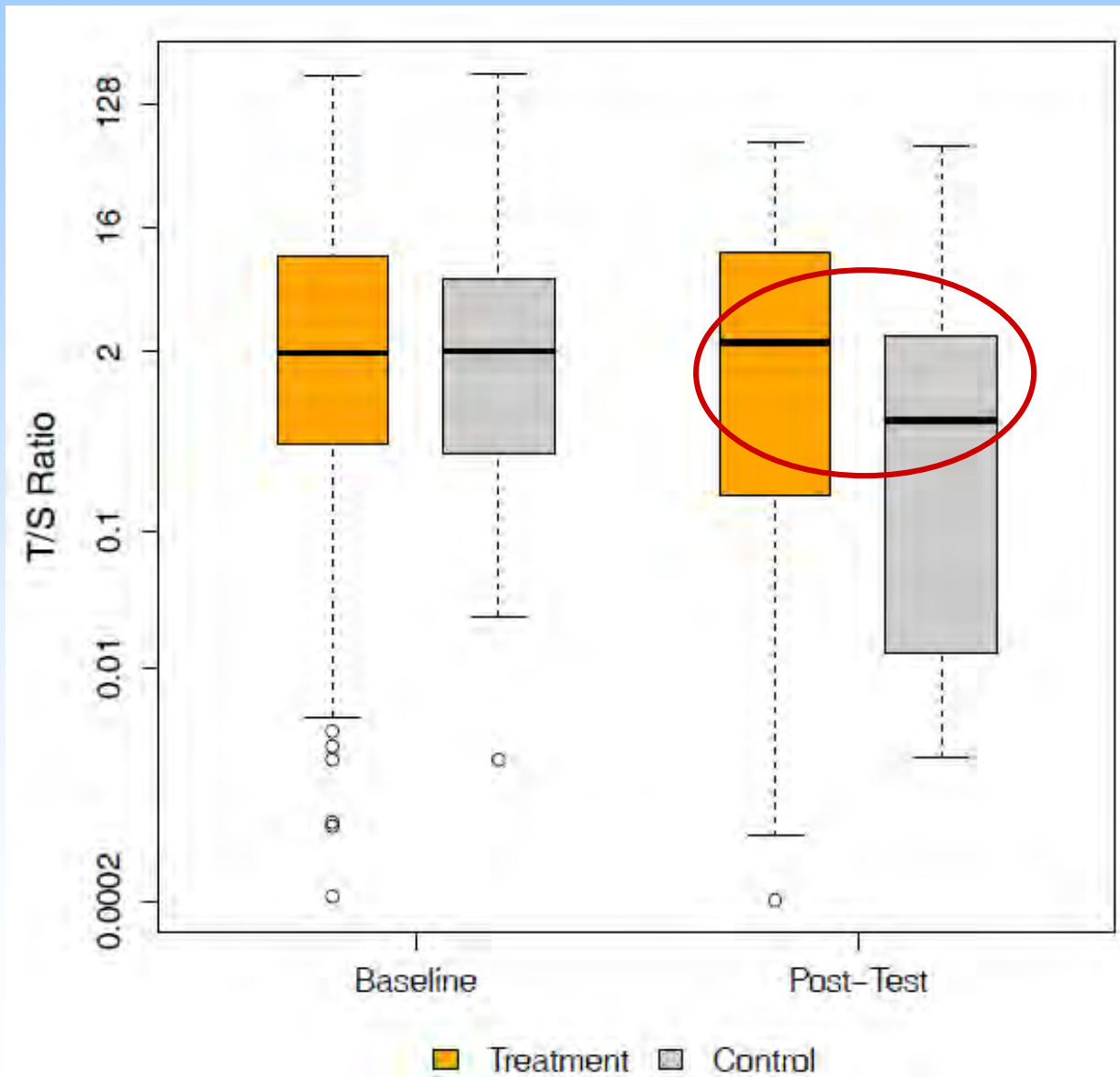
TL Methods



- TL data on only 88 participants (Calgary only)
- Assessed the T/S ratio
 - Relative telomere length using RT-qPCR
- The reference sample is the average T/S of all samples run
- Higher (over 1.0) T/S ratio indicates longer TL
- NO DIFFERENCES pre-post between MBCR and SET
- Combined treatment groups and compared to control



TL Results



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Changing Our DNA through Control?

A study finds meditating cancer patients are able to affect their DNA
By Bret Stetka | December 16, 2014

"I think, therefore I am" is perhaps the most familiar one-liner in western philosophy. Even if the stoners, philosophers and quantum mechanically-inclined skeptics who believe we're living an illusion are right, few existential quips hit with such profound, approachable simplicity. The only catch is that in Descartes' opinion, "we" – our thoughts, our personalities, our "minds" – are mostly divorced from our bodies.

The polymathic Frenchman and other dualist philosophers proposed that while the mind exerts control over interaction with the world, there is a clear delineation between body and our material forms are simply temporary housing for our immortal souls. Centuries of science argue against a corporeal crash pad. The body and mind are inextricably linked. And findings from a new study published in *Cell* suggest that meditation can affect our DNA.

Mindfulness can help
Credit: Thinkstock

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World-first evidence suggests that meditation alters cancer survivors' cells

For the first time, scientists have found clear biological evidence that meditation and support groups can affect us on a cellular level.

FIONA MACDONALD 8 NOV 2014

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We're often told that being happy, meditating and mindfulness can benefit our health. We all have that one friend of a friend who says they cured their terminal illness by quitting their job and taking up surfing - but until now there's been very little scientific evidence to back up these claims.

Now researchers in Canada have found the first evidence to suggest that support

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Cancer Care

Division of
Psychosocial Oncology
Helping You Live Well with Cancer



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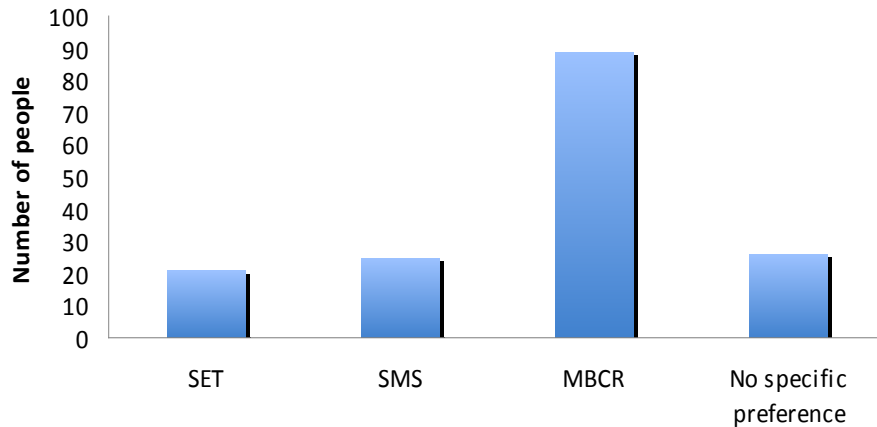
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Program preferences and randomization

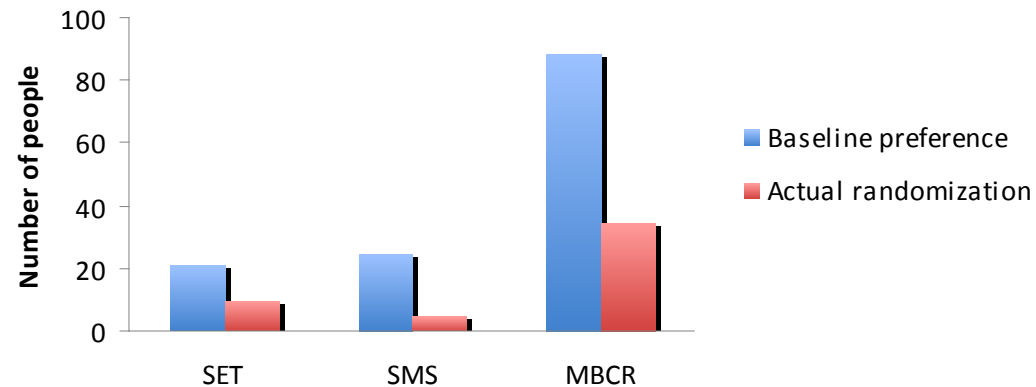
Program preference at baseline



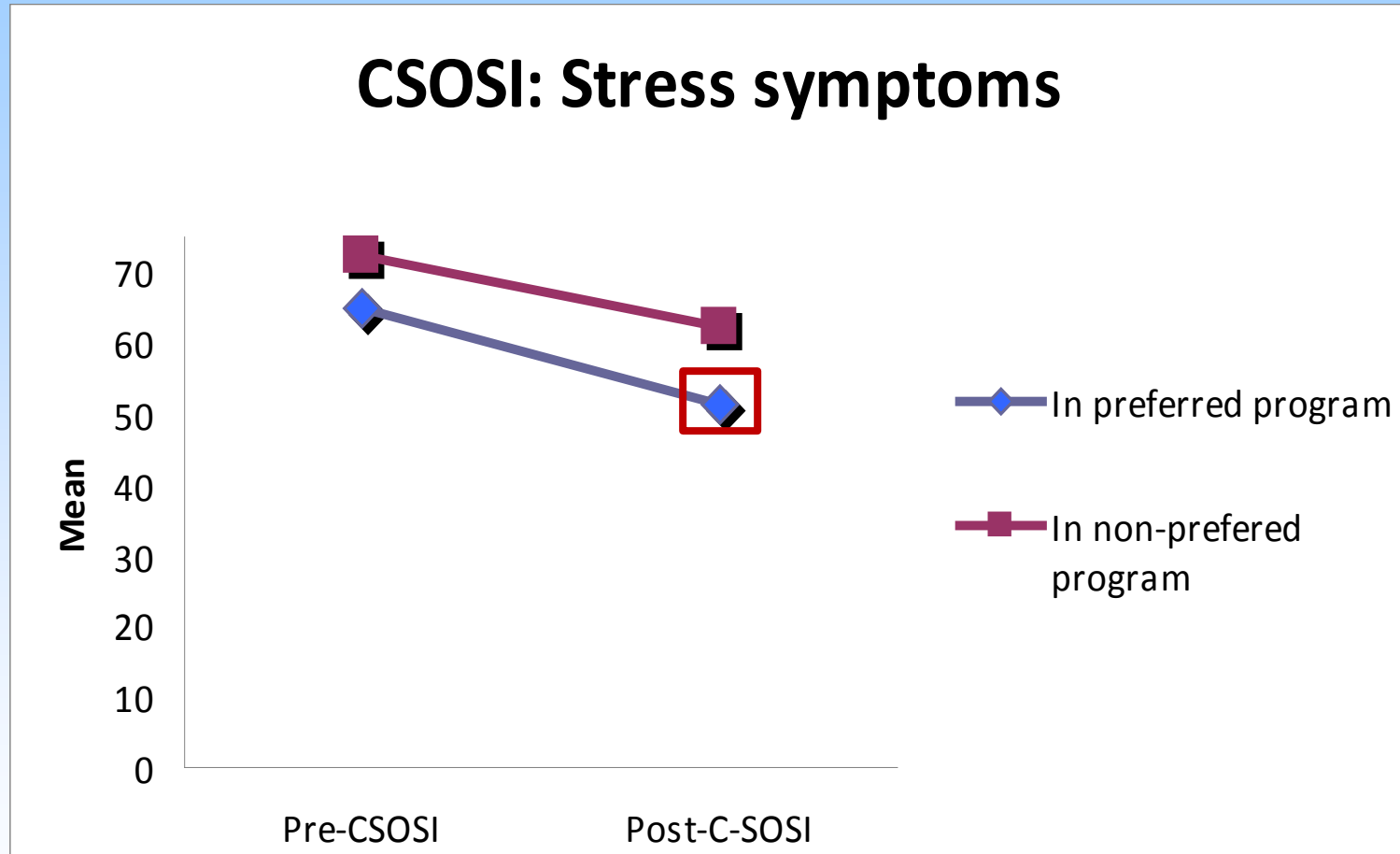
55% preferred MBSR,
13% SET, 16% SMS,
16% no preference

50 patients (31%) were
randomized into their
preferred program

Baseline preference and actual
randomization to treatment

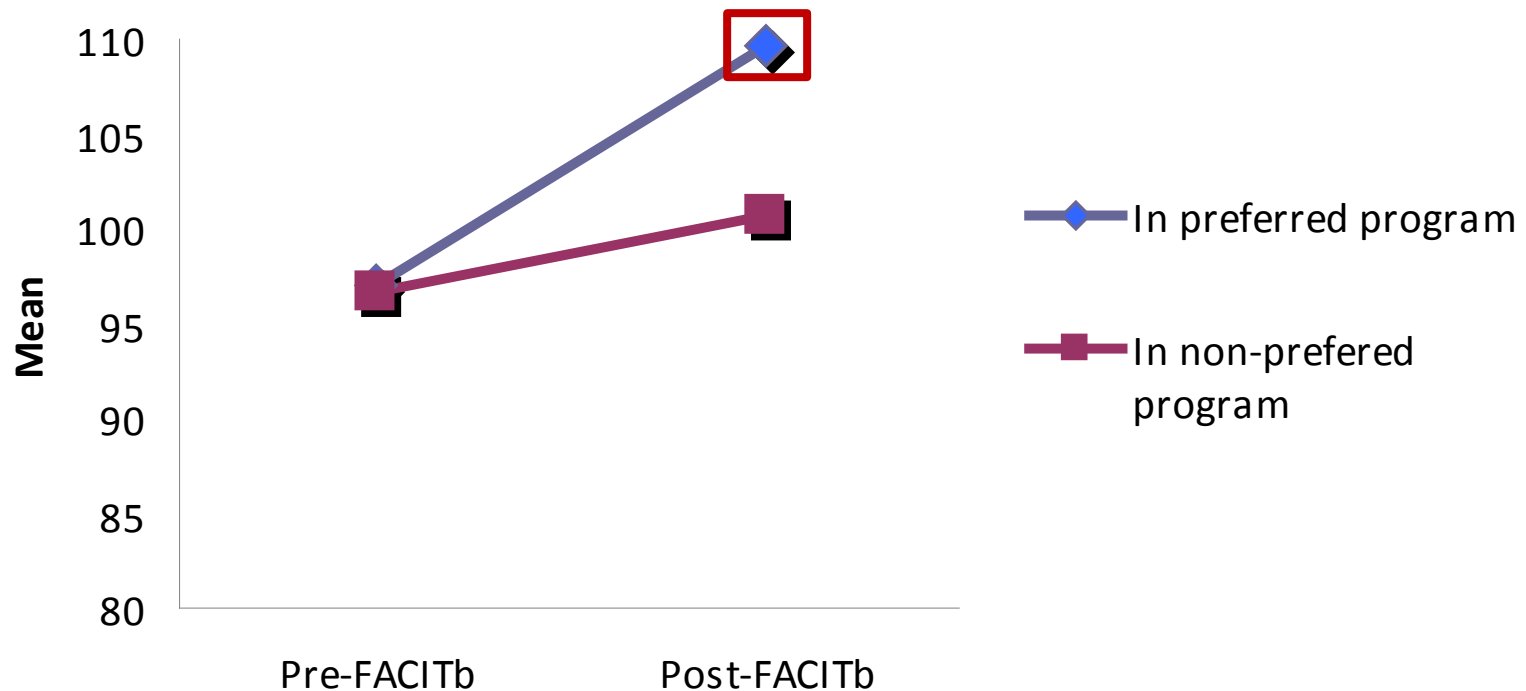


Effects of preference on stress symptoms



Effect of preference on quality of life

FACITb: Quality of life

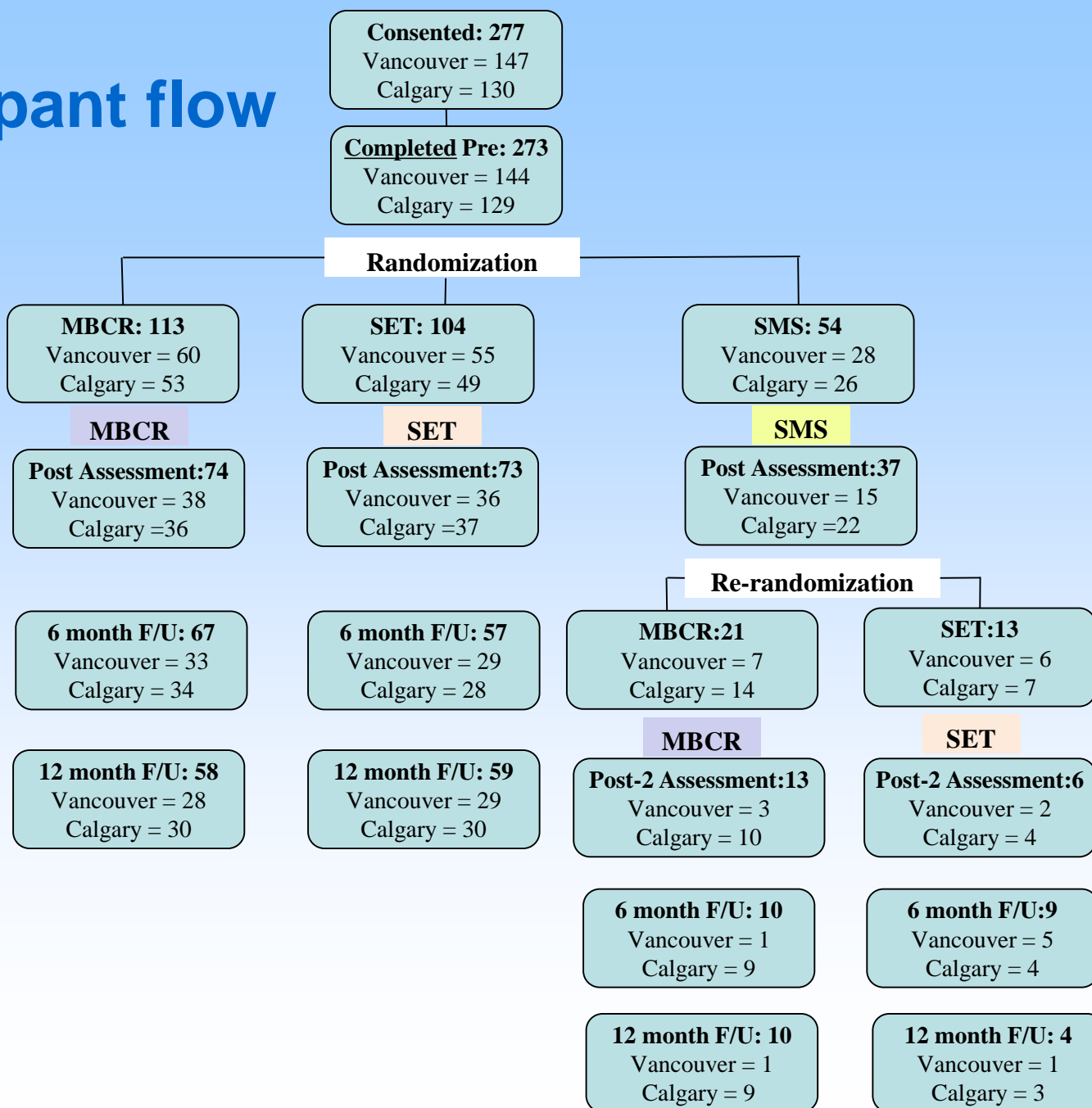


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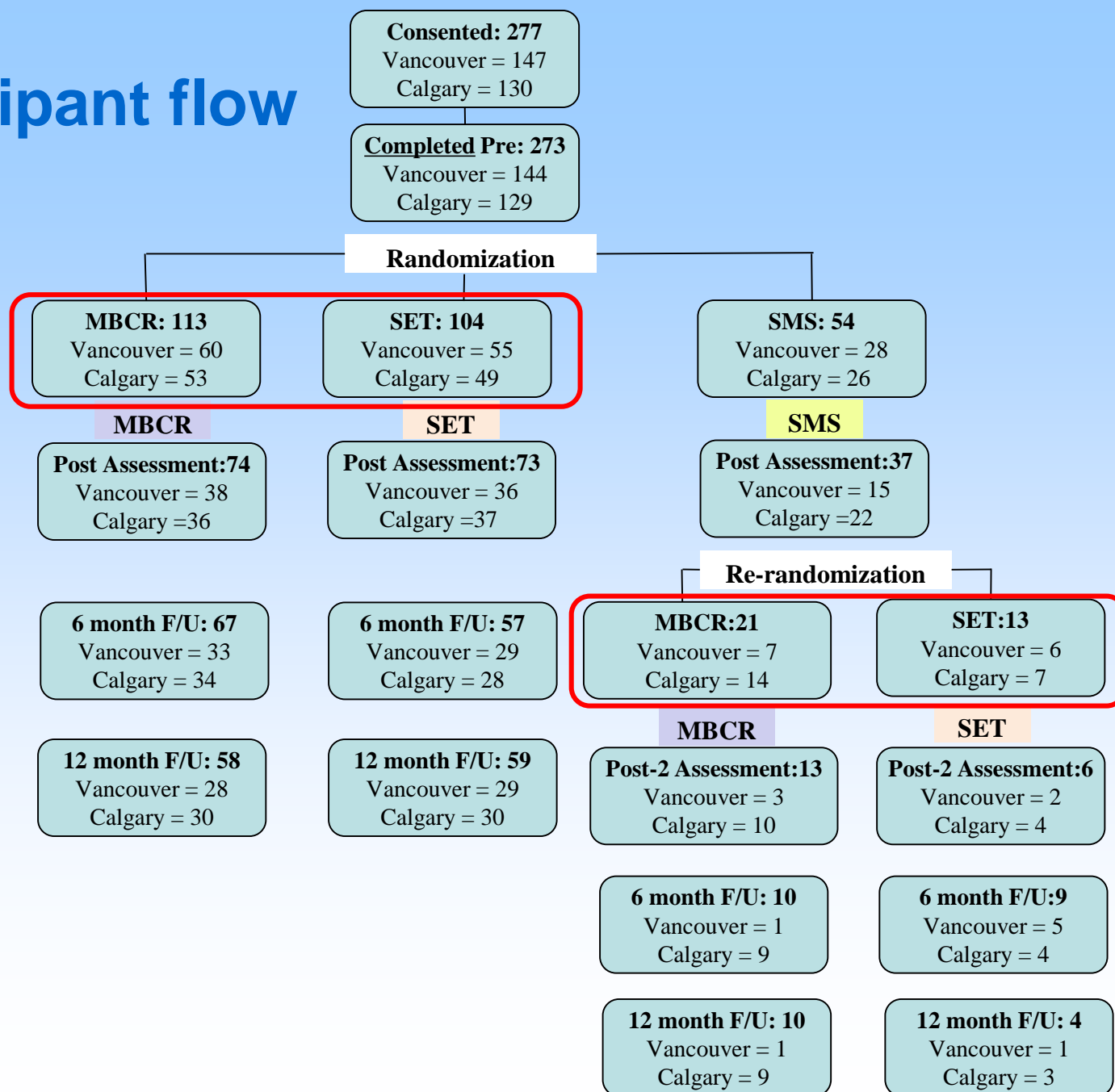


Participant flow



Participant flow

Pre N = 251
MBCR (134)
SET (117)

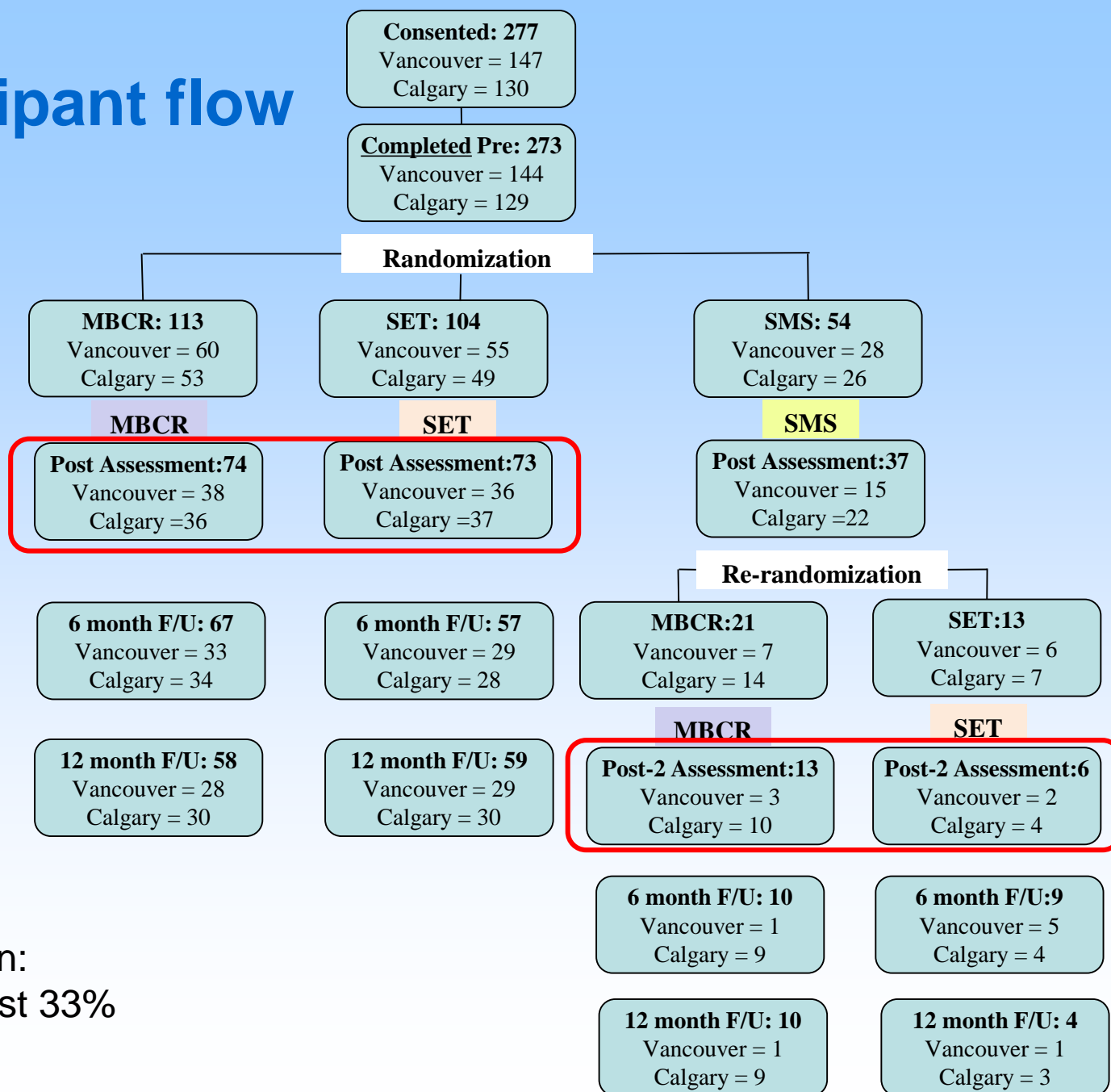


Participant flow

Pre N = 251
MBCR (134)
SET (117)

Post
N = 166

Attrition:
 pre-post 33%



Participant flow

Consented: 277

Vancouver = 147

Calgary = 130

Completed Pre: 273

Vancouver = 144

Calgary = 129

Randomization

MBCR: 113

Vancouver = 60

Calgary = 53

MBCR

Post Assessment:74

Vancouver = 38

Calgary =36

SET: 104

Vancouver = 55

Calgary = 49

SET

Post Assessment:73

Vancouver = 36

Calgary =37

SMS: 54

Vancouver = 28

Calgary = 26

SMS

Post Assessment:37

Vancouver = 15

Calgary =22

Re-randomization

6 month F/U: 67

Vancouver = 33

Calgary = 34

6 month F/U: 57

Vancouver = 29

Calgary = 28

MBCR:21

Vancouver = 7

Calgary = 14

MBCR

Post-2 Assessment:13

Vancouver = 3

Calgary = 10

SET:13

Vancouver = 6

Calgary = 7

SET

Post-2 Assessment:6

Vancouver = 2

Calgary = 4

6 month F/U: 10

Vancouver = 1

Calgary = 9

6 month F/U:9

Vancouver = 5

Calgary = 4

12 month F/U: 10

Vancouver = 1

Calgary = 9

12 month F/U: 4

Vancouver = 1

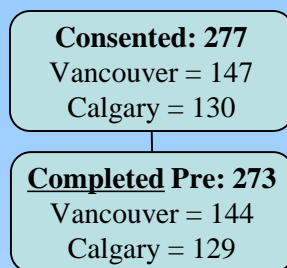
Calgary = 3

Pre N = 251
MBCR (134)
SET (117)

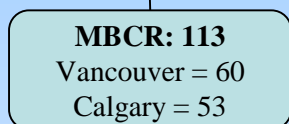
Post
N = 166

6 month
N = 143

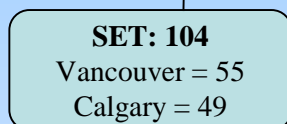
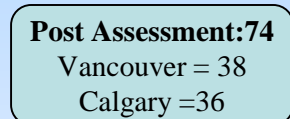
Participant flow



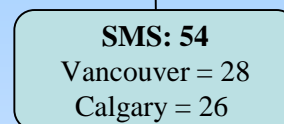
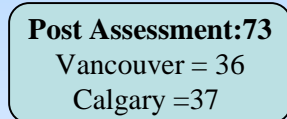
Randomization



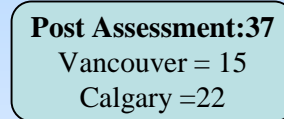
MBCR



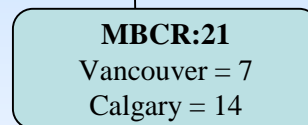
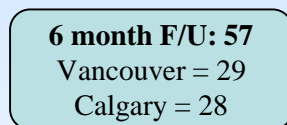
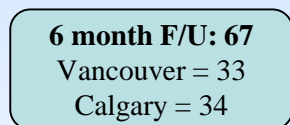
SET



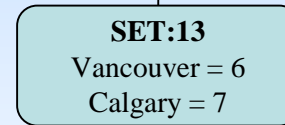
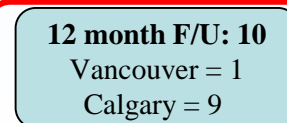
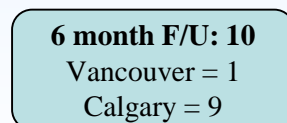
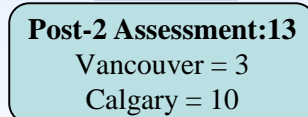
SMS



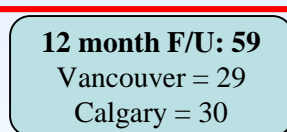
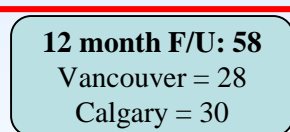
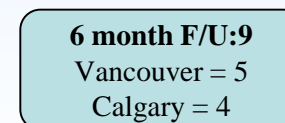
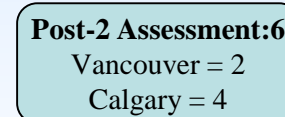
Re-randomization



MBCR



SET



**48% attrition
over 1 year**

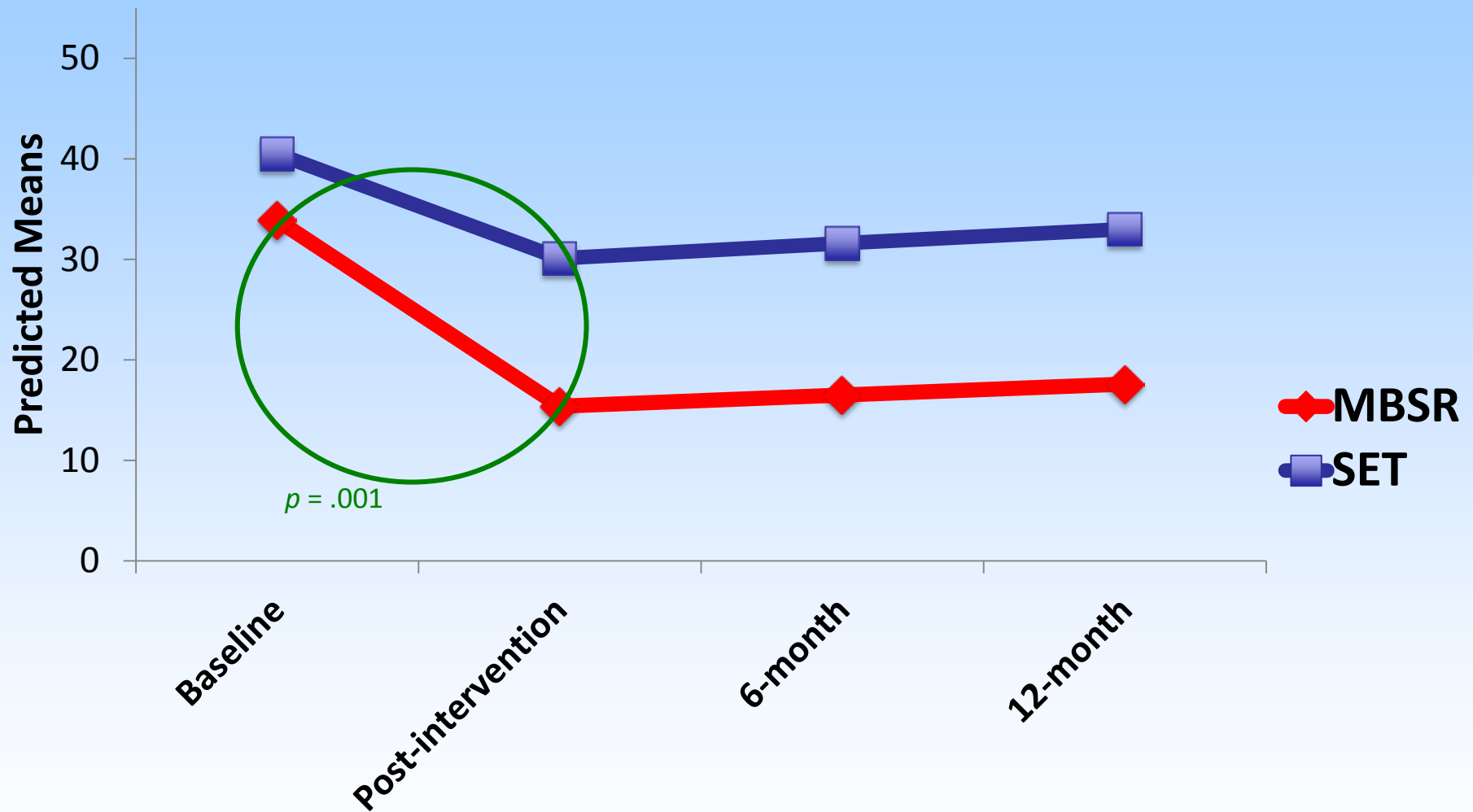
Pre N = 251
MBCR (134)
SET (117)

**Post
N = 166**

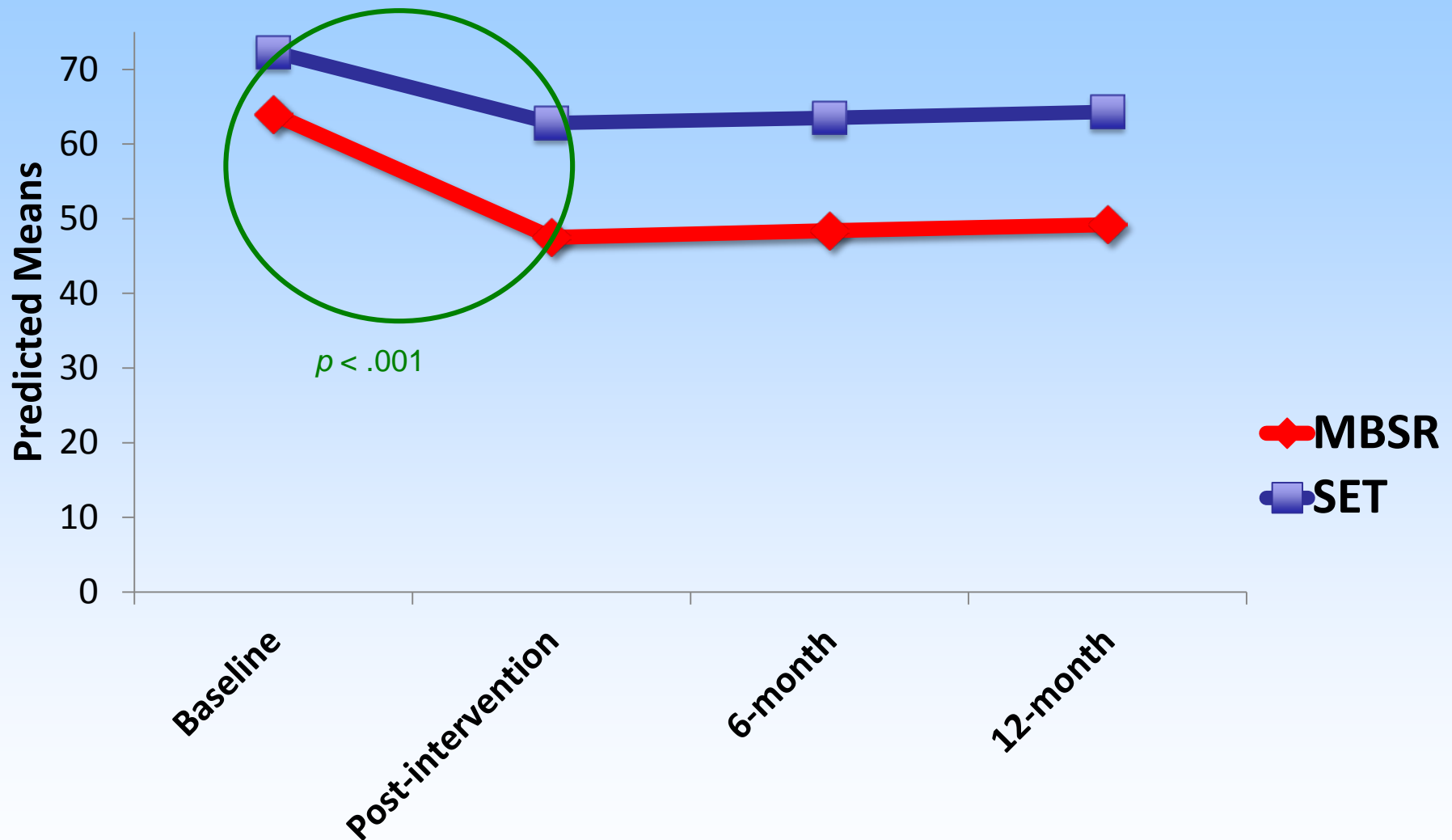
**6 month
N = 143**

**12 month
N = 131**
MBCR (68)
SET (63)

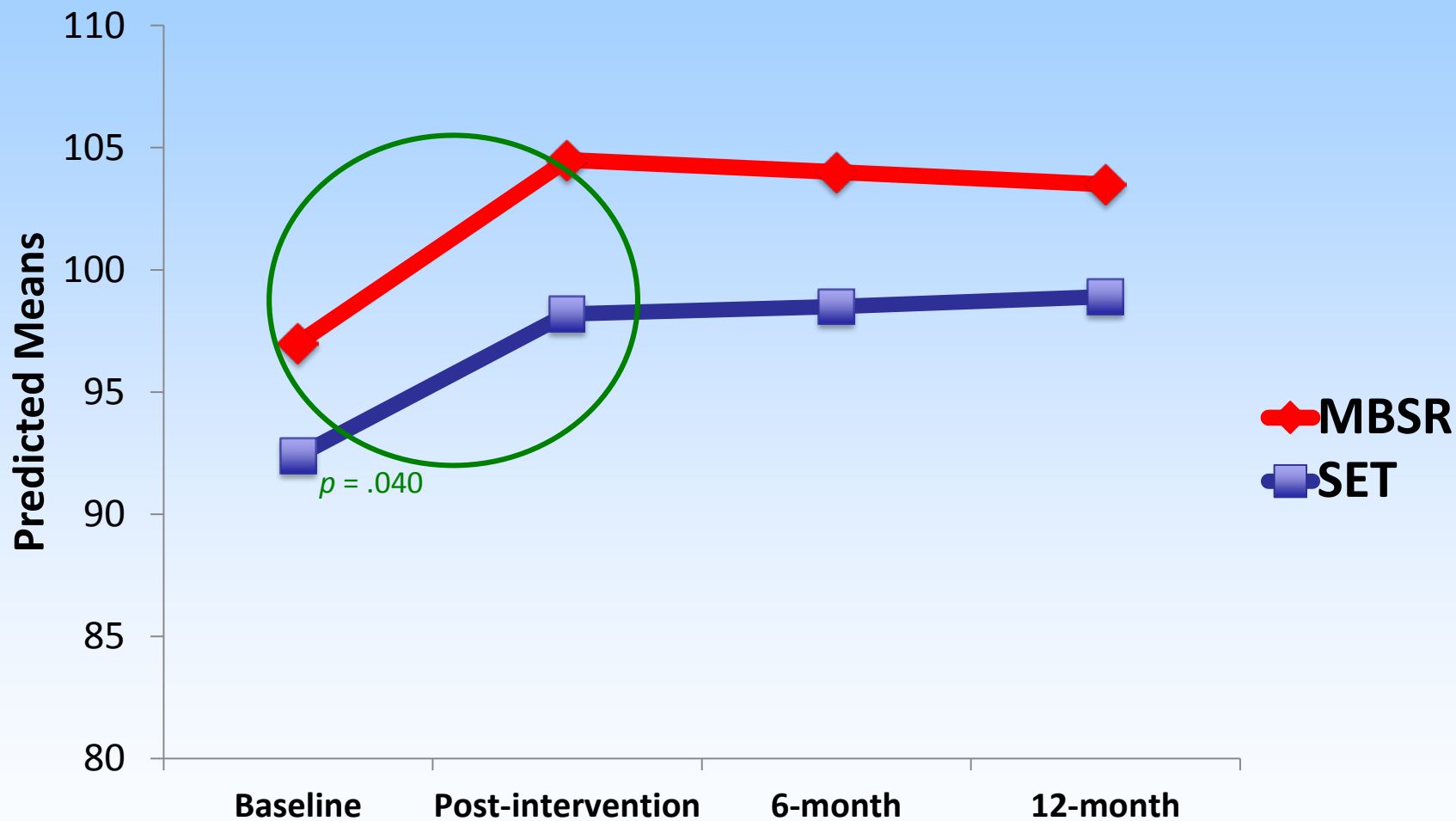
POMS mood



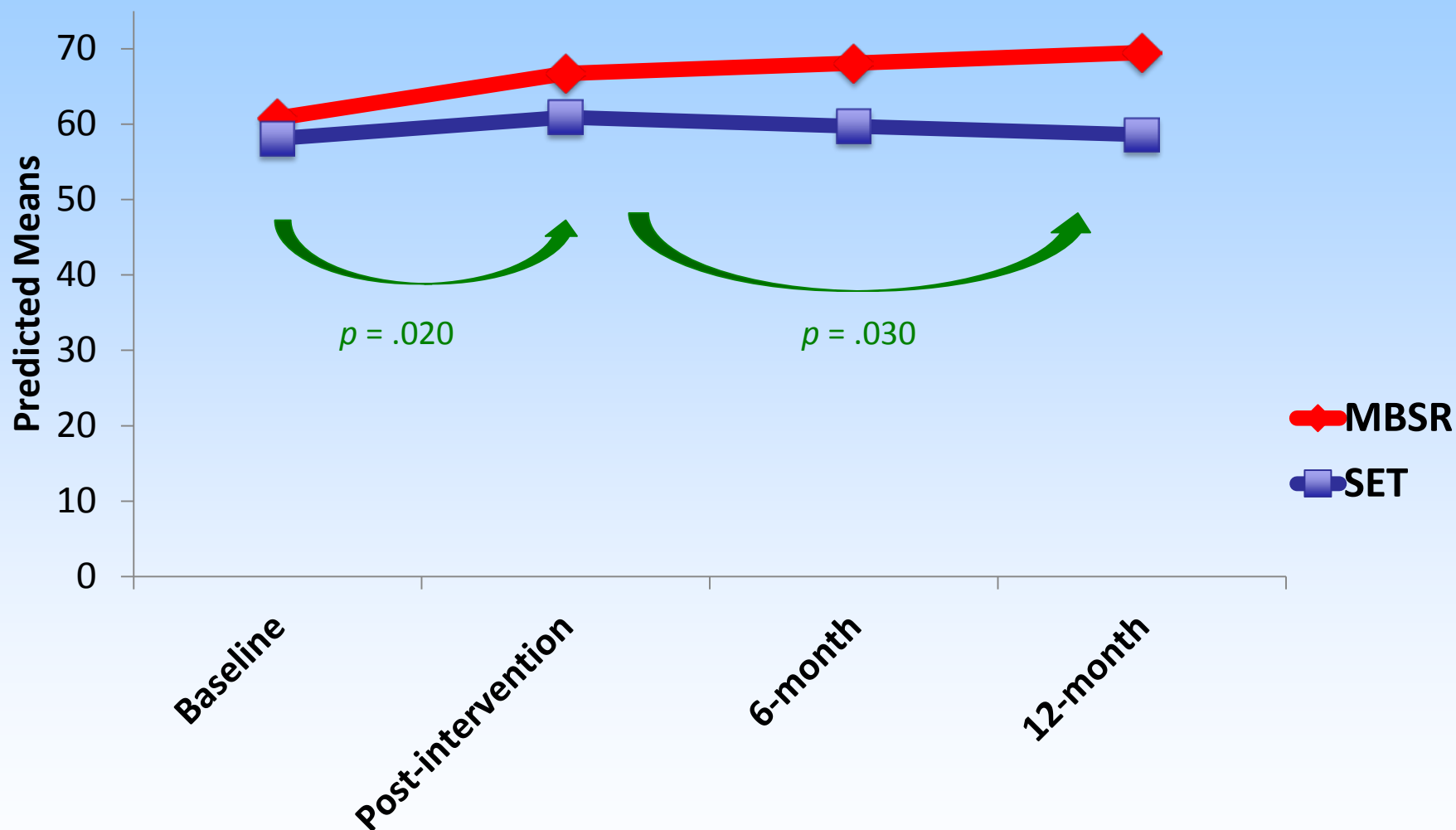
CSOSI stress symptoms



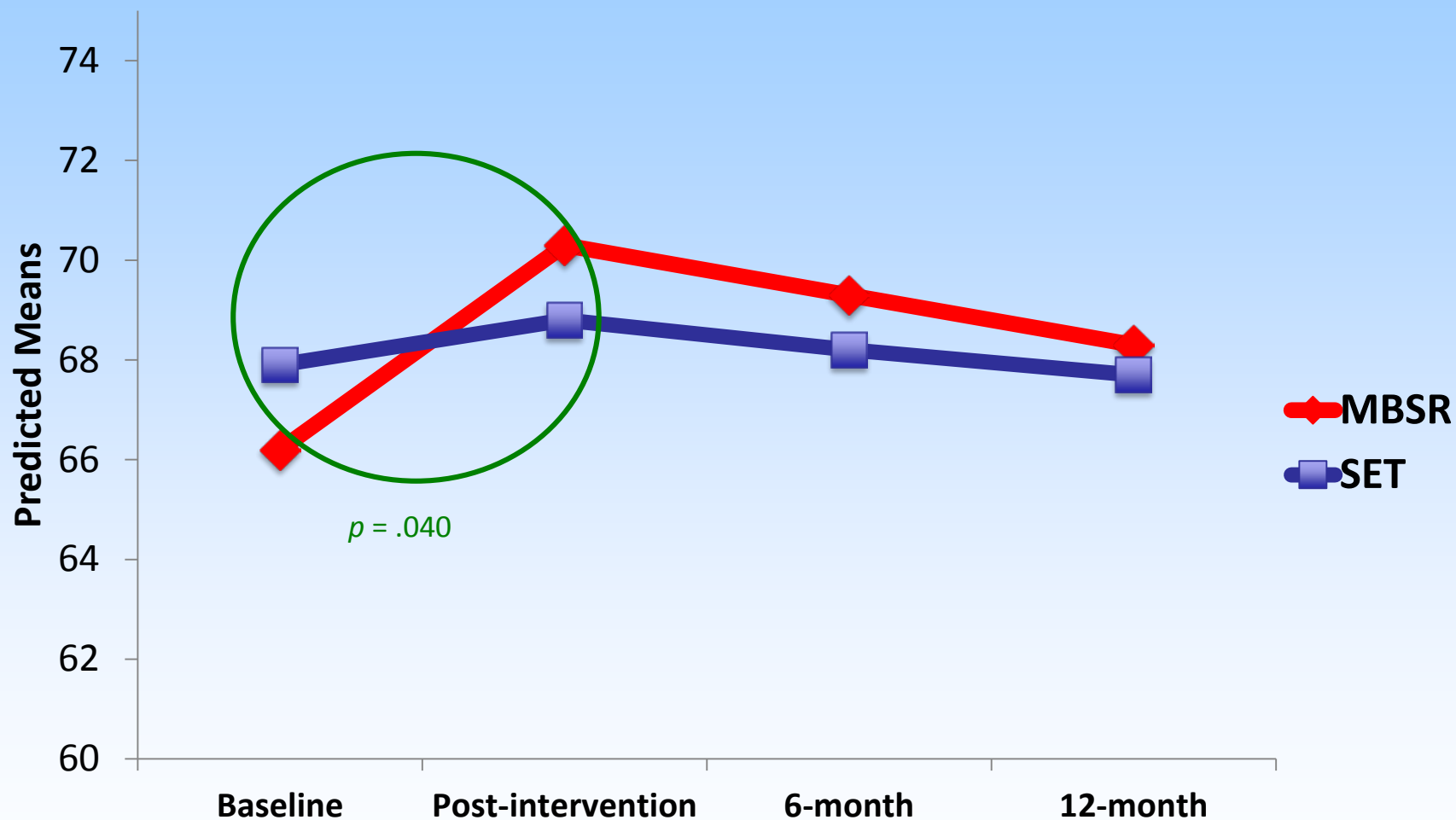
FACT-B Quality of Life



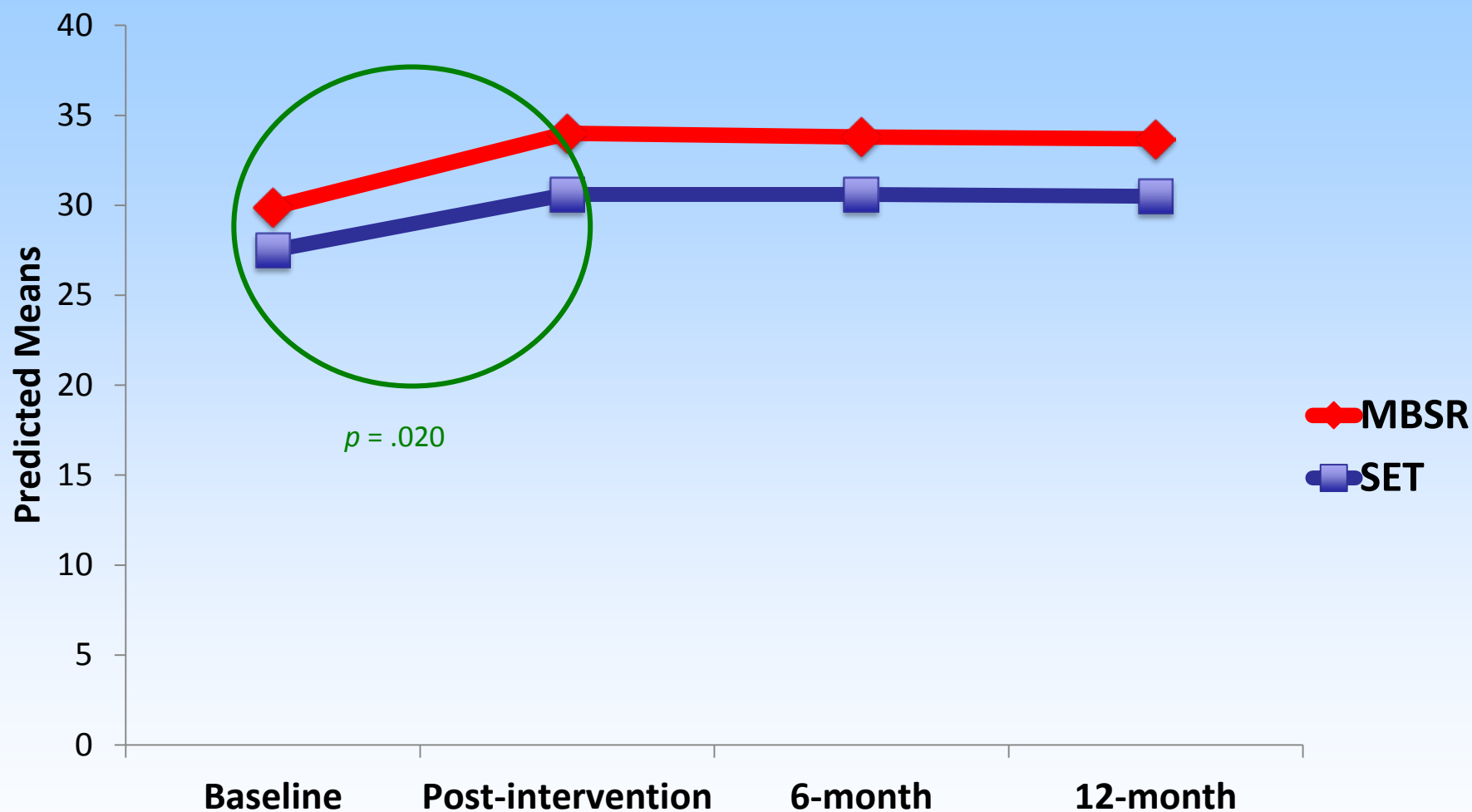
PTGI-R Benefit finding



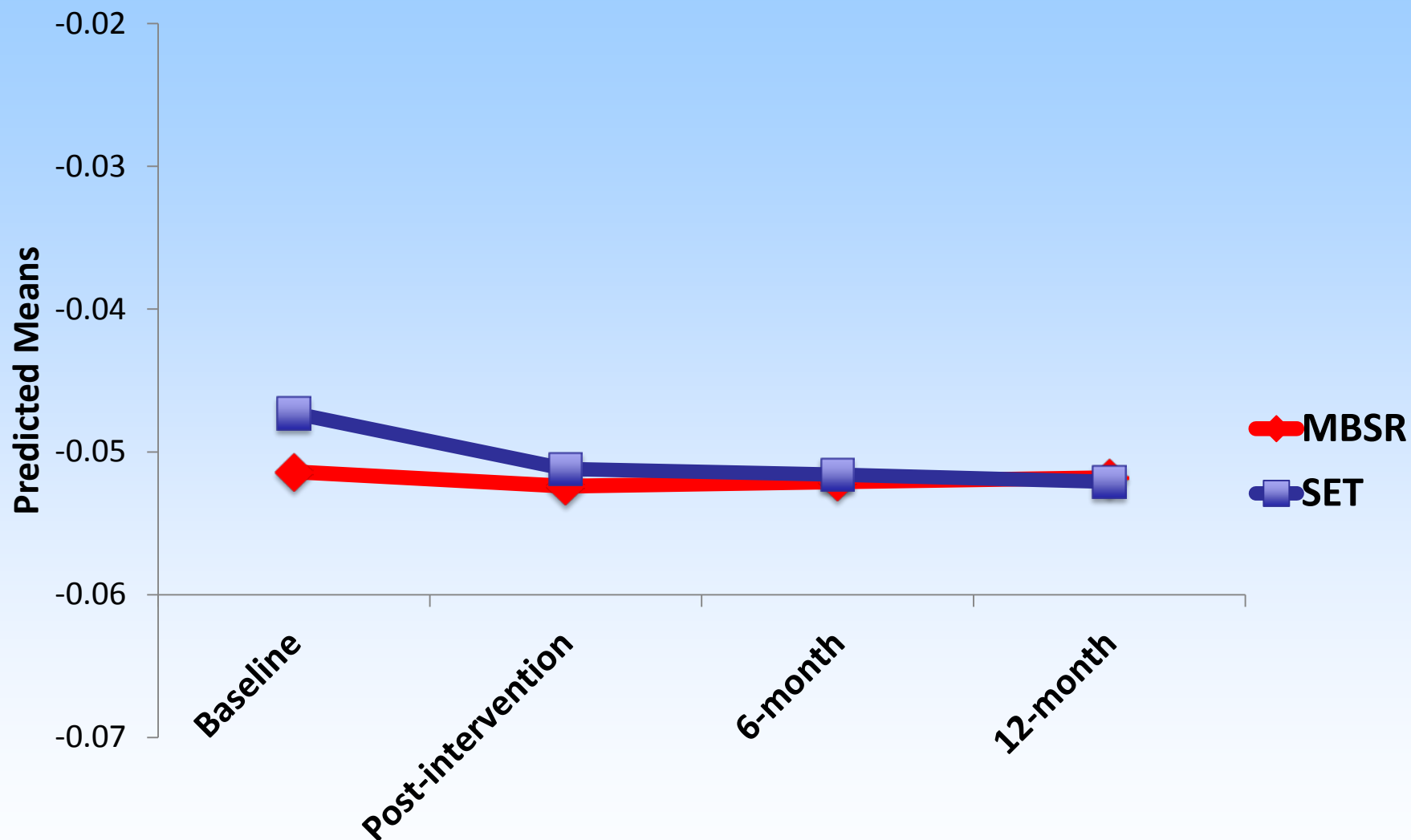
MOS-SSS Social Support



FACIT-Sp Spiritual wellbeing



Diurnal Cortisol Slopes



MINDSET Summary

- The **MBCR** group improved more on mood and stress pre-post relative to both **Control** and **SET** groups
- The **MBCR** group improved more in quality of life pre-post relative to the **Control** group
- Both **intervention groups** maintained steeper cortisol slopes and longer TL than the **Control** group
- **MBCR** was the preferred treatment (55%)
- Only 31% of patients got their preferred treatment
- Women who got their preferred treatment improved more on stress symptoms and quality of life
- **MBCR** participants maintained all benefits over 12-months



I-CAN SLEEP: A non-inferiority RCT of Mindfulness-Based Stress Reduction (MBSR) and Cognitive Behavioral Therapy (CBT) for the treatment of Insomnia in CANcer survivors

Garland, Campbell, Antel, Samuels, Carlson

- Randomly assigned to MBSR or CBT-I. Treatments matched for time
- Assessment by actigraphy, sleep diary and questionnaire pre- and post- intervention and at 3-month follow-up.
- Patients blind to study conditions **



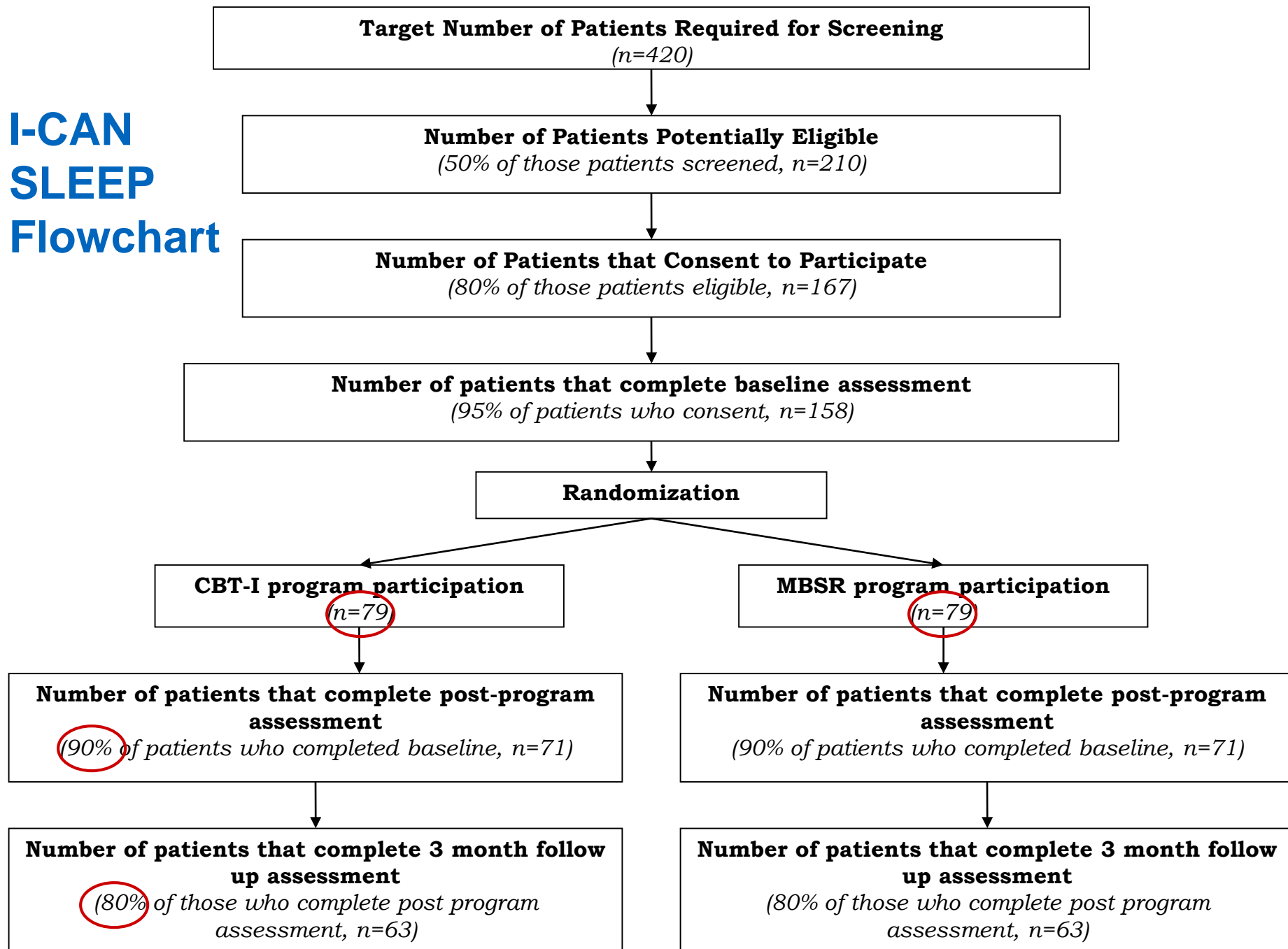
Outcome Measures



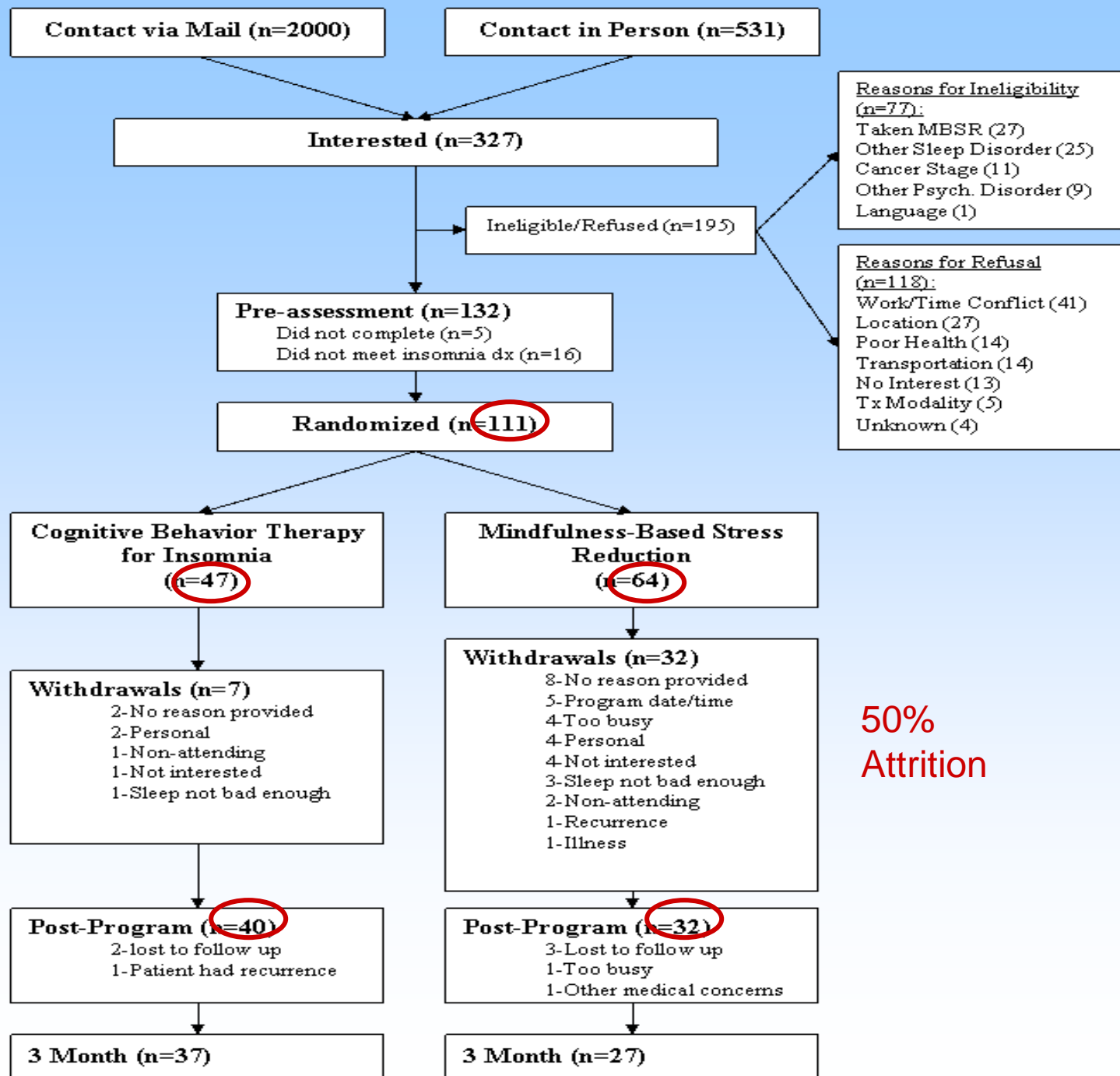
- Primary
 - Sleep Diary
 - Actigraphy
 - Pittsburgh Sleep Quality Index
 - Dysfunctional Beliefs and Attitudes about Sleep Scale
 - Insomnia Severity Index
- Secondary
 - Calgary Symptoms of Stress Inventory
 - Profile of Mood States-Short Form
 - Five Facet Mindfulness Questionnaire



I-CAN SLEEP Flowchart



15%
Attrition

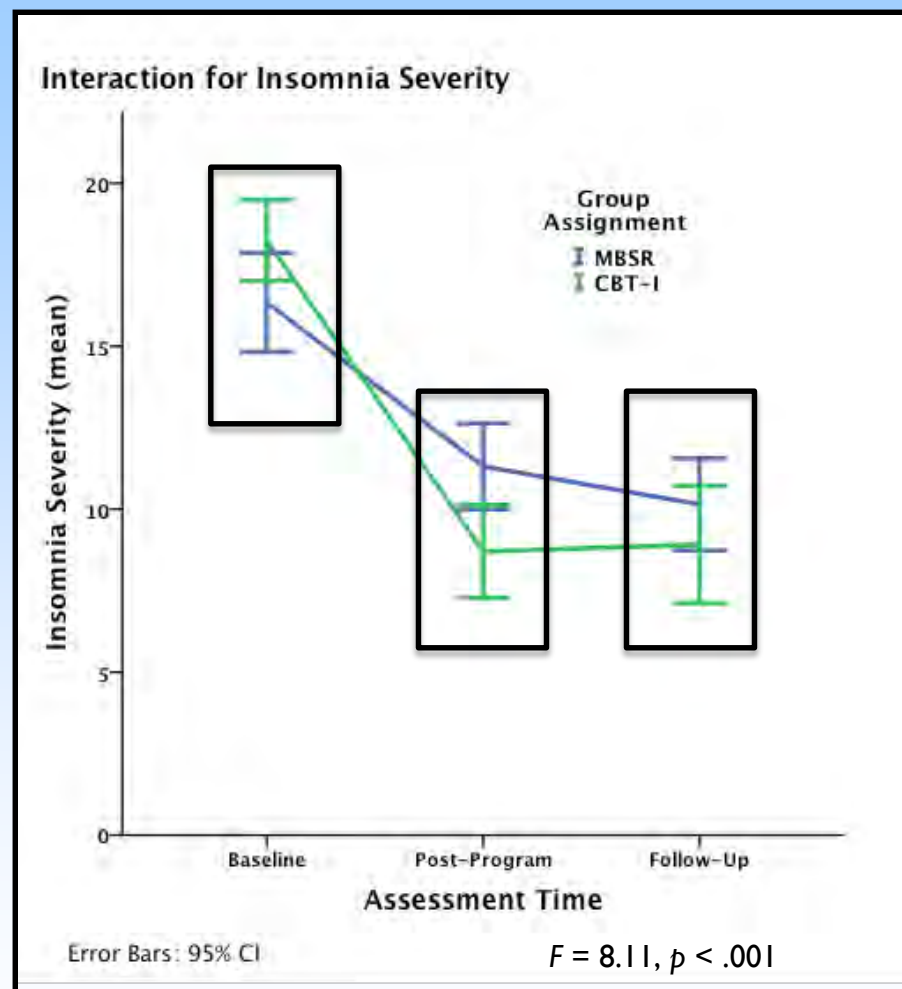


50%
Attrition

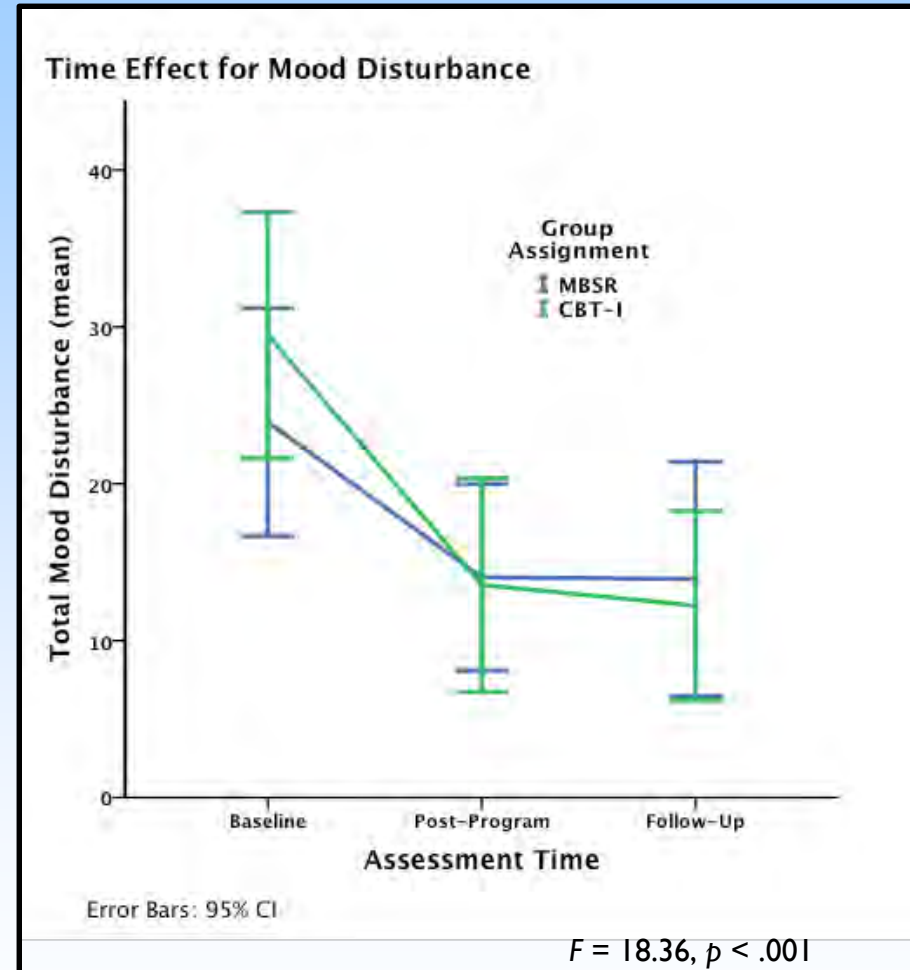
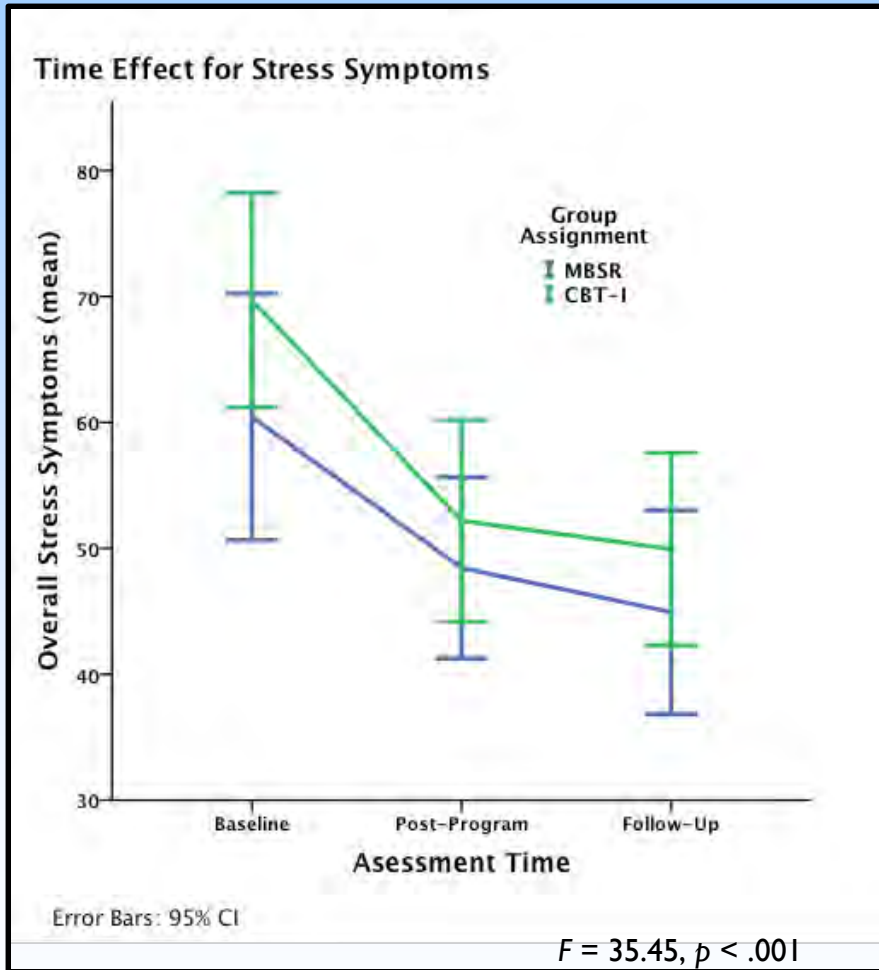
Insomnia Severity

Non-Inferiority Margin = 4

	Diff	Upper CI	<i>p</i>
Baseline	-1.91	3.579	0.061
Post-program	2.61	4.286	0.011
Follow-Up	1.10	2.870	0.307



Stress and Mood Disturbance



I-CAN Sleep Summary

- CBT-I more effective for insomnia than MBSR in short term
- In long term both treatments effective
- Both improve stress and mood

Methodological issues:

- What happens when you blind people to a behavioral treatment? Is it ethical? Possible?
- What kind of conclusions can you make regarding efficacy? Generalizability?
- Didn't measure program preferences – hints that this is important



eCALM: e-Therapy for Cancer Applying Mindfulness

Online MBCR Program for Underserved Cancer Patients in Alberta: A Randomized Waitlist Controlled Trial

Zernicke, Campbell, Specia, McCabe, Flowers, Carlson, in progress

- Randomized waitlist controlled trial (N = 64) to evaluate an online synchronous MBCR program – ethics approval Oct 2010 – provided through eMindful.com
- Primary outcome: **Feasibility** - whether individuals with cancer are willing to participate and complete the online MBCR program
- Secondary outcomes: **Questionnaires** - mood disturbance, symptoms of stress, mindfulness, spirituality and posttraumatic growth
- Powered to determine total mood disturbance and effect sizes for larger RCT




Online MBCR screenshot

File Edit Share View Audio Participant Session Breakout Help

Quick Start Session Info Introduction t...

08

Your emotions arise from your **interpretations of situations –
(the stories you tell yourself about what's happening)**




**Whether you are filled with awe or fear, kindness
or resentment depends a lot on
how you look at things.**


Full Screen 78% View

Participants Chat

Participants



Steve Flowers



Evidence Based Mind Body Wellness



Steve Flowers



Figure 1 - eCALM CONSORT Flow Diagram

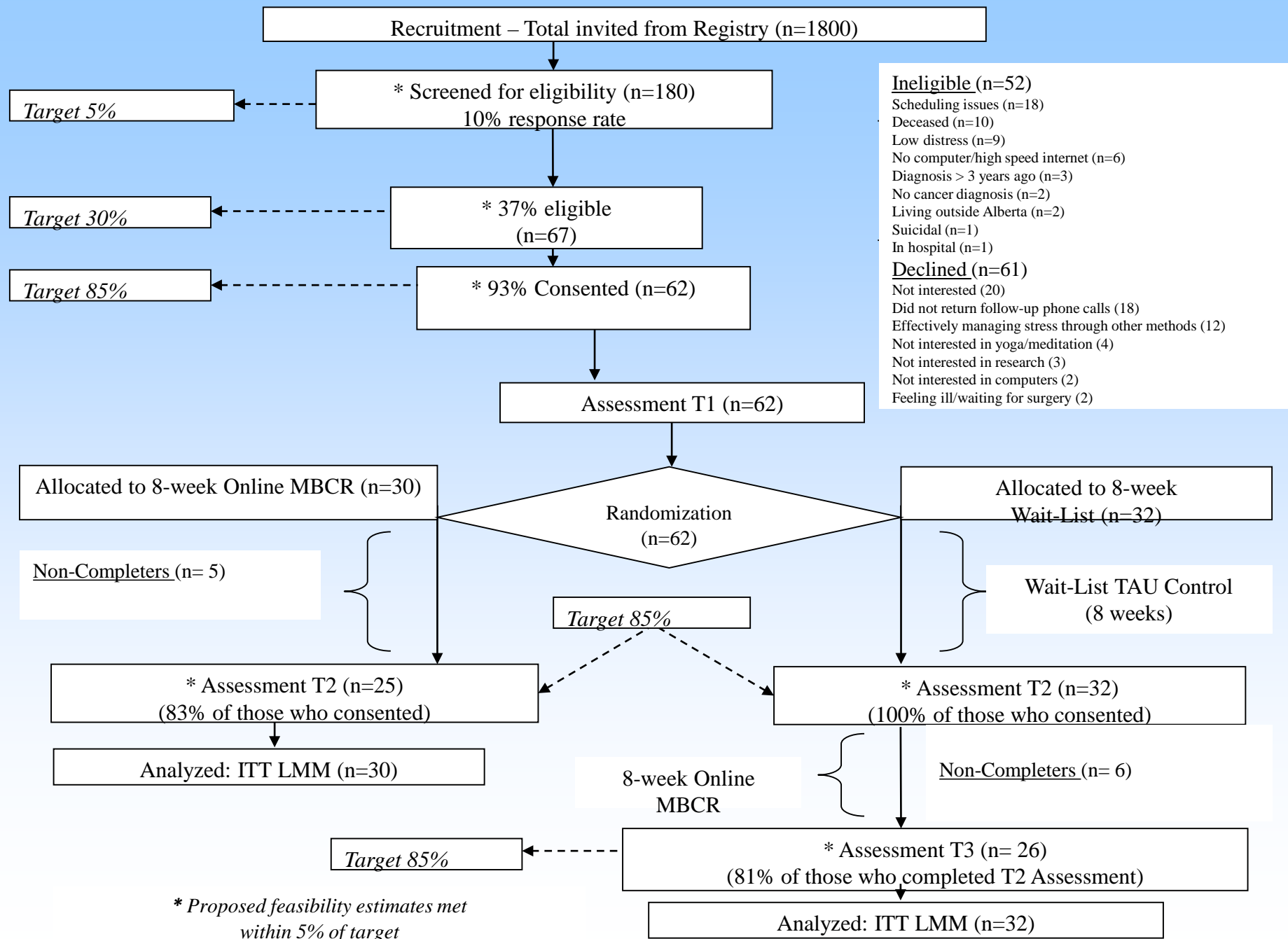


Figure 1 - eCALM CONSORT Flow Diagram

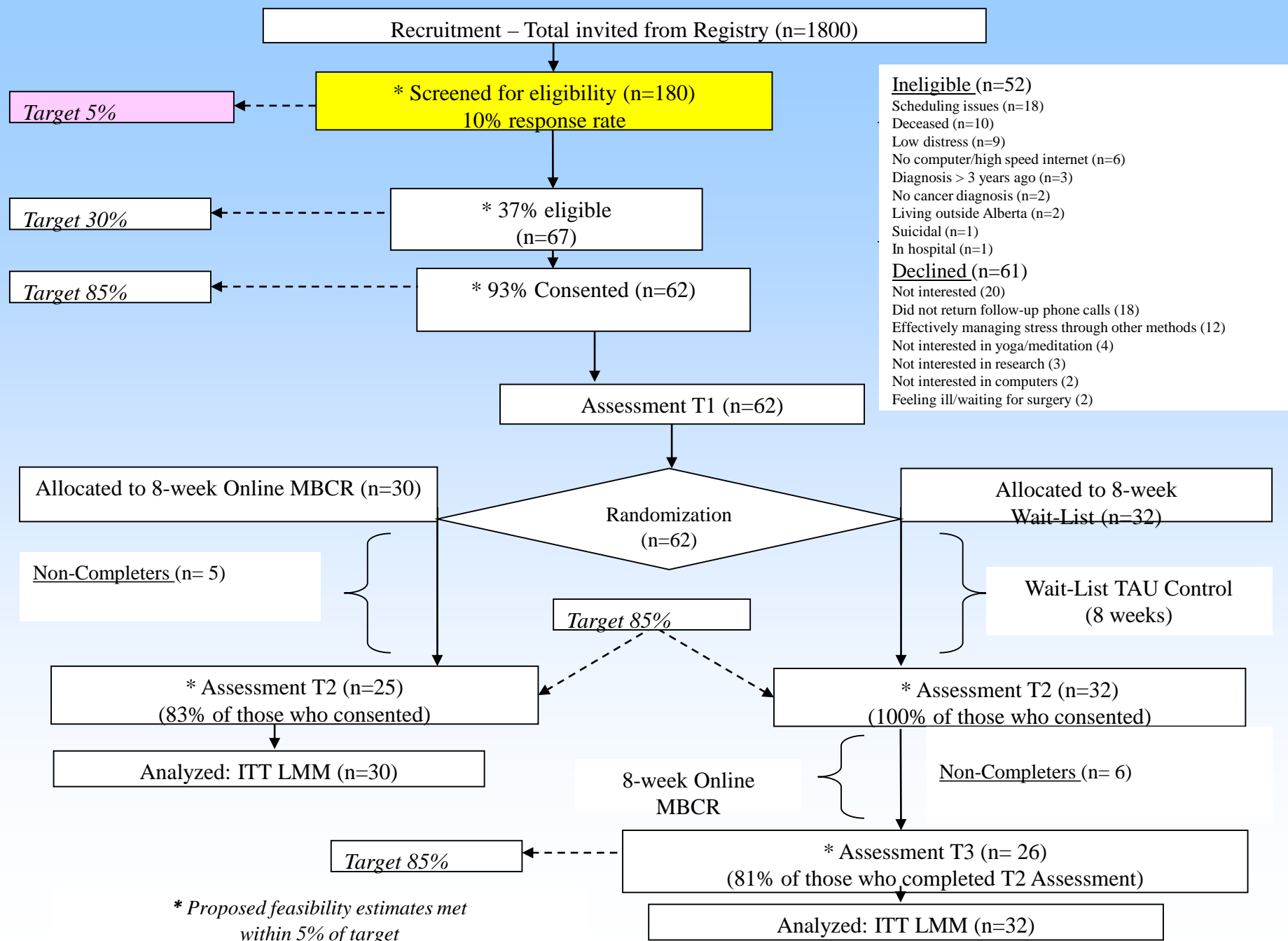


Figure 1 - eCALM CONSORT Flow Diagram

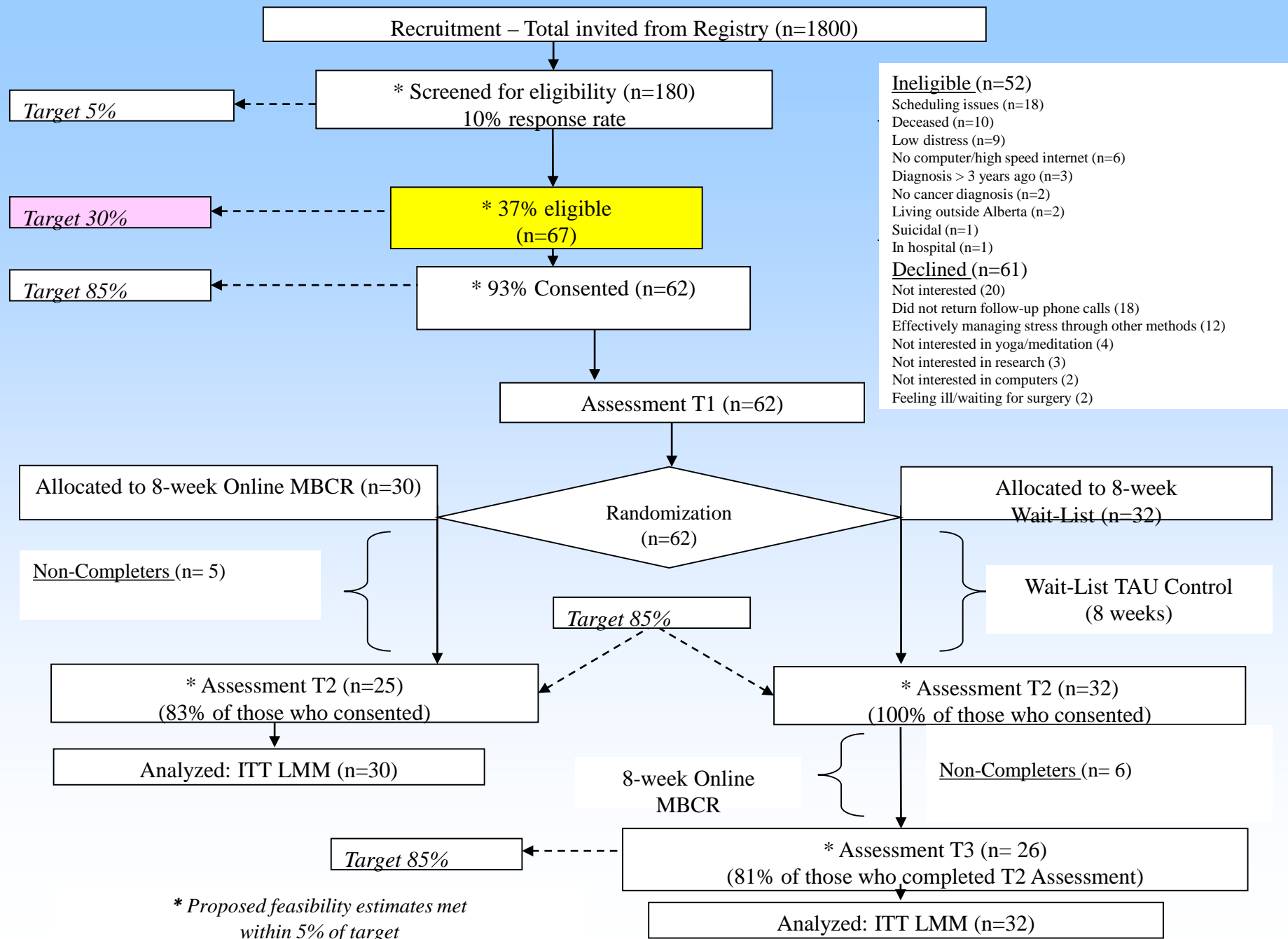


Figure 1 - eCALM CONSORT Flow Diagram

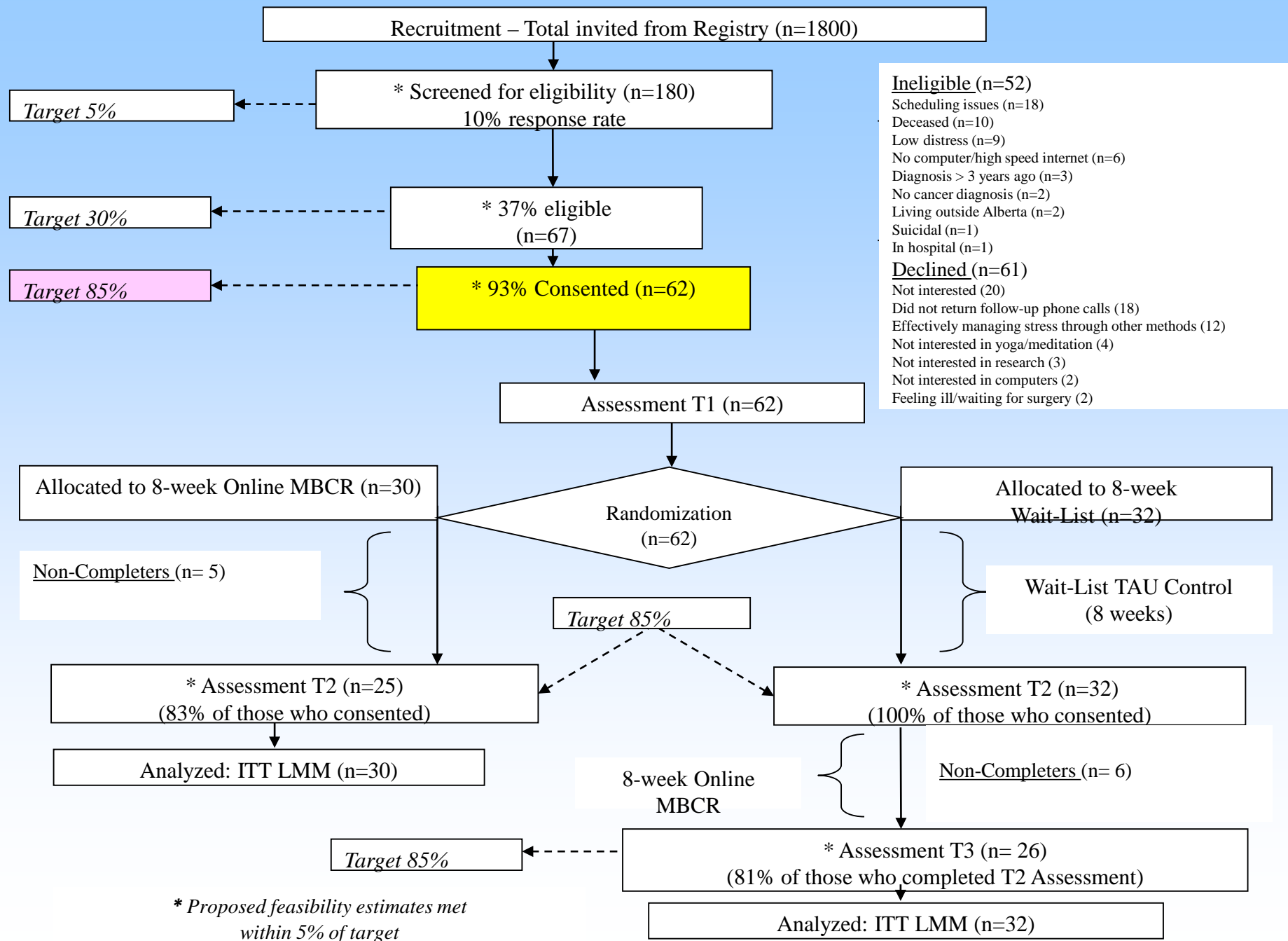


Figure 1 - eCALM CONSORT Flow Diagram

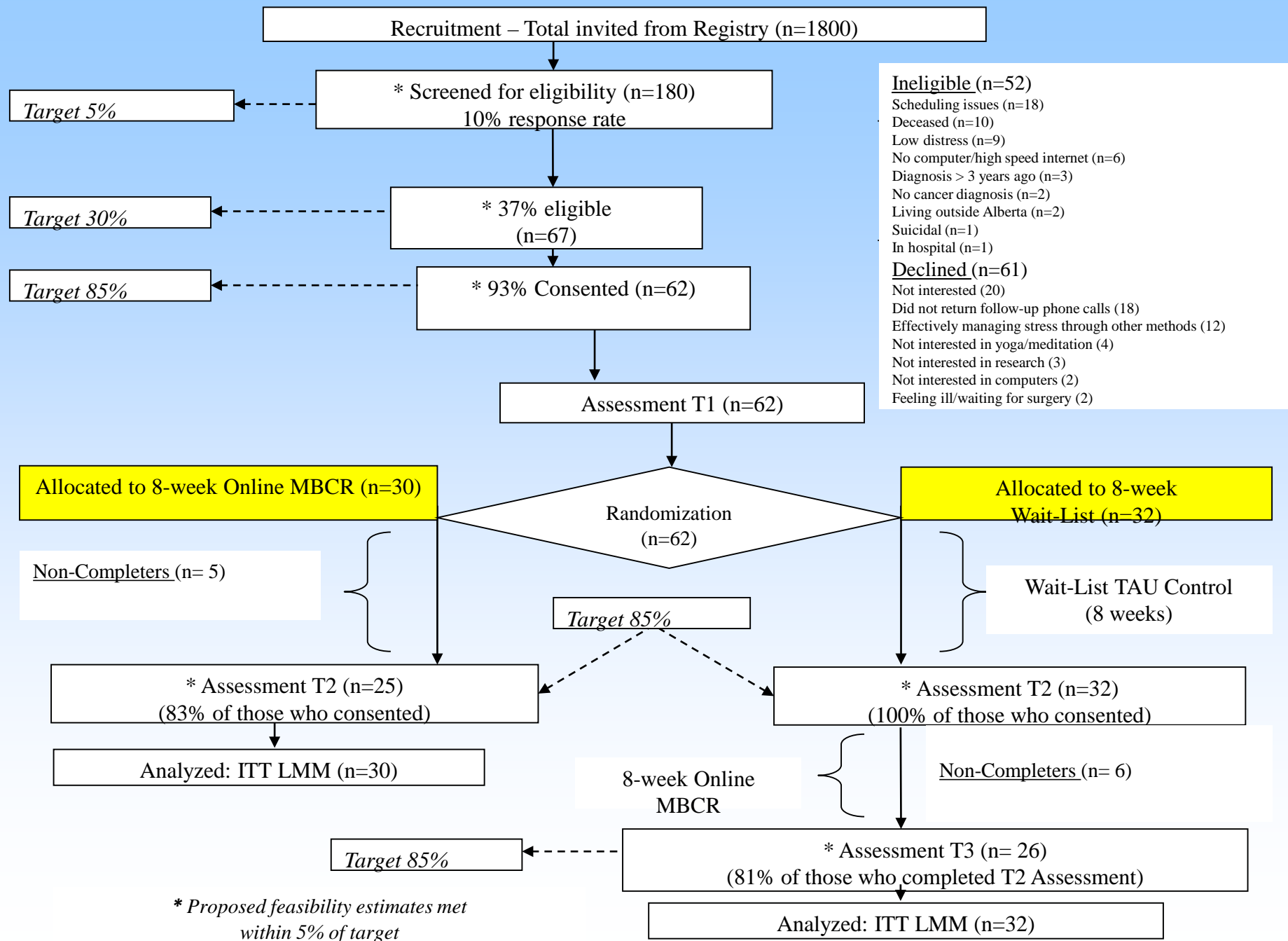


Figure 1 - eCALM CONSORT Flow Diagram

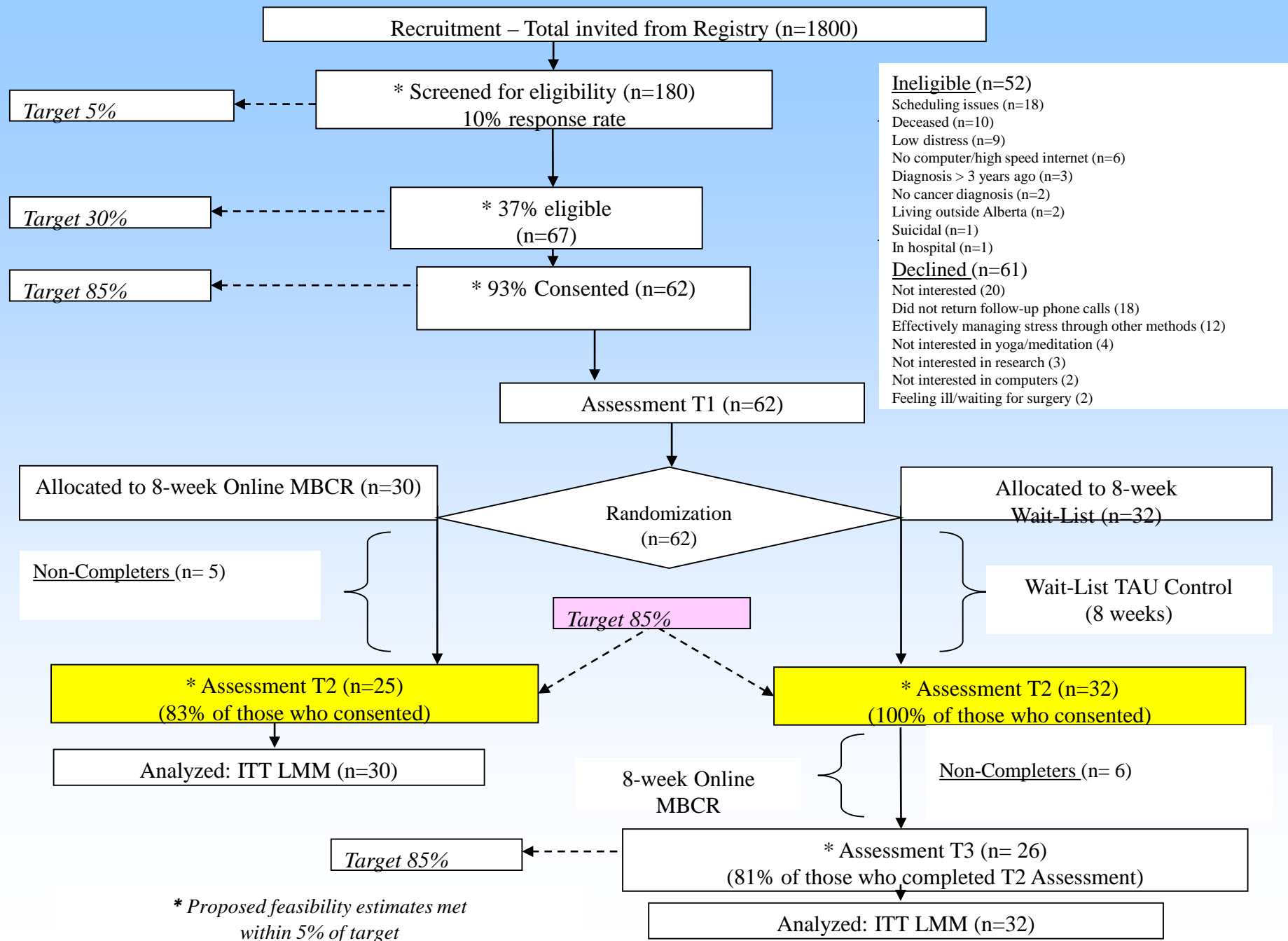
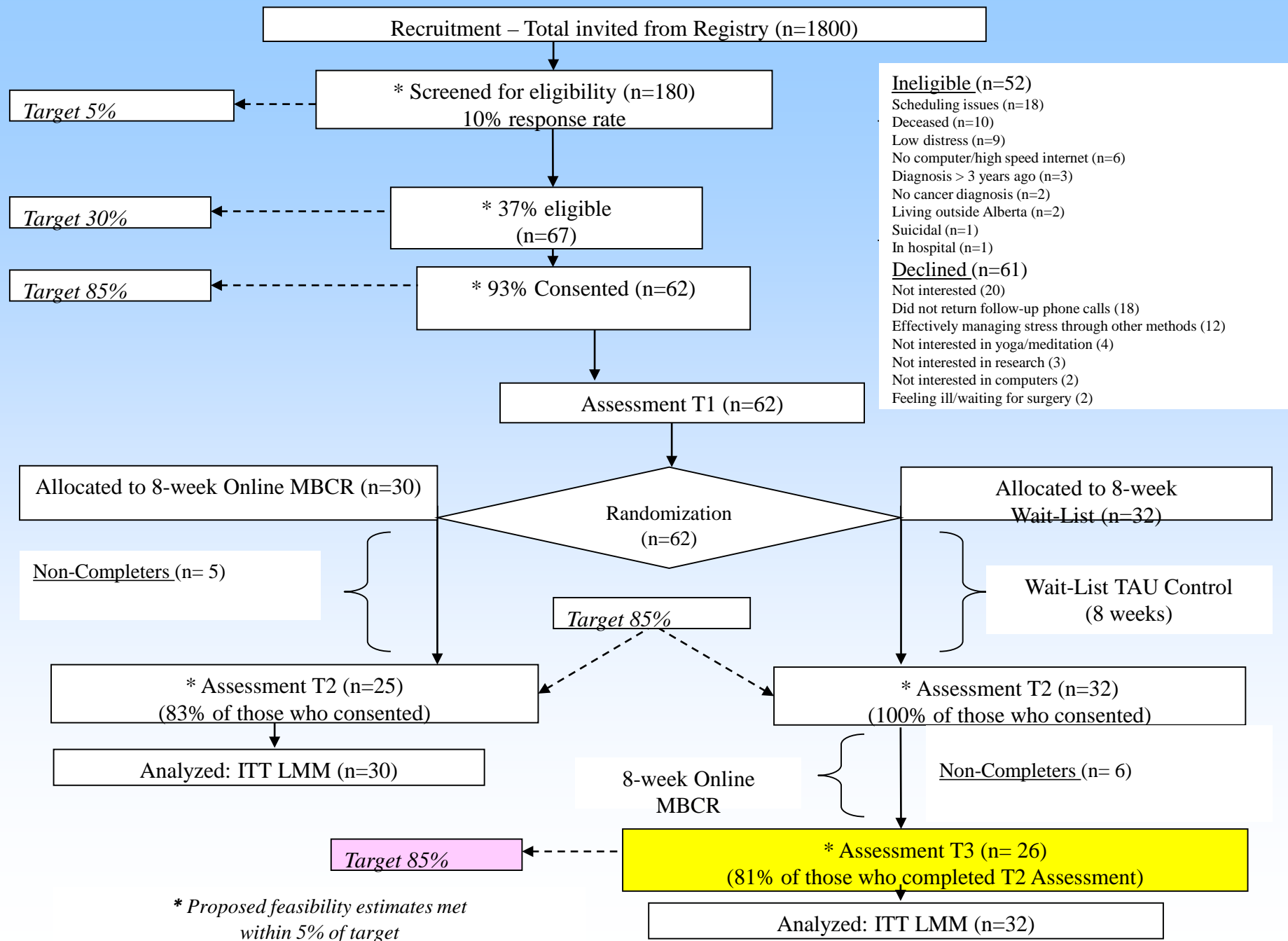


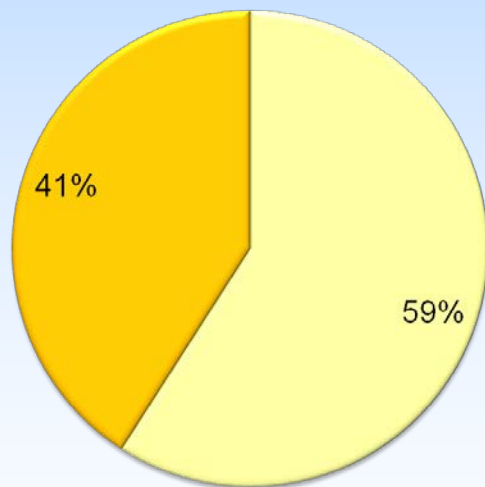
Figure 1 - eCALM CONSORT Flow Diagram



eCALM Satisfaction Results

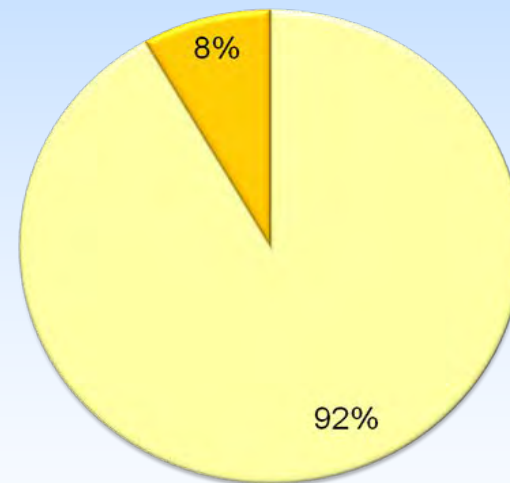
Online MBCR Program Satisfaction

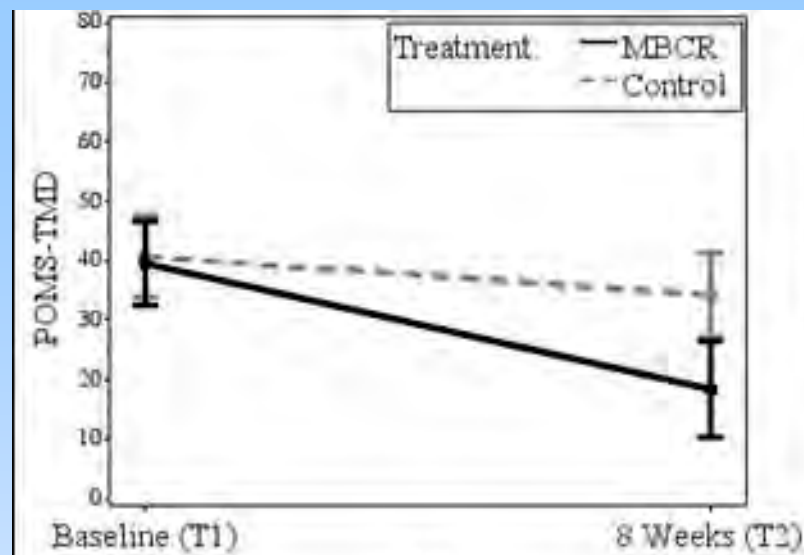
- Positively Surprised: Exceeded Expectations (n=13)
- Satisfied: Met Expectations (n=9)



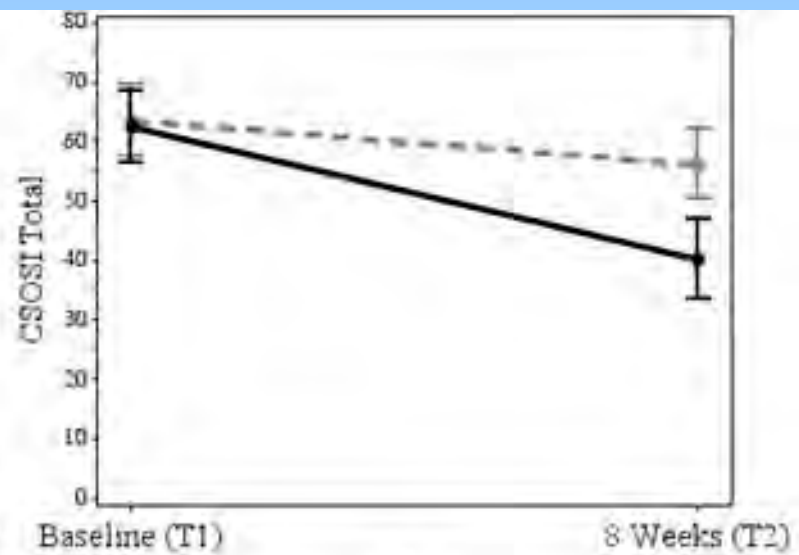
Recommend Online MBCR to Other Cancer Patients

- Recommend Program (n=22)
- Recommend with Reservations (n=2)*

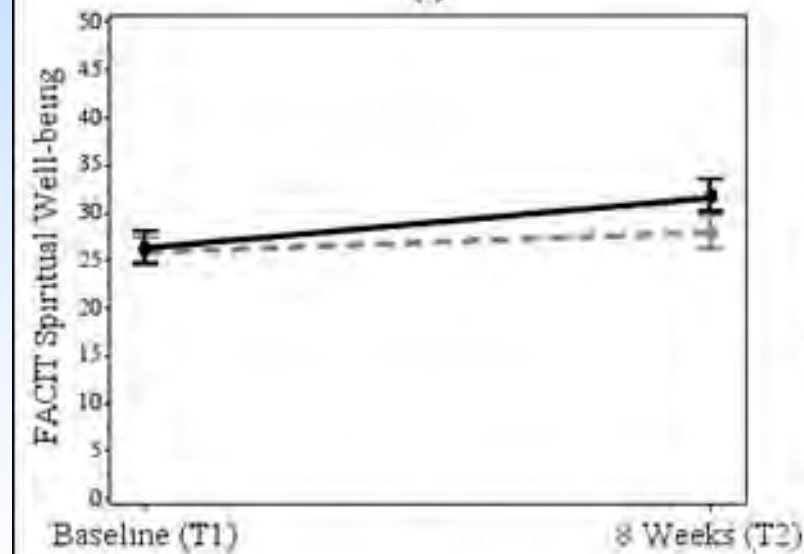




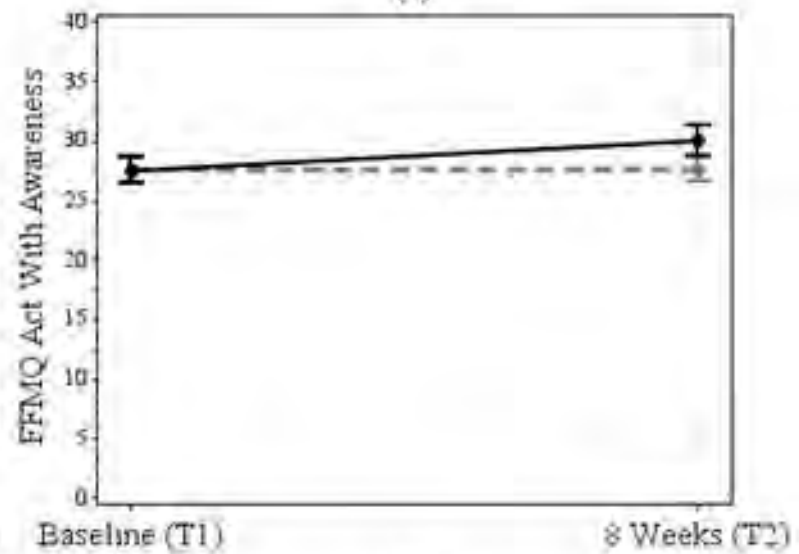
(a)



(b)



(c)



(d)



eCALM Patient Quotes

- Being able to access this course online was a huge benefit in terms of my energy level. Because I am still in treatment, driving to another location can be taxing on my energy, I was able to **conserve my energy strictly for the course and content**. Also setting up this time and location at home made it **easier on non-course days to keep up with the program** and practices since I was already comfortable in my home environment.”
- “Meditation and Body Scan was extremely helpful during my first Radiation Therapy as I calm my fears and emotions. **I do it every day during my treatment** as I lay on the treatment table and just become aware of my surroundings when they tell me that my treatment is done. GOOD TIMING and thank you.”



eCALM patient quotes

- “I truly appreciate having had the opportunity to participate and will definitely incorporate mindfulness (and yoga and meditation) in my daily life - to enhance my quality of life and contribute to my ongoing experience of **living with cancer versus dying of cancer**.”
- “I believe this program has **changed my life** and given me tools to live successfully no matter what happens. Practicing is a work in progress, but I am getting much better at not reacting, not letting my feelings and thoughts overwhelm me, etc. and I have great faith that practicing mindfulness will not only see me through, but build my resilience too.”



eCALM Patient Quotes

- “I was **somewhat hesitant** at the beginning of the course because I am not a touchy/feely type person, and had reservations about yoga and meditation, although I had very little actual experience with either. I found that I really enjoyed the sessions, and in many aspects, the **weekly sessions were a highlight of my week.**”
- “I felt a sense of wellbeing when involved with the program, and I think that the fact the group was from all over Alberta, and that we would unlikely run into each other was a positive thing--**didn't have to worry about someone in the group talking to other people that I know or work with.**”
- “Thank you! MBSR is a great practice to share any way we can. In a post cancer phase, accessing the course online is great, one less outing. The online format works. It held, for me at least, **just the right amount of contact and closeness** for me to be comfortable. I truly appreciate the graceful and loving way the course was conducted as well as the gentle reminders and patience extended me.”



eCALM summary

- Online MBCR is feasible and acceptable to patients
- Patients are highly satisfied with the program
- Online MBCR compared to waitlist resulted in significant improvements in mood and stress symptoms
- Online MBCR also resulted in greater improvements in spirituality and acting with awareness
- How to transition from a research study to ongoing programming?



MATCH study design: Mindfulness And Taichi for Cancer Health

- Pragmatic preference-based comparative efficacy trial
- MBCR (superior in MINDSET) vs. Tai chi/Qigong
- Design elements:
 - Included waitlist control component in each of the preference-based and randomized portions
 - Screening for distress to include only distressed participants
 - 6-month follow-up

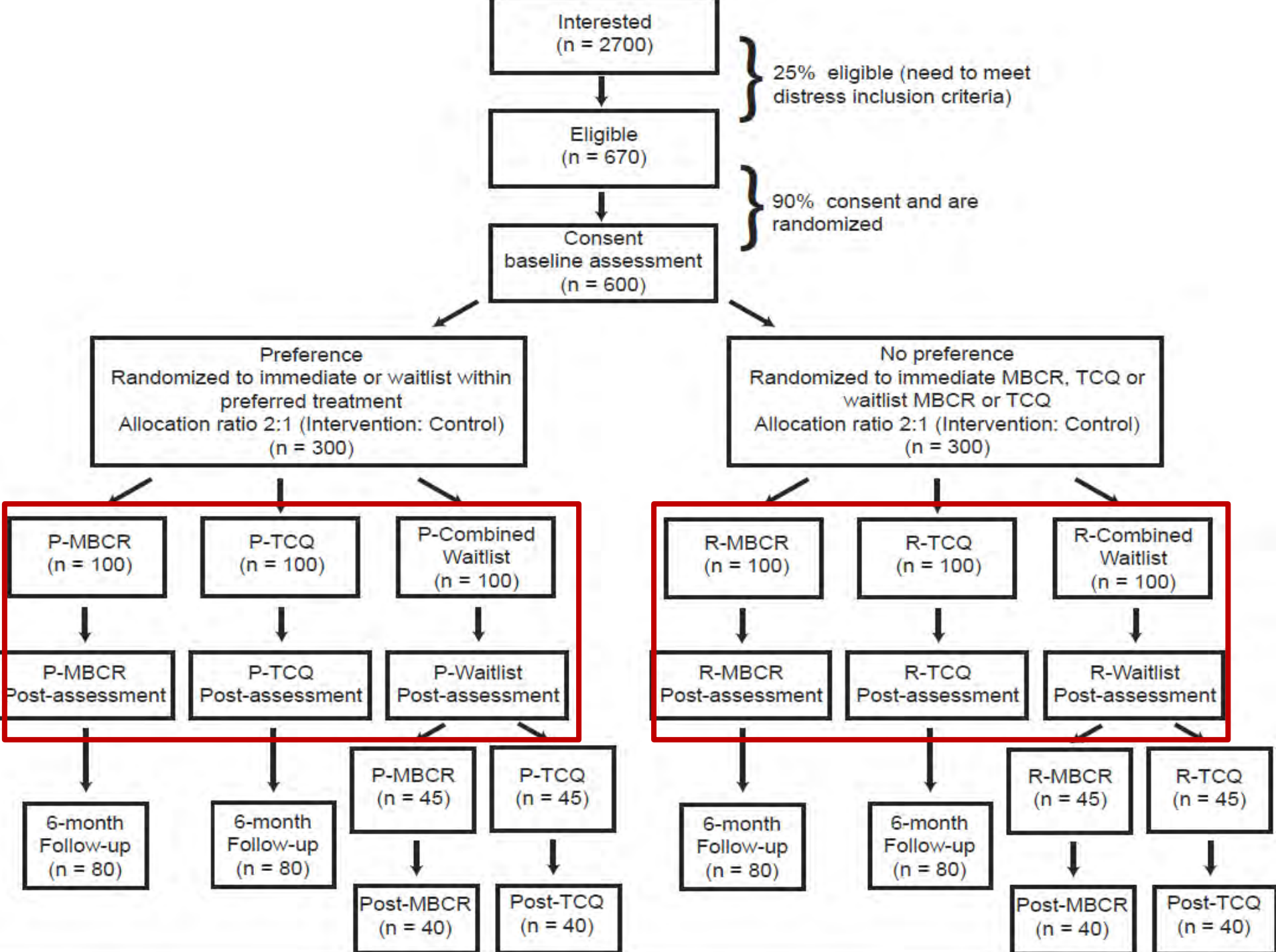


Objectives



- 1) To compare MBCR and TCQ to each other and a waitlist control condition using an innovative, randomized, preference-based comparative effectiveness trial design that takes into account potential moderating factors that might predict differential response, on a range of psychological and physical outcomes.
- 2) To investigate the impacts of MBCR and TCQ on a range of biological outcomes including inflammation/immune processes, blood pressure, heart rate variability, stress hormones, cellular aging and gene expression.





MATCH Outcomes

- Psychological
 - Mood, stress, QL
 - Positive Outcomes
- Physical
 - Fatigue, Sleep, Pain
 - Balance, fitness
- Biological
 - Salivary Cortisol
 - Cytokines
 - Telomere Length
 - Gene Expression
 - Psychophysiology (Ambulatory BP; HRV)
- Health Economic Measures



Progress to Date

- Recruitment began in June 2016
- First cohort run in Calgary, October 2016; currently on Cohort 6
- First Cohort TO, May 2017; currently on cohort 4



ONE-MIND (ONlinE MINDfulness during chemotherapy)

- Objective: to see if online mindfulness can prevent, diminish or delay the onset of CT-related side-effects
- Waitlist RCT to online mindfulness or usual care
- 12 55-min live sessions beginning at start of CT
- Daily home practice and practice during CT sessions
- Primary outcome: fatigue
- Secondary: nausea/vomiting, sleep problems, stress, mood,
- Recruitment underway



SEAMLESS (SmartphonE Application of MindfuLnEss for Cancer SurvivorS)

- Testing a commercial mindfulness App for helping cancer survivors transition after primary treatment
- Primary outcome: Stress Symptoms
- “Am” app includes instructional videos; tailored content; biometric feedback
- 4-week intervention
- Waitlist controlled trial
- Primary outcome stress/mood



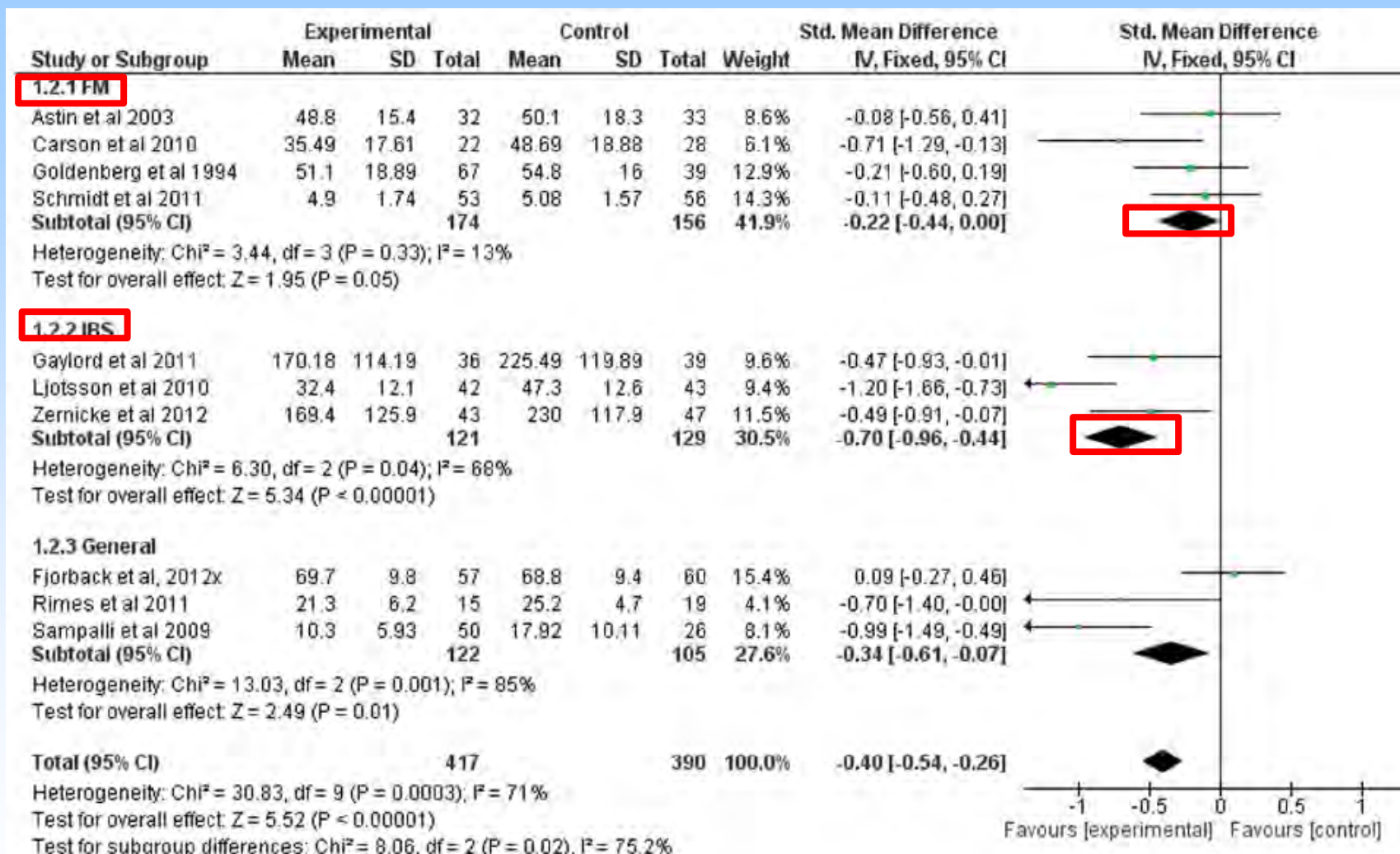
Other conditions

Mental Health	Physical Health	Outcomes in Healthy Populations
Depression Anxiety PTSD/Trauma Bipolar Disorder Social Phobia Eating Disorders Obesity Personality Disorders Substance Abuse/Smoking cessation Insomnia Psychotic Disorders/Schizophrenia	CVD/Hypertension HIV/AIDS Cancer Hot flashes/menopause Irritable bowel syndrome Solid organ transplant Pain Asthma Diabetes Fibromyalgia Headache/Migraine Multiple Sclerosis Skin Diseases/Psoriasis Stroke Tinnitus Emphysema/COPD	Inflammation/Immune function Attention Stress (Acute/Chronic) Cognition Health status Seniors Health Wound Healing Infectious Diseases/Colds

The Art and Science of Mindfulness, 2nd Ed. Shapiro & Carlson. APA books..(2016)



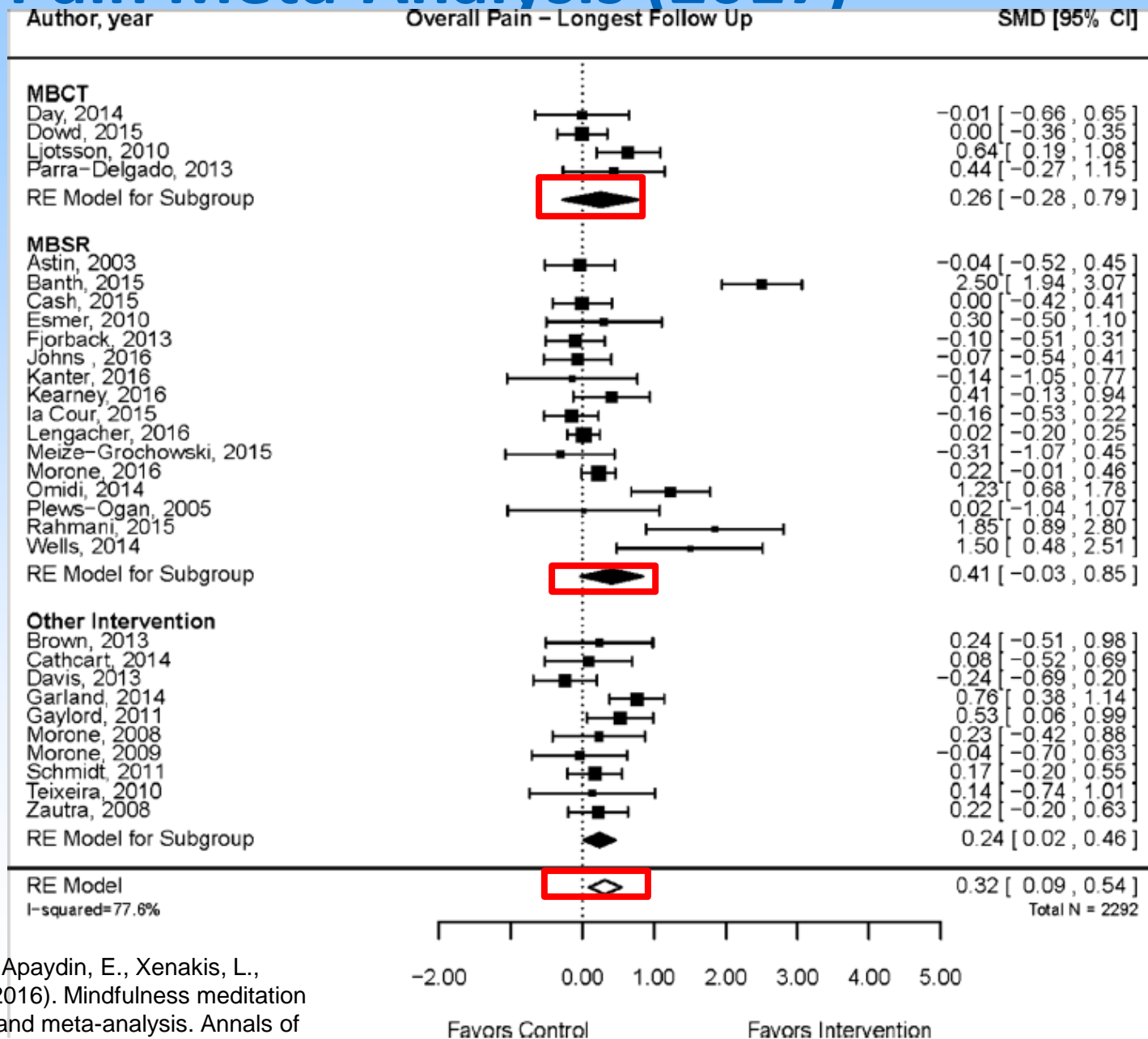
Somatization disorders meta-analysis



Lakhan SE¹, Schofield KL. Mindfulness-based therapies in the treatment of somatization disorders: a systematic review and meta-analysis. *PLoS One*. 2013 Aug 26;8(8):e71834.

Chronic Pain Meta-Analysis (2017)

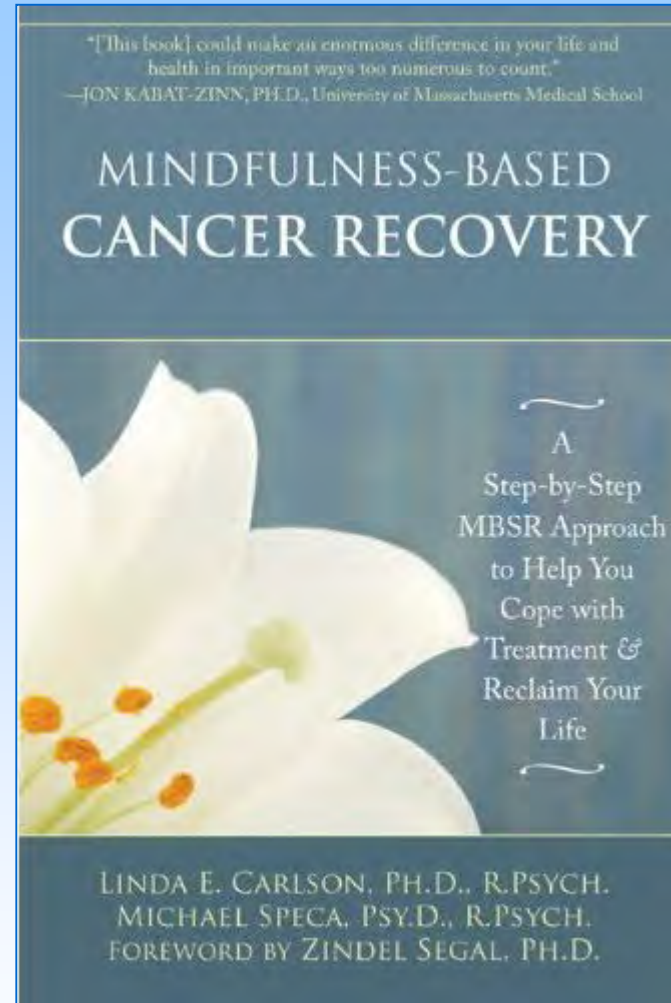
- 30 RCTs
- Total N=2292
- Overall ES=.032



Hilton, L., Hempel, S., Ewing, B. A., Apaydin, E., Xenakis, L., Newberry, S., . . . Maglione, M. A. (2016). Mindfulness meditation for chronic pain: Systematic review and meta-analysis. *Annals of Behavioral Medicine*.



MBCR Curriculum



Weekly Themes

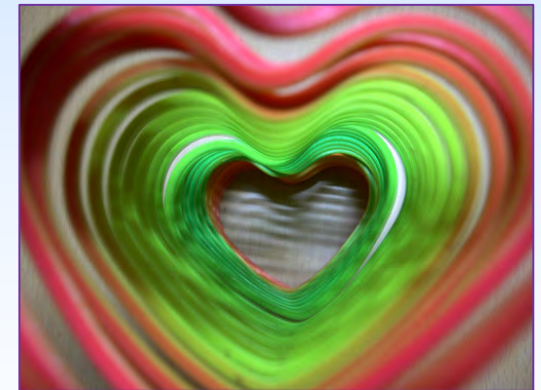
1. Introduction to Mindfulness
2. Mindfulness Attitudes
3. Mindbody Wisdom and Healing (stress responding vs. reacting)
4. Balance (breathing)
5. Mindful Coping
6. Cultivating Beneficial States of Heart and Mind (Imagery)
7. Deepening and Expanding
8. Moving into the World



Types of meditation practices in MBCR



- Body scan
- Sitting
- Walking
- Open awareness
- Mountain/lake
- Loving-kindness



born. yogis

SUSIE ARNETT and DOUG KIM
Foreword by GURMUKH KAUR KHALSA

n of
ogy
ncer



Week 1 – Introduction to Mindfulness

- Introductions, group principles
- What is mindfulness?
- Breathing awareness exercise
- Diaphragmatic breathing
- **Body Scan**
- Introduction to yoga
- Homework



Week 2 – Mindfulness Attitudes

- Discussion of home practice
- Raisin exercise
- **Mindfulness attitudes**
- Pleasant events log
- Yoga practice
- **Introduction to sitting meditation**
- Homework



Week 3 – Mindbody Wisdom and Healing

- Discussion of home practice
- Mind-body visualization exercise
- Discussion of symptoms of stress, responding vs. reacting, PNI
- Unpleasant events log
- Yoga Postures
- Sitting Meditation
- Home practice



Stress Symptom Checklist

- Physical Symptoms

- ☐ Headaches
- ☐ Stomach-aches
- ☐ Dizziness
- ☐ Sweaty palms
- ☐ “Butterflies” in stomach
- ☐ Back pain
- ☐ Tight neck, shoulders
- ☐ Racing heart
- ☐ Ringing ears

- Behavioral Symptoms

- ☐ Smoking
- ☐ Compulsive gum chewing
- ☐ Teeth grinding
- ☐ Overusing alcohol
- ☐ Compulsive eating



Stress Symptom Checklist (2)

- Emotional Symptoms

- ☐ Crying
- ☐ Nervousness
- ☐ Edginess
- ☐ Anger
- ☐ Loneliness
- ☐ Feeling overwhelmed
- ☐ Feeling powerless
- ☐ Easily upset

- Cognitive Symptoms

- ☐ Forgetfulness
- ☐ Memory loss
- ☐ Indecisiveness
- ☐ Trouble thinking clearly
- ☐ Lack of creativity
- ☐ Loss of sense of humor



Stress Symptom Checklist (3)

- Spiritual Symptoms

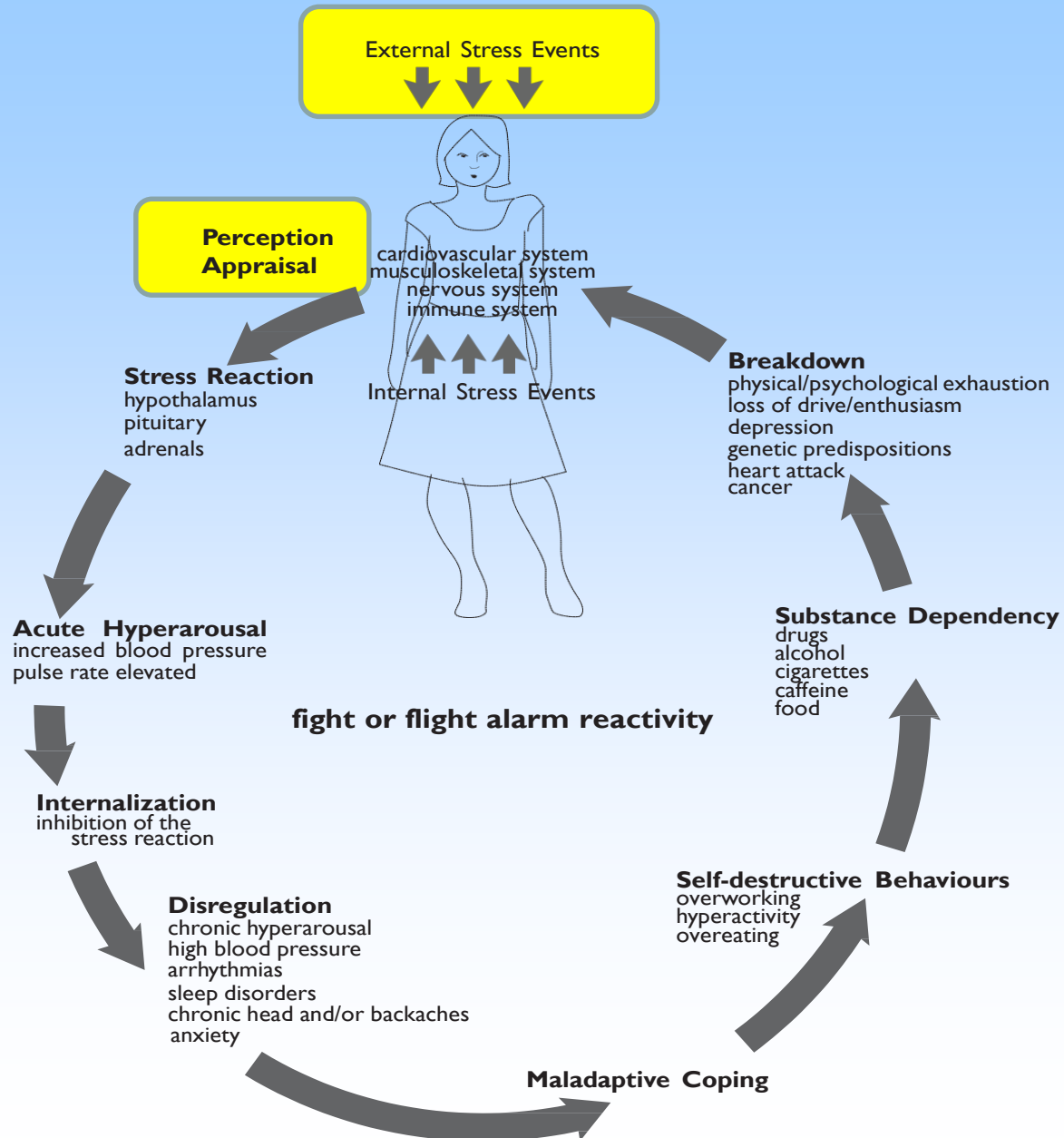
- ☐ Emptiness
- ☐ Loss of meaning
- ☐ Doubt
- ☐ Loss of direction
- ☐ Cynicism
- ☐ Apathy
- ☐ Martyrdom
- ☐ Unforgiving

- Relational Symptoms

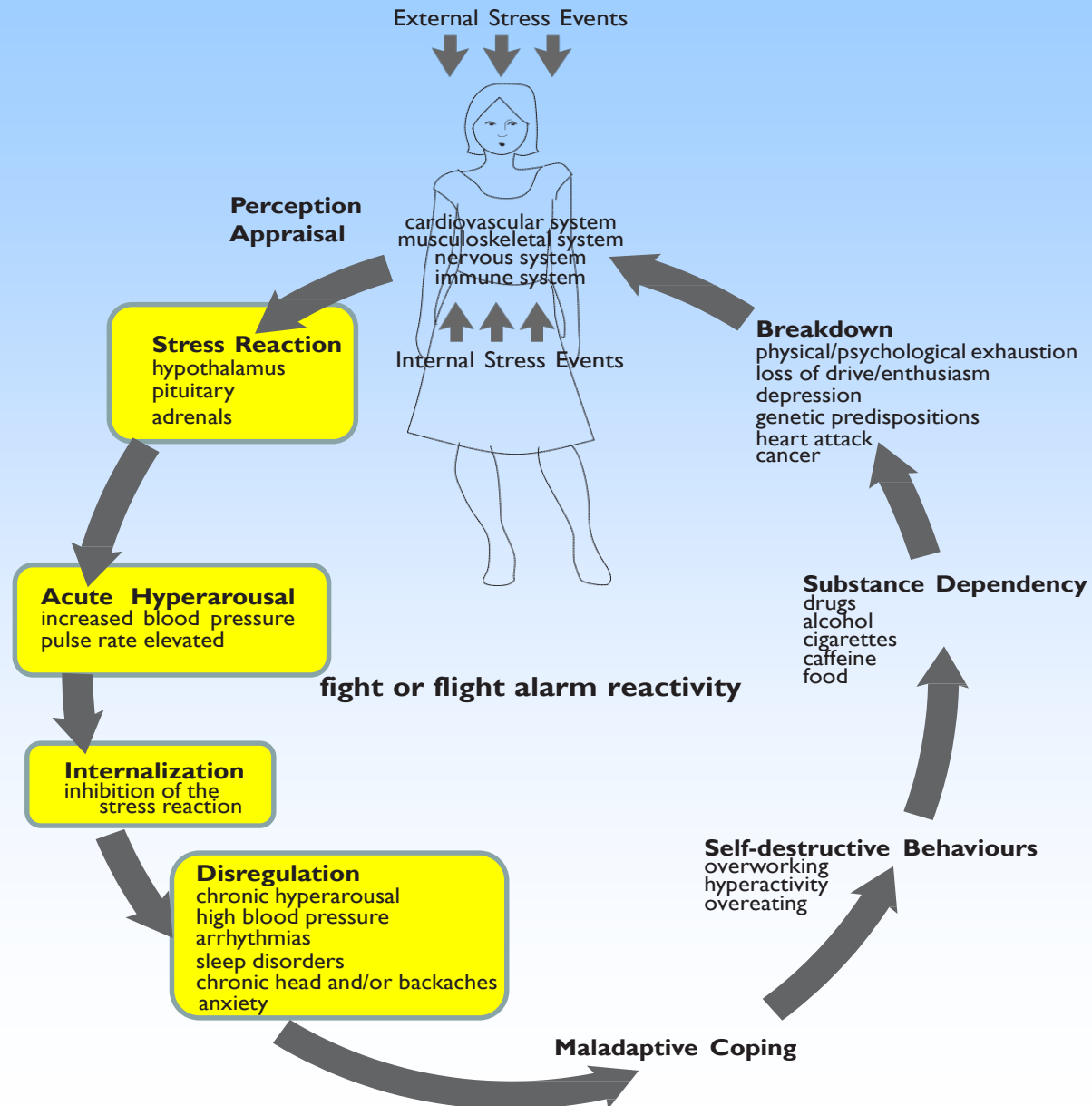
- ☐ Isolation
- ☐ Clamming up
- ☐ Social withdrawal
- ☐ Lack of intimacy
- ☐ Resentment
- ☐ Intolerance
- ☐ Distrust
- ☐ Lashing out



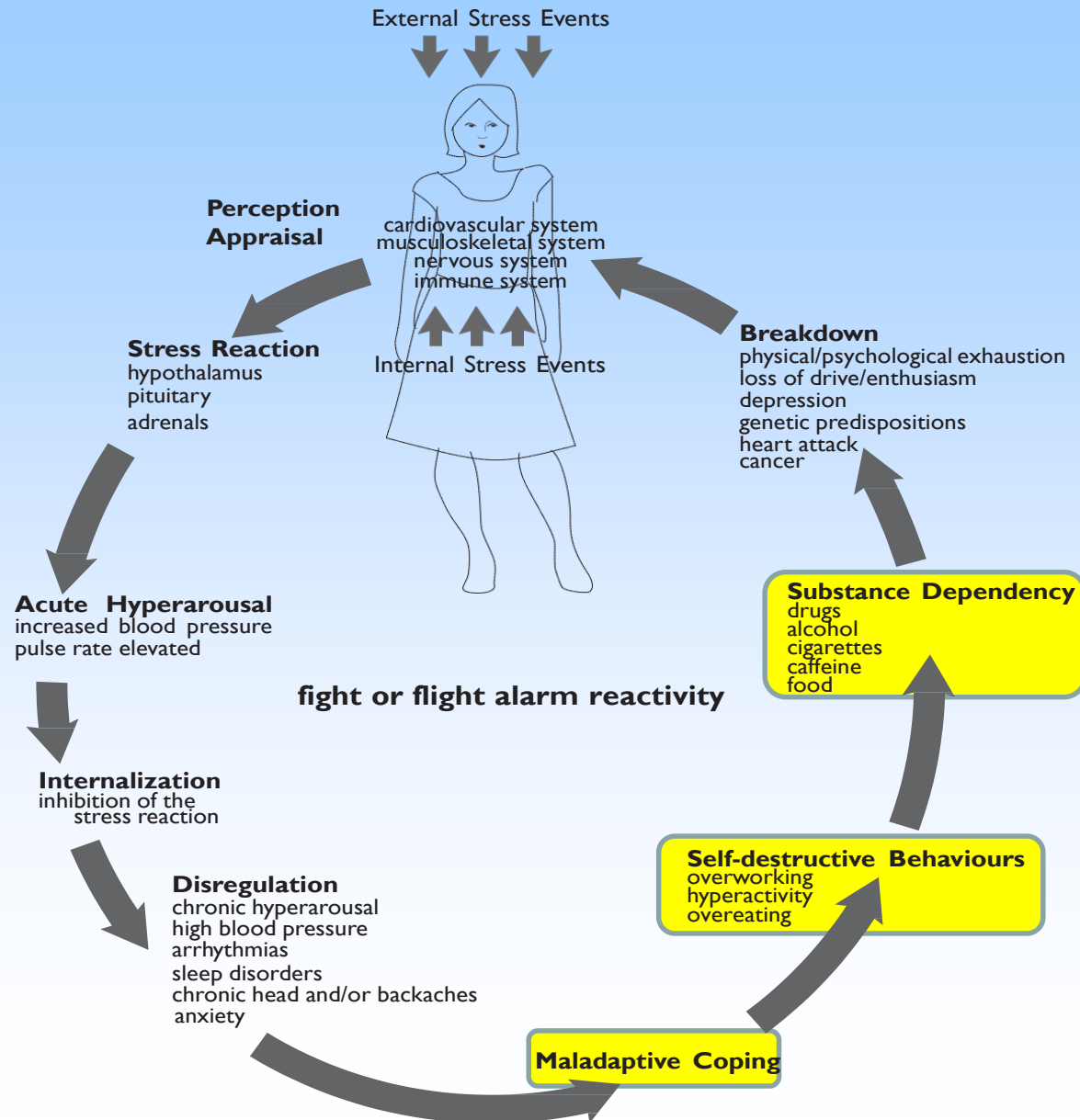
Reacting to Stress



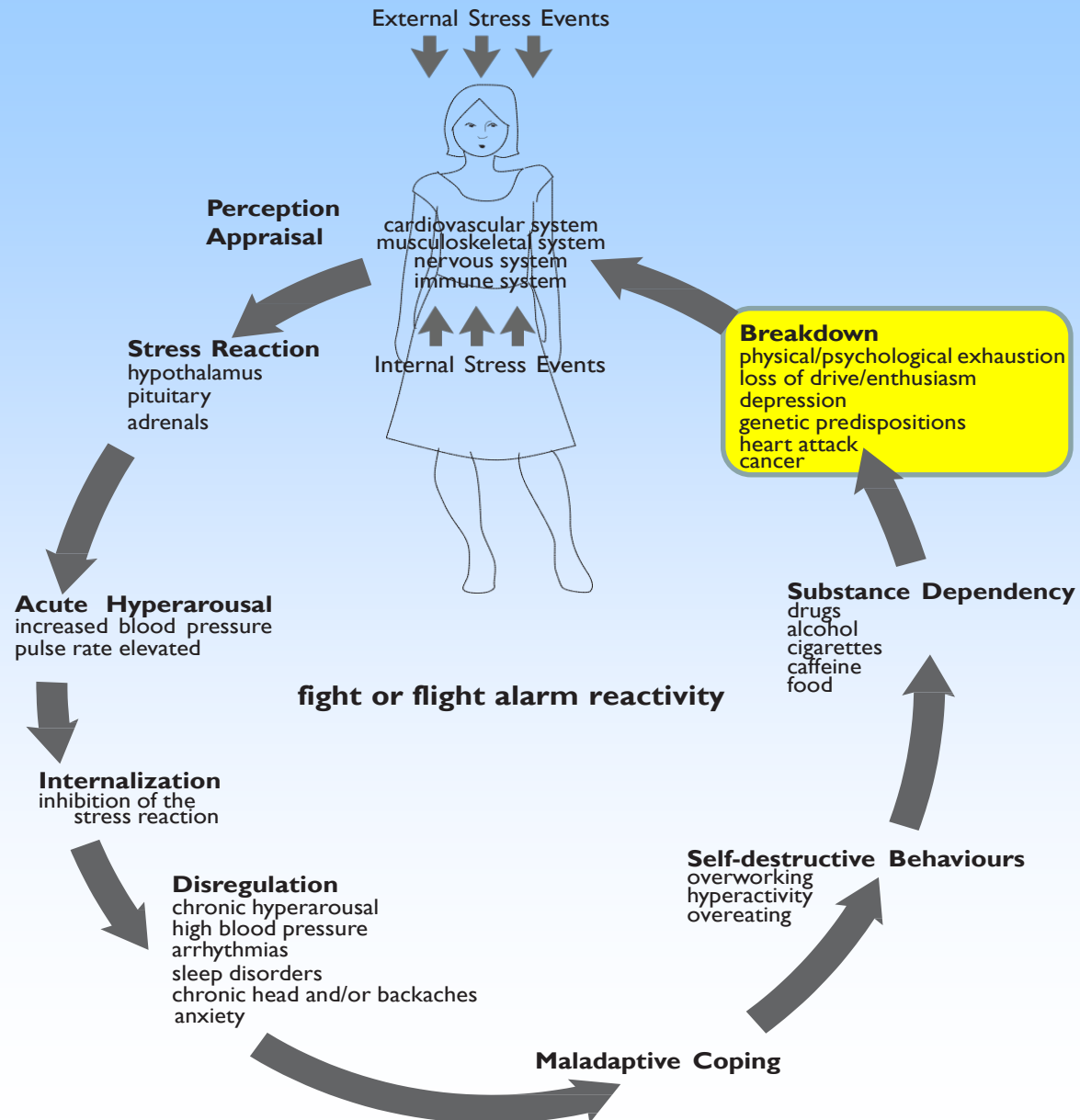
Reacting to Stress



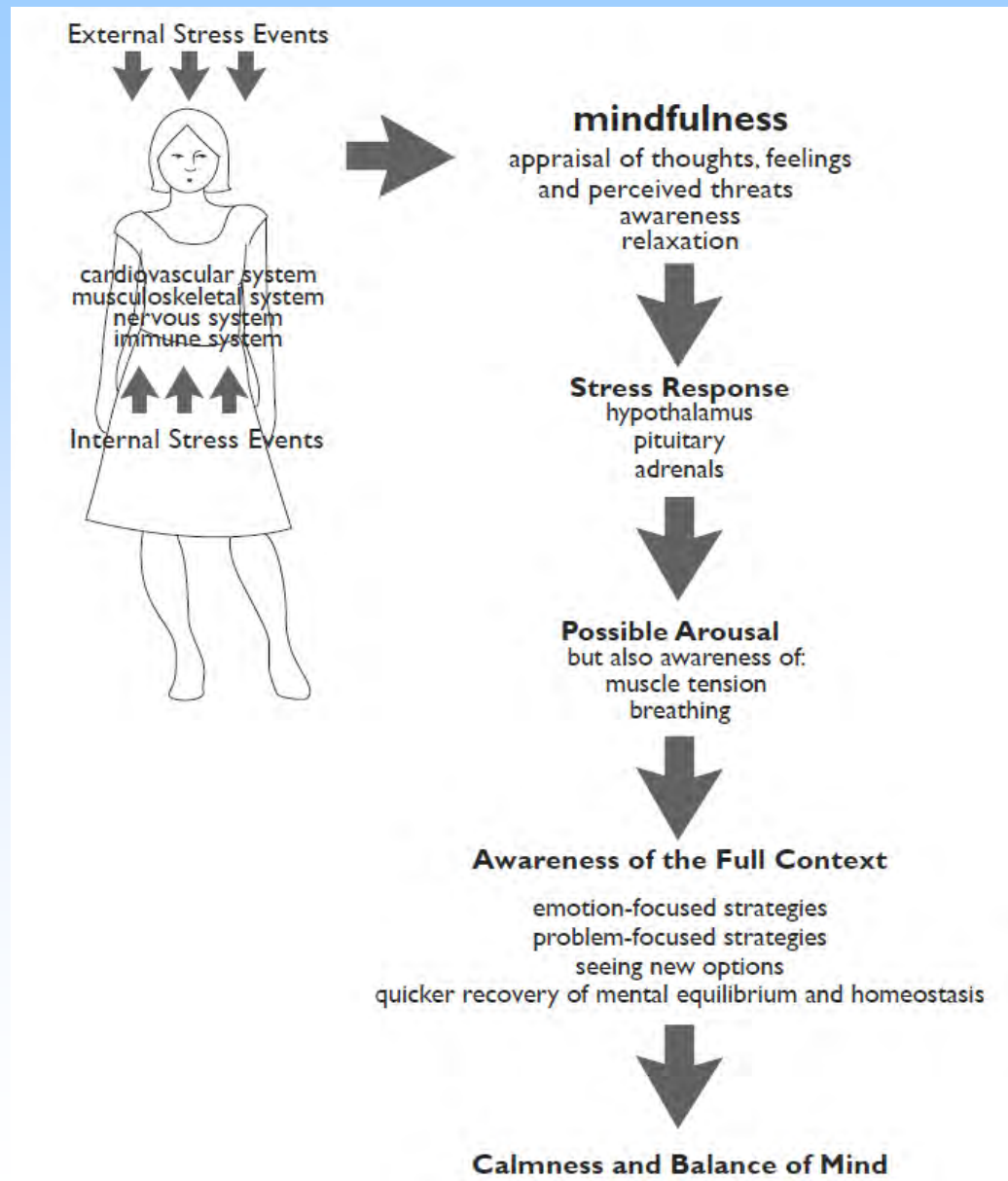
Reacting to Stress



Reacting to Stress



Mindfully Responding to Stress



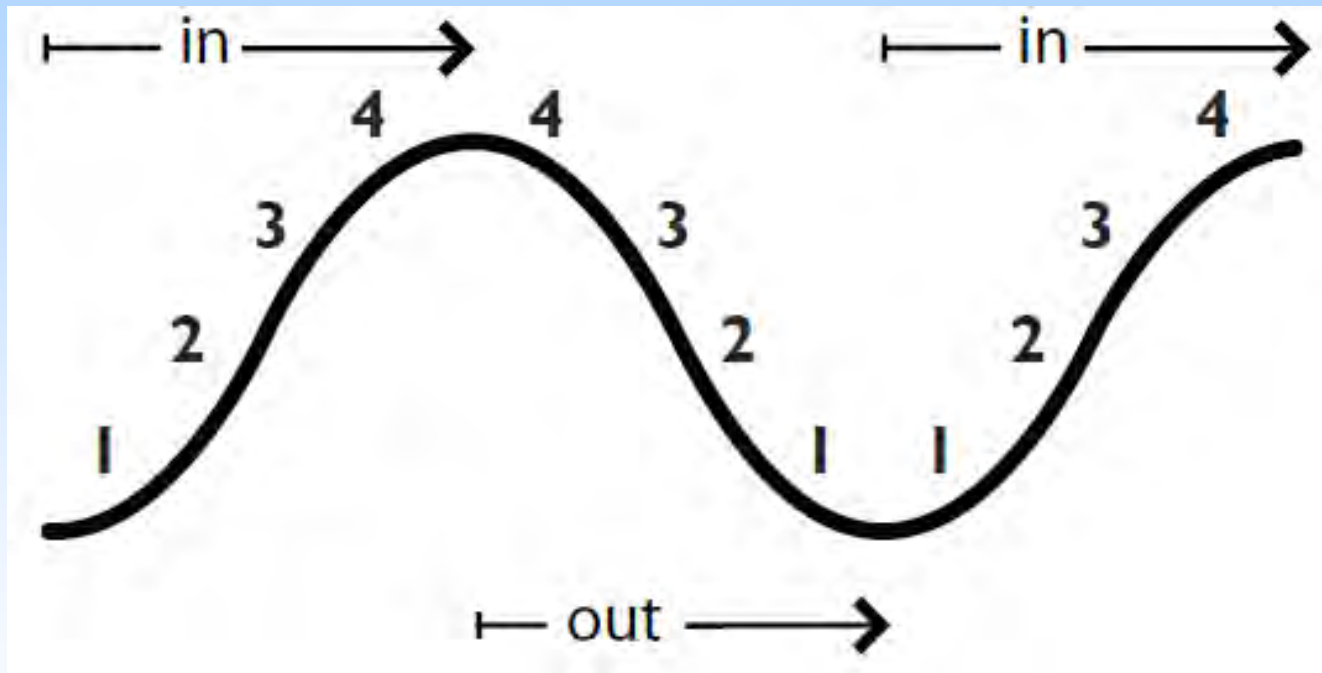
Week 4 – Balance

- Discussion of home practice
- Balance in the autonomic nervous system – SNS, PNS and breathing
- Mini mindfulness breathing exercises
- Sleep exercise
- Yoga postures
- Sitting meditation
- Homework

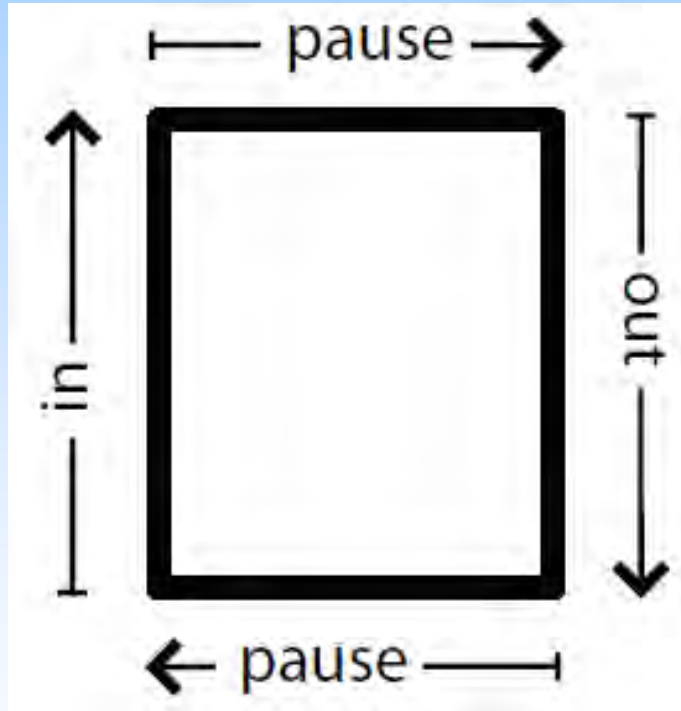




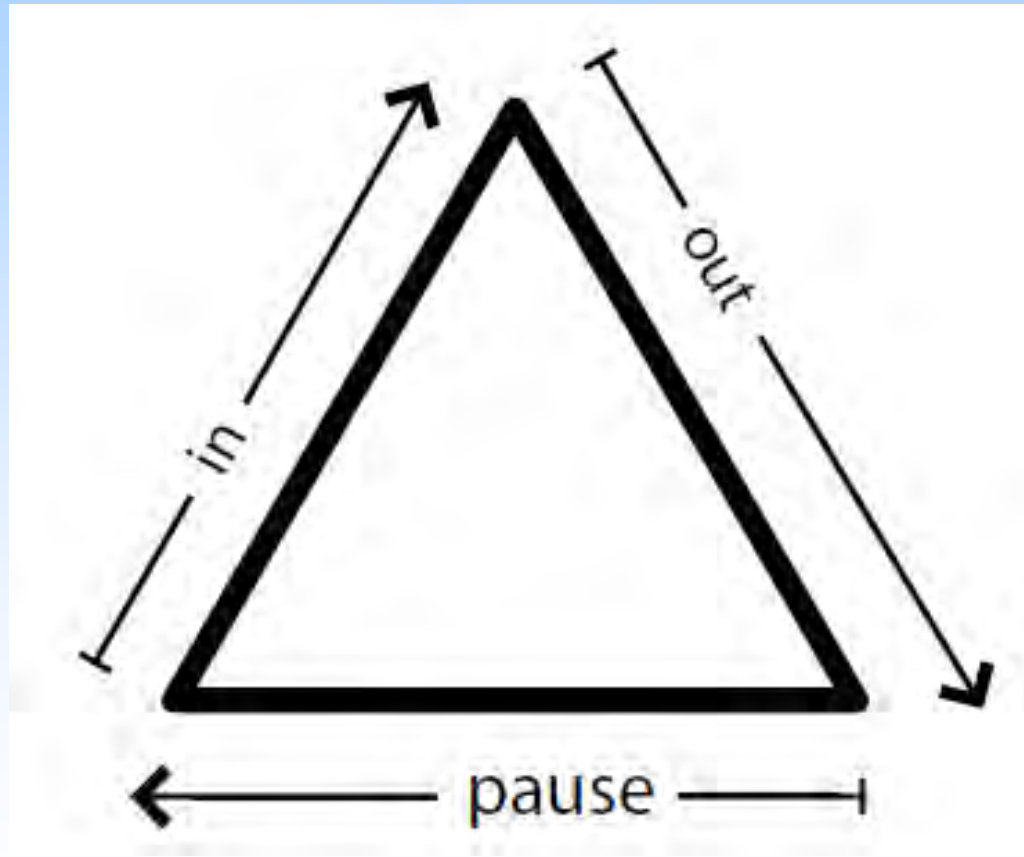
Riding the Wave of Breath



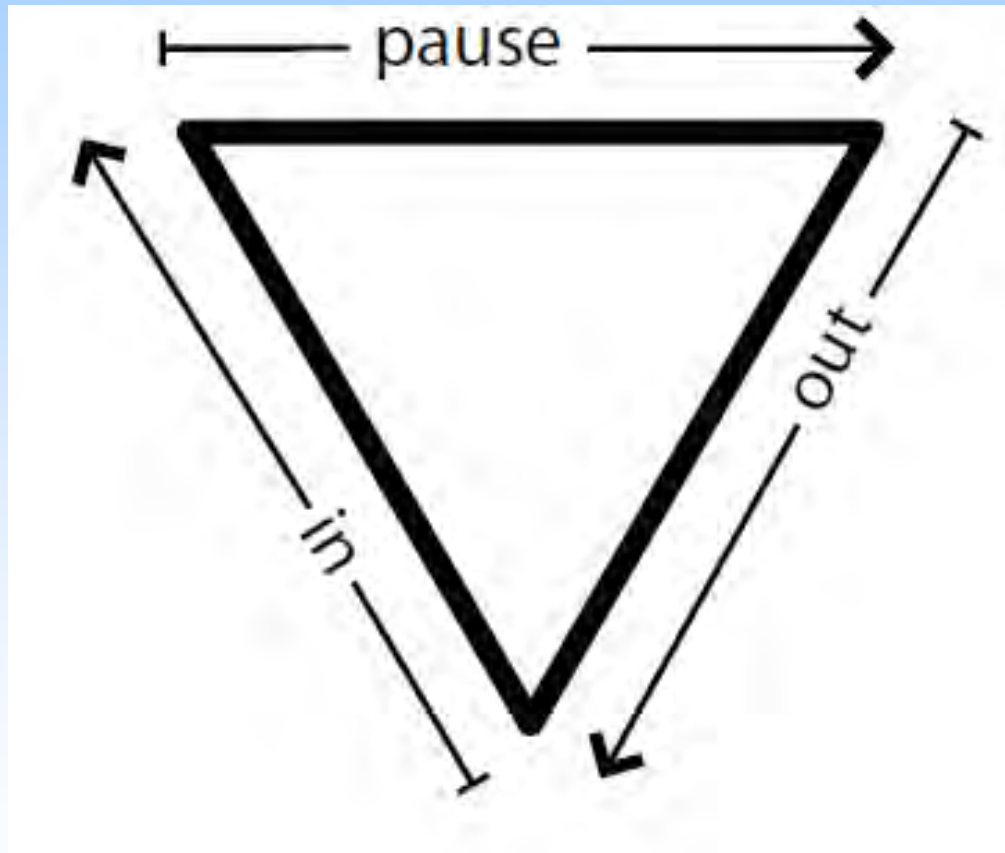
Square Breathing



Relaxing Triangle Breath



Invigorating Triangle Breath



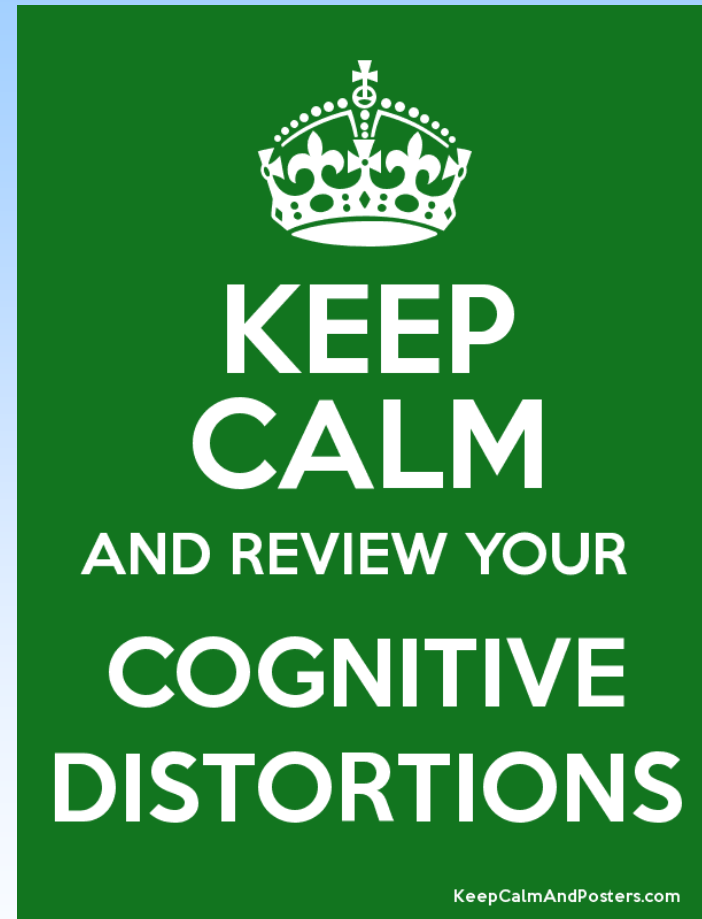
Week 5 – Mindful Coping

- Discussion of home practice
- Stories we tell ourselves (i.e. cognitive distortions)
- Challenging our assumptions
- Yoga Postures
- Walking meditation
- Homework



The Nature of Thought

“There is nothing either
good or bad, but
thinking makes it so.”



Events, Thoughts, Feelings

Life Event

Thoughts or
Interpretations
(Stories)

Feelings



Week 6 – Cultivating Beneficial States of Heart and Mind

- Discussion of home practice
- Uses of imagery
- Mountain/Lake Meditation
- **Loving-kindness meditation**
- Yoga postures
- Mountain meditation
- Preparation for retreat
- Homework



Introduction to Loving Kindness Practice



- traditionally called “*Metta*” practice
- one of several practices that aims to help uncover and nurture specific beneficial qualities that support well being



Loving Kindness

- Begin by cultivating wishes for the happiness of yourself, then of others who are your closest loved ones
- Very gradually expand the circle to include wishes for the well-being of more distant friends and acquaintances, strangers, eventually even your enemies and finally all living beings



Week 7 – Deepening and Expanding

- Discussion of home practice and retreat
- Discussion of bare (choiceless) awareness
- Yoga practice (sun salutations)
- Bare awareness Sitting meditation
- Homework



Week 8 – Moving into the World

- Discussion of home practice
- Sharing of experience over 8 weeks
- Discussion of options for future plans
- **Sharing of future plans**
- Yoga postures
- Loving kindness meditation and closing circle



Summary



- Mindfulness is present-moment nonjudgmental awareness
- MBSR is a general program for everyone
- MBCR is specific for people with cancer
- MBIs can help with depression, anxiety, stress and many other problems
- Hundreds of research papers support its efficacy



MBSR Instructor Training

- Requirements of Centre for Mindfulness Teacher Certification:
<http://www.umassmed.edu/cfm/oasis/index.aspx>
- Phase 1
 - Completion of an eight-week [MBSR course as a participant](#)
 - Participation in one or more silent, teacher-led, 5-10 day mindfulness meditation retreats



MBSR Instructor training (cont)

- Phase 2
 - 8-week practicum in MBSR (participant-observer)
 - MBSR in Mind-Body Medicine (7 day retreat).
 - Preliminary teaching experience (short classes and workshops)
 - MBSR essential study (teaching methods; didactic material such as stress physiology)
 - Ongoing regular mindfulness meditation and retreat practice; yoga practice
 - Teacher Development Intensive (8-day training)



MBSR Instructor training (cont)

- Phase 3
 - Teaching at least *four* complete eight-week MBSR courses.
 - Teaching at least *one* eight-week MBSR course under qualified supervision
 - Developing, deepening, and refining both your understanding and skills. At least three mindfulness meditation retreats are required to proceed to *MBSR Teacher Certification*.
 - Participation in a post-Supervision assessment.



MBSR Instructor training (cont)

- Phase 4
 - Continued teaching to complete at least *eight* complete MBSR courses
 - Completion of at least *four* mindfulness meditation retreats
 - Ongoing daily mindfulness meditation practice; and yoga and other body-centered awareness practices
 - Professional graduate degree or equivalent working experience



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