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Esther I. de Bruin



**UvA minds You**

**Academic Training Centre**



UNIVERSITY OF AMSTERDAM



Fonds Psychische  
Gezondheid

XXXX Mindful2Work



## Stress as a health hazard

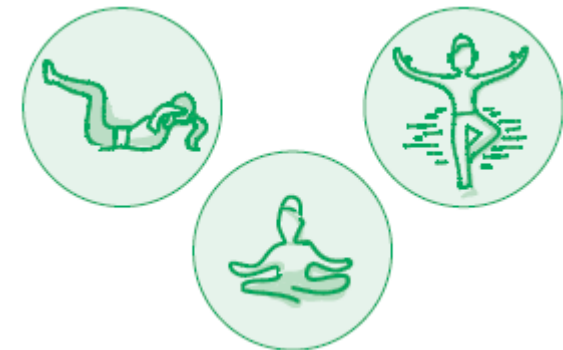


- 75%-90% of GP visits related to stress complaints
- > 2/3 of general population stress-related symptoms: fatigue, touchy or angry easily, changes in sleeping patterns
- 76% of the psychological occupational illnesses => burn-out
- Short-term costs: headaches, muscle pains, increased heart beat, blood pressure, sleeping problems, mentally unstable
- Long-term costs: chronic exhaustion, burn-out, anxiety, depression, decreased cognitive functioning, somatic and cardiovascular problems
- Consequences at work: decreased productivity, falling ill easier, more drugs/alcohol, errors, interpersonal problems
- Economical costs: yearly 660 billion dollars in the United States and 920 billion euro in Europe

## Rationale Mindful2Work

### Assumptions

- Physical exercise, yoga, mindfulness all have the potential to effectively reduce stress-symptoms
- Stress expresses itself through body and mind - reciprocally connected
- The combination of three elements attracts a wider range of people
- The combination of three elements might have a synergetic effect



### Combination of three effective elements

- Mindful physical exercises (20 min) - 70% of max, outdoor/nature
- Yoga (30 min) - restorative, attention to bodily limits, also exercises at work
- Mindfulness (40 min) - emphasis on how to relate to stress (at work), kindness to self

‘The outdoor physical exercises loosen me up, both mentally and physically, get me out of my set routines, which was a good feeling. After that we continued Indoors with yoga in another physical way, to then end the sessions with mindfulness meditations. Taken together, this was a very natural flow’.

## Three phases

- *Phase I: Feasibility and acceptability*  
=> Is the Mindful2Work training feasible and acceptable for people with (work-) stress complaints?
- *Phase II: Quantitative approach (top-down measurements)*  
=> What are the effects of Mindful2Work on well-being, functioning at work, and training-specific measures?
- *Phase III: Qualitative approach (bottom-up measurements)*  
=> What do participants think about the Mindful2Work program?



## Phase I -Feasibility and Acceptability

- $N = 26$  (4 males)
- 89% followed 5-6 sessions
- 69% took part in FU session
- 0% drop-out rate (< 4 sessions)
- Average grade M2W training 8.1 (1-10)
- Average grade M2W trainers 8.4 (1-10)
- 83% wants to carry on with 2-3 elements after training
- Positive effects: 55% due to M2W training, 35% M2W + other life factors
- 87% very positive about the order of PE, yoga, mindfulness

**Table 1** Evaluation of session themes and exercises of the Mindful2Work training

Theme sessions	Ratings (scale 1–3)
Session 1—from automatic pilot to become aware	$M = 2.96$ ( $SD = 0.20$ )
Session 2—the body	$M = 2.79$ ( $SD = 0.42$ )
Session 3—the breath	$M = 2.84$ ( $SD = 0.37$ )
Session 4—stress!	$M = 2.84$ ( $SD = 0.37$ )
Session 5—dealing with difficulties	$M = 2.75$ ( $SD = 0.44$ )
Session 6—taking care of yourself	$M = 2.73$ ( $SD = 0.46$ )
Exercises	Ratings (scale 1–3)
Sitting meditation	$M = 2.87$ ( $SD = 0.34$ )
Body scan	$M = 2.70$ ( $SD = 0.47$ )
Breathing exercise (alternate nostril breathing)	$M = 2.75$ ( $SD = 0.44$ )
Three-min breathing space	$M = 2.88$ ( $SD = 0.33$ )
Compassion meditation	$M = 2.41$ ( $SD = 0.59$ )
Walking meditation	$M = 2.57$ ( $SD = 0.65$ )
Stress visualization-breathing space practice	$M = 2.68$ ( $SD = 0.48$ )
Yoga exercises	$M = 2.72$ ( $SD = 0.61$ )
Boot camp exercises	$M = 2.73$ ( $SD = 0.47$ )

1 not so helpful, 2 somewhat helpful, 3 very helpful

### Mindful2Work: Effects of Combined Physical Exercise, Yoga, and Mindfulness Meditations for Stress Relieve in Employees. A Proof of Concept Study

## Phase II and III – Top-down and bottom-up measurements

### Participants

- $n = 124$  (24% males; 80% higher education/university)
- Mean age = 43.7 ( $SD = 10.20$ )
- Inclusion criterion: at least moderate stress complaints (CIS > 76 and 4DSQ-Distress > 10)
- Exclusion: current psychotic symptoms, suicidal ideation, drug abuse, BPD
- In- and exclusion criteria were self-reported and confirmed with an external physician
- Wait-list, pre-test, post-test, FU1, FU2 design

### Measurements: Top-down

- *Well-being* (stress, anxiety, depression, happiness, affect, sleep, somatic stress)
- *Functioning at work* (risk for drop-out, workability, satisfaction at work)
- *Training specific* (mindful awareness, self-compassion, emotion regulation)

### Measurements: Bottom-up

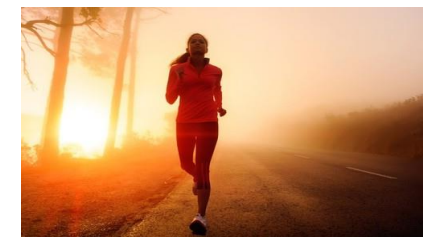
- *Personal goals* (i.e., better recognize my bodily stress signals; increase energy; set limits)
- *Personal interviews* (experienced changes; working mechanisms)



# Phase II – Well-Being (top-down)

	WL-Pre		Pre-Post		Pre-FU1		Pre-FU2	
	ES	p	ES	p	ES	p	ES	p
Stress <sup>1</sup>	.20	.07	.66	.00	.73	.00	.88	.00
Depression <sup>2</sup>	.03	.78	.47	.00	.54	.00	n/a	n/a
Anxiety <sup>2</sup>	.22	.06	.49	.00	.58	.00	n/a	n/a
Happiness <sup>3</sup>	.30	.08	.63	.00	.62	.00	.60	.00
Positive affect <sup>4</sup>	.00	.98	.49	.00	.61	.00	.82	.00
Negative affect <sup>4</sup>	.23	.03	.56	.00	.61	.00	.68	.00
Sleep <sup>5</sup>	.09	.31	.37	.00	.44	.00	n/a	n/a
Physical stress <sup>6</sup>	.19	.07	.43	.00	.53	.00	.58	.00

1 = Perceived Stress Scale (PSS); 2 = Depression Anxiety Stress Scale (DASS-21); 3 = 1-item questionnaire; 4 = Positive And Negative Affect Scale (PANAS); 5 = Holland Sleep Disorder Questionnaire (HSDQ); 6 = 4-Dimensio Symptom Questionnaire.



# Phase II – Functioning at Work (top-down)

	WL-Pre		Pre-Post		Pre-FU1		Pre-FU2	
	ES	p	ES	p	ES	p	ES	p
Risk for drop-out <sup>1</sup>	.09	.40	.63	.00	.67	.00	.89	.00
Physical workability <sup>2</sup>	.22	.06	.28	.00	.30	.00	.61	.00
Mental workability <sup>2</sup>	.08	.49	.47	.00	.59	.00	.79	.00
Work satisfaction <sup>3</sup>	.15	.41	.54	.00	.73	.00	.73	.00

1 = Checklist Individual Strength (CIS); 2 = Workability Index (WAI); 3 = 1-item questionnaire.

Dizzy; Neck pain; Backache; Palpitations; Nausea; Optimistic, Self-confident; Enthusiastic; Scared; Sad; Hostile; Nervous; Difficulty to relax; Stressed; Feeling negative; Gloomy; Short fuse; Bad sleep quality; I lie awake at night.

I feel exhausted; I feel fit; Thinking requires a lot of effort; I have difficulty concentrating; I am full of activity; How do you rate your current mental/physical workability?; How satisfied do you currently feel at work?





# Phase II – Training Specific Measures (top-down)

	WL-Pre		Pre-Post		Pre-FU1		Pre-FU2	
	ES	p	ES	p	ES	p	ES	p
Mindful awareness <sup>1</sup>	.09	.47	.69	.00	.26	.01	n/a	n/a
Self-compassion <sup>2</sup>	.06	.55	.43	.00	.51	.00	n/a	n/a
Reappraisal <sup>3</sup>	.13	.38	.29	.02	.42	.00	n/a	n/a
Catastrophizing <sup>3</sup>	.24	.07	.30	.01	.24	.03	n/a	n/a

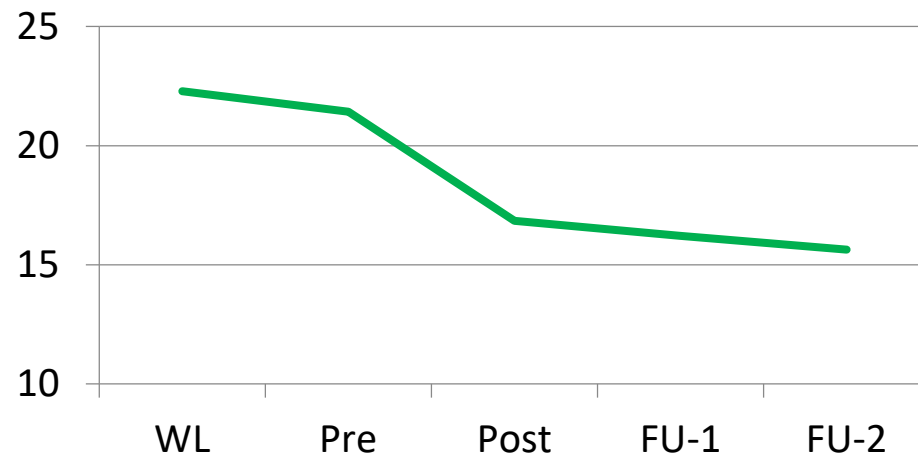
1 = Five Facet Mindfulness Questionnaire (FFMQ); 2 = Self-Compassion Scale (SCS); 3 = Cognitive Emotion Regulation Questionnaire (CERQ).

It seems I am “running on automatic” without much awareness of what I’m doing; I’m disapproving and judgmental about my own flaws and inadequacies; When I’m going through a very hard time, I give myself the caring and tenderness I need; I keep thinking how terrible it is what I have experienced; I look for the positive sides to a matter



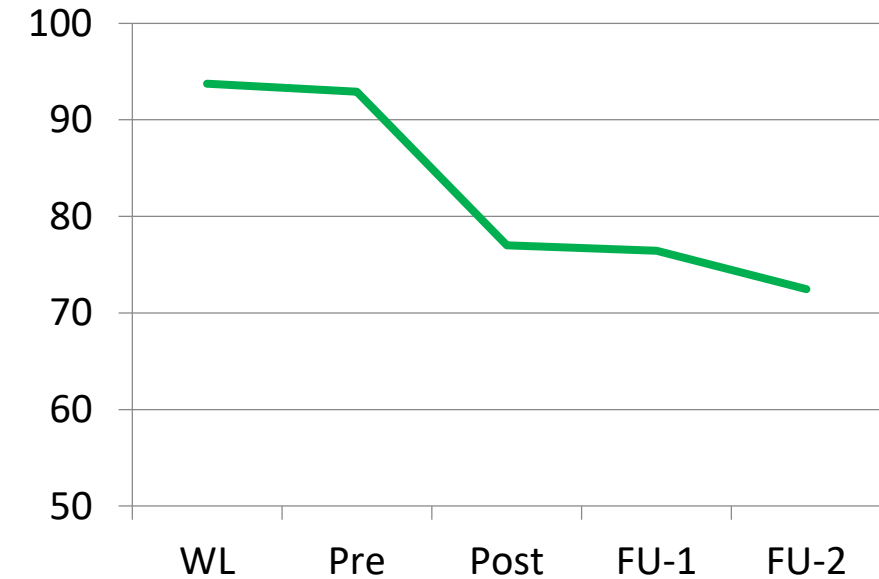
## Phase II - Effects on primary outcomes

PSS



- WL-Pre:  $p > .05$ ; ES = .20
- Pre-Post:  $p < .001$ ; ES = .66
- Pre-FU-1:  $p < .001$ ; ES = .73
- Pre-FU-2:  $p < .001$ ; ES = .88

CIS



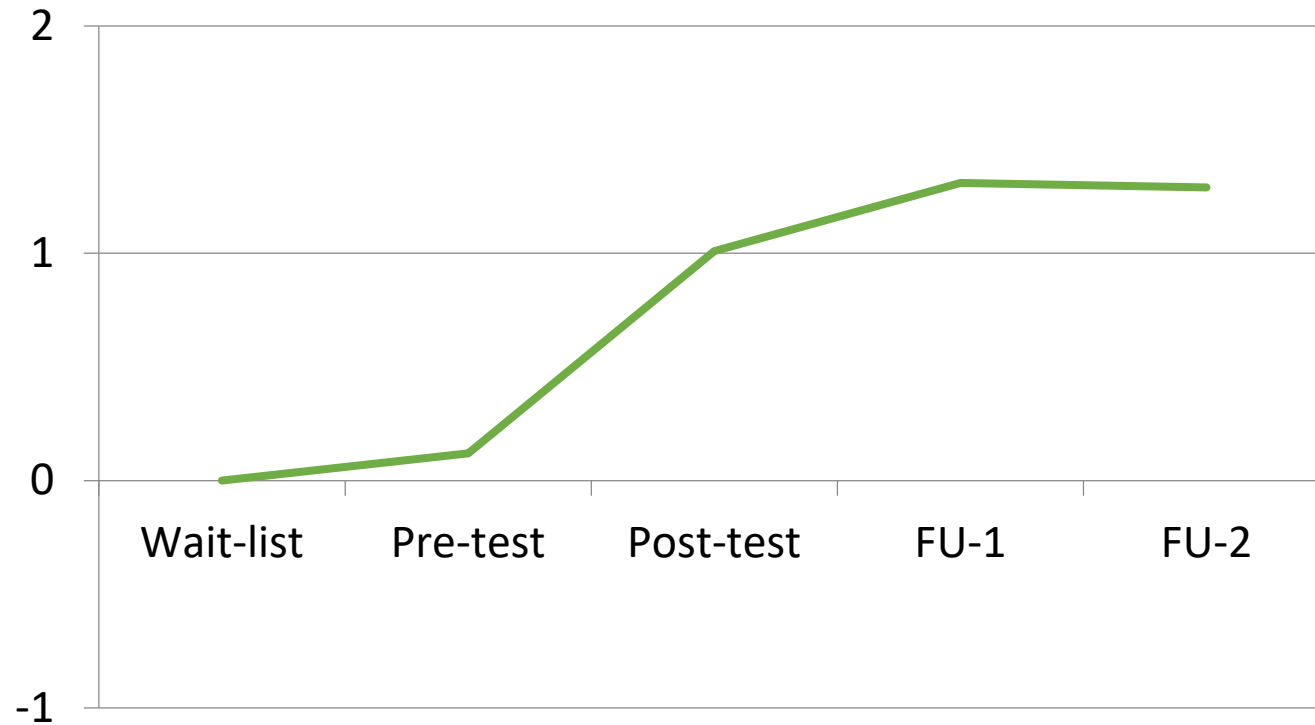
- WL-Pre:  $p > .05$ ; ES = .09
- Pre-Post:  $p < .001$ ; ES = .63
- Pre-FU-1:  $p < .001$ ; ES = .67
- Pre-FU-2:  $p < .001$ ; ES = .89

# Participant's opinion





## Phase III– Personal Goals - (bottom-up)



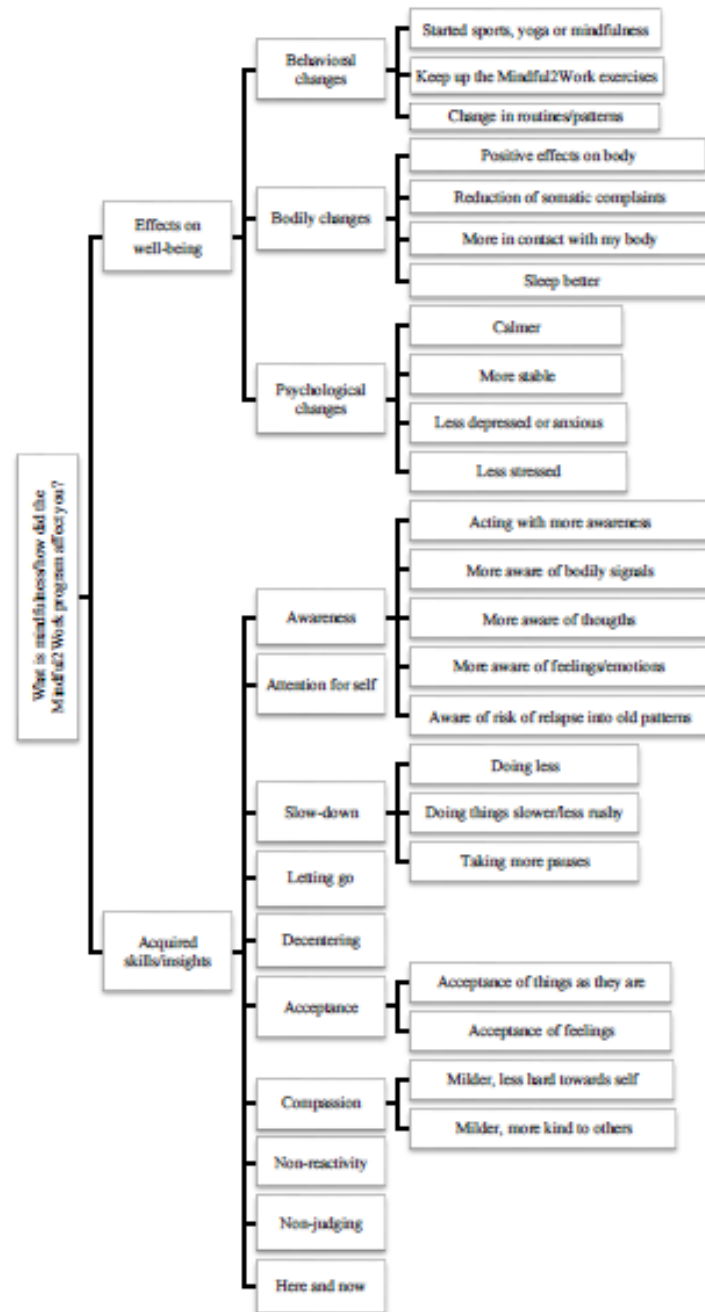
- Increase my energy
- Avoid stress
- Better able to leave work at work
- Learn to better set my limits
- Learn to better recognize my bodily stress signals

- Pre-Post:  $p < .001$ ; ES = .91
- Pre-FU-1:  $p < .001$ ; ES = 1.18
- Pre-FU-2:  $p < .001$ ; ES = 1.21

## Phase III – Interview data (bottom-up)

- $n = 9$  participants were interviewed; within 2 months after training
- Average duration 20 minutes
- Interview topics: Meaning of mindfulness, experienced change (if any), working mechanisms
- Transcripts divided into 'scorable units' (= quotes;  $n = 318$ )
- Quotes into categories, repeating process until all quotes included
- Proposed coding system → two independent raters
- Independent rater was a mindfulness trainer (not of M2W)
- Both raters coded all quotes
- Inter-rater reliability: ICC = .92 (high agreement)

antw_deelnemer	scoring_rater_1_cens	scoring_rater_2_cens
accept my feelings	A1	A1
ik ik meer heb leren accepteren en daardoor voel ik de weerstand wat minder	A1	A1
want to accept	A1	A1
it's ok to feel stress	A1	A1
it's o.k. to be worried sometimes	A1	A1
ik kan mezelf beter accepteren	A1	A1
just that I see a new way to change things	A10	A10
dingen relativeren	A10	A10
it didn't solve all my problems at once but I have found a way to look at them differently wh	A10	A10
en ontdekking dat andere personen zelfde problemen hebben	C5	A10
en relativeren	A10	A10
en dat je dit met aandacht kan verzachten	A2	A10
I can now take perspective on things and thoughts	A10	A10
but I try to see worries and stress differently	A10	A10
andere kijken naar de dingen	A10	A10
en relativeren	A10	A10





## Phase III– Personal Interviews (bottom-up)

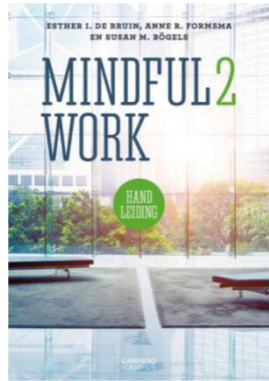
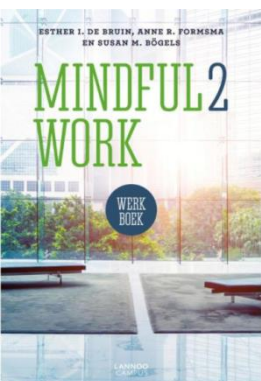
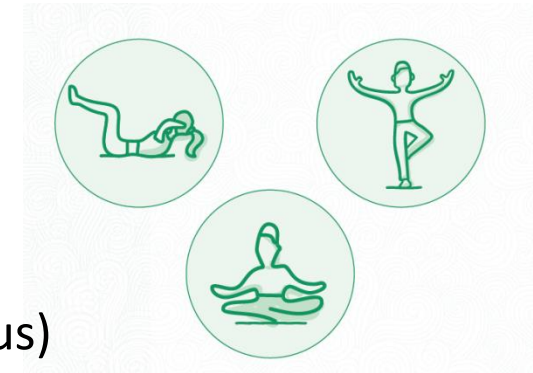
Effects on well-being	
Behavioral changes	
Started/maintained PE, yoga, or MM	<i>I joined a yoga club; I meditate when I feel I need to; I now walk to my office</i>
Changes in routines/patterns	<i>I see nice cracks emerging in my daily habits; I don't eat with the TV on anymore</i>
Bodily changes	
Positive effect on my body	<i>I notice physical improvements; Mindful2Work makes me fitter; I am more flexible</i>
Reduction somatic complaints	<i>The physical stress complaints are gone; My lower back is not stiff anymore</i>
More in contact with my body	<i>I now connect more with my body; I used to function with my head mainly</i>
Psychological changes	
Calmer	<i>Mindfulness helps me to be calm; Also at work I am much more relaxed</i>
More stable	<i>I feel more stable; I experience less extremes in my emotions</i>
Less depressed/anxious	<i>I don't have depressed or anxious episodes anymore; I feel less anxious</i>

## Phase III– Personal Interviews (bottom-up)

Acquired skills	
Increased awareness	<i>I am now aware of my thoughts racing; I am now aware I don't take breaks at work</i>
Attention for self	<i>I now create more space for myself; Meditating helps me to get closer to myself</i>
Slow-down	<i>I don't keep 'running' anymore; I do things a little less hasty; I live life at a lower pace</i>
Letting go	<i>I don't need to be involved in everything anymore; I let things go easier</i>
Decentering	<i>I am now able to observe things from a distance; I can park my thoughts to the side</i>
Acceptance	<i>It's ok to cry sometimes; Let the feelings come, happy or sad, I don't need to change them</i>
Compassion	<i>I am softer, more gentle to myself; It takes the edges of my, I am more friendly to others</i>
Non-reacting	<i>I now don't get angry immediately; I don't react to everything instantly</i>
Non-judging	<i>I now just notice a feeling without judging it right away; I don't judge things instantly</i>
Here and now	<i>I am here now, there is no yesterday or tomorrow; I am really in the now</i>

## Summary and the future

- Mindful2Work is acceptable and feasible for people with (work-)stress related complaints
- No significant changes (apart from NA) during wait-list period
- Large effects on stress and risk for drop-out
- Medium to large effects on well-being and functioning at work
- Very large improvements on people's self-formulated goals
- Effects up to half a year later, effects grow larger over time
- Mindful2Work workbook and trainer's manual available (in Dutch, Lannoo Campus)
- German version in preparation (Arbor-Verlag)
- Cost-analyses and investigation of mechanisms of change (mediators)
- See more: [www.mindful2work.nl](http://www.mindful2work.nl)





For more information:  
[e.i.debruin@uva.nl](mailto:e.i.debruin@uva.nl)

Special thanks to participants and:



'I no longer feel like a white water rafting roller coaster bashing through the waves of my week, but instead I am now in control of my little boat and stall it sometimes'