THE AUTISM RESEARCH GROUP

Can online therapy help alleviate anxiety in autism?

Sebastian B Gaigg

Overview

Part 1: The Nature of Anxiety in Autism

- Prevalence and Clinical presentation
- The suspected mechanisms
  - Sensory processing
  - Intolerance of Uncertainty
  - Alexithymia (difficulty understanding own emotions)

Part 2: Implications for treatment

- A brief reminder of CUES (see Jacqui Rodgers' slides)
- Mindfulness Based Cognitive Therapy (MBCT)

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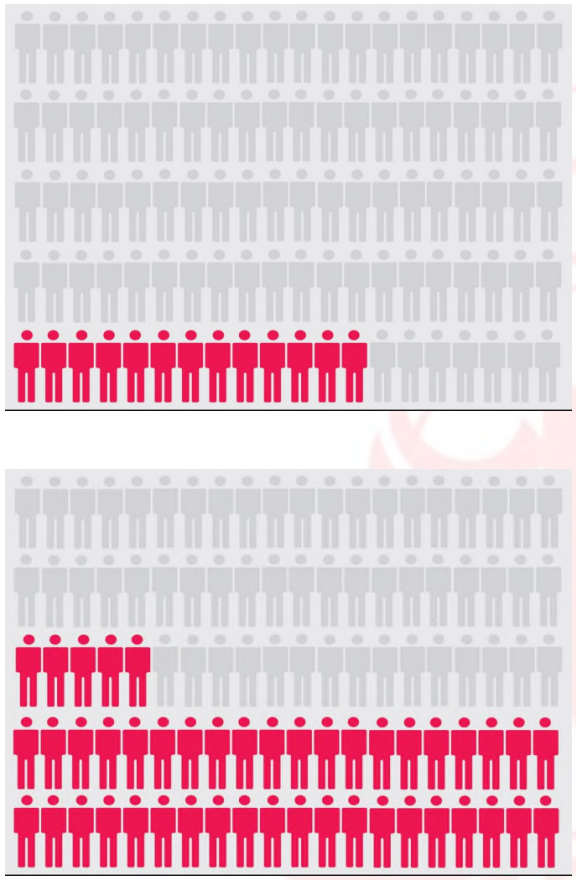
The Nature of Anxiety in Autism

Prevalence

Around 10 - 15% of people in the general population have an anxiety disorder at some point in their life - most commonly a specific phobia.

The prevalence in ASD is around 50%. Generalised Anxiety, Social Anxiety and Phobias are among the most common (Buck et al., 2014; Kerns et al,. 2014)



Diagnosis and clinical presentation

Anxiety is often overlooked in ASD due to diagnostic overshadowing and atypical presentation (e.g., Kerns et al., 2014).

- Highly Idiosyncratic phobias (e.g., walking through doors; Cartoons)
- Social Anxiety without fear of negative evaluation
- Compulsions unmotivated by distress relief
- Excessive worries about changes in routines or in the environment

But awareness is growing and the mechanisms of anxiety are beginning to be understood.

The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)

Aberrant Sensory processes (Green & Ben-Sasson, 2010)

Intolerance of Uncertainty (IoU) (Boulter et al., 2014)

Alexithymia (Maisel et al., 2016)

Emotional Acceptance / Non-Reactivity (Maisel et al., 2016)

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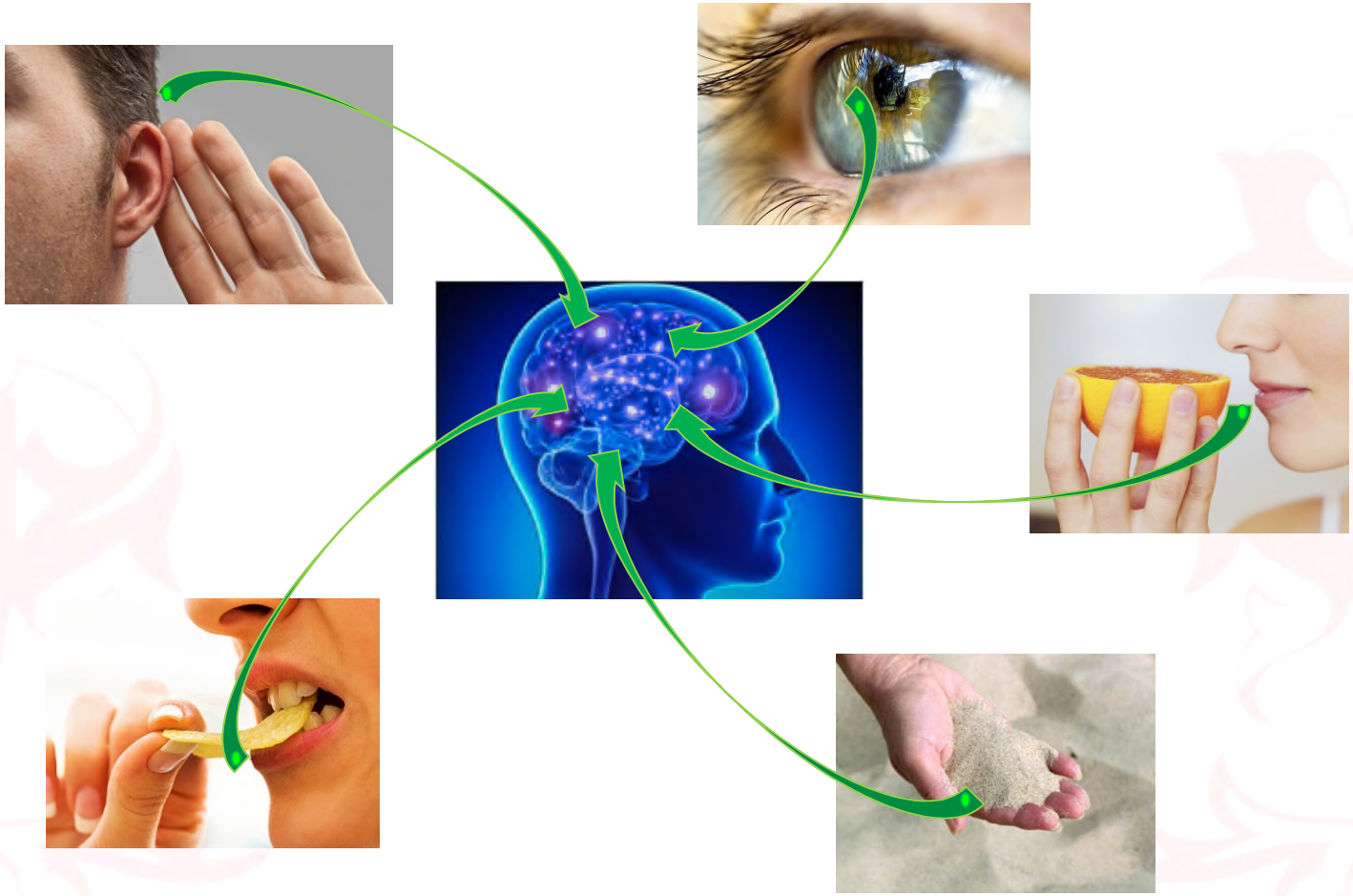
Sensory processing and the concept of uncertainty



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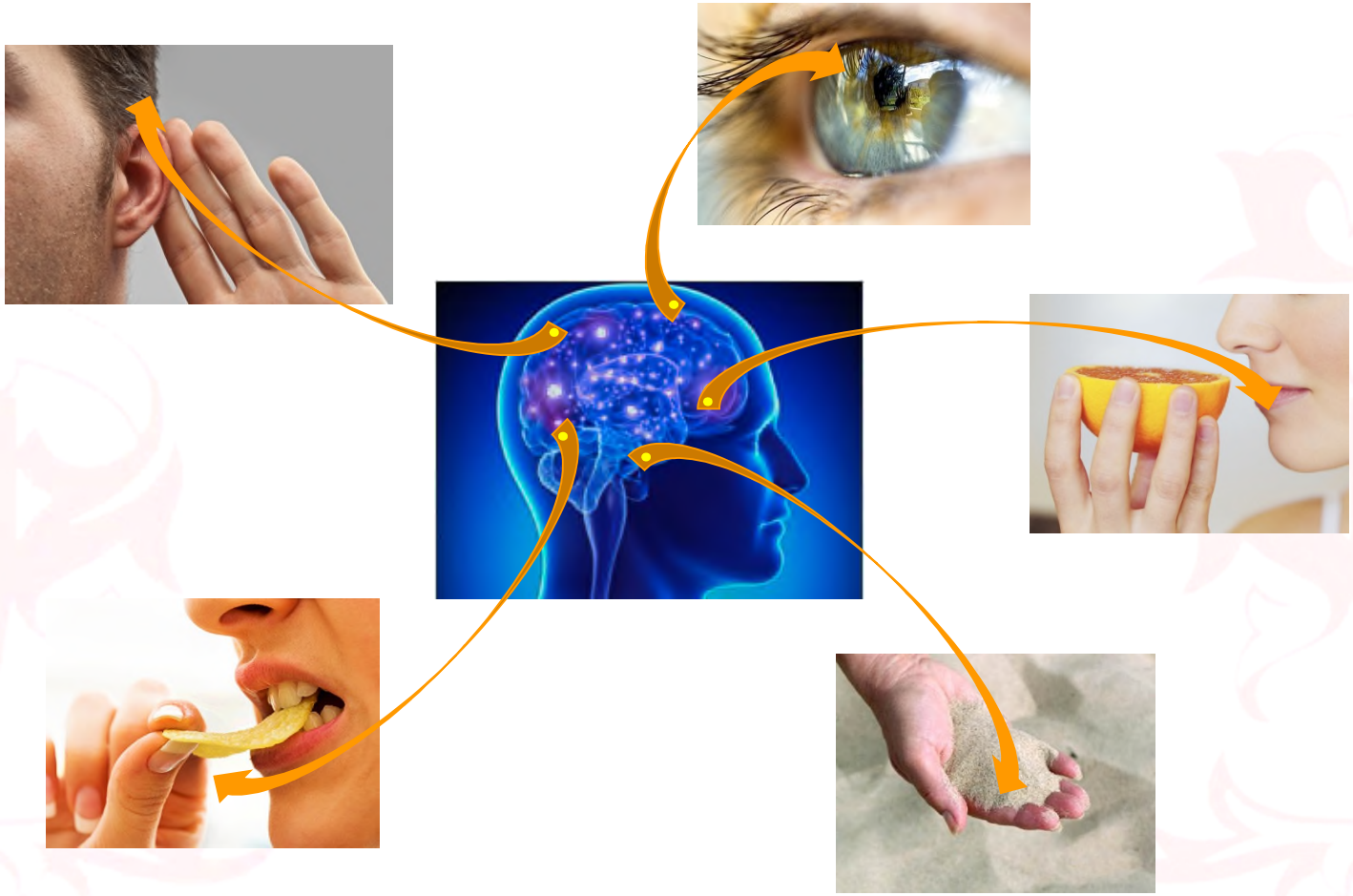

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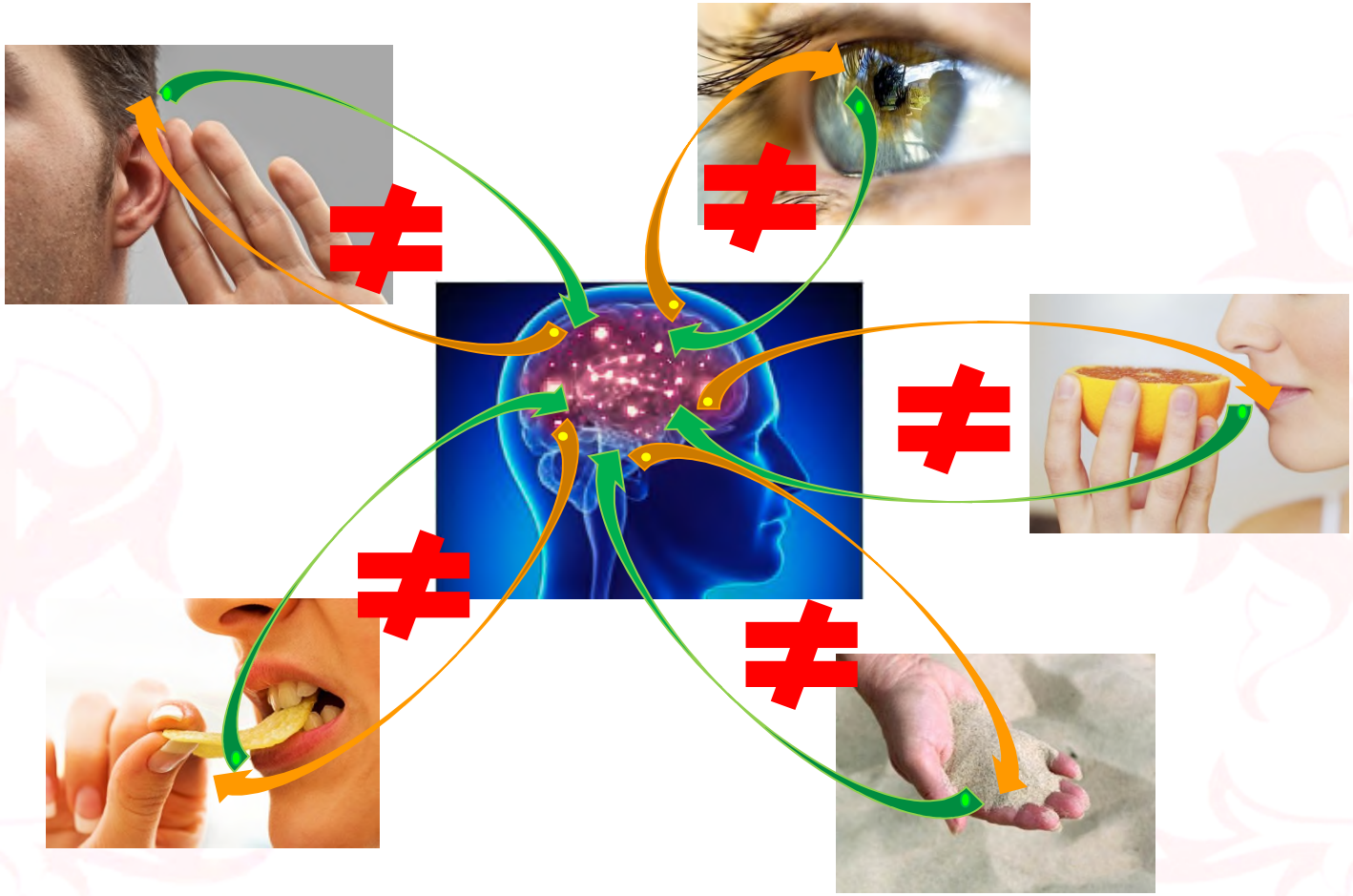


Sensory processing and the concept of uncertainty

Measuring intolerance of uncertainty

People differ in how easy they find it to cope with uncertainties and unpredictable situations

The Intolerance of Uncertainty Scale – 12 (IoU-12)

Unforeseen events upset me greatly

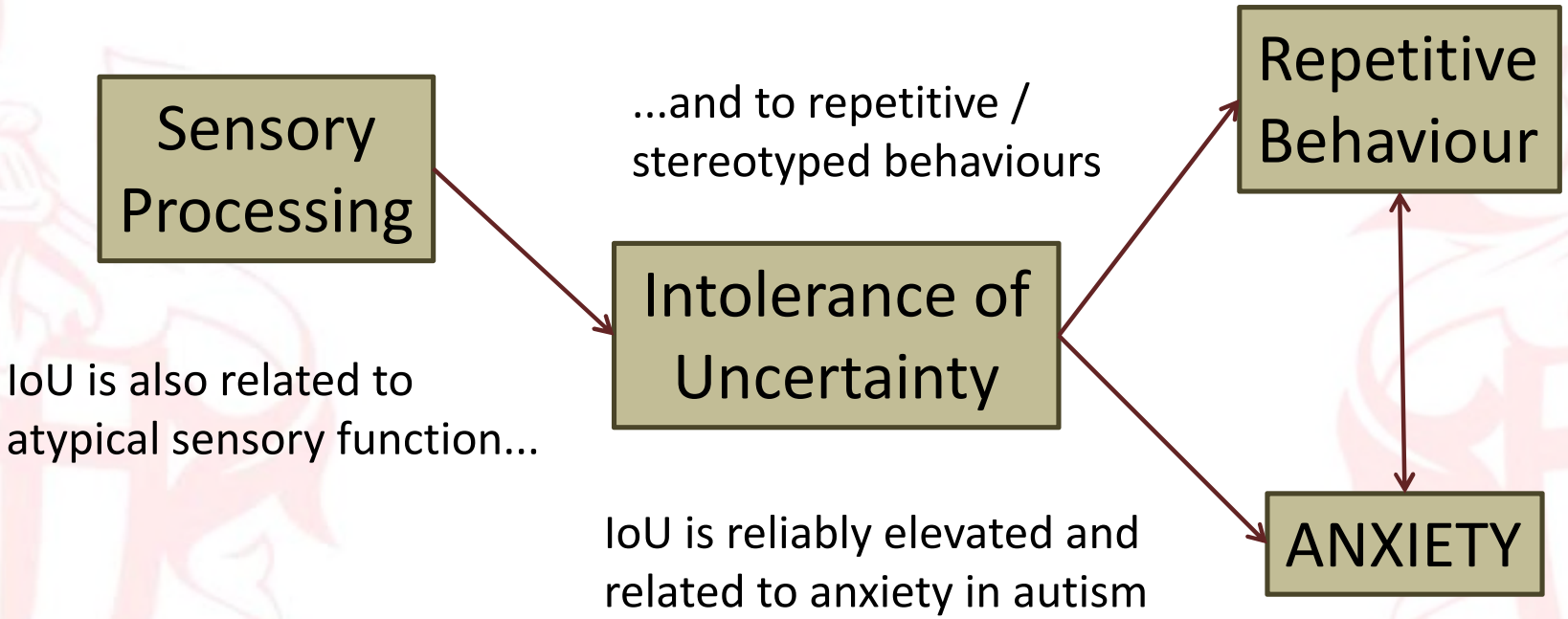
It frustrates me not having all the information I need

I can't stand being taken by surprise

I always want to know what the future has in store for me

…

The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)



Anxiety may result from uncertainties that stem from atypical sensory input.
Repetitive behaviours may function to make the world less uncertain.

The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)

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Alexithymia (Maisel et al., 2016)

Emotional Acceptance / Non-Reactivity (Maisel et al., 2016)

Alexithymia

50% of autistic individuals have difficulties identifying and describing their own emotions - Alexithymia

The Toronto Alexithymia Scale:

I'm often confused by what emotion I am feeling.

It is difficult for me to find the right words for my feelings.

When I'm upset, I don't know if I am sad, frightened, or angry.

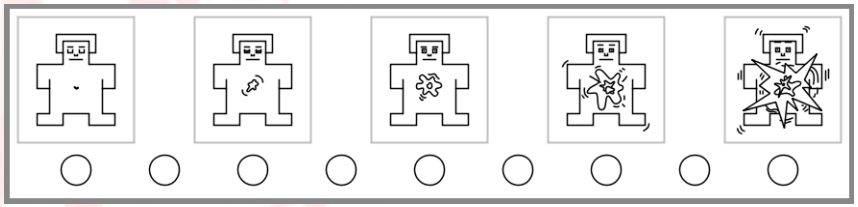
I am often puzzled by sensations in my body.

...

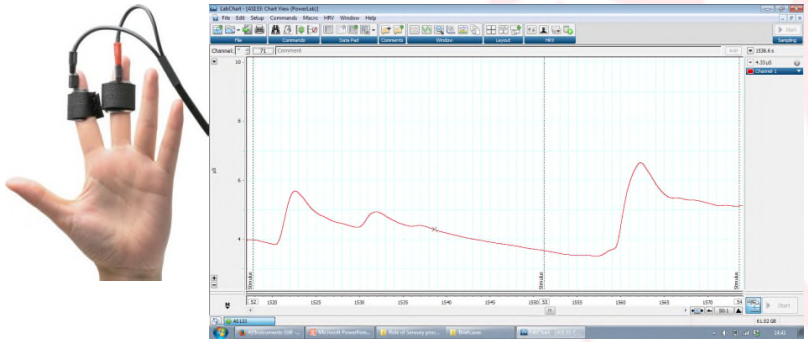
Alexithymia: What is involved?

(Gaigg, Maurice & Bird, 2016)

How aroused do you feel?

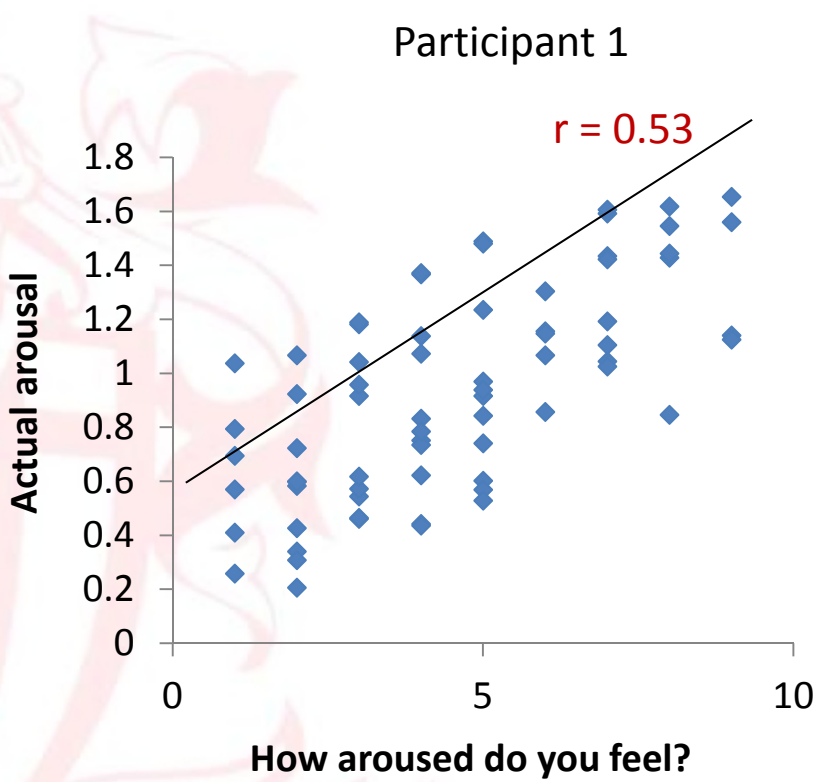


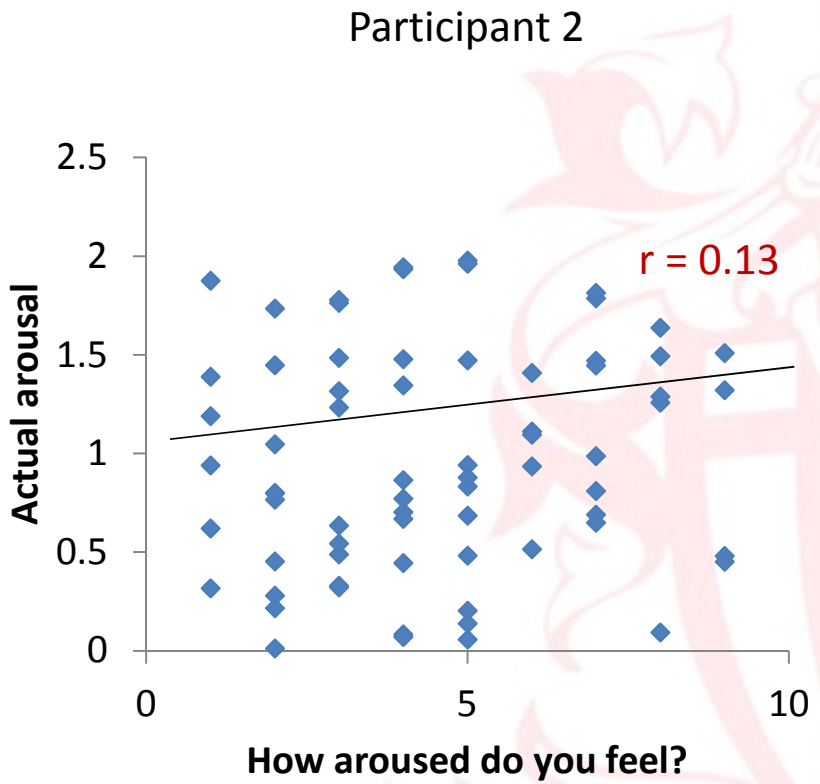
How aroused are you actually?



Alexithymia: What is involved?

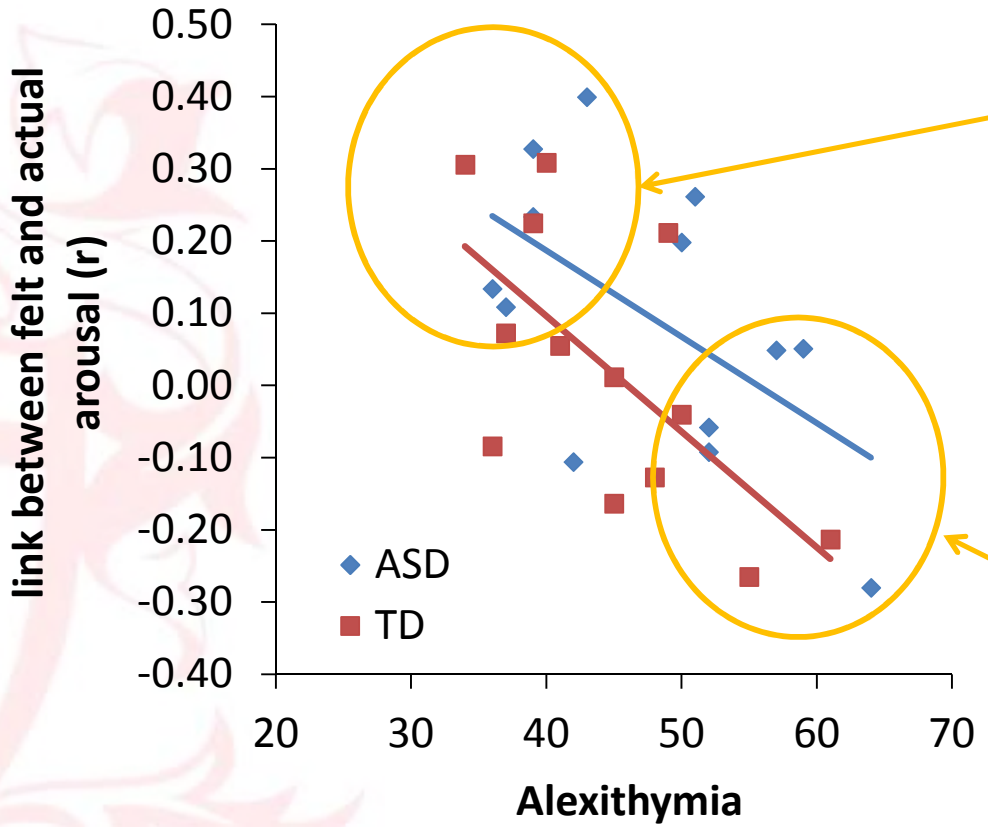
(Gaigg, Maurice & Bird, 2016)





Alexithymia: What is involved?

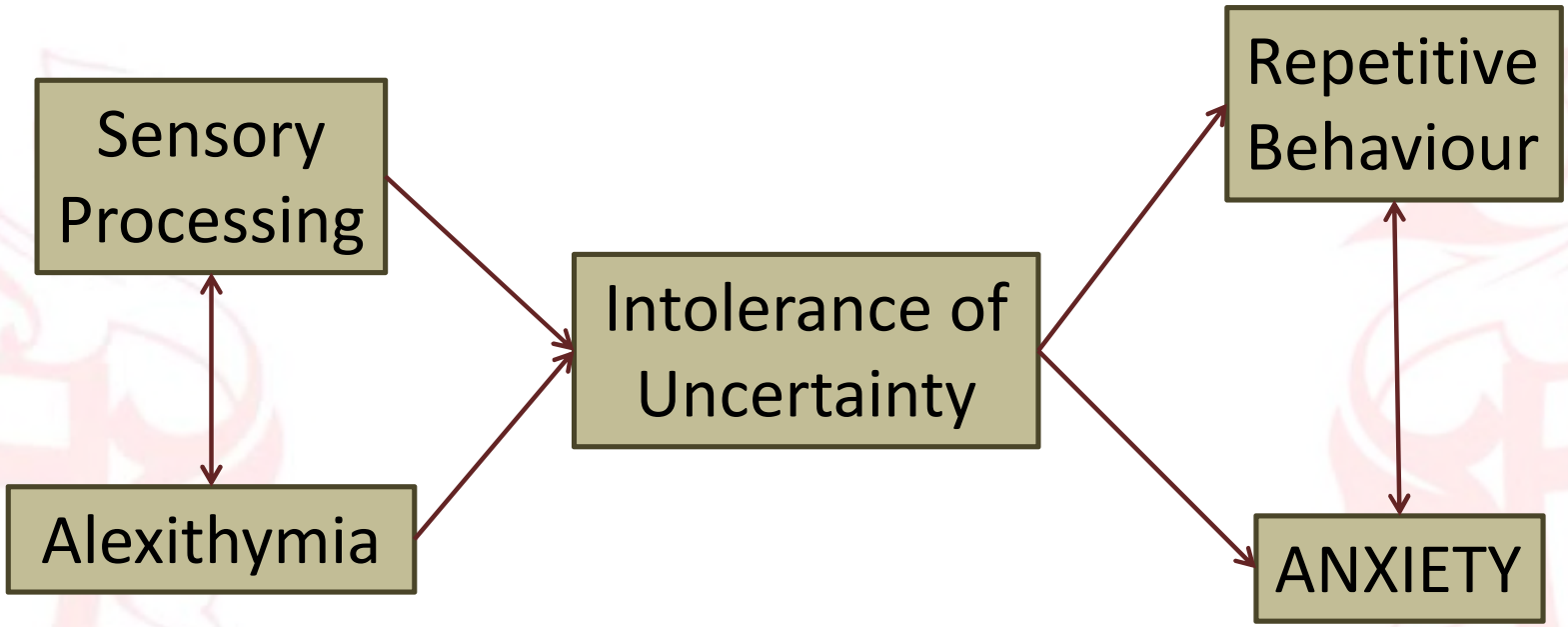
(Gaigg, Maurice & Bird, 2016)



Those who accurately report their arousal, report the least difficulties understanding their own emotions.

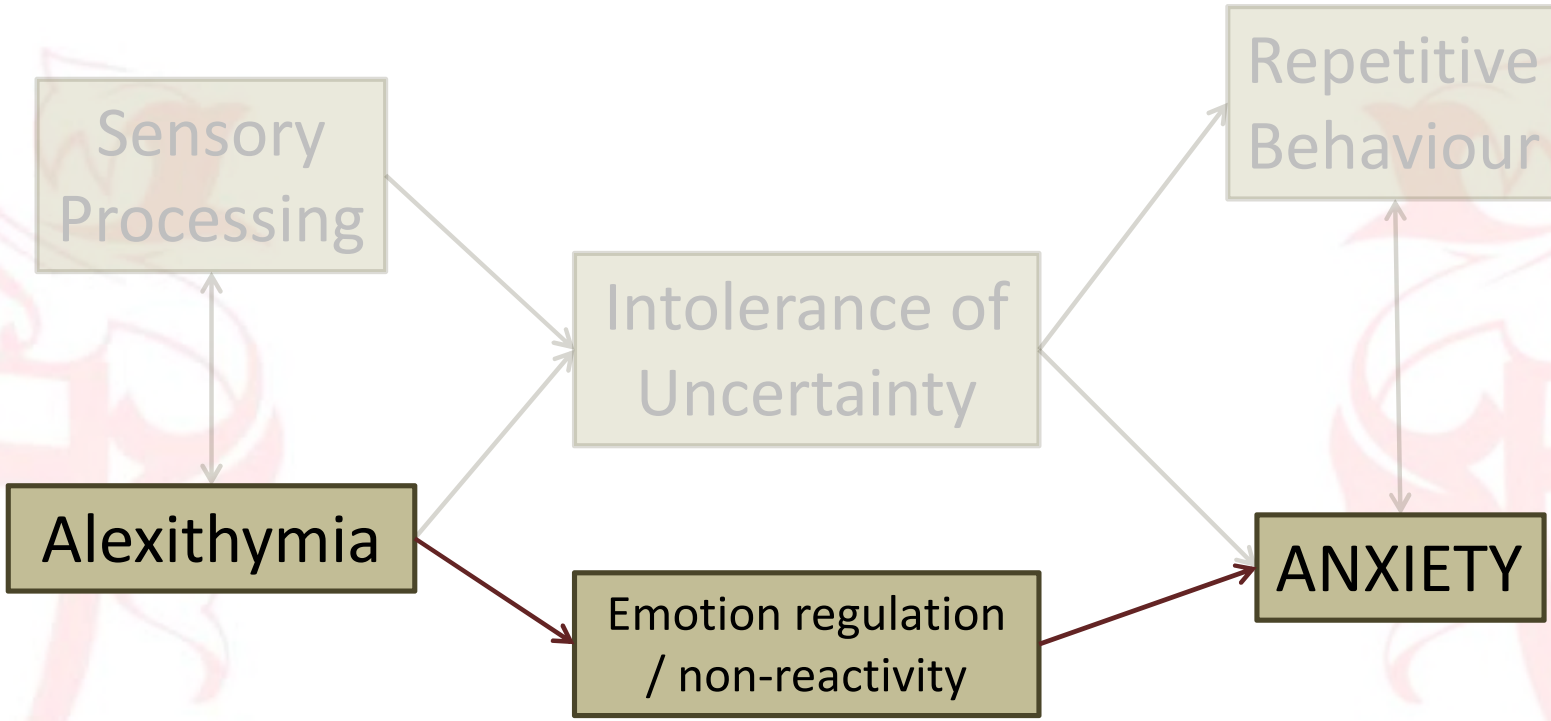
Those with difficulties reporting their actual arousal report the greatest difficulties understanding own emotions

The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)



In addition to uncertainties about the external sensory environment, uncertainties about internal sensory signals seem to contribute to anxiety...

The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)



...and Alexithymia might further contribute to anxiety by compromising the ability to regulate difficult emotions effectively

Implications for Treatment

Coping with Uncertainty in Everyday Situations (CUES)
(Rodgers et al., 2016)

Parent mediated (zone of proximal development)

Raise awareness of IoU and how it relates to autism symptoms

Gradually introduce uncertainties in non-threatening situations and help promote *tolerance* of uncertainty

- identify helpful strategies through play and real-life 'experiments'
- identify and reduce less helpful strategies

Mindfulness Based Cognitive Therapies (MBCT)

Already established as effective in reducing anxiety, depression & stess in general public (Grossman et al., 2004; Strauss et al., 2014)

Enhances awareness of thoughts, feelings and sensations, without reacting to them.

I.e., targets Alexithymia / non-reactivity...

...and (possibly) uncertainty about sensory signals

Initial evidence promising but only one rigorous RCT to date in ASD (Spek et al., 2013; see Cachia et al., 2016 for review)

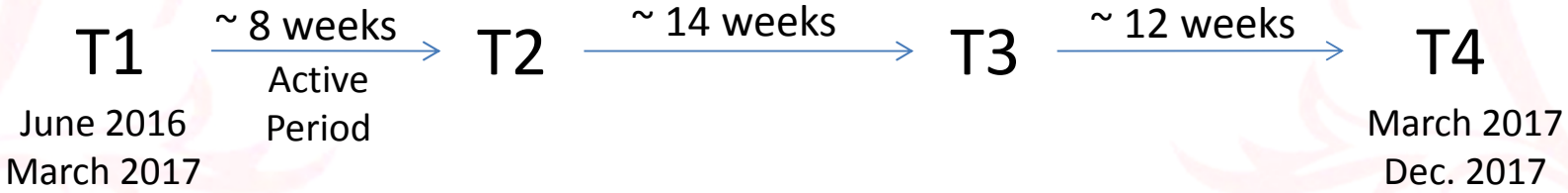
Are online mindfulness programmes effective?

Aims:

- Establish feasibility and acceptability of online MBCT program
- Estimate long-term benefits vis-a-vis a waitlist and alternative treatment group
- Seek user feedback to understand need for autism-specific adaptations

Design:

- 9 month longitudinal RCT
- MBCT vs. Active control vs. WL

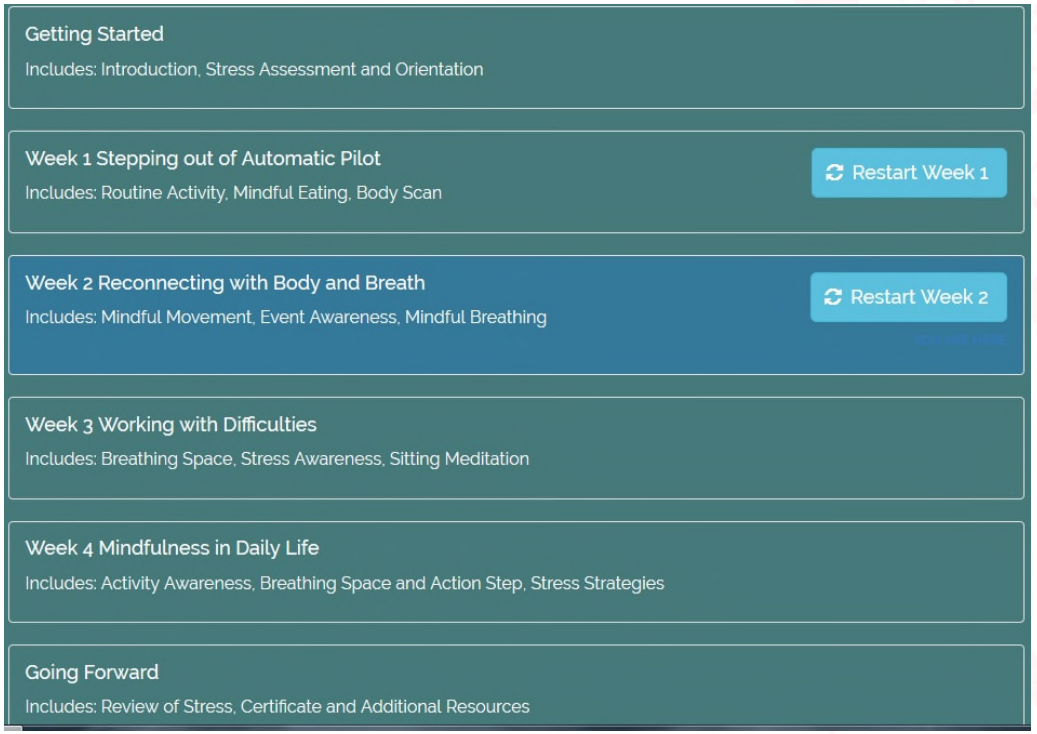


MBCT: BeMindful.co.uk

8-week MBCT course delivered across 4 modules, which guide user through standard mindfulness practices.

As effective as face-to-face MBCT (Krushe et al., 2013)

Endorsed by NHS

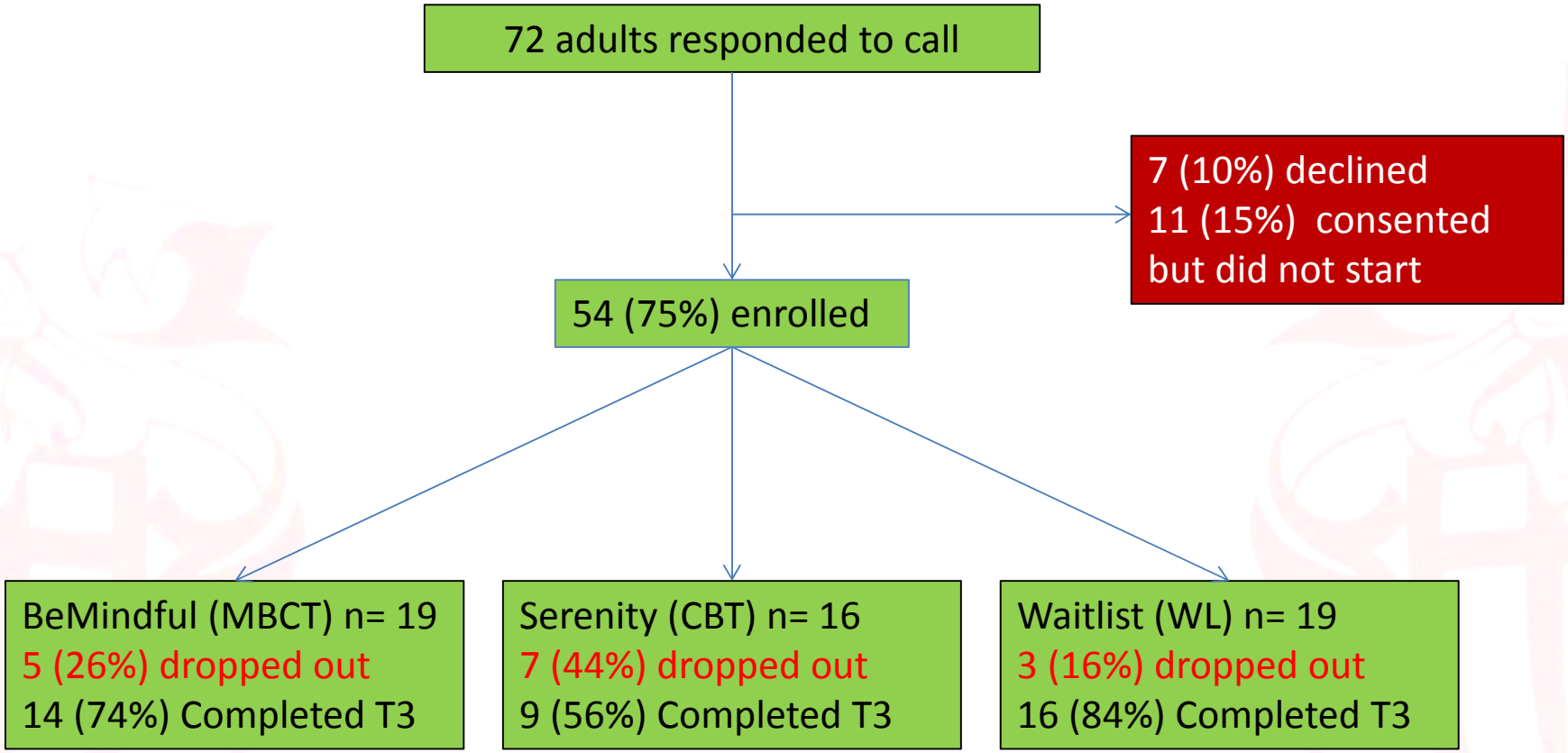


Active control: Serene.me.uk

8-week psycho-educational course, largely based on CBT principles, which provides advice on how to manage anxiety.

Minimal overlap with MBCT course

No systematic evidence but developed in response to clinical need within NHS setting



At each time-point participants completed measures of Anxiety, IoU, Alexithymia and emotional non-reactivity

Measures

Clinical Presentation

Autism Spectrum Quotient (AQ)

Social Responsiveness Scale-Adults (SRS)

Autism Diagnostic Observation Schedule (ADOS)

Wechsler Adult Intelligence Scale (WAIS)

Measures

Anxiety

- Trait Anxiety – STAI – T
- Physiological aspects – BAI
- Social Anxiety – LSAS
- Generalised Anxiety – GAD 7

} ‘State’ Anxiety (over the past 1-2 weeks)

Broader clinical outcomes

- Clinical Outcomes in Routine Evaluation – CORE-OM

Predicted Mediators

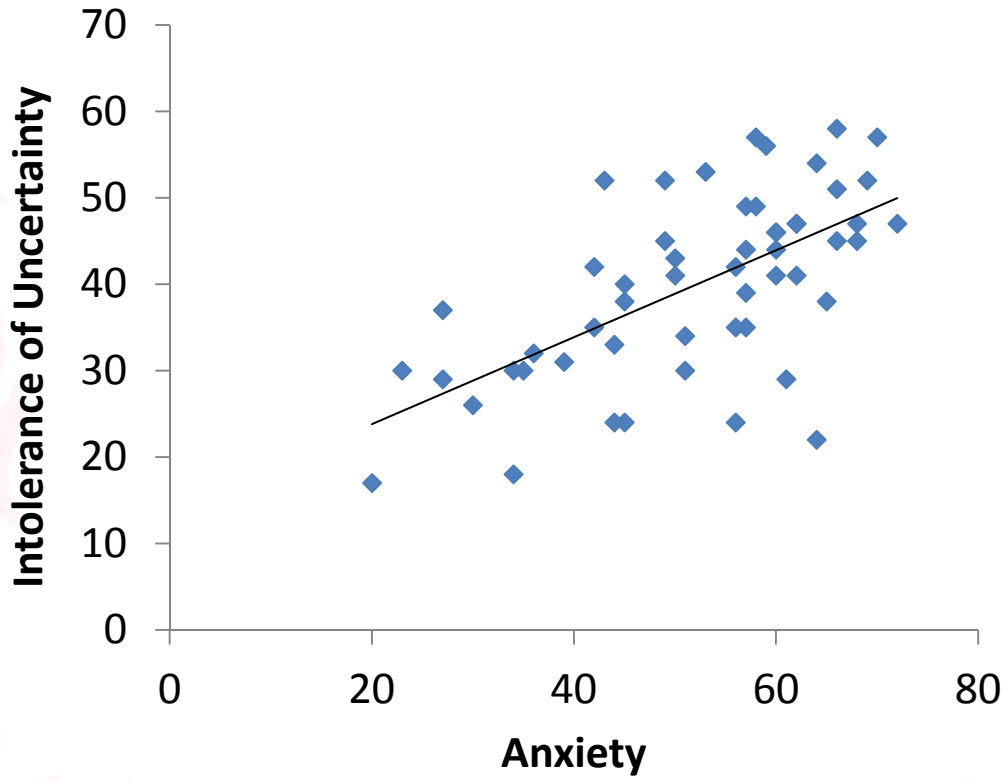
- Intolerance of Uncertainty – IoU 12
- Emotional Acceptance – FFMQ (non-reactivity sub-scale)
- Alexithymia – BVAQ (Verbalise & Identify sub-scales)

Results at Baseline (n = 54): Simple Correlations

	STAI-T	BAI	LSAS
BAI	.679**		
LSAS	.489**	.495**	
GAD-7	.775**	.786**	.361**

	STAI-T	BAI	LSAS	GAD-7
IoU	.622**	.563**	.562**	.581**
NR	-.720**	-.479**	-.294*	-.537**
Alex	.404**	.189	.341*	.242

Predictors of anxiety at Time 1 (n = 54)



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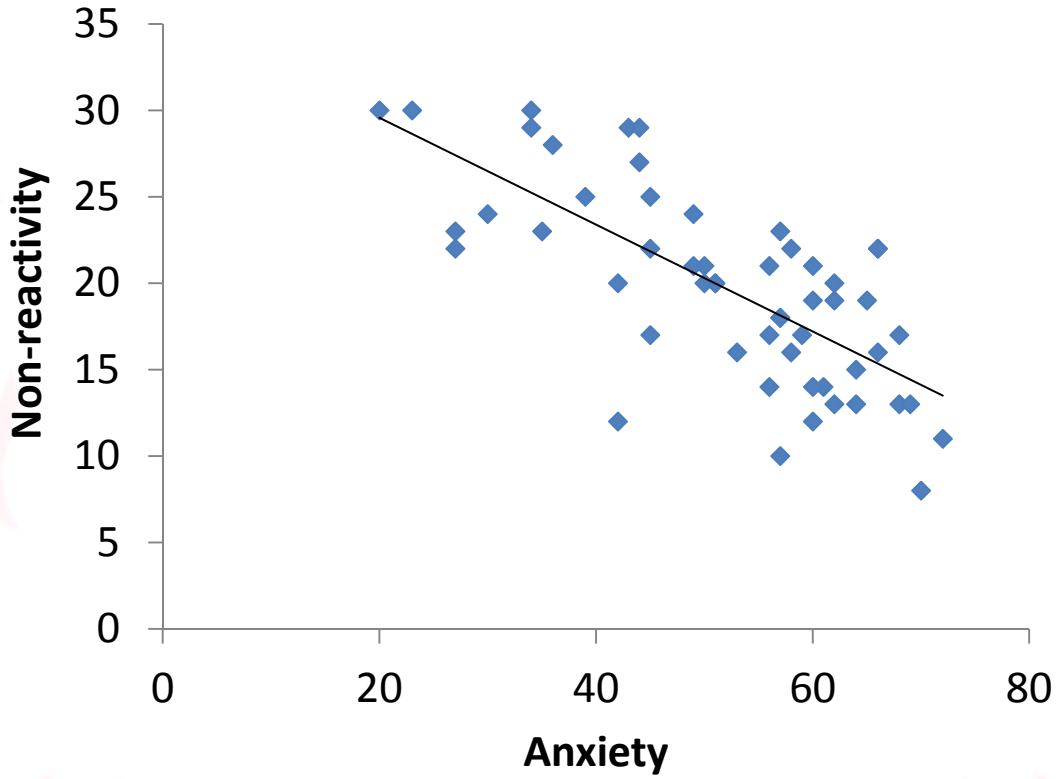

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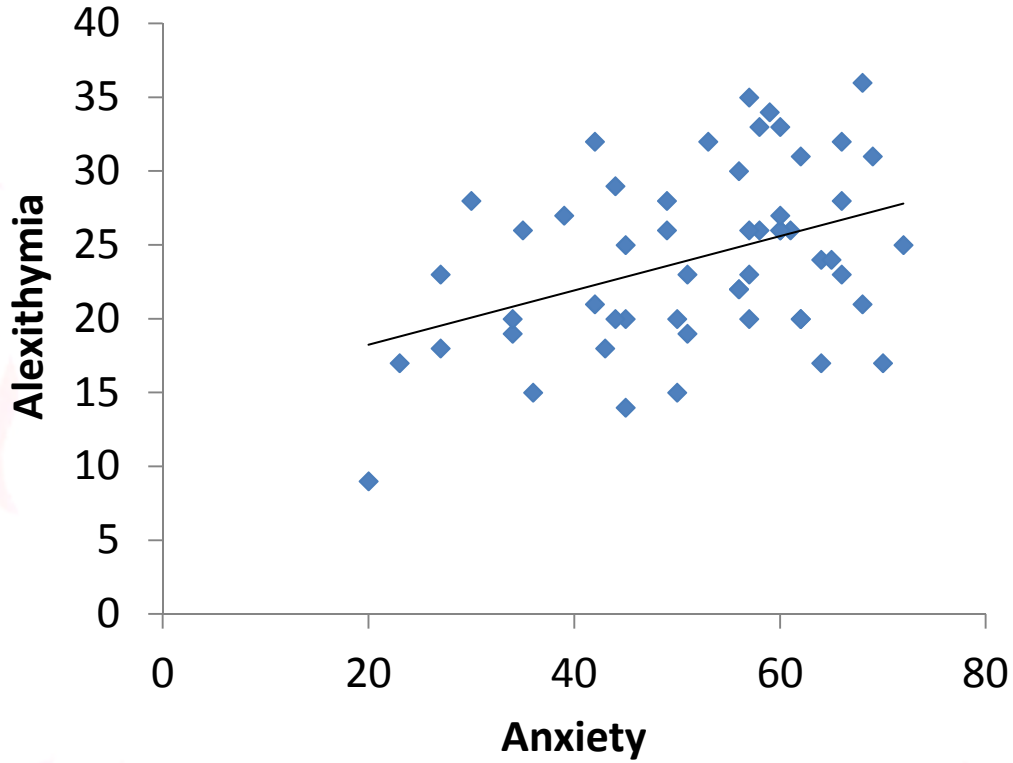


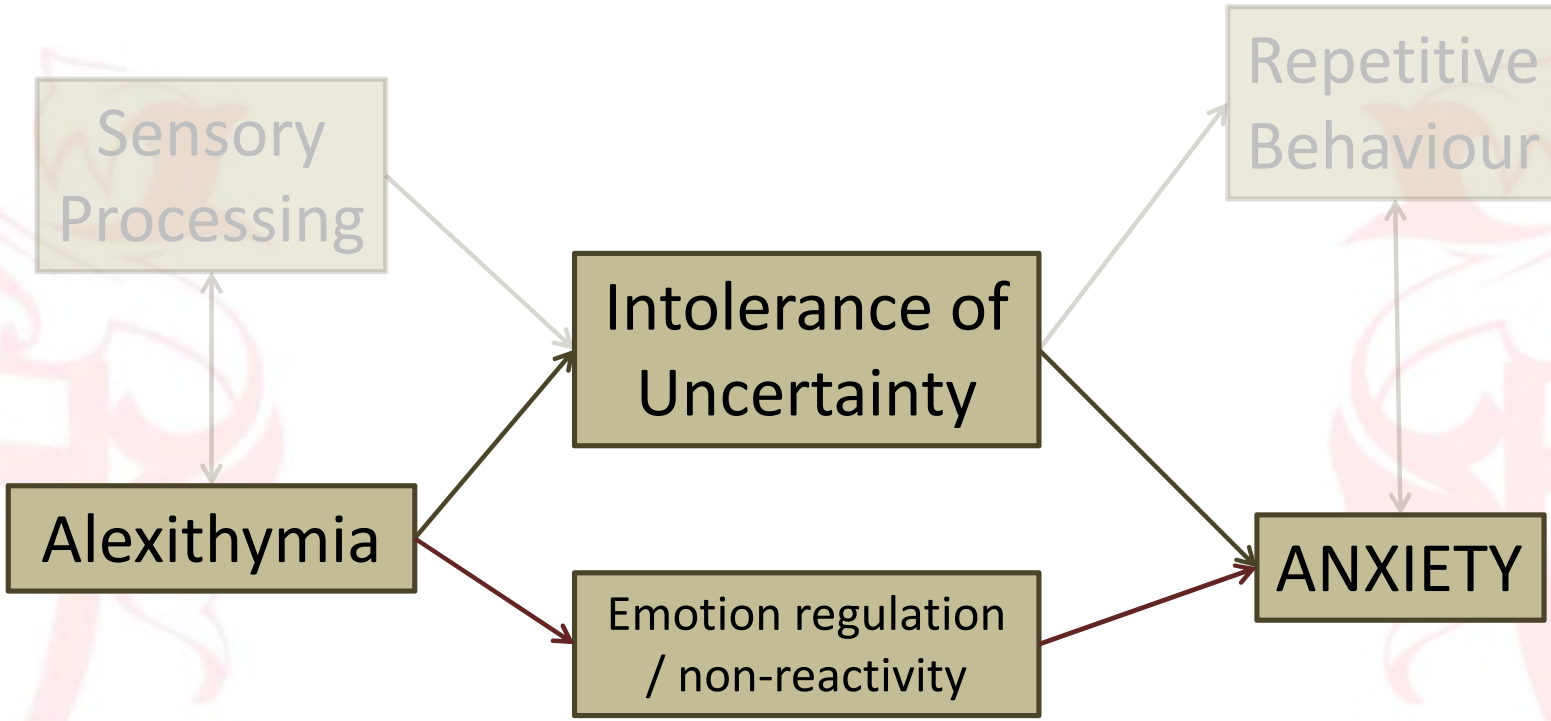
Predictors of anxiety at Time 1 (n = 54)

Baseline data confirm that IoU, Alexithymia and Non-reactivity are all associated with anxiety in ASD.

In combination, these factors account for 60% of participants anxious symptoms, with IoU and non-reactivity pulling the most weight (Maisel et al., 2016).

DV	Model (adjusted R^2; F-test)	Pred.	B	t	p
Anxiety	R^2=.60; $F_{(3,50)}$=27.8; p<.001	IoU	.35	3.46	<.005
		NR	-.52	-5.08	<.001
		Alex	.09	0.93	.36

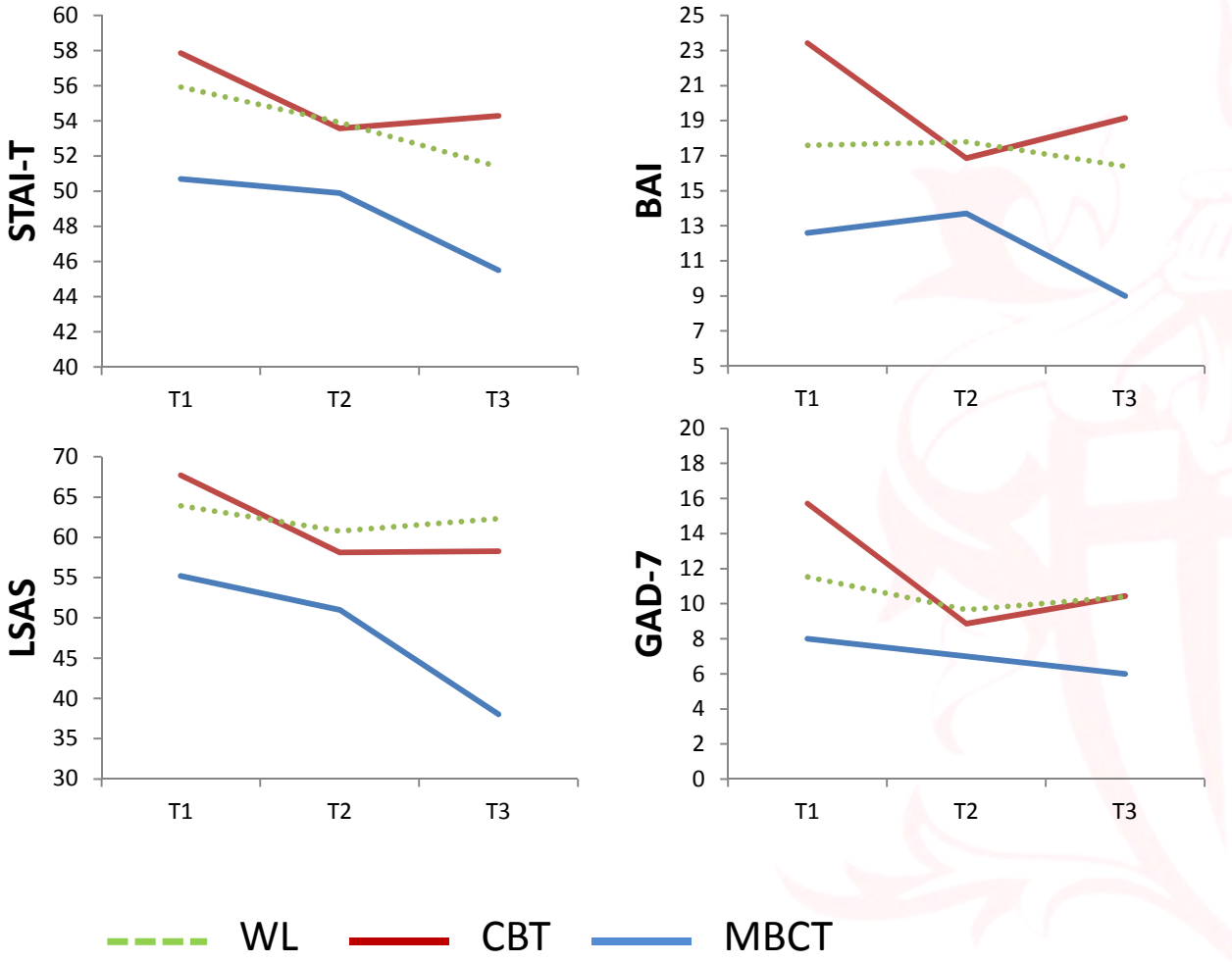
The mechanisms (see South & Rodgers, 2017; Maisel et al., 2016)



Results: T1-T3 primary outcomes

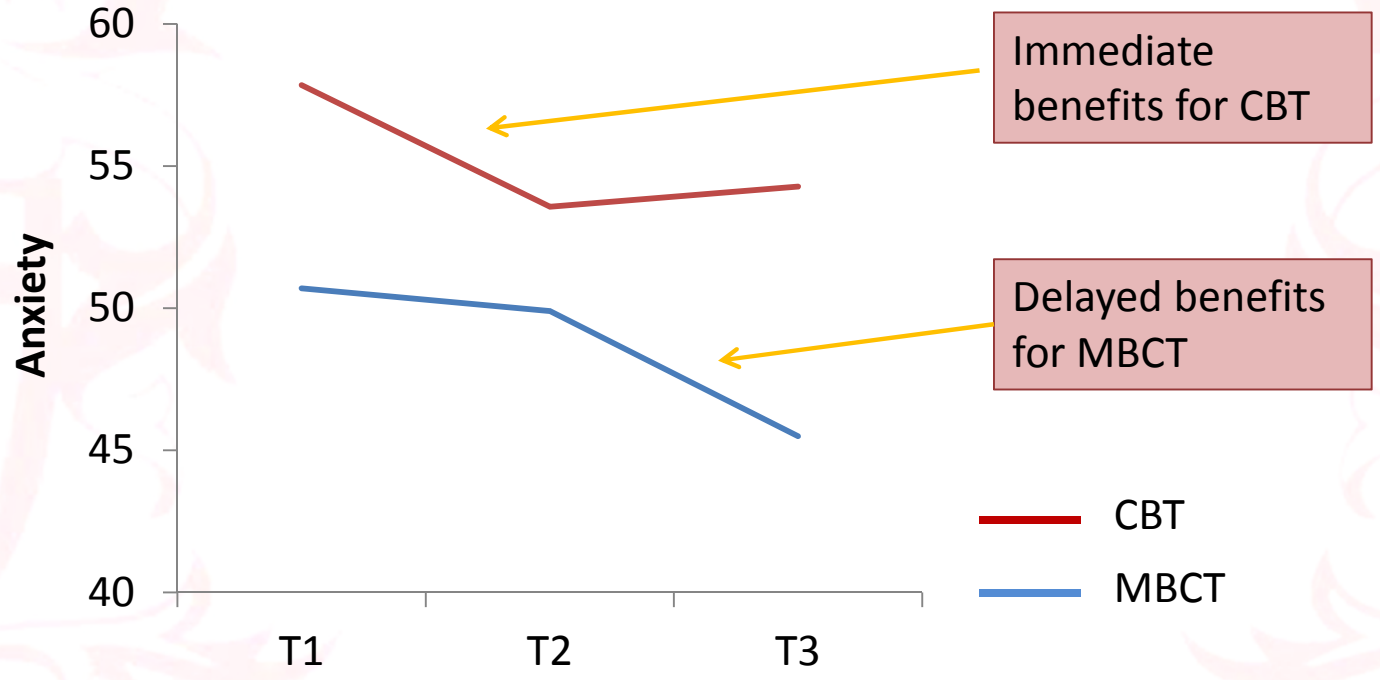
Consistent pattern of immediate benefits following CBT versus delayed benefits following MBCT

$F(4,58) = 2.70$; $p<.05$



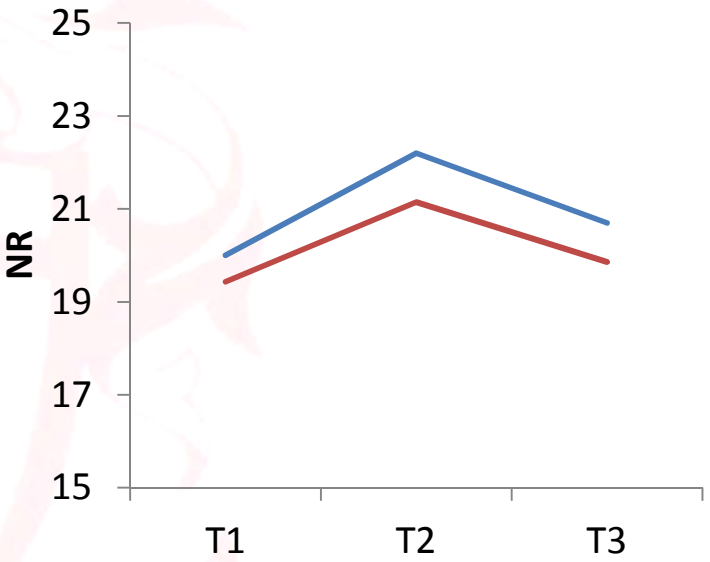
Results: T1-T3 primary outcomes

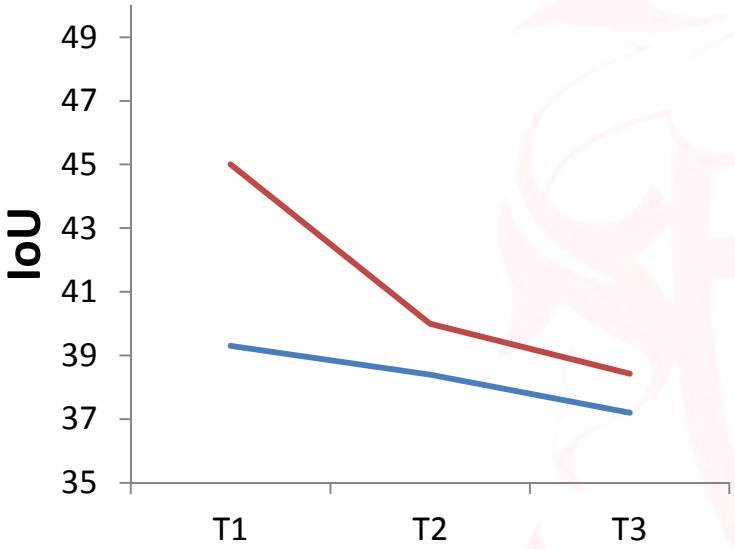
Significant decreases in anxiety following both online support tools but at different time-points



Changes over time

Some indication that IoU and Non-reactivity also improve over time...



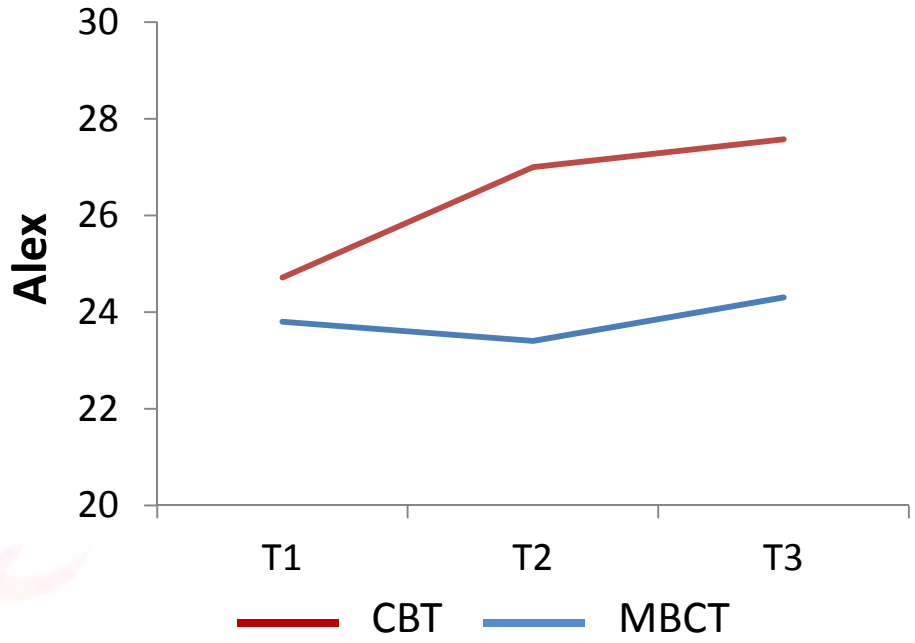


CBT MBCT

Changes over time

...but Alexithymia increased (!?)

We think, because participants become more aware of their difficulties reflecting on their emotions



Conclusions

Intolerance of uncertainty and difficulties introspecting on and regulating/accepting own emotions play a big role in anxiety in autism.

Interventions targeting these difficulties show promise in alleviating anxiety in autism, including easily accessible online tools.

What are the next steps

Bigger trials with representative / clinically referred samples.

Adapt the programs for different settings and age groups

Extend the work to formally take into consideration the role of sensory sensitivities and repetitive behaviours.

Engage with schools, parents, practitioners & individuals with autism to learn from their experiences & practices!!!

Mindfulness in Schools Project (MiSP)

Teaches children about the nature of thoughts, emotions and attention

e.g., *'Training a Puppy'*

Engages children in mindful exercises that can readily be integrated into daily activities

e.g., *FOFBOC*

Seems feasible to adapt to cater for the specific needs of autistic children

e.g., *integrate with sensory-related activities; use of inexpensive bio-feedback to facilitate understanding of internal signals*

Thanks to....

Gracie McLaven

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Online Mindfulness Course

Richard Latham

Rebecca Millard

Jacqui Rodgers

Mikle South

Serenity Programme
CBT@Home!

Steve Cottrell

And You!!