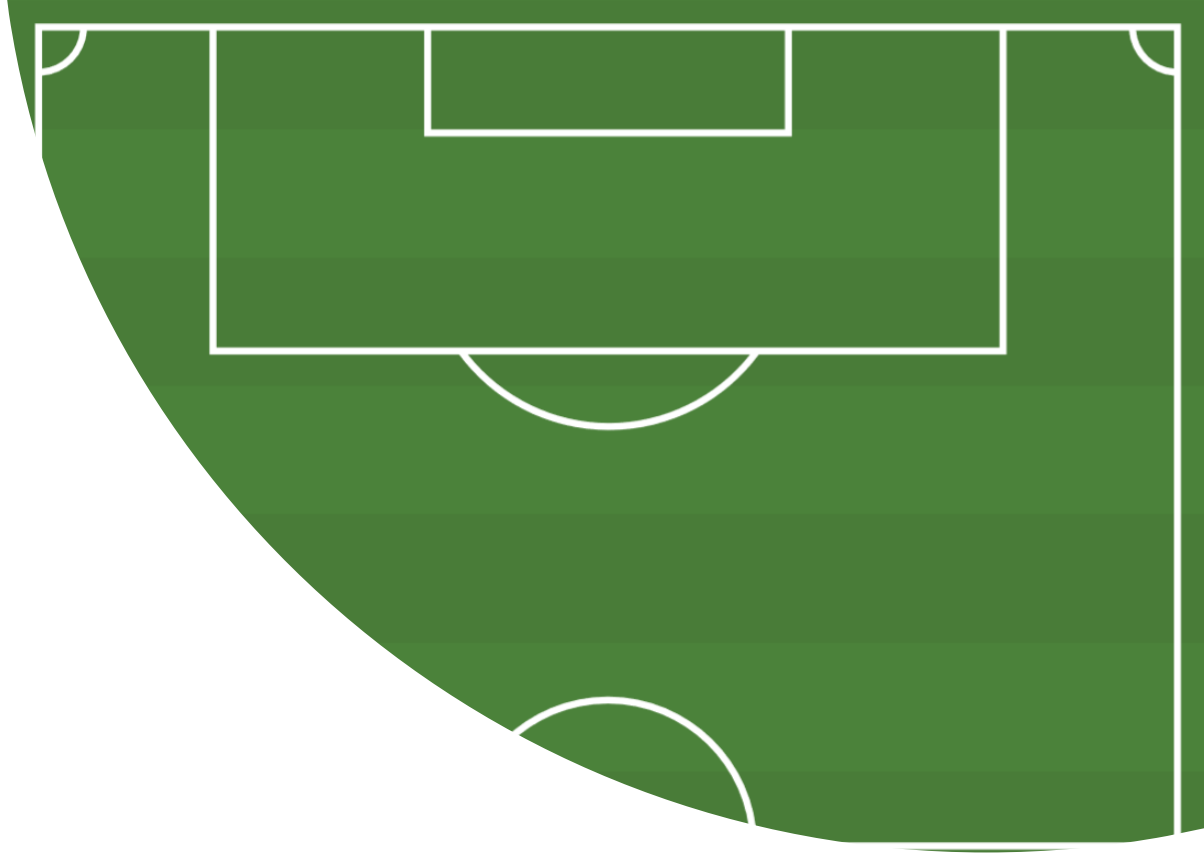


Tackle your Tics
a brief intensive tic training

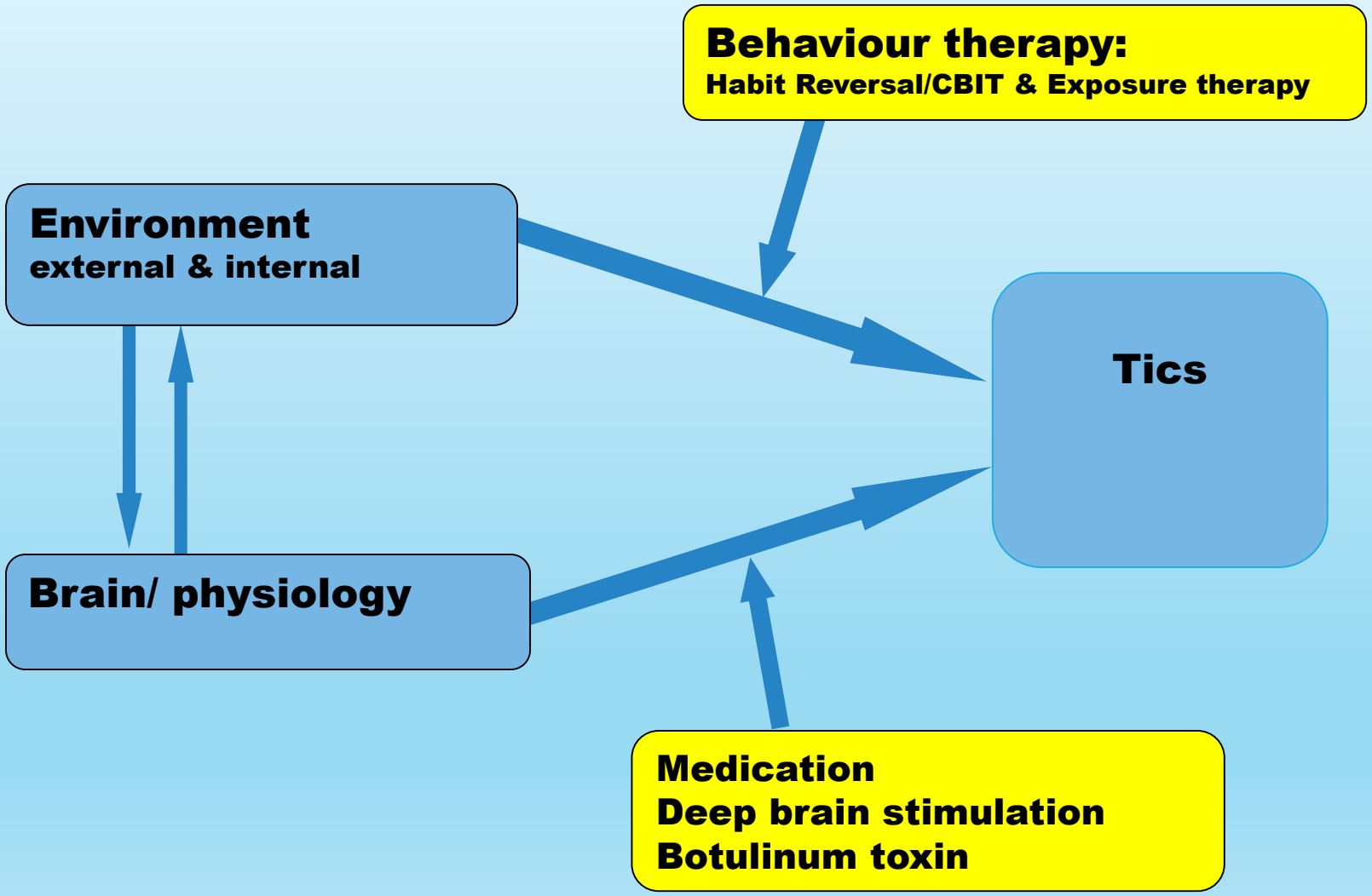
TARN meeting London

September 13, 2019

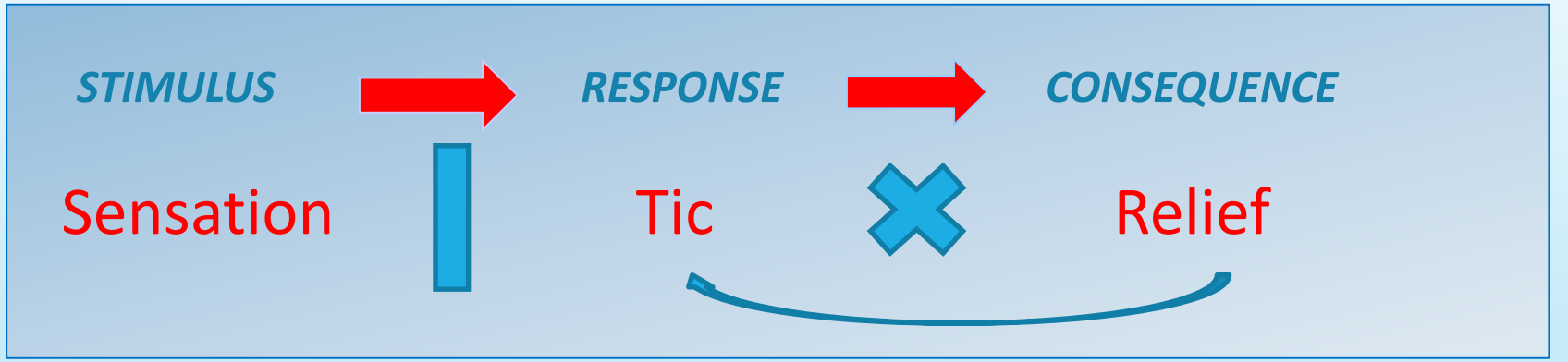
Annet Heijerman-Holtgrefe, MSc

Cara Verdellen, PhD

Treatment of tics

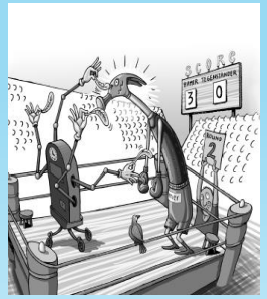


Behavioural treatments - Negative Reinforcement



- Habit reversal training (HRT; Azrin & Nunn, 1973; CBIT; Piacentini, Woods ea, 2010):
  - Treats tics one by one
  - Awareness training
  - Competing response training
  - Change environmental factors

- Exposure and response prevention (ERP; Hoogduin ea, 1997; Verdellen ea, 2004):
  - Targets all tics at once
  - Resisting tics for a long period of time
  - Exposure to premonitory urges



Eur Child Adolesc Psychiatry (2011) 20:197–207
DOI 10.1007/s00787-011-0167-3

ESSTS
European Society for the Study of Tourette Syndrome

European clinical guidelines for Tourette Syndrome and other tic disorders. Part III: behavioural and psychosocial interventions

Cara Verdellen · Jolande van de Griendt · Andreas Hartmann · Tara Murphy · the ESSTS Guidelines Group

Behaviour Therapy (HRT and ERP) is first-line intervention for tics

Apply medication if BT is not available or insufficient

BT evidence: how good does it work? RCTs

HRT Habit Reversal Training
ST Supportive Therapy
ERP Exposure and Response prevention
PE Psycho-education
BT Behaviour Therapy
MED Medication
G(RP) Group
IND Individual

Study	N	Age M (SD)	Condi-tion	YGTSS (mean) pre	post	% improve-ment	Effect size
Wilhelm ea, 2003 HRT > ST	32	36.2 (12.7)	HRT ST	30.5 26.6	19.8 26.9	**35.1%** -1.1%	**1.50** -0.03
Verdellen ea, 2004 HRT = ERP	43	20.6 (12.1)	HRT ERP	24.1 26.2	19.7 17.6	**18.3%** **32.8%**	**1.06** **1.42**
Deckersbach ea, 2006 HRT > ST	30	35.1 (12.2)	HRT ST	29.3 27.7	18.3 26.8	**37.5%** 3.2%	
Piacentini ea, 2010 HRT > ST	126	11.7 (2.3)	HRT ST	24.7 24.6	17.1 21.1	**30.8%** 14.2%	**0.68**
Wilhelm ea, 2012 HRT > ST	122	31.5 (13.7)	HRT ST	24.0 21.8	17.8 19.3	**25.8%** 11.5%	**0.57**
Yates ea, 2016 GRP HRT > GRP PE	33	12.0 (1.38)	G HRT G PE	29.0 30.5	25.6 27.2	18% 11%	**0.39**
Rizzo ea, 2018 BT > PE BT = MED	110	11.2 (2.43)	BT PE MED	19.7 21.9 24.1	12.3 21.9 14.7	**37.5%** 0% **39.0%**	
Nissen ea, 2018 GRP HRT/ERP = IND HRT/ERP	59	12.2 (2.32)	GRP IND	23.4 23.8	15.9 14.3	**32,1%** **39.9%**	**1.38** **1.21**

2019 - Where do we stand?

A lot has been achieved!

- Efficacy of BT for tics is well established
- BT is first-line intervention for tics
- Availability of treatment manuals
- ‘Tics’ is available in 8 languages
- Trained therapists over Europe/US
- Remote delivery of treatment

Room for improvement:

- Enhance effects on tic reduction
- Improve Quality of Life
- Personalize treatments
- Find predictors of response to treatment
- Gain more insight in mechanisms of change
- Gain more insight in neurobiological correlates
- Still working on dissemination of BT
- Working on online accessibility of BT

BIP

R.B.I.T
ONLINE REMOTE BEHAVIOURAL INTERVENTION FOR TICS

Working Mechanisms? What do we know?

- **Habituation?** **Probably not** ✖
  - Verdellen ea (2008): +
  - Specht ea (2013), Houghton ea (2017), vd Griendt ea (subm): -
  - Also supported by neurological findings that tic inhibition and premonitory urges are under control of two distinct neural pathways. Urges are not directly related to tic inhibition capacity (Ganos ea, 2012)

- **Inhibitory learning / Cognitive change?**
  - Based on the inhibitory learning model of extinction as a mechanism of exposure therapy for fear and anxiety (Craske ea, 2012, 2014)

- **Other? Eg, increased inhibition ability?**
  - EEG collected during neurocognitive task suggest that BT works by increasing the brains ability to inhibit movement (LaVoie et al., 2011)

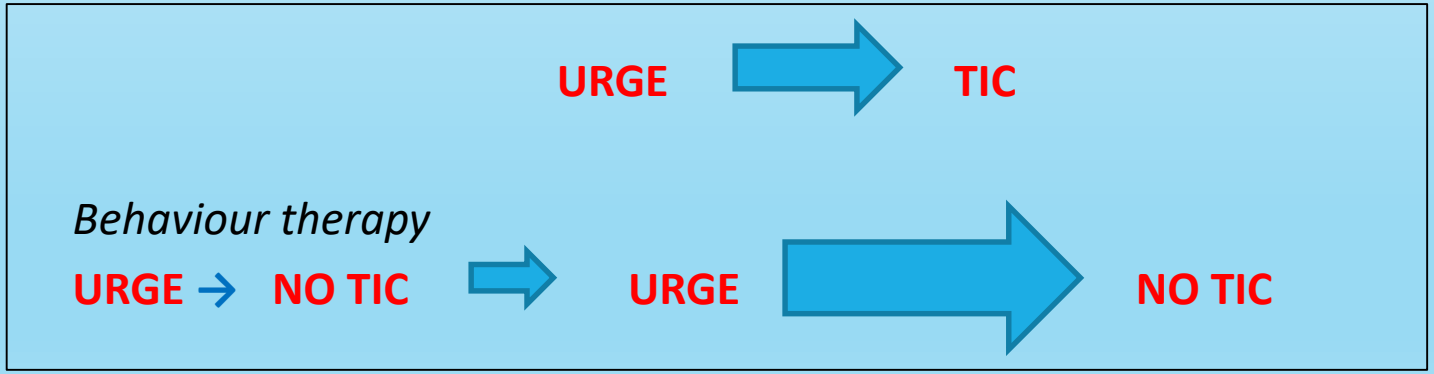
Alternative models of therapeutic change warrant further investigation

Inhibitory Learning model of extinction

- Increasing the tic free period in the presence of the premonitory urge leads to a new 'inhibitory' response

- The 'tic' response (in reaction to the urge) is still there, yet the 'inhibitory' response is stronger and more likely to win in a situation where both responses are possible

- The learned association between the urge and following tic has become weaker as a result of the newly learned response



- Urge tolerance – degree to which tics are inhibited in presence of urges

Expectancy disconfirmation

I cannot control my tics

I CAN control my tics

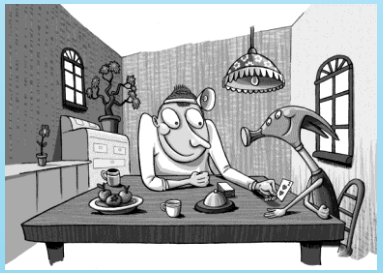
I cannot stand the urge

I CAN endure the urge

Reinforce urge tolerance: Optimizing Exposure

- Maintain focusing on the tic alarms/urges

- Provoke tic alarms:
  - Talking about tics and tic alarms
  - Describing tics and tic alarms
  - Taking a ‘’tic posture’’, start the tic
  - Watching a video of someone doing tics
  - Therapist performs the tic
  - Imagining performing the tic
  - Imagine situations with many tics
  - Bring tic eliciting objects to sessions
  - Play games! Watch out: focus on the urges!

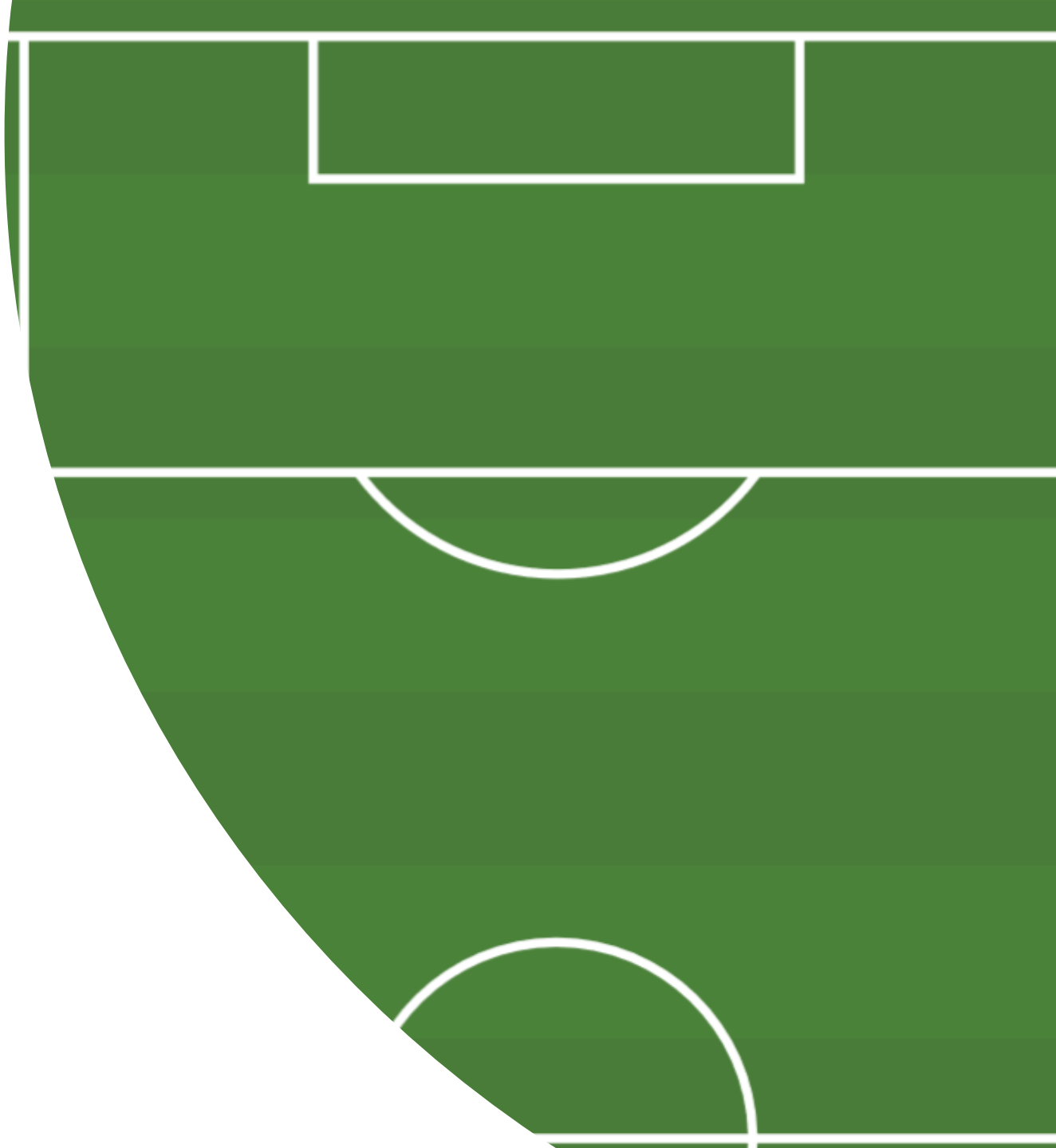


- Pay attention to generalization:
  - When able to suppress tics even with intense urges
  - Apply ERP in different situations, eg while reading, walking, calculating
  - From easy to more difficult situations

- Dense spacing of sessions

Video Germain

Warming up
Training
Match
Score



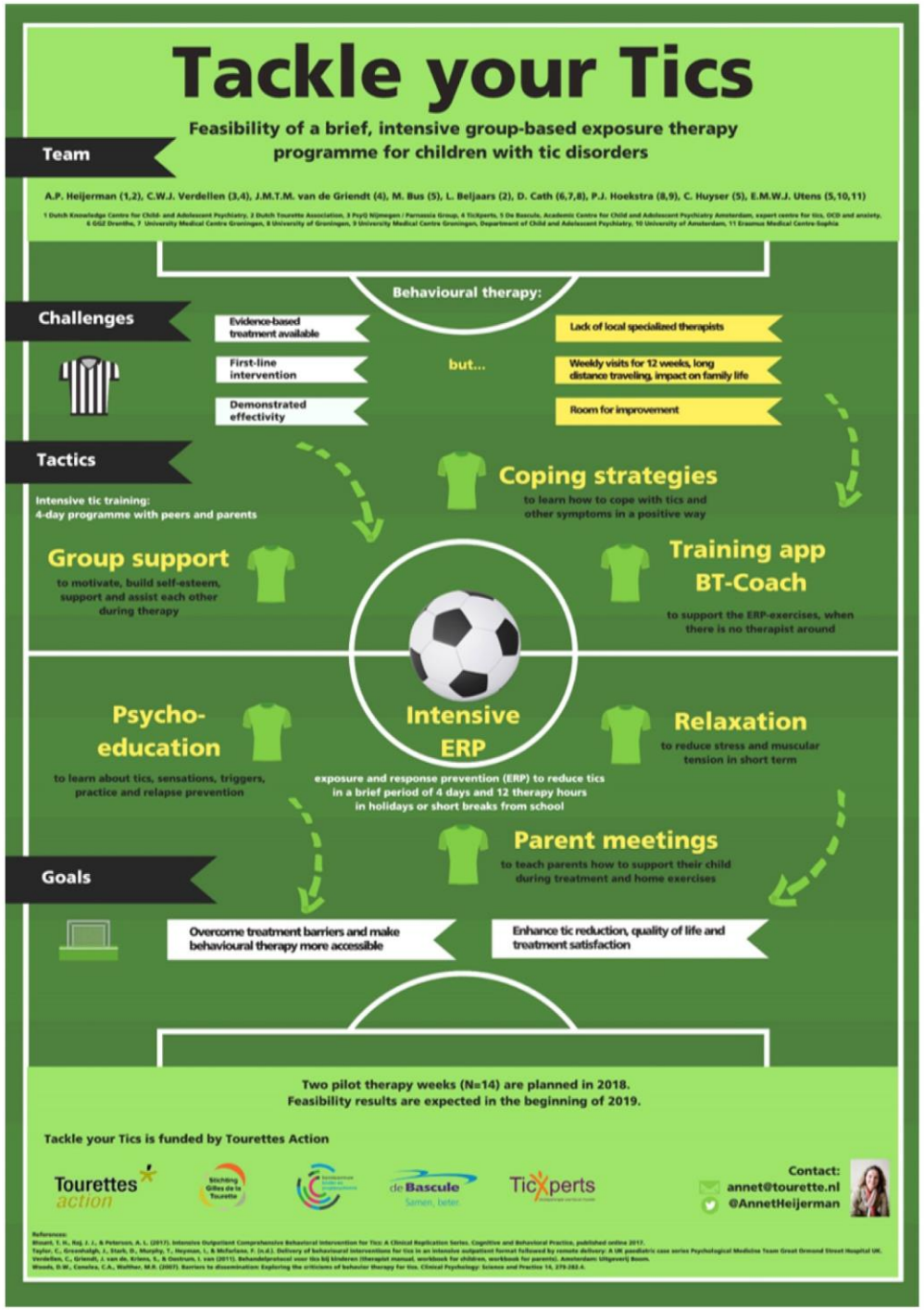
Warming up

The challenge

- optimizing ERP-therapy
- enhancing quality of life
- families needs & wishes

Training program

- 4-day intensive exposure
- group format
- supporting elements
- patient participation



Match

Design

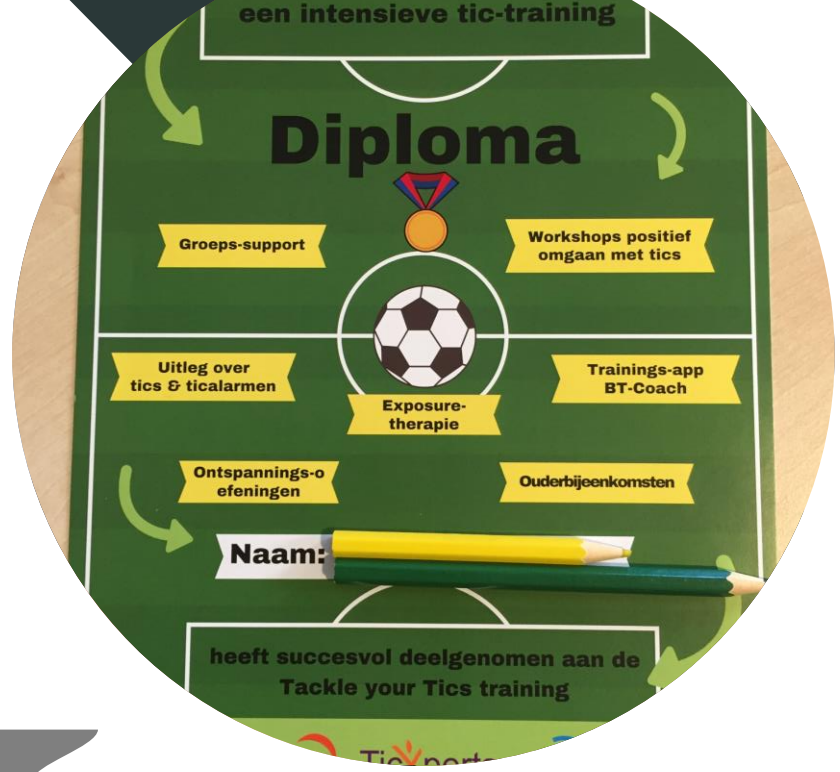
- tic severity & urges (YGTSS, PUTS)
- quality of life (C&A-GTS-QOL)
- behavioral problems (CBCL)
- treatment satisfaction

Criteria

Inclusion	Exclusion
• youths aged 9 to 17 years	• behavioural treatment for tics in past year
• diagnosed with Tourette Syndrome or persistent (motor/vocal) tic disorder (DSM-5 criteria)	• pharmacological treatment, not stable the past 6 weeks or with planned changes during study
• moderate or severe tics (YGTSS total tic score >13 (>9 for children with motor or vocal tics only)	• poor mastery of the Dutch language • IQ < 75 • serious physical disease
• comorbidities are allowed, unless the disorder requires immediate (change in) treatment	• substance abuse, suicidality, psychotic disorders, severe ASD or ADHD-problems • poor group functioning

Conclusions

- feasible & satisfactory
- indications of effect on symptoms
- Further research (RCT) 2019-2023



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Tourettes action

Thank you for your attention!

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