



# Screen time and self-regulation in young children

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# Introduction

- Self-regulation (SR) – the effortful control of behaviour, attention, emotions
- Multidimensional construct
- Internally-directed capacity
- Effective response to both internal and external demands
- SR plays an important role in children's everyday functioning and later adjustment in various areas
- *W.Mischel, C.B.Kopp, G.Kochanska, N.Eisenberg, M.K.Rothbarth, L.A.McCabe, M.Raffaelli et al., etc.*



# Introduction

- Various forms of screen media are more and more common free-time activities among children
- Screen time is longer and users of it are younger
- SES and parental education can be additional risks
- *AAP, 2016; Foster, Watkins, 2010; Kabali et al., 2015; Radesky et al., 2014; Thompson et al., 2013; etc.*
- Bidirectional relations among screen time and attention problems, social functioning, internalizing and externalizing problems, and self-regulation
- *Anderson, Pempek, 2005; Christakis et al., 2004; Magee et al., 2014; Radesky et al., 2014; etc.*



# Aim of this study

- The associations between screen time in toddlerhood and self-regulatory abilities of the same children in preschool age
- Prospective and longitudinal research
- *Could the self-regulation be predicted by screen time duration in early childhood?*



# Methods

## Participants



- Part of the longitudinal study on early development of self-regulation funded by Research Council of Lithuania
- In this study we analyze complete data of 81 children (37 girls and 44 boys)
- All children were born in May – September 2009 as full term low risk babies
- 58% were first-borns, 65% of parents had high university education and 89% were married



# Methods



## Design and measures

- **Screen time use:** *how much time a child spends in front of TV, computer and other IT devices playing, watching, etc.*
- At age **2 and 3 years** old, in minutes
- **Self-regulation, Hot** effortful control: *Snack Delay and Gift Wrap (delay of gratification)*
- **Self-regulation, Cool** effortful control: *Head and Legs (inhibitory control), Draw-a-Circle and Walk-a-Line (motor control), RAVEN B part (attention control), Truck Loading (planning abilities)*
- At age **4 years** old, transformed scores



# Results

## Correlational analysis

	Screen Time (2 years)	Screen Time (3 years)	Maternal Education
Delay of Gratification (Snack)	-.11	-.09	.19
Delay of Gratification (Gift)	-.34**	-.41***	.10
Inhibitory (cognitive) Control	-.26*	-.14	.22*
Fine Motor Control	.01	.04	.11
Gross Motor Control	-.15	-.08	.20*
Attention Control	-.17	-.19	.30**
Planning abilities	-.16	-.30**	.26*
Hot Self-regulation	-.29**	-.33**	.184*
Cool Self-regulation	-.27*	-.26*	.357**

No significant differences in boys' and girls' self-regulation and screen time



# Results

## Regression: predicting SR by Screen Time

Dependent variable	Predictors	Beta Coefficient	Model Fit
Hot Self-regulation	Screen Time 2 years Screen Time 3 years Maternal education	-.141 -.277* .043	F = 4.747, p < .01; R <sup>2</sup> = .16
Cool Self-regulation	Screen Time 2 years Screen Time 3 years Maternal education	-.172 .011 .384**	F = 5.966, p < .001; R <sup>2</sup> = .19

- Hot self-regulation was predicted by screen time, maternal education “added” only 3% of variance
- Cool self-regulation was not predicted by screen time; maternal education is significant



# Conclusions

- Screen time use in young children can have negative effects on their delay of gratification
- Further examination with larger sample and taking into account the content of media use and developmental and environmental variables is needed





# Ongoing study

- **Electronic media use and young children's health, [www.mediavaikai.lt](http://www.mediavaikai.lt)**
- 2017 January – 2018 December
- Funded by Research Council of Lithuania (*agreement no. GER-006/2017*)
- Over 800 young children (2 – 5 years old)
- Detailed information on e-media use, development, health, social and family environment
- 200 participant children will be tested with self-regulation tasks after one year
- *Hope to present more results at ECDP in 2019*



# THANK YOU FOR ATTENTION



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