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## Type 1 Diabetes and its Effects on Active/Inactive Goal Priming for Exercise

Kevin Seske  
*Illinois Wesleyan University*

Jason Themanson, Faculty Advisor  
*Illinois Wesleyan University*

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# Type 1 Diabetes and its Effects on Active/Inactive Goal Priming for Exercise



Kevin Seske  
Illinois Wesleyan University

# Why is this Important?

- Exercise has many benefits
- Managing a chronic illness (long-lasting) can be difficult
- Priming is effective



**ALERT!**

**TYPE 1  
DIABETES**



# Priming (In general)

- Achievement Goal Priming (Action Priming)  
(Gollwitzer, Sheeran, Trotschel, & Webb, 2011)
  - Inactive
  - Active
  - Exercise tasks (Albarracin, Hepler, & Tannenbaum, 2011)

# Protection Motivation Theory (PMT)

- Cognitive mediation process of behavioral change with threat and coping appraisal (Plotnikoff, 2009)
- Perceived severity
- Perceived vulnerability
- Response Efficacy (Coping response)
- Self-Efficacy



# PMT in Plotnikoff et al. (2009)

- Canadian adults with Type 2 Diabetes
- Intention and Self-Efficacy make a significant impact on behavior
- Provides framework



# Action and Inaction Goals

- When one has a general *action* goal, they tend to carry out an *active* task.
- When one has a general *inaction* goal, they tend to carry out an *inactive* task.
- Priming these types of goals does what? (Bluemke, Brand, Schweizer, & Kahlert, 2010)
- Positive Associations
- Negative Associations



# Why this study?

- How can individuals be motivated to exercise with a chronic illness?
- To determine whether goal priming (active or inactive) can be affected by a chronic disease (type 1 diabetes)





# Hypotheses

- If actively primed to exercise, type 1 diabetes will *not* affect this priming.
  - Individuals will continue to exercise
- If inactively primed, type 1 diabetes *will* affect this priming.
  - Individuals will become active



# Method and Measures

- Participants = enrolled in a general psychology course at Illinois Wesleyan University age 18 and over
- Completion of research experience is required for the course
- Action/Inaction Goal Priming Tasks
  - Active Priming: Jumping Jacks
  - Inactive Priming: Closing Eyes and Relaxing

# Measures (Cont.), Research Design, and Procedure

	Chronic	Healthy	Active	Inactive
P1	<b>X</b>		<b>X</b>	
P2	<b>X</b>			<b>X</b>
P3		<b>X</b>	<b>X</b>	
P4		<b>X</b>		<b>X</b>

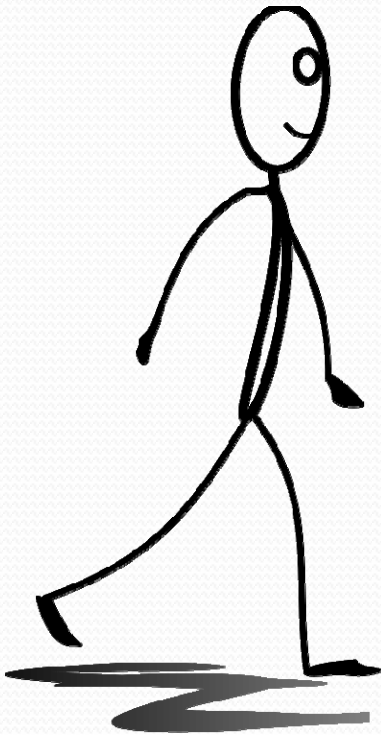


# Measures (Continued)

- PMT Questionnaire (Plotnikoff, 2009)
  - Perceived severity and vulnerability
    - EX: Getting further diabetes complications would be a very bad thing to happen to me (1-5 Scale)
  - Response efficacy
    - EX: For me, regular physical activity will keep me healthy (1-5 Scale)
  - Self-efficacy (level of confidence to exercise regularly)
    - EX: You feel stiff or sore (1-5 Scale)
  - Behavioral Intention
    - EX: (0-100%) Likelihood of getting regular physical activity within the next month?

# Post-PMT Behavior Analysis

- Do you want to do the active task (walking) or the inactive task (napping)?



OR





# Statistical Analyses

- 2 (priming: action, inaction goals) x 2 (illness: yes, no) between-subjects ANOVA
- Dependent Variable: Do you want to do the active task (walking) or the inactive task (napping)? (Participant's intention?)
- Examines the influences of goal priming and a chronic illness on participant's intention to exercise

# Results

- $N = 66$  participants total
- Omnibus 2x2 Univariate ANOVA indicated that:
- Significant Main Effect of Priming
  - $F(1, 62) = 4.68, p = 0.03, \eta^2 = 0.07$
- Marginal Main Effect of Illness
  - $F(1, 62) = 3.29, p = 0.08, \eta^2 = 0.05$
- Significant Priming x Illness Interaction Effect
  - $F(1, 62) = 4.68, p = 0.03, \eta^2 = 0.07$



## Results (Continued)

- To examine interaction better, two-way ANOVAs were conducted
- Compared behavioral choices between the two illness conditions (chronic, healthy) within each priming group (active, inactive)
- No illness condition effect for the actively primed group
- Significant illness condition effect within inactively primed group
  - $F(1, 32) = 8.54, p = 0.006$





# Discussion (What does this mean?)

- Main Effect of Priming
  - If someone is actively primed, then more likely to be active
  - If someone is inactively primed, then less likely to be active
- Priming x Illness Interaction effect
  - For those who are inactively primed and given an illness, they will intend to exercise more than those who were inactively primed and not given an illness.
- Illness condition effect within inactively primed group
  - Supports interaction effect



# Limitations and Future Research

- Total number of participants were relatively low
  - $N = 66$
- Participants hypothetically had diabetes
- Priming manipulation
  - Participants get primed for a *longer* period of time, then answer questionnaire, perform behavioral follow-up, etc. afterwards

# The Puzzle Finally Makes Sense...

- Generally, if an individual is very active, then his/her exercise frequency will not be affected by type 1 diabetes should it enter his/her life unexpectedly.



# Table 1

## *Sex for the Four Condition Groups*

	<u><i>M (SD)</i></u>
Active/Chronic	1.53 (.514)
Inactive/Chronic	1.69 (.480)
Active/Healthy	1.53 (.516)
Inactive/Healthy	1.60 (.507)

## *Age for the Four Condition Groups*

	<u><i>M (SD)</i></u>
Active/Chronic	19.24 (.970)
Inactive/Chronic	19.62 (1.33)
Active/Healthy	19.47 (1.995)
Inactive/Healthy	19.27 (.961)

## *School Year for the Four Condition Groups*

	<u><i>M (SD)</i></u>
Active/Chronic	1.71 (.849)
Inactive/Chronic	2.08 (1.32)
Active/Healthy	1.80 (1.082)
Inactive/Healthy	2.00 (1.13)

## *Race for the Four Condition Groups*

	<u><i>M (SD)</i></u>
Active/Chronic	4.65 (1.06)
Inactive/Chronic	4.54 (1.198)
Active/Healthy	3.60 (1.81)
Inactive/Healthy	4.07 (1.62)

# Table 2

## *PMT Measures Responses*

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	<u><i>M (SD)</i></u>
Perceived vulnerability	3.68 (0.98)
Perceived severity	4.53 (0.71)
Response efficacy	4.60 (0.57)
Self-efficacy	3.47 (0.75)
Participants' intentions	1.45 (0.50)

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