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**The Role of Habits in Behavioral
Weight Loss Maintenance**

Wednesday, September 21, 2022

Moderator
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Program Manager
MacDonald Center for Obesity Prevention and Education
M. Louise Fitzpatrick College of Nursing

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1

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3

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4

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5



The Role of Habits in Behavioral Weight Loss Maintenance

Nick Frye, MS, LCPC, CHES®



6

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There are no relevant financial relationships with ineligible companies for those involved in planning this activity.

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7

7

The Role of Habits in Behavioral Weight Loss Maintenance

Presented by:

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8

8

Agenda

1. The challenge at hand
2. Habits defined
3. Behavior change models
4. Habit-based interventions
5. Limitations to habit-based interventions

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9

9

The challenge at hand

The problem. The plausible explanation. The opportunity.

Most weight loss is followed by weight regain	Habitual behavior and automaticity	Interventions that focus on changing behavior are not usually successful
<ul style="list-style-type: none"> Despite the significance placed on lifestyle interventions for obesity management 	<ul style="list-style-type: none"> These psychological concepts have been suggested as plausible explanations for this overwhelming lack of long-term weight loss success 	<ul style="list-style-type: none"> Because they do not incorporate the strategies required to break unhealthy habits and/or form new healthy habits

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10

10

The good news

- Habit-based interventions show promising results in sustaining behavior change
- Weight loss maintenance may benefit from incorporating habit-based strategies

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11

11

Habit defined

Habit

- Learned stimulus-response association
- A given stimulus, such as a particular situation and its contextual cues
- Triggers an impulse to act in a particular way; i.e. the response
- Developed by repeatedly executing a particular behavior in a given situation
- An association between the two develops which becomes so strong that the situation alone is enough to trigger the associated behaviors without conscious thought

Habitual behavior

- Behaviors that result from the habit process
- Can be multiple habitual behaviors as part of a habit, and changes to these do not mean changes to the habit

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12

12



Coffee in the morning

- Habit of making a cup of joe in the morning includes adding water to the machine, placing the filter, scooping out the grounds, clicking it on, and then adding the sugar and milk.
- You may decide to stop having sugar, or switch to decaf, which changes your habitual behaviors to some extent.
- However, you still have the habit of making a hot drink.

13

Cognitive processing and behavior change

Two models of behavior change

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14

14

Cognitive processing and behavior change

Theory of planned behavior

- Suggests that behavioral intention is the primary driver of human behavior
- Defined as individual's readiness to perform a given behavior. Includes:
 - attitude,
 - subjective norms, and
 - perceived behavioral control.
- However, habitual behaviors override intention—people respond in-line with their habits more than their intentions

Dual process model

- Behavior is theorized to be regulated by the interplay of two systems:
 1. **automatic system** which responds in line with habits and impulses
 2. **reflective system** which is based on conscious thought and consideration, and is controlled but effortful

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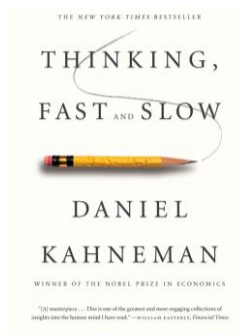
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Kahneman's cognitive processing model

- **System 1** (intuitive, fast, automatic, effortless, implicit, governed by habit)
- **System 2** (slow, effortful, controlled, deliberate, rule-governed) processes.
- Suggested that behaviors which rely more on System 1 processes are more likely to be sustained for the long-term
- Implies the importance of developing habits for behavior change maintenance

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16

Behavior change maintenance

- Behavior change can be maintained by use of the reflective system (System 2) through ongoing and effortful self-regulation
 - Reflective system is used for intentional behavior, such as new health-related behaviors but is relatively slow, effortful, and prone to errors
 - Likely to fail if psychological resources are limited or depleted due to stress, tiredness, exhaustion or intoxication
- More sustainable method for behavior change maintenance may be to develop habits and regulate behaviors utilizing the automatic system (System 1)

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17

17

Habit-based interventions

Breaking unhealthy habits and forming new, healthy habits

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18

18

Habit-based interventions

- Habit-based interventions that focus on breaking unhealthy habits and/or forming new, healthy habits have shown some promising results in maintaining behavior change
- Strategy for breaking unhealthy habits
 - *Habit discontinuity*
- Strategies for forming healthy habits
 - *Habit formation*
 - *Habit substitution*

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19

19

Habit discontinuity

- Habits are cued by the context; the situation alone triggers the associated behavior without conscious thought
- Habit strength may be weakened, or broken entirely, by a large enough change in context
- **Habit discontinuity:** *disrupt the stimulus-response process by targeting and changing the 'stimulus' element of the habit process and potentially breaking the habit*
 - E.g., avoid situations or environments that tends to trigger a habit of overeating or unhealthy eating such as fast-food restaurants or all-you-can-eat buffets.
- Reducing exposure to these contexts may stop the initiation of the habitual behavior and interrupt or potentially break the habit process

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20

20

Challenges with breaking unhealthy habits

- May be important in weight loss maintenance, however...
 - may only discontinue a habitual behavior and...
 - underlying habit associations may remain.
- Can't eliminate, change, or control all triggers

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21

21

Strategies for forming healthy habits

- Forming new stimulus-response associations
 - *Habit formation*
- Overwriting old stimulus-response associations
 - *Habit substitution*

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22

22

Habit formation

- Habits develop by repeating a behavior in a consistent context until it has become more or less automatic...
- Establishing a direct link between the context and the behavioral response (i.e., stimulus-response) such that, eventually...
- The mere perception of that context automatically triggers the behavior.
- **Habit formation gradually shifts self-regulatory control from the intentional reflective system to the habitual automatic system**
 - E.g., repeating a self-chosen health-promoting behavior (e.g., eat fruit, go for a walk) in response to a daily cue in their own environment (e.g., with coffee, after breakfast)

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23

23

Automaticity

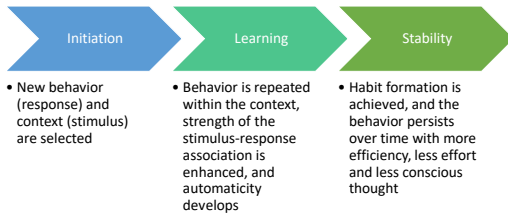
- Behavior is efficient, unintentional, and uncontrollable
- Ensures that once effortful and intentional health-related behaviors become progressively easier over-time
- Maintaining motivation and consistently undertaking the new behavior is only necessary until the habit forms and the new behavior becomes automatic
- Automatic behaviors are more resilient to change than reflective, intentional behaviors and therefore last longer which can lead to maintained results

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24

24

Habit formation process



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25

25

Habit formation and weight loss maintenance



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26

26

Habit substitution

- **Habit substitution:** *Forming a new, competing association that can overwrite old stimulus-response associations*
 - Strategy involves both breaking old habit responses, and forming new habits
 - Disrupts the underlying habit association not just the habitual behaviors that result from the habit process
- Response element is targeted—however...
 - response is not suppressed through willpower and self-control but rather...
 - competing behavior is substituted for the habitual response so that the...
 - old unhealthy behavior is overwritten with a new one.

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27

27

Habit substitution and weight loss maintenance

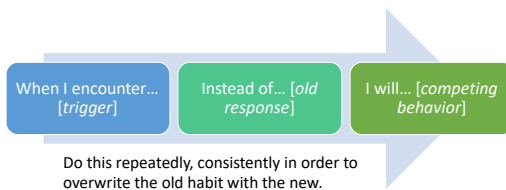
- Rather than attempting to restrain behavior through self-control and willpower, or avoiding triggers
- Expose themselves to the stimulus; e.g., fast-food restaurant
- Substitute a healthier option—which is the competing behavior
- Repeatedly until a new stimulus-response association is formed
- Thus, overwriting the old stimulus-response association and forming a new one

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28

28

Habit substitution and weight loss maintenance



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29

29

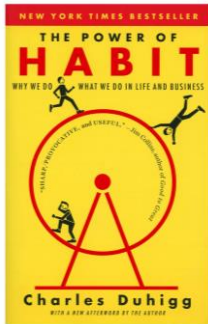
The role of habits in weight loss maintenance

- Habits are learned stimulus–response associations
- Can use strategies to break unhealthy habits by changing context...
 - however, may only change behavior and not stimulus-response association, can't avoid, change, control all triggers
- New, healthy habits can be formed by pairing advice on repetition in consistent contexts with behaviors associated with weight loss to promote habit formation
- Old, unhealthy habits can be overwritten by substituting competing behavior repeatedly writing over the old stimulus-response association and forming a new one

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30

30



Charles Duhigg's habit substitution

- Unhealthy habit of going to the cafeteria and buying a chocolate chip cookie every afternoon and eat it while chatting with friends
- Substitute competing behavior—walk to friend's desk to talk for 10 min—when triggered (stimulus = time of day)
- Repeat, repeat, repeat consistently overwriting old stimulus-response association and forming a new one

31

31

Limitations to habit-based interventions

Show tremendous promise, but not without limitation

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32

32

Is it even a habit?

- Not all 'problem' behaviors are habits; e.g., skipping a doctor's appointment
- Must identify the 'stimulus-response' association linking the behavior to a given situational context in order to be sure that the behavior we want to change is a product of the habit process
- If it is not, then why use habit theory to change it? There are plenty of other behavioral theories to help here!

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33

33

Context dependence

- Habit formation occurs through context-dependent repetition...
 - behavior change maintenance often requires performing the newly adopted behavior in many different environments, including unsupportive ones and...
 - under varying individual states of being (e.g., stress, tiredness, exhaustion or intoxication) that cannot always be controlled.

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34

34

Need for self-regulation

- Many health-related behaviors will always need some level of active self-regulation in order to maintain them:
 - under difficult environmental (e.g., cues for highly tempting and palatable foods) or...
 - individual circumstances (e.g., stress, fatigue, opposing drives for unhealthy behaviors, lower inherent executive function ability, etc.).

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35

35

Competing drives and impulses

- Automatic behaviors are undeniably more efficient; however, may not be possible to fully automate all health-related behaviors
- Extent to which a behavior can become habitual significantly depends on competing drives or impulses that influence the behavior
- Health-related behaviors that have competing drives or impulses (e.g., healthy eating, caloric restriction, exercise) may require additional techniques—such as encouraging **identity transformation** and by connecting new, healthy behaviors with **identity, beliefs, and values**—to help them become more efficient and less effortful

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36

36

Conclusion

- Habits are learned stimulus–response associations
- Can use strategies to break unhealthy habits—**habit discontinuity**—however, may not be effective
- May be more effective to:
 - Form new, healthy habits by pairing advice on repetition in consistent contexts to promote **habit formation** and behaviors associated with weight loss
 - Overwrite old, unhealthy habits through **habit substitution** by swapping in competing behavior repeatedly and consistently, overwriting the old stimulus–response association and forming a new one
- Habit-based interventions show tremendous promise in sustaining behavior change and weight loss maintenance, but they are not without limitation

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37

37

Resources

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Wednesday, September 14, 2022

38

38

Resources

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39

39

Questions & Discussion

- Thank you!!!
- Before we conclude, any questions?
- Discussion
- Let's keep talking! nicholas.frye@medifastinc.com

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40

40

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41

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September 20, 2022, 5:30-7:30 PM
Culinary Medicine in Clinical Practice

October 20, 2022, 5:30-7PM ET
Food as Medicine to Address Nutrition Equity, Food Insecurity and Diet-Related Chronic Illness

November 15, 2022, 5:30-7PM ET
Cooking "Food as Medicine" for Media 101

November 30, 2022, 5:30-7PM ET
Food as Medicine in Health Policy and Law

December 8, 2022, 5:30-7PM ET
Food as Medicine in Wellness and Disease: Practical Applications in Medical and Nutrition Education



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42

Upcoming Events: Shared Decision-Making Workshop

Thursday, November 3, 2022 | 9 am - 2 pm
The Inn at Villanova University

Enhance your **patient-centered counseling skills** utilizing the Shared Decision-Making Process (SDM) and develop a decision tool to use in your future practice.

Workshop includes:

- Introductory Lecture
- Decision Making Tool Session
- Decision Making Tool Review Session
- 4 CPEUs for Dietitians; 4 CH for Nurses
- Breakfast and Lunch



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43

Upcoming Events: Feeding the Need, Developing Solutions Webinar Series

October 27, 2022, 12-1 PM ET

Sleep and Weight Management: Theory and Practice for Healthcare Providers

November 16, 2022, 12-1 PM ET

Weight Stigma in Healthcare: Findings from Patients, Implications for Providers

December 7, 2022, 12-1 PM ET

Promoting Physical Activity and Cardiovascular Health in Clinical Practice



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44

Q&A



Moderator:
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45