



NEUROMINDFULNESS®  
INSTITUTE

# The Neuroscience of Habit Formation

—  
Change your habits,  
Change your life

April 30<sup>th</sup>, 2021



Los Angeles  
Charter Chapter



## WHO WE ARE



**Our mission at NeuroMindfulness® Institute is to inspire leaders to raise their level of consciousness and make a positive difference in the world.**

**CORPORATE  
PROGRAMS**

**EXECUTIVE  
RETREATS**

**ONLINE  
PROGRAMS**

Participants to our programs are leaders from:



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## AGENDA

1. What are habits and why they matter?
2. The Neuroscience of habits
3. What is the role of the coach?
4. 3 Practical Tips for Habits Formation
5. Be Well 2021 Workbook

**45%**

of our behaviors are habitual

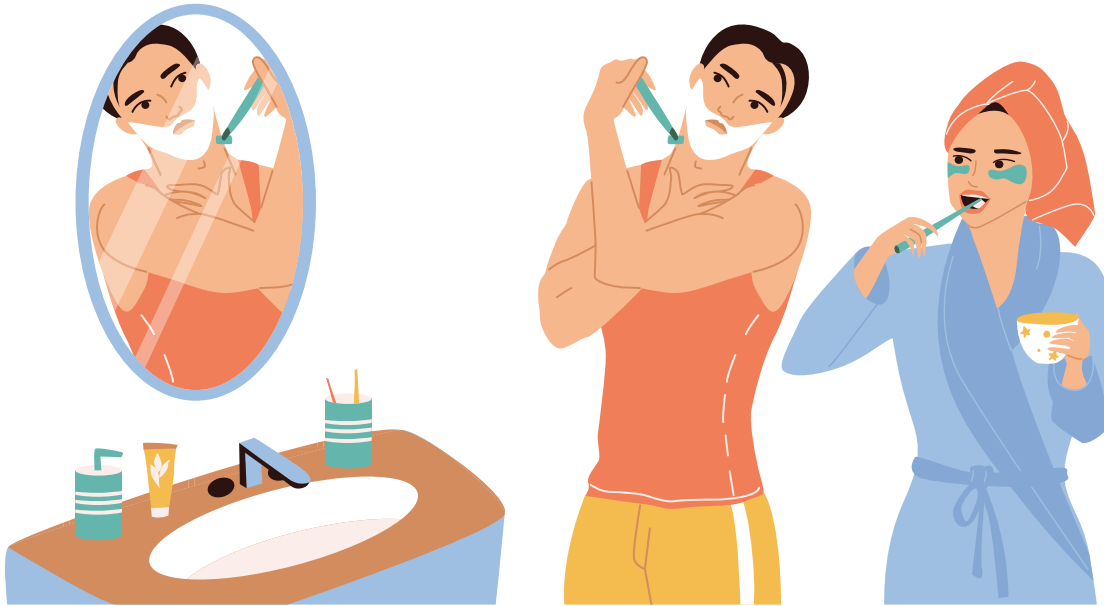


# WHAT ARE HABITS AND WHY THEY MATTER?





## WHAT ARE HABITS? – A WAY TO FREE OUR ATTENTION SPACE



- Habits are our brain's way to be **more efficient**:
  - Puts us in **autopilot** so that our brain is not overwhelmed by every small action
  - **Frees us space** to focus our attention of what we choose
- They do not start as an automatic **behavior, but end up** that way after **repetition of a learned behavior**



## WHAT ARE HABITS? – DIFFERENT TYPES OF HABITS



### THOUGHTS

- **Mental patterns** (self-narrative, limiting beliefs, ruminations...)

- People **biases**
- Stereotyping



### BEHAVIORS

- **Self-directed** behaviors

- **Social** interactions

### SELF

### OTHERS



## WHY HABITS MATTER – THEY SHAPE WHO WE ARE AND OUR BEHAVIORS

### THEY DRIVE A HUGE PART OF OUR LIVES

- **45%** of our behaviors are habitual
- We resort more to them when we are **stressed** or **tired**

### WE TEND TO HAVE LITTLE CONTROL OVER THEM

- **80%** of New Year's resolutions fail by **mid-February**
- **Most patients (6/7) fail** at habit change when their doctor tells them that **they might die**



***“SOW A THOUGHT AND YOU REAP AN ACTION;  
SOW AN ACTION AND YOU REAP A HABIT;  
SOW A HABIT AND YOU REAP A CHARACTER;  
SOW A CHARACTER AND YOU REAP A DESTINY”***

**RALPH WALDO EMERSON**

Sources:

Neal D. T., Wood W., Quinn J. M. (2006). Habits—A repeat performance. Curr. Dir. Psychol. Sci. 15 198–202

<https://www.forbes.com/sites/markmurphy/2020/02/11/this-is-the-month-when-new-years-resolutions-fail-heres-how-to-save-them/>

## HABIT FORMATION – WHAT ARE THE HABITS YOU KNOW YOU SHOULD INCLUDE IN YOUR DAILY ROUTINE, BUT YOU DON'T?

# What are the habits you know you should include in your daily routine, but you don't?



## WHY HABBITS MATTER – HEALTHY HABITS ARE KEY TO PERFORMANCE



**How to STICK TO HEALTHY HABITS?**

<https://www.forbes.com/sites/deeppatel/2017/07/14/10-daily-habits-of-the-most-productive-leaders/>

# THE NEUROSCIENCE OF HABIT FORMATION

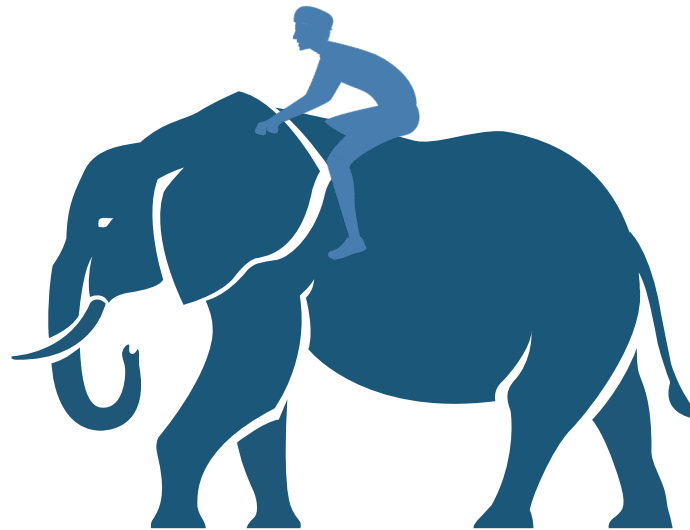




## NEUROSCIENCE ANALOGY – THE RIDER AND THE ELEPHANT

### RIDER

- Manages a single task
- Solves complex problems
- Controlled: Slow, Intentional, Cognitive
- Sensitive to positive information (focus on satisfaction)
- Flexible (open to novelty and change)
- High Energy Consumption : gets tired
- Explicit (conscious) memory

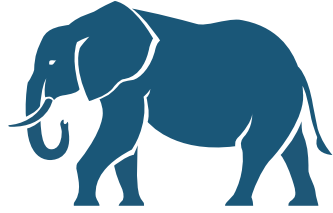


### ELEPHANT

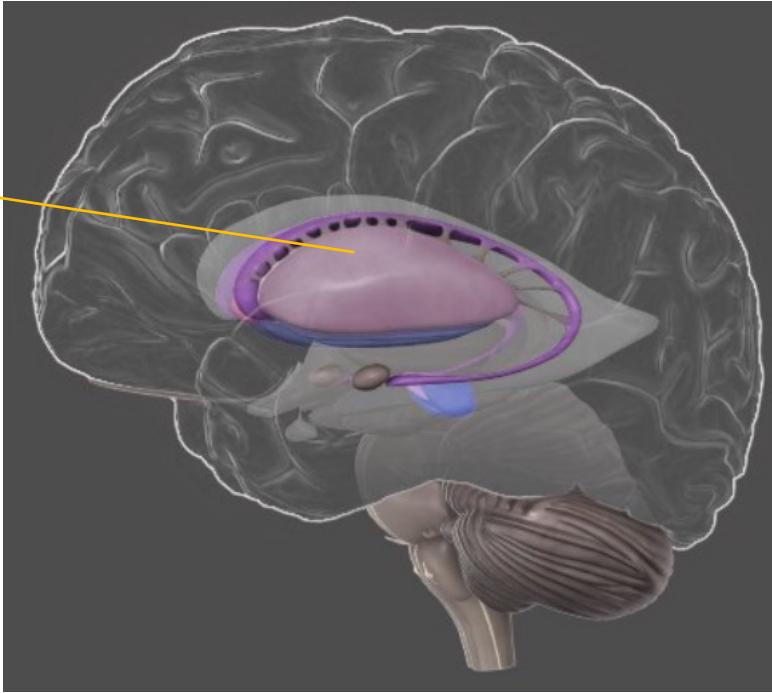
- Manages multiple tasks
- Solves simple problems
- Automatic: Fast, Unconscious, Intuitive
- Sensitive to negative information (focus on security / survival)
- Creature of habits (sees threats in novelty)
- Performant / Energy-Efficient
- Implicit (unconscious) memory

Source: Jonathan Haidt. The Happiness Hypothesis, 2006

## THE MAIN CHARACTERS FOR HABIT FORMATION – BASAL GANGLIA IS THE SEAT OF HABITUAL BEHAVIORS



Basal ganglia



- Skill learning
- Habit formation
- Reward system

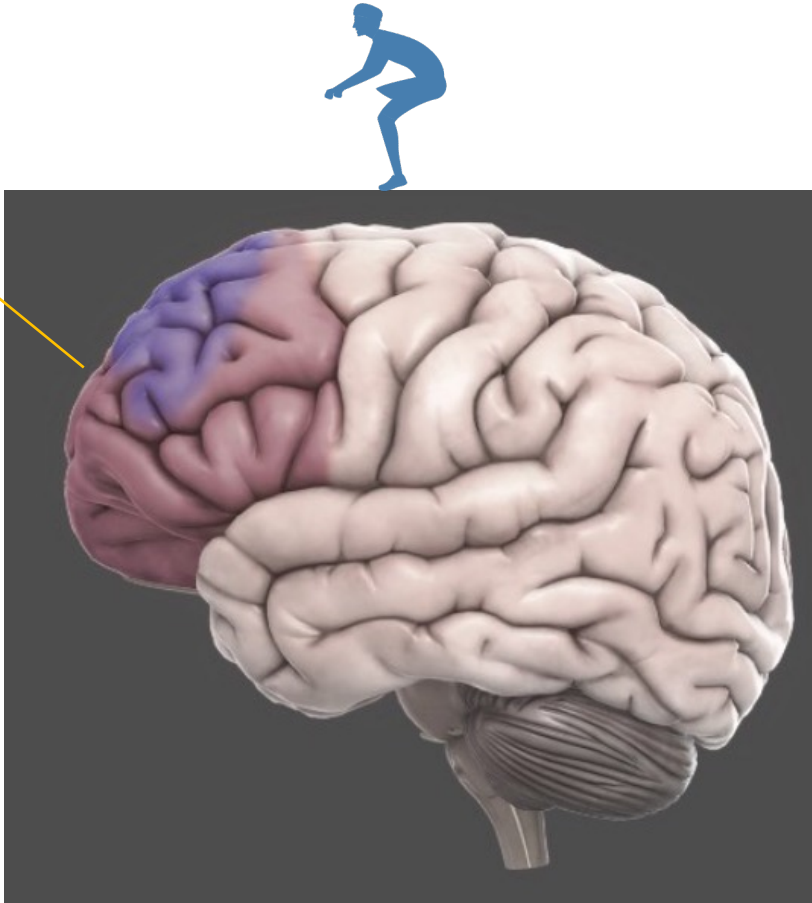
Source: Cold Spring Harbor Laboratory 3D Brain app



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## THE MAIN CHARACTERS FOR HABIT FORMATION – THE PREFRONTAL CORTEX IS THE “CEO” OF THE BRAIN

Prefrontal cortex



- Abstract thinking
- Reasoning
- Attention
- Emotion regulation
- Error detection & correction
- Integrating inputs from other brain parts
- Conscious decision-making
- Social cognition (empathy, theory of Mind)

Source: Cold Spring Harbor Laboratory 3D Brain app



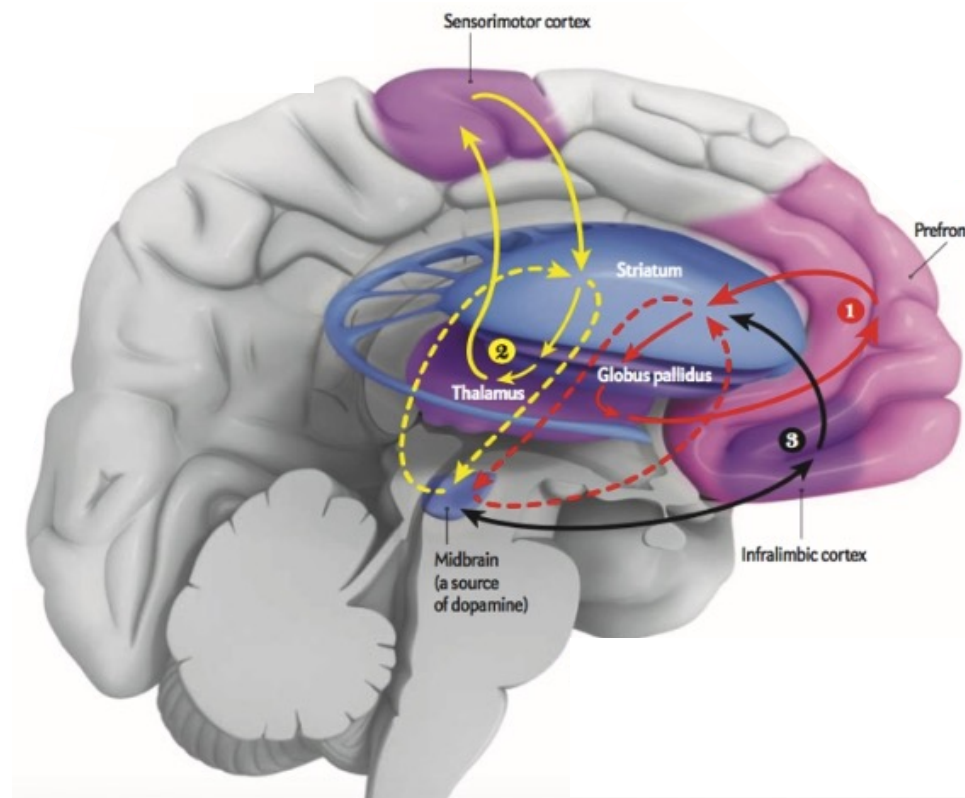
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## HABIT FORMATION – HOW ARE HABITS FORMED?

2

### HABIT FORMATION

- **Striatum** (part of basal ganglia)
- Reward network - Dopamine



1

### HABIT EXPLORATION

- Prefrontal cortex - **Striatum**

3

### HABIT IMPRINTING

- Formation of a neural highway between **striatum** and sensory-motor cortex (behavior)

Sources:

Graybiel A., Smith K., 2014 "How the Brain Makes and Breaks Habits". Scientific American June 2014

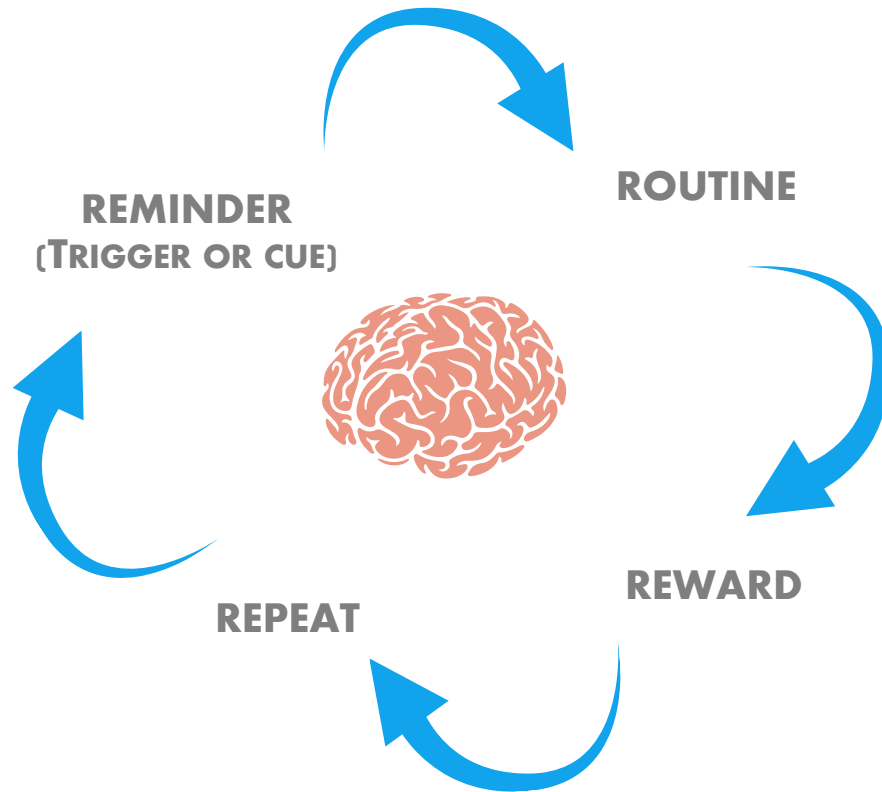
Ashby et al., 2010. "Cortical and basal ganglia contributions to habit learning and automaticity". Trends Cogn. Sci., 14(5): 208-215, May 2010

Seger & Spiering, 2011. "A Critical Review of Habit Learning and the Basal Ganglia". Front. Syst. Neurosci., 5: 66, 2011



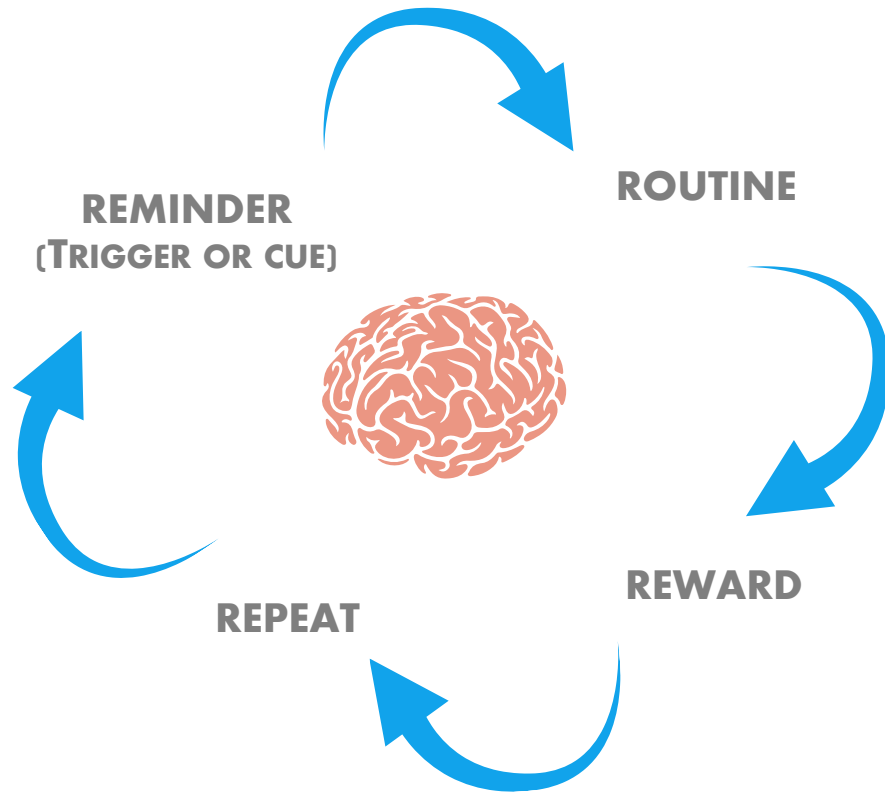
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## HABIT FORMATION – HOW ARE HABITS TRIGGERED BY A CUE

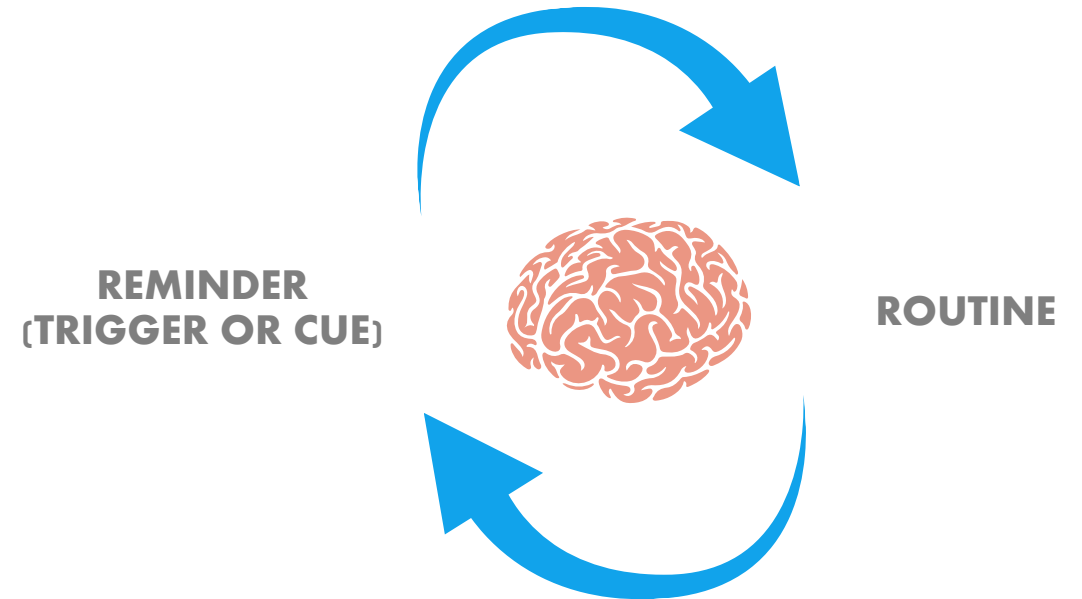


**REWARD IS ESSENTIAL IN HABIT FORMATION**

## HABIT FORMATION – HOW ARE HABITS TRIGGERED BY A CUE



**REWARD IS ESSENTIAL IN HABIT FORMATION**



**ONCE A HABIT IS ANCHORED, THE TRIGGERING CUE IS ENOUGH TO DRIVE BEHAVIOR - GOOD OR BAD**

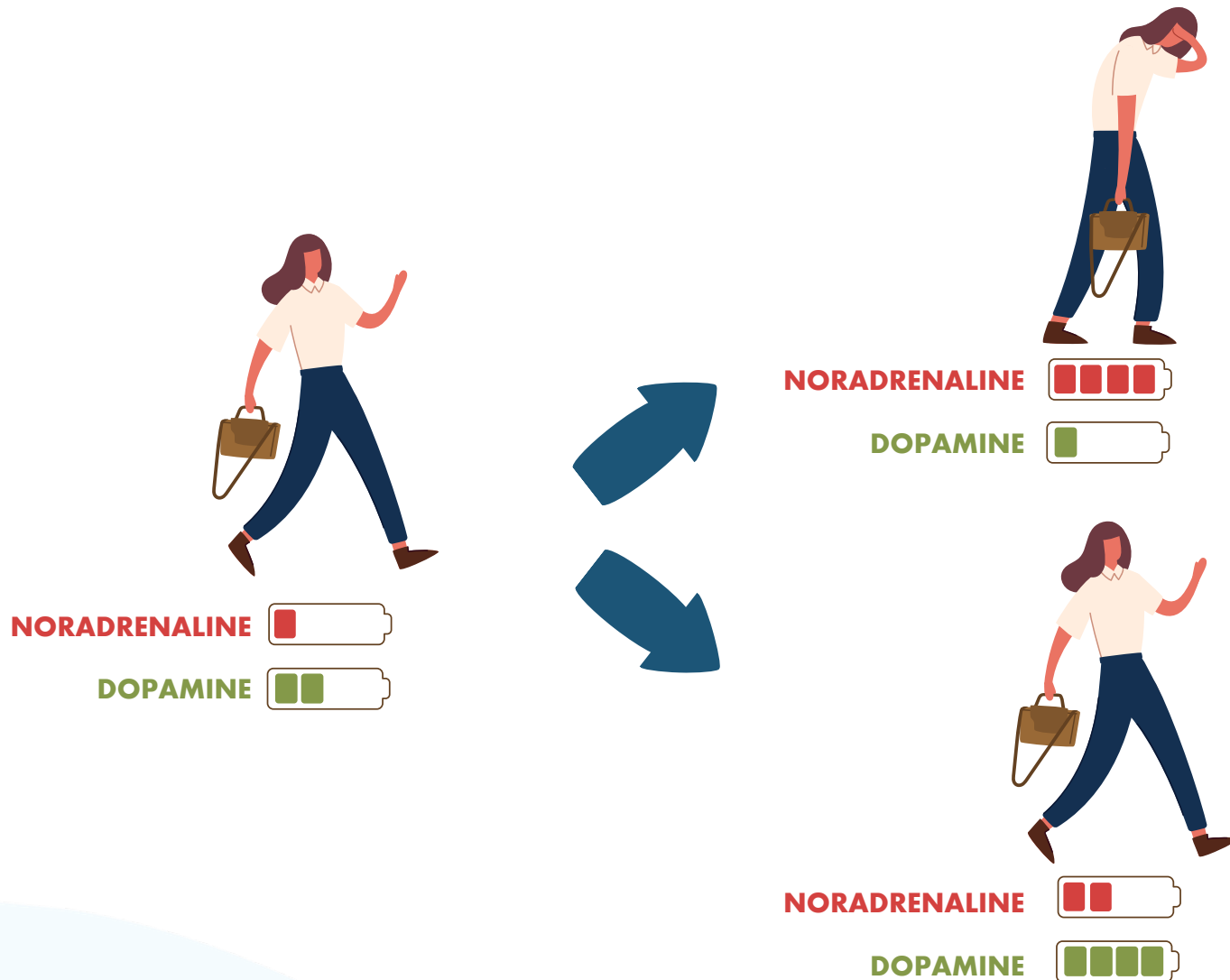


## HABIT FORMATION – WHY DO WE QUIT ON BUILDING HABITS?

**OPEN DISCUSSION**



## HABIT FORMATION – WHY WE QUIT



- When we exert any focused **effort**, our body secretes **Noradrenaline**, and the more the effort lasts, the more it accumulates
- When it reaches a certain threshold, we **quit** on our objective

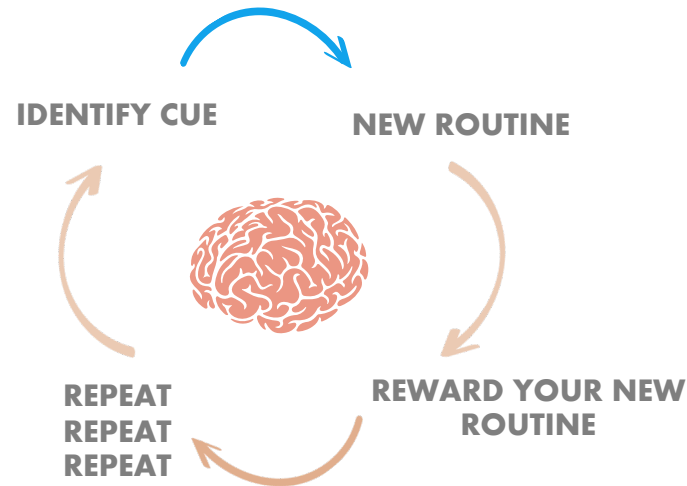
- We produce **Dopamine** when we achieve an objective, and we feel that we are getting close to it
- Dopamine decreases the amount of **Noradrenaline** whenever we reach a milestone, allowing us to continue to put effort into reaching our objective

Sources:  
Andrew Huberman - The Rich Roll podcast: "how to change your brain"

## HABIT FORMATION – HOW TO CHANGE BAD HABITS FOR HEALTHY HABITS

### BREAKING BAD HABITS IS VERY HARD

- **Motivation is not enough** to drive habit change
- Focusing on the **not repeating** the bad **habit is ineffective**
- The only way is to **create new habits that will progressively substitute** the bad ones



### REWIRING YOUR BRAIN ON A NEW HABIT

1. Identify the **cue** triggering the bad habit
2. Consciously attach a new **behavior** to the cue
3. **Reward** your new behavior
4. **Repeat** the new behavior until it masks the old one

Sources:  
Keegan R. & Lahey L. 2009 Immunity to Change: How to Overcome It and Unlock the Potential in Yourself and Your Organization

## HABIT FORMATION – A STRONG MOTIVATION IS REQUIRED FOR EFFECTIVE HABIT CHANGE

### 3 LIMITING BELIEFS AT THE ROOT OF LACK OF MOTIVATION TO CHANGE

#### EFFORT BELIEFS

- “It is too hard to change”

#### BARRIERS BELIEFS

- Barriers are perceived too high: “I do not know how”, “I do not want to look like a fool”, “I do not have time”, “I am too lazy”

#### OUTCOME EXPECTANCIES

- “The potential reward is not worth it.”

#### NEED TO WORK ON:

- BUILDING SELF-CONFIDENCE
- QUESTIONING EFFORT BELIEFS
- BALANCE BETWEEN OUTCOME AND EFFORT/BARRIERS



Source: Hardcastle S. et al., 2015. “Motivating the unmotivated: how can health behavior be changed in those unwilling to change?”. Front. Psychol., 16 June 2015

# WHAT IS THE ROLE OF THE COACH?



WHAT IS THE ROLE OF THE COACH RELATED TO HABITS?

**BREAKOUT ROOMS**





## THE ROLE OF A COACH – 4 STEPS TO HELP YOUR CLIENTS



1

**IDENTIFY UNWANTED HABITS**

2

**IDENTIFY DESIRED HABITS**

3

**DESIGN IMPLEMENTATION STRATEGY**

4

**IMPLEMENT AND TRACK IMPLEMENTATION**



## THE ROLE OF A COACH – 4 STEPS TO HELP YOUR CLIENTS



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Daily routine

Dopamine

Do it!



# Daily routine

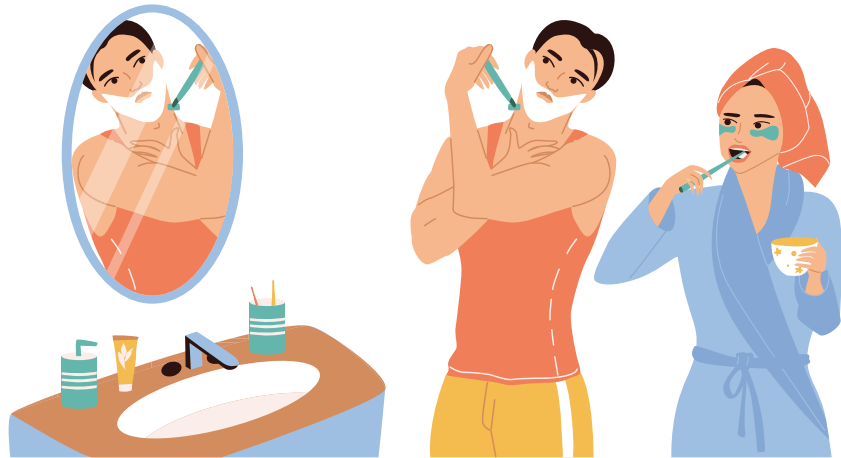
- Choose what you want to integrate in your daily routine
- Identify the **cue** that will trigger your daily routine
- Associate a **new positive habit** to the trigger/cue of your **bad habits**

# Dopamine

# Do it!



## IMPLEMENTATION STRATEGY – DAILY ROUTINE: 5 TYPES OF CUES



**TIME**

**LOCATION**

**PRECEDING EVENT**

**EMOTIONAL STATE**

**OTHER PEOPLE**

Sources:  
James clear - Atomic habits  
<https://jamesclear.com/habit-triggers>

# Daily routine

# Dopamine

# Do it!

- Design a **reward strategy** for your new habits
- Chunk up your objectives into **milestones** and celebrate each one
- **Aim small initially** in order to be sure to stick to it





## IMPLEMENTATION STRATEGY – DOPAMINE: EXTRINSIC AND INTRINSIC REWARDS

### EXTRINSIC REWARD



### INTRINSIC REWARD



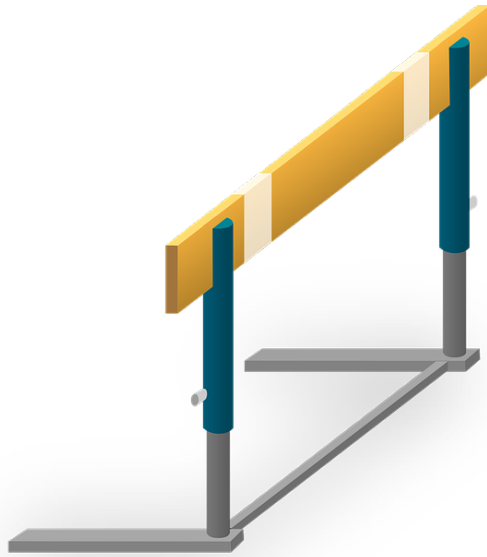
# Daily routine

# Dopamine

# Do it!

- **Stick to** your daily routine for 1-3 months no matter what until your healthy routine becomes **automatic**
- **Anticipate obstacles:** “if..... then” planning





### “IF.....THEN” IMPLEMENTATION INTENTION

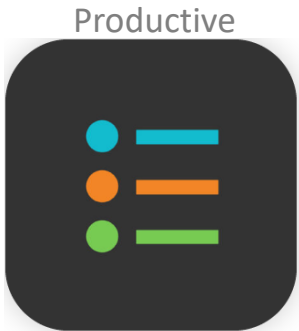
- **Running:** “If it rains, **then** I’ll wear a raincoat”
- **Delegating:** “If I’m doing work that a member of my team could do, **then** I’ll ask her if she can take over the work in our next 1:1.”
- **Morning meditation:** “If my kid wakes up early, **then** I will meditate once he is at school”
- **Eating:** “If I’m hungry, **then** I’ll snack on a fruit”

# PRACTICAL TIPS FOR HABIT FORMATION



PRACTICAL TIPS – TRACKING YOUR HABITS

2021																											
January							February							March							April						
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							31																				



HabitShare



Habitica



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## PRACTICAL TIPS – CHANGING YOUR ENVIRONMENT

**INCREASE FRICTION:  
MAKE TEMPTATIONS INCONVENIENT**

**ENVIRONMENT**

**DECREASE FRICTION:  
MAKE CUES FOR DESIRED HABITS OBVIOUS**



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## PRACTICAL TIPS – SOCIAL ACCOUNTABILITY



We are **social animals**, motivated by how others see us:

- People who have an **accountability buddy** are more successful at habit implementation (eg. Weight loss program)
- We are more likely to reach our goals if we share them with a **community of like-minded people** (collective gym classes, Alcoholics Anonymous...)

Sources:

<https://www.nytimes.com/2021/01/08/well/live/habits-health.html>

Dailey R. et al., 2018; The Buddy Benefit: Increasing the Effectiveness of an Employee-Targeted Weight-Loss Program. Journal of Health Communication. Volume 23, 2018



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# BE WELL 2021 WORKBOOK





## BE WELL 2021 WORKBOOK – 4 STEPS TO PREPARE YOUR JOURNEY



1

**FUTURE BACK VISION**

2

**PREPARING THE LUGGAGE**

3

**INSPIRATION AND SUPPORT**

4

**THE ROAD: 3D ACTION PLAN**



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## IF YOU WANT TO LEARN MORE: NEUROMINDFULNESS® ONLINE COURSES

### NeuroMindfulness® Coach Certification - Practitioner

113 Lessons

€695,00



**-15% WITH  
DISCOUNT CODE:**

**ICF2021**

- |   |  |
|---|--|
| 1 | Welcome to the course!                                       |
| 2 | Chapter 1: NeuroMindfulness® Essentials                      |
| 3 | Chapter 2: From Stress to Building Resilience and Well-being |
| 4 | Chapter 3: Cognitive Performance                             |
| 5 | Chapter 4: Trust and Human Connection                        |
| 6 | Chapter 5: Mindfulness Practices                             |
| 7 | Final Practice: Bringing It All Together                     |
| 8 | Final Assignment: Spread Your Wings                          |
| 9 | Congratulations and Thank You!                               |

<https://neuromindfulness.thinkific.com/collections>



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A large elephant is in the foreground on the left, its head and trunk visible. In the background on the right, a young girl in a patterned dress stands with her hands clasped in a prayer-like gesture, looking towards the elephant. The setting is a grassy field with mountains in the distance under a soft sky.

**`Be kind whenever  
possible.  
It is always possible!`**

**Dalai Lama**