

# THE COMPLETE GUIDE TO **SELF-CONTROL**

The Science of Willpower

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Indulge now and pay the price later? Or wait a little and reap bigger rewards in the future? Many of life's biggest challenges come down to a simple trade off.

Self-control isn't easy. But it is possible to make it easier. In this guide, I've teamed up with cognitive science PhD student [Jakub Jilek](#) for another complete guide to understand the science of willpower and discipline.

# What is Self-Control?

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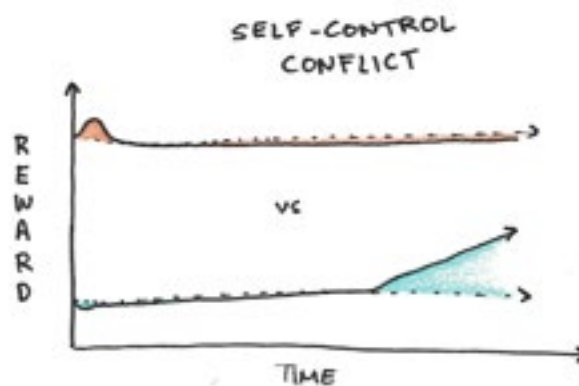
Two common terms from the psychological literature are self-regulation and self-control.

Self-regulation is your ability to control what you're thinking, feeling and doing in a way that promotes your goals.<sup>[1]</sup> Self-regulation is a broad term and includes many different things, including goal-setting, habit formation, emotional regulation and self-control. Since the topic of self-regulation is extensive, we'll focus mainly on self-control in this guide.

What is self-control? It's your ability to resolve conflicts between your short-term desires and your long-term goals.

Shall I order a hamburger or a salad? Shall I revise for an exam or go to a party? Shall I watch my favorite TV show or go for a run?

All these decisions share one thing in common: You can choose between an option that yields a smaller immediate reward (pleasant taste of food, fun from watching TV or pleasure from socializing with friends) and an option that yields a larger but delayed reward (staying healthy, maintaining good weight, or reaching a higher income). The immediately gratifying option is called a 'temptation'.<sup>[2]</sup>



Successful self-control means sacrificing the immediate pleasure (chocolate cake) and choosing the delayed reward (healthy weight), while self-control failure means sacrificing the delayed reward and choosing the immediate pleasure.<sup>[3]</sup>

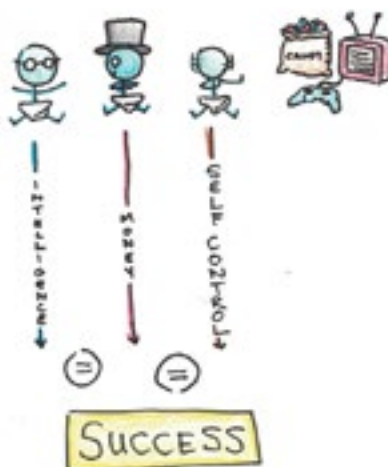
Not all decisions between immediate pleasures and long-term rewards cause a self-control conflict. For a self-control conflict to be triggered, there must be trade-off between the options: You need to get pleasure from that chocolate cake and at the same care about your weight. If you don't care about your weight or you don't like chocolate cake, then you won't experience a self-control conflict.<sup>[4]</sup>

## Success and Self-Control

Why should you care about self-control?

Name anything important to your life and self-control plays a major role.<sup>[5]</sup> In an extensive longitudinal study spanning across three decades,<sup>[6]</sup> researchers from Duke university followed 1,000 children. At the beginning, they assessed their self-control skills, intelligence and social class, and examined what impact these characteristics had on their life success. **Can you guess which of these factors was most important?**

Unsurprisingly, children who were born to richer parents and who were more intelligent enjoyed greater physical health and a higher income. What's striking though is that self-control had an equally powerful effect on success in life as intelligence and social class. The more the children improved their self-control skills during adolescence, the more successful they became 30 years later.





In general, people with better self-control eat more healthily,<sup>[7]</sup> do more exercise,<sup>[8]</sup> sleep better,<sup>[9]</sup> drink less alcohol,<sup>[10]</sup> smoke fewer cigarettes,<sup>[11]</sup> achieve higher grades at university,<sup>[12]</sup> have more peaceful relationships,<sup>[13]</sup> are more financially secure,<sup>[14]</sup> and enjoy stronger physical and mental health.<sup>[15][16]</sup>

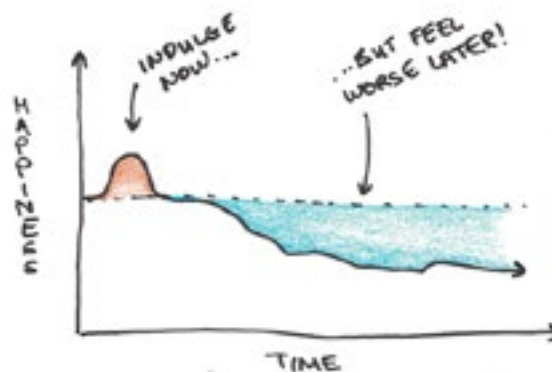
Self-control clearly matters for your long-term health and success in life. But can it also make you happy?

## Happiness and Self-Control

You may be thinking that sacrificing a bit of long-term health and wealth is sometimes worth it. After all, indulging in a bit of chocolate cake makes us happy and helps us enjoy our lives to the fullest. If we became too strict and never indulged in anything, we might deprive ourselves of life's greatest delights.

Hyperopia, (the opposite of myopia, or short-sightedness) is a real issue, and can prevent you from enjoying life.<sup>[17]</sup> But will indulging in temptations really make you happy?

To answer this question, scientists gave people smartphones which asked them at random times if they were currently experiencing a temptation. If they answered “yes”, they had to indicate if they indulged or not, and how they felt about it. Although people did get pleasure from indulging, it didn't raise their momentary happiness. On the contrary – people felt less happy immediately after they'd given in to a temptation.<sup>[18]</sup>



People who have high self-control aren't missing out on enjoyment. Succumbing to temptation and enjoying life are not the same things. Additionally, many activities with long-term rewards are also enjoyable: eating fruits, playing sports, finishing a book. But they may still require some self-control to get started.<sup>[19]</sup>

It's actually people with poor self-control who suffer. After giving in to temptations, they tend to feel guilt and regret about their decision, which spoils the pleasure. In contrast, those who successfully avoid temptations receive a boost to their self-esteem.<sup>[20]</sup>

People with strong self-control are more satisfied with their lives, experience less stress and fewer negative emotions.<sup>[21][22]</sup> Improve self-control and life gets better, not worse.

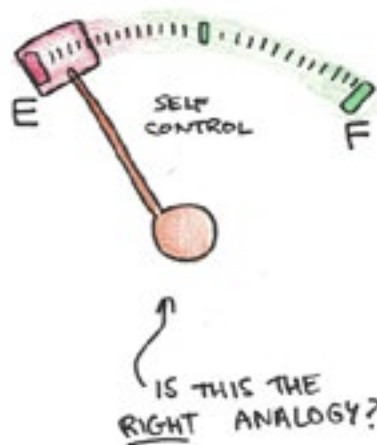
# **Is Your Self-Control Limited?**

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You wake up, the alarm blares and you drag yourself out of bed. Work is exhausting. Your boss piles on more deadlines and the stress ratchets higher. You planned to exercise and read a book when you got home, but now all you can think about is opening a beer and watching Netflix.

Experiences like this one seem to say that our self-control depends on a limited resource. Run out of fuel, and it's no longer possible to ignore temptation. But is it true?

## The Ego-Depletion Model



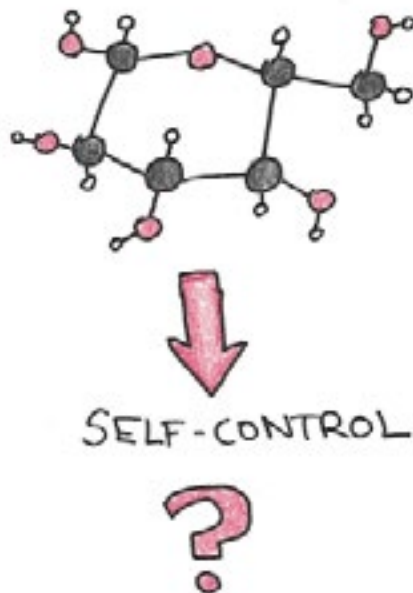
For many years, all discussions about self-control were dominated by Roy Baumeister's ego-depletion model.<sup>[23]</sup> According to this model, self-control behaves like a battery with a limited capacity. When you exercise self-control, the battery gets depleted. Once the battery runs out of energy, you can't exercise self-control any more unless you 'recharge' it first (by sleeping, relaxing, eating, etc.). This simple metaphor neatly explains why we struggle to stick to our plans after a hard day's work – we've essentially depleted our resources and need to rest.

However, if self-control really behaved like a simple battery, then merely changing our beliefs or motivation shouldn't make any difference to our performance. Researchers have shown that this is not the case – our per-

sistence in self-control depends on many psychological factors such as our beliefs about how self-control works, how motivated we are, how we frame the self-control task, or how much we enjoy it. [\[24\]](#)[\[25\]](#)[\[26\]](#)

In summary, the ego-depletion model is too simplistic and doesn't capture the richness of psychological processes which all play an important role in self-control. However, does this mean that our self-control has no limits?

## Biological Limits to Self-Control



Did you know that the brain accounts for only 2% of body mass but consumes about 20% of total energy derived from glucose? [\[27\]](#)

Glucose is the fuel for the brain. All cognitive functions, including self-control, are ultimately limited by the supply of glucose. Therefore, it's theoretically possible (though not proven yet) that people fail in demanding self-control situations because their brains need more glucose than the blood can supply at a given point of time. [\[28\]](#)

However, the picture is probably more complex than that. When we do a mentally demanding task, different parts of our brain become disconnected and chemicals and toxins (such as adenosine) accumulate around neurons. Together, these changes give us the feeling of mental fatigue and make it difficult for us to stay focused on what we're doing. <sup>[29]</sup>

Therefore, another reason why self-control feels exhausting could be that after demanding mental activity our brain needs to do some housekeeping to stay healthy and functional.

Whatever is its actual biological mechanism, <sup>[30]</sup> self-control is without doubt demanding. But this raises an important question: why should self-control be taxing for our brains? Why aren't we hardwired to do the "right" thing all the time, so we don't have to work hard to maintain self-control?

## Evolution and Self-Control Failure

Do you remember your first commute to work? You probably had to pay a lot of attention on the way not to get lost. After taking the same route many times, however, the commute became automatic. Now you can listen to music, speak on the phone, rehearse your speech, or plan your day, all while driving and navigating automatically.



As this example shows, automatic behaviour can be extremely useful. Because it doesn't require attention or effort, it frees our cognitive capacity, which allows us to do more things at the same time.

Over millennia, natural selection has built us with many automatic behaviours and drives which helped us survive and reproduce. Although these behaviours served us well in the past, they were designed for the environments our ancestors lived in, which are completely different from the ones we live in today.

For example, we've been hard-wired to seek fatty and sugary foods and to avoid unnecessary effort. <sup>[31]</sup> Although these drives were well-designed for scarcity, they're rather unhelpful today, when our environments are overflowing with food and we no longer need to chase animals (or be physically active) to survive.

The result of this mismatch between our environments and our programming is that if we give a free rein to our automatic drives, we end up lying on the couch munching on biscuits and ice cream. If we want to eat healthy and take enough exercise, however, we have to constantly inhibit our automatic tendencies, which places a burden on our brains. <sup>[32][33]</sup>

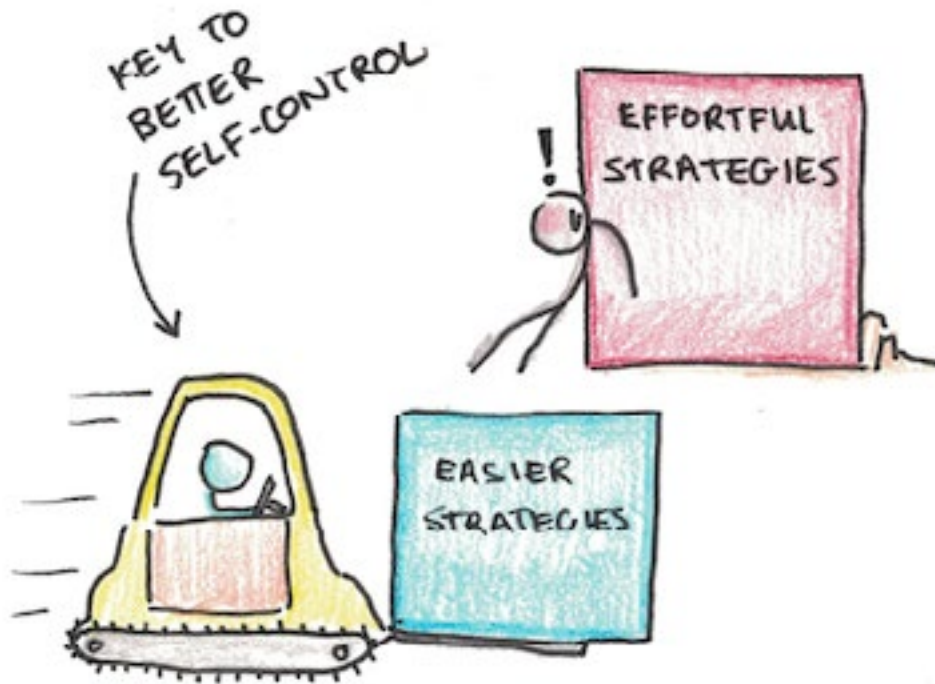
You may wonder now – if self-control is exhausting, why do some people seem to have an iron will?

## The Secret to Great Self-Control

The main takeaway from research is that self-control is ultimately limited by our biology. We can't exercise effortful self-control indefinitely – the brain has to do regular maintenance to remain functional.

The reason why some people are good at self-control nonetheless **is not because they make more effort**. Instead, these people *avoid* effortful strategies (such as suppression and resistance) and use easier strategies (such as re-appraisal). Instead of effortfully inhibiting their automatic drives,

they *bypass* them. In this way, they don't tax their brains, which then don't have to do housekeeping so quickly. As a result, they are free to invest their effort into pursuing their goals, instead of fighting with themselves. [\[34\]](#)[\[35\]](#)[\[36\]](#)[\[37\]](#)[\[38\]](#)



In this guide, we'll show you various strategies you can use to tweak your self-control in ways that aren't as tiring. Before, however, let's talk about some of the lousy strategies people use instead.



# **Which Self-Discipline Strategies Don't Work?**

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It's the second day of your diet. But Susan, the office manager, is having her birthday and they've bought a big chocolate cake. What do you do?



Do you try to suppress the thoughts of that delicious, mouth-watering chocolate icing? Do you white-knuckle your way through the happy birthday song, and flat-out refuse a bite? Do you try to train yourself by going to the bakery every day to build the “muscle” of avoiding temptation?

Unfortunately, research shows all of these approaches don't work very well. The first step to improving self-control is to stop using the strategies that don't actually work.

### **Thought Suppression: Don't Even Think About It**

Thought suppression is when you consciously attempt not to think about something.

You can try it right now: Don't think about polar bears.

How long did it take you to think of one? You probably failed before you even finished reading the sentence.

This is exactly what Wegner found in his original study on thought suppression.<sup>[39]</sup> In the study, he asked participants to ring a bell whenever they thought of a white bear. Surprisingly, the participants who were explicitly instructed not to think about a white bear ended up ringing the bell more often than those who were encouraged to think about it.



To explain this result, Wegner developed the “ironic processing theory”.<sup>[40]</sup> According to this theory, thought suppression consists of two processes: The first (conscious) process distracts us from unwanted thoughts (by making us think about something else). The second (unconscious) process checks each thought and compares it to the unwanted thought.

The second process inadvertently increases the neural activation of the unwanted thought in the brain.<sup>[41]</sup> Once we stop consciously distracting ourselves (when we relax or start a cognitively demanding activity), the suppressed thought returns with a vengeance. This effect is called “ironic rebound” and has been confirmed by many studies.<sup>[42]</sup>

To directly test the effect of thought suppression on self-control, scientists asked participants to either suppress or verbalize thinking about chocolate for five minutes. After that, they could eat as much chocolate as they liked. The suppression group **ended up consuming twice as much chocolate at the end of the experiment.** [\[43\]](#)

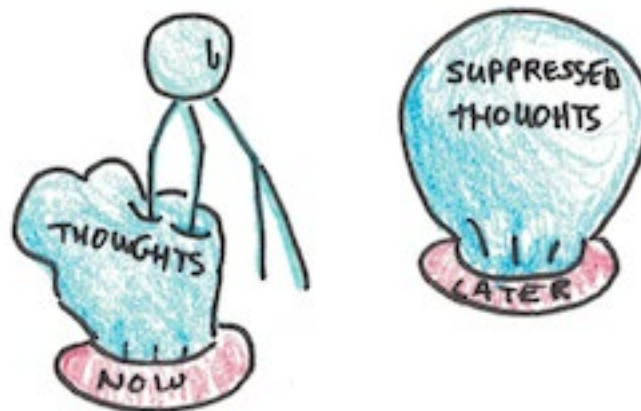


In another study, researchers asked smokers to either think about smoking as much as they could (expressing thoughts), to suppress all thoughts about smoking for 3 weeks, or to do nothing in particular (control group). Which group do you think ended up consuming most cigarettes during the third week?

Whereas in the first week, the suppression group smoke fewer cigarettes than the other two groups, the effect reversed in the remaining two weeks (ironic rebound), so the suppression group ended up consuming most cigarettes. Surprisingly, smokers who actively thought about smoking did not consume more cigarettes than the control group. [\[44\]](#)

Don't try to suppress your thoughts. Although it can be effective in the short-run, it's more effortful than other self-control strategies [\[45\]](#) and it will

make your desires come back stronger in the long-run. An effective alternative to thought suppression is re-appraisal and mindfulness, which we'll discuss shortly. [\[46\]](#)[\[47\]](#)



### Resisting Temptations: Just Say No.

When you're resisting temptations, you're not trying to stop thinking about them. Instead, you're actively inhibiting your urge to act on them (such as stopping yourself from putting a candy into your mouth).



Popular wisdom holds that high-achievers are good at resisting temptations.<sup>[48]</sup> It is believed that whenever such people face unhealthy food, they can summon up their determination and say a resolute 'no'. For this reason, they're more successful in achieving their goals than those who can't resist temptations so easily.

To test this popular wisdom, researchers followed students for the full length of a semester. At the start of the semester, the students had to list 4 important personal goals (e.g. getting a specific GPA, improving their health, learning a language, etc.). The researchers tracked their goal progress while measuring how much they tried to resist temptations that conflicted with their goals.<sup>[49]</sup>

One would expect that the students who put in more effort into resisting temptations would be more successful in achieving their goals. Surprisingly, no such relationship was found. **Regardless of how hard the students tried to resist, it had no positive effect whatsoever on their goals.**

On the face of it, this result seems contradictory to what we said at the beginning. Didn't we establish that self-control is essential for life success?

The important thing to realize is that resisting temptations is only one of many self-control strategies. Because it's one of the most effortful strategies, it's likely to fail when applied over a longer period of time.

Crucially, the study also showed that it wasn't the amount of self-control that students exercised, but the number of temptations they faced in total, which predicted their goal success. The students who experienced more temptations were always deciding whether they should indulge in immediate pleasures or work on their long-term goals. The fact that they had to constantly make effortful decisions left them tired and unable to direct their efforts to their goals.

Therefore, making more effort to resist temptations won't help you to achieve your goals. In fact, it might even do the opposite.<sup>[50]</sup> Instead, you

should use less demanding strategies to down-regulate self-control conflict. We describe these strategies throughout this guide.

## Self-Control Training: Is Willpower a Muscle?



In addition to the energy metaphor, Baumeister has also used the ‘muscle’ metaphor to describe the ego-depletion model. In essence, practicing acts of self-control should make our self-control muscle stronger. The way to build strong self-control, the logic goes, is to train it regularly as we exercise our muscles in the gym.

Initial studies did show that when participants trained self-control, they became better at it. For example, smokers interested in quitting smoking who regularly squeezed a hand grip for 2 weeks remained abstinent for longer than the control group.<sup>[51]</sup>

Nevertheless, a recent meta-analysis of many studies has found that the effect of self-control training is rather small and may well be due to researcher bias and placebo effects, rather than an actual improvement in self-control.<sup>[52]</sup> All in all, the evidence for self-control training is flimsy.



## Why Training Self-Control Doesn't Work

The answer can be found in the theory of transfer-appropriate processing (for a full explanation, see our [Complete Guide on Memory](#)). In brief, the skills that you learn when practicing self-control in one area are not the same skills which you need for self-control in other areas. In particular, practicing any single act of self-control (such as squeezing a handgrip, maintaining a good posture or using a non-dominant hand) probably cannot teach you the skills you need to change your diet or start doing more exercise.



**Therefore, there's probably no such thing as a single self-control muscle.** Self-control doesn't seem to be reducible to one underlying skill that can be trained with one kind of practice. The reality is again more complicated than that.

Having said that, it's certainly possible to develop self-control with practice.<sup>[53]</sup> However, the way to do that is by learning a complex set of skills rather than simply training acts of self-control.

This is the same principle behind the chapter on Directness in my book, [Ultralearning](#). Although “learning” and “self-control” may seem distantly related, they both operate on the same principles of cognitive science!



In summary, you should avoid these three self-control strategies:

- suppressing thoughts about temptations
  - if you suppress thoughts then they'll come back stronger than before (in ironic rebound)
- resisting temptations
  - this takes a lot of effort and it's ineffective
- training self-control as a muscle
  - there's little transfer between different self-control tasks
  - you need to develop a complex skill set to master self-control

# **How Beliefs Impact Your Willpower**

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What is your understanding of self-control? How do you think it works? Do you think your self-control capacity is limited or unlimited?

Do you believe that after strenuous activity you run out of energy and you need to rest to get it refueled? If this is the case, then you have a *limited* theory of self-control.

Do you think that demanding activities don't easily deplete your energy? In that case you have a *non-limited* theory. Most people have a limited theory. [\[54\]](#)



## Do Your Beliefs About Self-Control, Change Your Ability to Avoid Temptation?

To answer this question, researchers categorized students into two groups based on their self-control theory and followed them during a semester. Outside the exam period, or under low course load, there were no differences between the two groups. However, when demands were high, students with a limited theory procrastinated more, achieved a lower GPA and ate more unhealthy food. [\[55\]](#)

**Theories about self-control become a self-fulfilling prophecy.** If you think that self-control is limited, then you will succumb to temptations more easily and find it harder to pursue your goals. On the other hand, if you have a non-limited theory, you will be more successful with your goals. [\[56\]](#)

Why does endorsing a 'limited' theory make it more difficult to pursue your goals?



## How Self-Control Theories Work

Scientists believe that people with limited theories are motivated to conserve their resources. When they are low on energy, they believe that they've run out of their self-control resources and they feel they have to replenish them by sleeping or eating before they can make new effort.

Interestingly, both 'non-limited' and 'limited' theorists feel just as tired immediately after exercising self-control. However, 'non-limited' theorists don't take their feelings as a sign that they have depleted a limited resource and they need to rest.<sup>[57]</sup> In fact, they believe that a day full of demanding tasks 'activates' their self-control skills, which leaves them energized and more willing to make effort the next day.<sup>[58]</sup>

It seems that there's a clear benefit to having the 'right' beliefs about self-control. How can you change your self-control theory?

## Changing Your Self-Control Theory

If you're inclined towards a 'limited' theory, then we suggest that you try to convince yourself or a friend that if they use effortless strategies, then self-control is not easily depleted. As evidence, you can use the research we describe throughout this guide. With a similar exercise, researchers have managed to experimentally manipulate students' self-control theories.<sup>[59]</sup>

There's another, potentially more powerful way to change your self-control

theory. In a series of experiments, researchers asked participants to do an easy (e.g. keeping a diary) or a difficult (e.g. not eating sweets) task for 2 weeks. Before and after this period, they measured their self-control theories and self-control strength. [\[60\]](#)

Interestingly, the participants who did the more effortful task shifted their beliefs toward the 'limited' theory by the end of the experiment. As a result, they made less effort in the final self-control task.

This study shows that when we experience a lot of effort, it may act as a signal telling us that our self-control capacity is limited. This in turn makes it more difficult for us to exercise self-control in the future. Therefore, if you use the more effortless strategies, which we describe in the rest of this guide, you can automatically shape your self-control theory to be more non-limited, naturally improving your self-control.

In summary:

- your beliefs about how self-control works become a self-fulfilling prophecy
  - if you think your willpower is limited, you'll feel depleted after exercising self-control
  - if you believe your willpower is unlimited, you'll feel energized by self-control tasks
- you can gradually change your beliefs to become more unlimited (thus strengthen your actual willpower) by adopting effortless self-control strategies described in the rest of this guide

# **Motivation: Avoiding Willpower**

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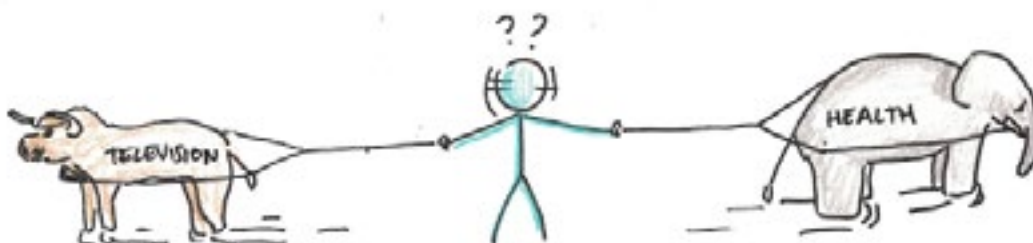
Motivation is basically what gives positive or negative value to whatever we do. It's the fun of watching TV, the pain of working or studying, the joy of being healthy and slim, or the pleasure of earning a high income. <sup>[61]</sup>

Scientists believe that self-control is a value-based decision-making process. When deciding between an option that yields an immediate reward (watching TV) and an option that yields a delayed reward (doing exercise), the brain first computes the subjective value of each option and then select the option with the highest positive value. <sup>[62]</sup>

If the value difference is large, there's no need for self-control conflict. The decision is made automatically. For example, if health is your core personal value and you love jogging, then going for a run will come naturally and won't require much effort. <sup>[63]</sup> Similarly, if you don't see health as a priority and hate running, then you'll never even think of tying up your shoes.

Where this gets interesting is when you have a **value conflict**. Two values, but with opposite motivations, thus requiring self-control to make a decision.

For example, if you wish to lose weight, but at the same time hate exercise and really want to watch television, then the decision will no longer be automatic and effortless – you'll have to use your willpower to force yourself to go running. <sup>[64][65]</sup>



Therefore, if you increase the value difference between the tempting and the goal-promoting options, you can effectively bypass self-control conflict and choose the goal-promoting option more effortlessly.<sup>[66]</sup>

There are two ways to do this. The first is to reduce the value of the temptation (such as with reappraisal or commitment contracts). The second is to increase your motivation for the thing you need to do.

When it comes to motivation, there are two kinds recognized by researchers: have-to and want-to.

### **Do You *Have To* or *Want To*?**

Have-to motivation comes from the outside. Get grades. Get a promotion. Appease your parents. Don't let down your friends.<sup>[67]</sup>

Want-to motivation comes from within. The pride from finishing a task. [Runners high](#). The satisfaction of a job well done.<sup>[68]</sup>

### **How do *have-to* and *want-to* motivations impact self-control?**

To answer this question, researchers carried out a series of studies where they followed students over a semester. At the start, students listed 3-4 most important personal goals and indicated their motivations for these. Students mentioned goals such as finding a job, losing weight or getting a specific GPA, and motivations such as personal importance, enjoyment (want-to) or pressure from parents (have-to).

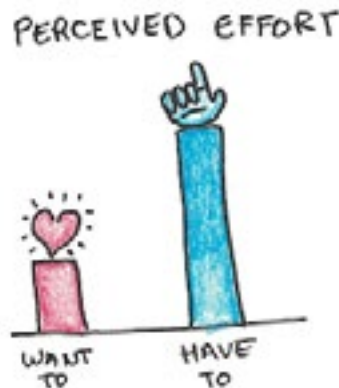
The researchers were interested in how many obstacles the students perceived (such as not having enough time, money or the right equipment/facilities) and how much effort and progress they made towards their goals.<sup>[69]</sup>

### **Which goals do you think the students put more effort in? The want-to goals or have-to goals?**

It would make intuitive sense if students put more effort into goals which



were personally important to them, and less effort into things they did just to make money or please their parents. However, the exact opposite was found. Students felt that they had to make more effort towards their have-to goals than their want-to goals. [\[70\]](#)



Despite this, at the end of the semester, students made significantly less progress towards their have-to goals than their want-to goals. Can you guess why?



The more have-to motivations the students had, the more obstacles and temptations they perceived (more self-control conflict). For example, students who wanted to eat healthy for have-to reasons reported that they frequently felt hungry, didn't have time to cook or that a flatmate was buying junk food. Interestingly, they also rated unhealthy food as more tasty (and healthy food as less tasty) than students who had want-to reasons. [\[71\]](#)

Although students made more effort towards their have-to goals, the extra effort was cancelled out by increased subjective perception of obstacles and temptations.

In contrast, the more want-to motivations the students had for their goals, the fewer obstacles and temptations they perceived (less self-control conflict). For this reason, students were more successful in achieving their want-to goals without having to make extra effort.

This study shows that it's much better to bolster your want-to rather than have-to motivations. If you only have have-to motivations, then you'll experience self-control conflict. You'll know you should choose the option with the delayed reward, but you'll want the option with the immediate reward.

On the other hand, if you have strong want-to motivations for your goals, you will automatically experience fewer obstacles and temptations.

### **Bolstering Want-To Motivation**

If your goal does not reflect your deepest values and wishes, then you'll constantly be fighting with yourself. If you don't have any want-to motivations for your goal, then it's a good idea to **reconsider whether it's worth wasting your time and effort on something you don't really want to do in the first place.**

However, sometimes you don't have a choice – your job may require you to learn new skills, you need to get good grades to graduate from university, or you have housework to do. Also, sometimes you may have some want-to motivations for your goal, but not enough so self-control is still difficult. What can you do in such situations?

It's hard to keep eating bland food, doing annoying exercise, or studying a boring subject. So if you have a choice, choose something that's intrinsically rewarding.<sup>[72]</sup> Research shows that it's easier to do exercise primarily for fun, challenge, or stress management rather than to avoid bad health or lose weight.<sup>[73]</sup>

Do you dislike healthy food? You have to find something that that'll please your tongue. Do you hate running? Try something fun like team sports, dancing or hiking. Do you hate your French class? Maybe you'd enjoy Chinese more. Experiment and find activities that help your goals but are more enjoyable to do.



If you can't find any activity that would promote your goals and be enjoyable at the same time, then you need to look for an aspect within your activity that's immediately rewarding.

Do you have to attend a French class? Maybe you'll have fun watching films without subtitles. Do you have a programming assignment? Maybe you'll enjoy coding simple games as a way of practicing. Do you need to improve your presentation skills? Telling jokes in front of your friends might be a fun way to do that.

## **Temptation Bundling and Self-Rewarding**

If it's impossible to find any immediately rewarding aspect in your goal-promoting activity, you can use a technique called 'temptation bundling' (also called reward substitution). In essence, temptation bundling means that you pair an indulgence with a goal-promoting activity.

To see how it works, consider the following study: Researchers tracked participant's attendance of the gym for ten weeks. One group was given iPods with highly addictive audio novels (such as *The Hunger Games*).

There was a condition though – they were allowed to use their iPods only at the gym.<sup>[74]</sup> The study showed that compared to the control group, students' attendance to the gym increased by 20%.



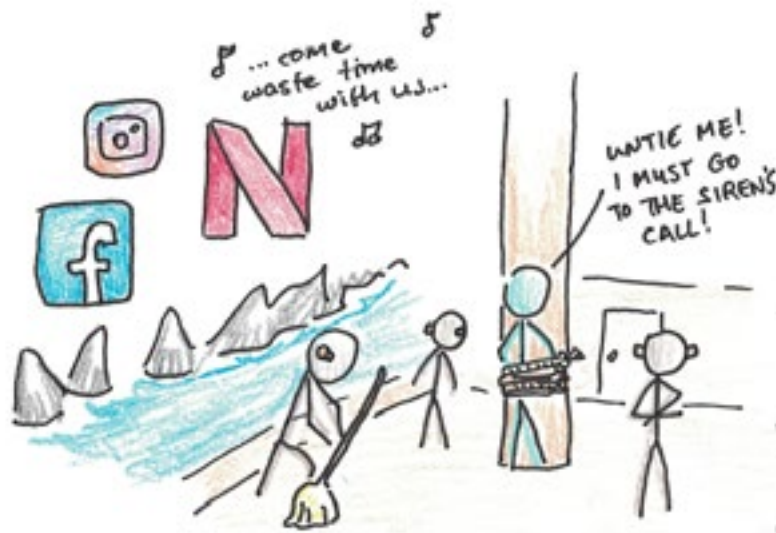
Apart from going to the gym, temptation bundling is suitable for doing housework. You could, for instance, play your favorite songs or watch your favorite series while ironing or washing up. Since temptation bundling is a form of multi-tasking, we don't recommend using it when concentration is needed (during study or work) because it places a load on your working memory (read more here [why listening to music while studying is not a good idea](#)).

However, the iPod study showed that after a Thanksgiving break, students' gym attendance returned back to normal despite the intervention. Although the researchers didn't look into this, a plausible explanation is that the students 'cheated' and finished the audio books at home on their own devices, removing the motivation to return to the gym.

Therefore, for temptation bundling to work, it's crucial that you restrict yourself from enjoying the pleasurable activity outside of the goal-promoting activity. You shouldn't be able to watch the series when not exercising. If you cheat, temptation bundling won't work. To make sure you don't

cheat, you can use app blocks to limit your app use to only specific times of the day. Alternatively, password-protect your series / audio books and give your password to a friend or spouse.

A good friend of Scott's restricts access to his television and devices on his computer outside of certain hours of the day, and then gives Scott the password so he can't decide to change it without first contacting (and possibly annoying his friend). [Tying yourself to the mast](#) is an important step in making self-control techniques like this work long-term.



There's another strategy that people use to bolster their want-to motivation: self-rewarding. Self-rewarding means that you do an intrinsically enjoyable activity only after completing your goal. Scott's gym has a hot-tub that he goes to after working out. Sometimes the motivation to exercise comes mainly from wanting to soak after the work out!

Although self-rewarding may work for some, the existing studies show that people have difficulty rewarding themselves in a way that's effective.<sup>[75]</sup> Having to constantly come up with meaningful (and healthy) rewards is quite challenging. What's worse, people can use self-rewarding as a way to justify indulgence.<sup>[76]</sup> For instance, after a hard day at work, they often think they 'deserve' some chocolate ice-cream, or to relax in front of TV.

## Make Temptation Less Fun

Instead of boosting the want-to motivations, you can also devalue the immediately rewarding option. One technique for this is by reappraisal and we'll cover it later in the guide. Another technique is a 'commitment contract'.

**Commitment contracts impose costs on self-control failure.** Typically, you sign a contract with a friend or a company and place a financial deposit. You only get your deposit back if you meet certain criteria after an agreed-on period of time. For instance, you need to cut down your smoking to a few cigarettes a day. If you don't satisfy the criteria, then you lose your deposit.



A few studies have found that commitment contracts can help people stop smoking, do more exercise and lose weight. [\[77\]](#)[\[78\]](#)[\[79\]](#) However, one study showed that after the contract ended, participants went back to their previous behavior—in particular, they regained all weight that they had lost during the contract. [\[80\]](#)

In general, temptation bundling, self-rewarding and commitment con-

tracts are a kind of ‘trick’ you play on yourself – you sweeten the goal-promoting activity with a few perks (or you punish yourself for failure), but the core activity remains as unpleasant as ever. Although these techniques may work to in the short run, we wouldn’t completely rely on them in the long run. You should always aim to find some want-to reasons for your goals. This is the only way to persist in them in the long run.

In summary, you can avoid having to use your willpower by doing the following:

- choose ‘want-to’ goals (for which you have intrinsic motivations) rather than ‘have-to’ goals (for which you have extrinsic motivations)
- if you can’t choose want-to goals, increase your want-to motivation for the thing you have to do
  - find activities that promote your goals and which are enjoyable at the same time
- if you can’t find enjoyable goal-promoting activities,
  - look for aspects within the activities you have to do which are immediately rewarding,
  - use temptation bundling (pairing an activity you have to do with an indulgence),
  - or decrease the value of indulgence with commitment contracts (agreeing to incur costs if you fail)
- be careful not to self-reward with indulgence and don’t rely on temptation bundling and commitment contracts only

# Identifying Self-Control Conflicts

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Imagine the following situation: You're standing in a queue at the supermarket. Next to you, there's a rack with a wide selection of snacks. Without giving it too much thought, you grab a chocolate bar and head on to the cash desk. Or think of this: You've set out to go jogging three times a week. You've come back from work and you're feeling really tired. You say to yourself – well, I'm going to skip it today, but tomorrow I'll definitely go.

The reasons we sometimes fail in similar self-control situations is not because we don't know what's good for us. We all know that chocolate bars aren't particularly healthy and that regular exercise is key to long-term health.

The problem is that if we eat one chocolate bar and skip jogging once then we won't feel any kind of negative impact. The cost of indulging here is virtually zero, while the benefits of a tasty treat or comfortable evening are immediate and tangible. However, if we indulge most of the time, then the costs to our health will be quite large. <sup>[81]</sup>



Because we don't feel the negative effects immediately, we often don't even notice that our decision is a self-control problem. We simply indulge mindlessly. Scientists have a fancy term for this – *epsilon-cost temptation*. In math, the symbol epsilon is often used to represent a minuscule amount, which may be huge though when it's added up.

In essence, the probability of identifying a self-control conflict decreases as the cost of indulging decreases.<sup>[82]</sup>

To counteract epsilon-cost temptations and correctly identify a self-control conflict, you need to group the decisions together. To do that, use one of these three techniques: broad bracketing, connectedness and self-diagnosticity.

### Broad-Bracketing: One Choice or Many?

When making decisions, you can apply a narrow or a broad bracket. If you use a narrow bracket, you consider a decision in isolation, so you only weigh the costs and benefits of the single decision. On the other hand, if you use a broad bracket, you consider the decision as one of many. In that case, you take into account the costs and benefits of a series of such decisions.<sup>[83][84]</sup>



For example, when thinking about whether to buy a chocolate bar, you can bracket this choice narrowly – compare the pleasure of eating this delicious sweet with the costs to your health. If you do that, your decision-making system will likely give you a green light to indulge because this single decision bears zero costs in the long run. (see ‘Motivation’ for value-based self-control)

On the other hand, you can also bracket this choice broadly – instead of eating a single chocolate bar, you’re considering the rule of eating like this all the time. If you ate a chocolate bar like this every time you’re at the checkout counter, you’ll quickly be overweight. Now, your epsilon cost just got a lot bigger.

Researchers have successfully used simple broad-bracketing cues to help people cut down on junk food. In one study, they placed carrots and chocolate on a table and invited the participants to help themselves. In addition, there was a sign above the table, which either read ‘April 12th Stand’ (narrow bracket), or ‘Spring Food Stand’ (broad bracket).

Interestingly, the broad-bracket sign was enough on its own to make the participants eat more carrots and less chocolate.<sup>[85]</sup>

It’s very useful to get into the habit of broad-bracketing all of your decisions. Whenever you’re making a choice regarding food, exercise, expenses, ask yourself: What are the costs and benefits of this decision if I make it every time from now on?

Another way is to reframe your behaviors from independent choices into rules or habits. Instead of asking yourself, “What’s the harm in doing this once?” You ask yourself, “Suppose this were to be my habit for this behavior, would it still be okay?”

Although broad-bracketing is helpful, it can fail when applied on its own. Broad-bracketing won’t work if you don’t care about your future self or if you think that your future self will be different.

## **Psychological Connectedness: Today is Yesterday’s Tomorrow**

Let’s replay the scenario from above, now equipped with a fresh new strategy. You’re at the checkout counter again but this time you don’t automatically grab the chocolate bar. You’re aware that if you eat lots of these bars, you won’t stay slim or lose weight. However, you may also think – “OK,

today I'll get one but tomorrow, I won't". So you end up eating the chocolate bar like before.

What you just said to yourself hides an implicit assumption. You assume that tomorrow, next week or next year you'll be a different person. You'll be more determined and better prepared to resist temptations than you are now. You don't perceive your personal identity to be stable over time – you don't have a strong connection to your future self. As a result, you don't care too much about your future self – you give preference to the wants and needs of your current self.<sup>[86]</sup>



If you're low on connectedness, it will be more difficult to identify self-control conflicts. If you're high on connectedness, however, they'll be much easier to deal with. People high on connectedness have lower BMI, visit the gym more often and choose healthier snacks.<sup>[87]</sup>

To see how connectedness affects financial decision-making, researchers had students read passages of text which either argued that they would change a lot after graduation, or that their core identity would stay fixed. Students could then choose between lotteries that yielded \$120 in a week, or up to \$240 a year later. In the 'high-connectedness' condition, students were more likely to choose a lottery that fetched a higher sum later.<sup>[88]</sup>

The way you can boost your connectedness is by reflecting on how much your character changes over time.<sup>[89]</sup> Although people's personalities naturally change, the changes are gradual and span over decades. Moreover, some of our core personality remains constant across the lifespan.<sup>[90][91]</sup>

Imagine yourself vividly as a person who's 5, 10, 20 and 50 years older. Will you be a completely different person? Or will you have similar tastes and preferences?

If you connect to your future self this way, then you'll realize that what you find tempting today, you'll also likely find tempting tomorrow (and next month, next week and next year). Therefore, if you indulge today, you're probably going to indulge tomorrow.

Researchers have also used a fun way to increase connectedness. In one study, they rendered participants' images to create their 70-year old version. Just seeing and interacting with this model helped participants make better (hypothetical) financial decisions which took their future selves into consideration.<sup>[92]</sup> There's many apps that you can find that will do the same trick for you (but take care to choose an app that won't steal your personal data).

Whenever you're deciding how much to exercise, what food to eat, or how much to save for retirement, vividly imagine yourself as an old person. Does your older self also want to enjoy quality food, holiday stays, concerts, massages, as much as you do? If so, what would she kindly ask you to do better now so that you are in good health and have the financial means to live your life to the fullest when you're old?

## **Adjusting Your Identity to Prevent Self-Control Failures**

Let's say that you're again standing at the cash desk pondering the chocolate bar. Now you're equipped with two strategies – you know it's not a good idea to indulge because if you do it now, you'll most likely fail every time. But what do you do if broad-bracketing and connectedness still don't cut it?



Fortunately, there's another strategy that can help you tip the scales in the right direction. **Scientists have shown that people who have developed a self-image around virtuous activities are more likely to identify and resolve self-control conflicts.**<sup>[93]</sup> For these people, indulging incurs a cost to their self-image – it contradicts the beliefs they have about themselves. On the other hand, avoiding the temptation and choosing the option with delayed rewards protects their self-image.<sup>[94][95]</sup>

People high on self-control often exercise self-control just to signal to themselves that they have strong willpower. The stronger the temptations, the greater the pleasure they derive from overcoming them. For example, if they skip their jog once in a while when it's raining, it will have zero impact on their long-term physical condition. And yet they take a jog despite the rain to preserve their self-image.<sup>[96]</sup>

James Clear, author of [Atomic Habits](#), has a useful way of framing these issues of identity, “Every action you take is a vote for the kind of person you wish to become.”



Do you want to take up running? Start thinking of yourself as a runner. Try to emulate the way a runner thinks, how they feel, how they overcome obstacles and how strong their willpower is. Whenever you're faced with a self-control dilemma (staying home or going for a run in bad weather), imagine what a strong-willed runner would do.

Being identified with a strong self-image is necessary but not sufficient to identify a self-control conflict. You also need to perceive your actions as ‘diagnostic’ of your self-identity. In other words, you must think that buying or not buying the chocolate bar tells you something important about what kind of person you are. In particular, it needs to signify whether you have or don’t have strong willpower.<sup>[97]</sup>



Therefore, to successfully avoid buying the chocolate bar, you need to firstly identify yourself with the image of a strong-willed healthy-eating person. Secondly, you need to construe the act of buying or not buying as diagnostic of this self-identity. In this way, you’ll be motivated not to buy it in order to preserve a positive self-image.

In summary, we recommend the following techniques to identify self-control conflicts:

- broad-bracketing
  - think of your choice (whether to indulge or not) not as a one-shot decision, but as a sequence of habitual decisions;
  - always ask yourself: what will be the consequences if I indulge every time?
- psychological connectedness

- realize that in the future you likely won't change much – you'll be equally tempted to indulge as you're now and you won't have more willpower or resources to deal with temptations than you have now
- ask yourself – what would my older self ask me to do better now?
- adjusting your identity
  - identify yourself with the self-image of a strong-willed person
  - choose your identity based on your goals – if you want to become a runner, start thinking like one



# **Self-Affirmation: Facing Self-Control Conflict**

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Imagine your mother has been smoking for a long time, eats junk food and doesn't do any exercise. Since you care about her well-being, you bring up to her the risks of leading such an unhealthy lifestyle. You recommend that she should attend a medical check-up. How will that conversation go?

Maybe she'll say something like this:

'Well, we all have to die of something',

'You're exaggerating'.

'I hate doctors',

'I'm fine, I don't need a check-up',

What your mother just did is what scientists call defensive processing.<sup>[98]</sup> According to self-affirmation theory, we are motivated to maintain a sense of self-integrity. We want to keep seeing ourselves as competent, adequate, capable of free choice and of controlling important outcomes in our lives.<sup>[99]</sup>



When we're informed about the health risks of our lifestyle, our self-integrity is threatened – we're told that we're not competent at managing our lives and what's worse – we're unable to change it.<sup>[100]</sup> To protect our sense of self-integrity, we avoid, downplay or derogate such information. This way, we escape self-control conflict. However, we also avoid the possibility of positive change.

Fortunately, there's an alternative to defensive processing – self-affirmation.

## Reaffirming Your Self-Integrity

Staring at a mirror and repeating nice-sounding things about yourself has become somewhat of a joke in popular culture:



<https://youtu.be/6ldAQ6Rh5ZI>

But beyond this cliché of repeating bland affirmations to yourself, the process of self-affirmation is a nuanced and successful strategy for avoiding defensive processing and the self-control traps it creates.

Scientists believe that to deal with a threat to our self-integrity, we need to muster up sufficient psychological resources. The best place where to find these is in our most cherished personal qualities. When we remind ourselves of our personal strengths (=self-affirm), we become aware of our psychological resources. As a result, we feel stronger so we can more easily process threatening information without relying on defensive processing.<sup>[101]</sup>

Moreover, by self-affirming we realize that we don't need to derive our sense of self-integrity purely from our ability to lead a healthy lifestyle. We have other positive qualities that we can rely on. This gives us an opportunity to accept our lifestyle deficiencies without feeling incapable or inadequate in an overall sense. [\[102\]](#)

Researchers have shown that when people self-affirm, they are more likely to expose themselves to information about their health. [\[103\]](#) Importantly, self-affirmation has real-life consequences. People who self-affirm before reading health-related information later consume more healthy food [\[104\]](#), reduce their alcohol consumption [\[105\]](#) and exercise more compared to control groups. [\[106\]\[107\]](#)

A meta-analysis has found that the effect of a single session of self-affirmation combined with reading of health-promoting messages is relatively small, but reliable and applicable in all health domains. [\[108\]](#) Therefore, it's possible that the effect could be large if self-affirmation were performed repeatedly.

## How to Use Self-Affirmation

One of the ways you can self-affirm is by taking [this online test](#). The test is free and takes about 15 minutes. In the test you'll answer a series of questions designed to assess your core strengths. The test result will provide you with a sorted list of your biggest strengths.

When you've finished the test, choose one of your greatest strengths. Alternatively, you can choose a value that's personally important to you without taking the test (this could be relationships, religion, humor, kindness, etc.).

Once you've picked your strength/value, write a short essay (or journal note) about why it's important to you and when is it important. If you need some inspiration, then have a look at essay excerpts which you can find on the sixth page of [this article](#). [\[109\]](#)



The most effective way to use self-affirmation is the following: If you want to change your lifestyle, then firstly do the self-affirmation exercise we described above. When you've done that, find some health-promoting information on the internet and read it carefully. If you're interested in improving your diet, exercise or sleep, then you can find information on these in the section 'Changing your lifestyle'. [\[10\]](#)

By self-affirming, you'll program yourself to be more accepting of information about your health without the need to defend yourself. The more information you accept, the more you'll boost your motivation, which will help resolve future self-control conflicts.

There's another way you can enhance your self-integrity with self-affirmation – by repeating positive statements about important areas in your life. These can include:

'I am capable of change, even if it's difficult'

'My financial situation is slowly getting better'

'I'm gradually improving my grades'

You can repeat these statements throughout the day – as many times as you like. The point of these self-affirmations is not to lie to yourself but to

shift your thinking more towards the possibility of positive change.

Therefore, it's probably a good idea to ground these statements in reality and focus on small rather than big changes. For instance, instead of telling yourself 'I can quickly and easily start eating healthy and exercising every day', say something like 'Gradually, in small steps, I'm finding ways to improve my eating and exercise habits'.<sup>[111]</sup>

If you're interested in learning more about positive self-affirmations, then you can find lots of resources in [this article](#).

Despite its benefits, self-affirmation may not be suitable for everyone and in every situation. One study has found that it could be ineffective when people are experiencing a strong negative emotion (such as anger).<sup>[112]</sup> Also, if you have particularly low self-esteem, you may find self-affirmations to be too conflicting with your mindset.<sup>[113]</sup> If this is the case, it might be better to try one of the mindfulness-based approaches.

In summary:

- when people receive information about the risks of their current lifestyle, they tend to avoid, downplay, or derogate such information (this is called defensive processing)
- you can overcome your own defensive processing with self-affirmation
  - one way to self-affirm is by reflecting on your most cherished personal values and strengths (see an online test)
  - another way is to repeat positive statements about possible change in important areas in your life (e.g. "I'm capable of gradually improving my diet") – these need to be grounded in reality
- self-affirmation helps you realize that you're a competent and adequate person, even though you may not always have perfect self-control.

# **Construal and Reappraisal: Reframing Self-Control Conflict**

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Imagine that Peter and John are best friends and frequently have lunch together. Peter usually orders a hamburger with French fries and a chocolate cake. John is trying to lose weight but the food is very tempting so he thinks to himself “OK, I’ll have French fries today. But tomorrow, I’ll get back to my diet”.

As we already know, this pattern of thinking is deceptive because today is yesterday’s tomorrow. Since John meets Peter often, if he indulges today then the chances are that he’ll also indulge tomorrow. How can John avoid the temptation without suppressing or resisting his urges?

If you find yourself in a similar situation, then your best chance is to down-regulate the self-control conflict. A powerful way to do that is by changing the way you think about it, in other words, ‘reframing’ it.

### Construal: Adopting an Abstract or Concrete Mindset

There’s two broad ways you can think about any situation – you can adopt a high-level or a low-level construal. If you’re in a low-level construal, you’re thinking more concretely – you’re focusing on the particular details of the situation, ignoring the bigger picture.





**Side note:** In other articles, Scott has followed [Robin Hanson](#)'s use of *near* (=low) and *far* (=high) modes of construal thinking. We have decided to follow the terminology from the literature here, but wanted to point out the connection with Scott's other writing.

On the other hand, if you're in a high-level construal, then you're thinking more abstractly – you're focusing on the bigger picture rather than any particular details. For instance, when thinking about whether to have a chocolate bar or an apple as a snack, you could either focus on the immediate features (taste and smell) or on more distant health-related features (sugar and vitamin content). <sup>[114]</sup>

Depending on the circumstances, getting yourself in either a low- or high-level construal can help you down-regulate self-control conflict. Researchers have shown that when people are in a high-level construal, they are more aware of their long-term values and goals. This makes them see the long-term implications of their decision, rather than just the immediate benefits. <sup>[115][116][117]</sup>

In an intriguing study, researchers brought participants into either high-level or low-level construal. One group had to answer 'how' (low-level) and another group 'why' (high-level) questions about their work/study goals. The first question was always either 'why is achieving your goal important?' or 'how can you achieve your goal?'.

Once the participants provided an answer, it was turned into a new question. So if someone answered the 'why is achieving at studies important?' with 'to get a good job', the next question would be 'why is it important to get a good job?', and so on. <sup>[118]</sup>

While providing their answers, a seemingly unrelated symbol (a chain link) was displayed on the screen. After they had answered all questions, the participants took part in 'taste rating' of various high-calorie snacks. This was actually a deception, because the aim was to measure how much the participants would restrain themselves from eating.

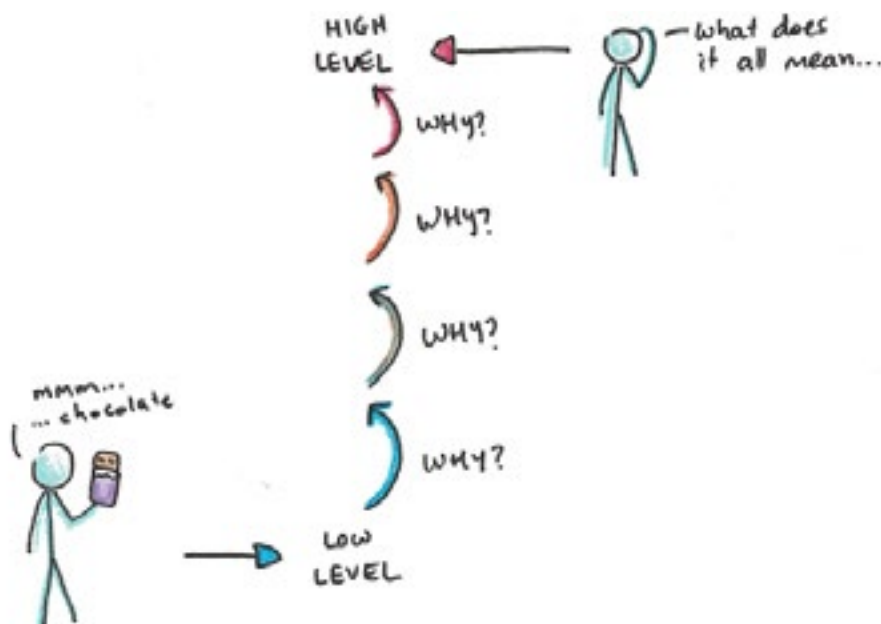
Interestingly, when a 'high-level' symbol was displayed during the 'taste rating', the participants consumed almost 1/5 fewer snacks.

The fact that participants were completely unaware of the true purpose of the 'taste test' and the true meaning of the 'high-level' symbol implies that their decision to eat fewer snacks was purely automatic, therefore effortless. In fact, researchers have shown that high-level construal automatically makes people perceive unhealthy food as more negative.<sup>[119]</sup>

## How Can You See The Big Picture?

The most well-established technique is the one used in the study above.

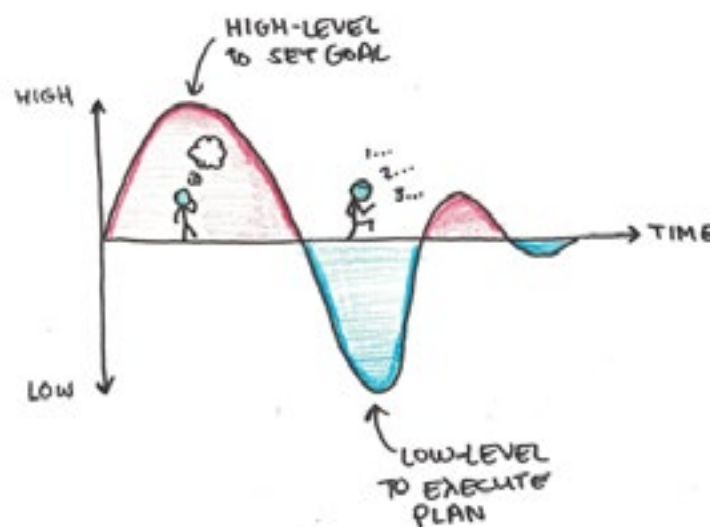
**Whenever you're faced with temptations, ask yourself a series of 'why' questions:** Why do I want to lose weight? Then turn your answer into another question (e.g. Why do I want to be attractive?). In this way, you link your current decisions whether to indulge or not with your deepest wishes and values (such as self-compassion and caring), which boosts your want-to motivation. You could even come up with a specific symbol that reminds you of high-level construal and use it whenever you're faced with temptations.



As an alternative, you can take a third person perspective. Imagine that you're looking at yourself from a distance while making a self-control decision. What is that person doing? Can you describe what's happening? What kind of choice is she facing? By doing this little exercise, you can get into a more 'abstract' mindset, which will help you choose the goal-promoting rather than the indulgent option. [\[120\]](#)

You can easily apply high-level construal to all important decisions in your life. Are you deciding whether to work on your career skills or go to the pub? Ask yourself why you need better career skills. Is the answer 'to get promoted and reach a higher salary'? Then ask yourself why you want to reach a higher salary. In this way, you should gradually get to answers such as: Because I want to enjoy a freer lifestyle. Because I want to be happier. Because I want to spend more time with my children without worrying about my income. Because I deeply care about my life.

Despite its benefits, high-level construal is not a universal technique. Firstly, if you've set yourself a goal and you're making plans how to achieve it, then it's necessary to switch between a high-level and low-level construal. For example, if you've set out to start exercising, it's good at the beginning to think about why you want to do it – to boost your want-to motivations.



However, at some point you need to figure out the concrete steps that will help you achieve this goal – decide how many times per week and where you'll be exercising.<sup>[121]</sup> In other words, you need to shift into a low-level construal. When you've done that and you're making an immediate decision whether to watch TV or go out for a run, then again it's helpful to adopt a high-level construal to remind yourself of 'why' you're doing this.

Secondly, high-level construal isn't suitable for everyone. If you experience a lot of negative thinking – you judge and criticize yourself harshly for self-control failure – then high-level construal might actually make the problem worse. If this is the case, then it's better to use mindful concrete construal, as we explain later.<sup>[122]</sup>

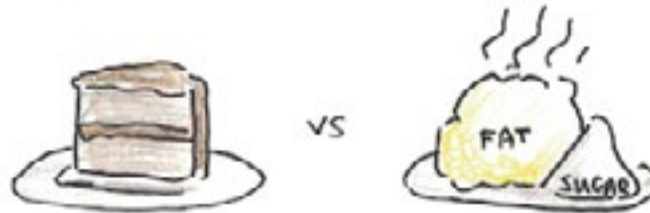
In summary, we recommend the following:

- whenever making an important decision, get yourself into a high-level (=abstract) construal by asking yourself a series of 'why' questions
  - for instance, if you want to lose weight, ask yourself: Why do I want to lose weight?
  - if your answer is 'to be more attractive', turn it into another 'why' question: Why do I want to be attractive?
  - Do this until you've connected to your deepest values (because it gives me great joy, because I deeply value my life, etc.)
- whenever you need to plan how to achieve your goals, you need to get into a low-level (=concrete) construal
- if you have a tendency for harsh self-criticism, practice mindful construal (described later in the guide)

## Reappraisal: Changing the Meaning of Temptations

Imagine that John is sitting over lunch with Peter. The sight of Peter's chocolate cake makes John's mouth water. When looking at the cake, he can give a free rein to his mind and let it say: 'yum, what a delicious creamy chocolaty piece of cake!'. It's obvious that this will only make his cravings

worse. However, he can instead say something quite different: ‘hmm, what a fattening piece of high-calorie, vein-clogging dessert!’.



According to the appraisal theory, our emotions are the result of our (conscious or unconscious) thinking. As an example, consider disgust: We feel disgust when our brains evaluate (=appraise) an object to be contaminated or harmful.<sup>[123]</sup> Disgust makes us feel too close to the object and motivates us to get rid of it or keep away from it.<sup>[124]</sup>

Cognitive re-appraisal means deliberately changing the way we think about a situation or an object in order to change the way we feel about it. It has been used as a powerful strategy for reducing stress<sup>[125]</sup> and overcoming anxiety.<sup>[126]</sup> Recently, researchers have started using it as a way to down-regulate self-control conflict.

Buddhist monks used a version of this technique where they detach themselves from sensory pleasures by imagining the human body in various states of decay. Seen from that perspective, worldly pleasures lose some of their allure.



In particular, you can think about tempting food, cigarettes or alcohol in such a way that stimulates your disgust, which reduces your desire for it. <sup>[127]</sup> In one study, researchers asked subjects to look at pictures of unhealthy food (cookies, donuts, fries, ice cream, etc.). Sometimes, they asked them to imagine eating the food, sometimes to re-appraisal their desire to eat it. Afterwards, the subjects rated how much they desired the food.

The re-appraisal strategies included: imagining being full, bringing to mind negative consequences (stomach ache, weight gain, heart problems) or imagining there was something wrong with the food (someone sneezed on it, it was moldy, etc.). When the subjects used a re-appraisal strategy, their **cravings dropped down by as much as 50% compared to the control group.** <sup>[128]</sup>

In another study, researchers also examined an opposite strategy – using positive re-appraisal to enhance subjects' desire for healthy food. The strategies included imagining vitamins and minerals that make the person strong. At the end of the study, subjects reported eating less unhealthy food but also eating more healthy food. <sup>[129]</sup>

### **Positive appraisals seem to be more effective than negative appraisals.**

For instance, positive appraisals of healthy food reduce eating of unhealthy food more effectively than negative appraisals of unhealthy food. <sup>[130]</sup> Also, thinking about the long-term benefits of not eating unhealthy food seems better than thinking about its long-term costs. <sup>[131]</sup>



In summary, when deciding between a tempting option (watching TV, smoking a cigarette, eating a high-calorie dessert) and a healthy option (exercising, drinking herbal tea, eating fruit), you can use three re-appraisal strategies:

- you can stimulate disgust by imaging the possible negative consequences of choosing the tempting option (e.g. someone sneezing on food)
- you can think of the positive consequences of not choosing the tempting option (e.g. not putting on weight)
- the best approach is to focus on the positive aspects of selecting the healthy option (e.g. staying slim and healthy, feeling proud of yourself)

# **Mindfulness: Letting Cravings Come and Go**

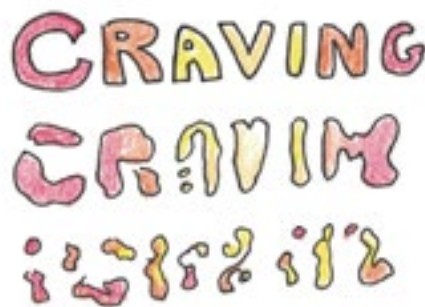
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Let's imagine that John can't get himself to see the big picture because as soon as he does, he starts judging himself. He criticizes himself for having cravings and weak willpower. He tries the re-appraisal strategy, which helps somewhat, but the desire to eat the hamburger and the chips is still rather strong. What can he do then?

Many studies have shown that mindfulness is an effective way for boosting our self-control.<sup>[132]</sup> In one study, researchers followed obese individuals for five months. All participants attended a weight-reduction program (lectures and discussions on nutrition, relaxation techniques). In addition, one group was trained with mindfulness techniques (awareness of eating, stress management and emotion regulation). Participants in the mindfulness group experienced fewer cravings. As a result, they lost more weight than the control group one year after the study.<sup>[133]</sup>

Mindfulness doesn't suppress or resist your thoughts and emotions. It doesn't even try to down-regulate them. It just changes your perspective on them. You don't judge your inner experiences (don't evaluate whether your desires are good or bad). Allow our cravings and desires to be as strong as they want to be without acting on them.<sup>[134]</sup>



Training in mindfulness can help you not only to eat less unhealthy food, but also to limit how much alcohol you drink<sup>[135]</sup> and to increase the amount of exercise you do.<sup>[136]</sup> Therefore, we recommend checking out a good mindfulness training program – there's plenty of them online (our favourite pick is Mindfulness Daily by [Jack Kornfield](#) and Tara Brach, which you can get completely for free).

## Mindfulness of Cravings

In the age we live in, we're overwhelmed with responsibilities and distracted by an incessant stream of emails, posts, videos and notifications. Our attention is constantly directed outwards and we no longer pay much attention to what's happening inside us. As a result, we often don't even notice what food and how much of it we're eating.

One of the reasons why mindfulness is effective is that it helps us become aware of our feelings of being hungry and being full. This makes it easier for us to make choices of how much and what to eat based on our actual bodily needs. [\[137\]](#)

The second reason is that mindfulness disconnects our cravings from our behavior. In an interesting study, researchers recruited subjects interested in quitting smoking. Participants were trained for 4 weeks to mindfully accept their cravings (with techniques such as body scan and loving-kindness). Before the study began, there was a strong relationship between cravings and smoking – the more cravings one had, the more cigarettes they smoked. This result is typical – cravings known to drive consumption and addiction.

One would expect the mindfulness training would reduce the cravings and as a result the number of cigarettes smoked. Indeed, the more the participants practiced mindfulness at home, the less they smoked by the end of the study. However, the smoking reduction didn't depend on the strength of their cravings.

Therefore, mindfulness doesn't immediately reduce the strength of our cravings (although it may do so in the long term). Instead, it gives us the freedom not to follow them.

The beauty of mindfulness-based techniques is that you don't put any predefined limits on how much or what you eat, smoke or drink. You make these changes gradually and spontaneously as you develop greater awareness of your emotions and your needs. You don't get preoccupied with your

our diet or exercise goals. Instead, you learn to make peace with your urges and desires.

However, therein also lies its potential weakness. Sometimes you may think that you're accepting your cravings whilst in fact you're being indifferent to them. If you're indifferent to your cravings, you won't try to do anything about them – you'll indulge as much as usual (and maybe even more).

One study has shown that teaching participants mindfulness and acceptance actually increased their later consumption of unhealthy food.<sup>[138]</sup> If this happens to you, it's good to remember that mindfulness is not about telling yourself 'it's OK to eat unhealthy food, not to do exercise and to be fat'. You don't condone your unhealthy behavior, but you stop mentally whipping yourself for it. You accept that you cannot change yourself immediately but you still do your best.

This is a thin line to tread. It takes some practice to develop mindfulness. If you're new to it, we recommend that you start with mindful eating and mindful construal, which are specific techniques calibrated by researchers therefore much easier to implement than general mindfulness practice.<sup>[139]</sup>

## Mindful Eating



The idea behind mindful eating is to increase your awareness of what you eat and how you eat it. The technique teaches you to slowly focus on the sensations that you get while eating your meal (the color, shape, texture, scent, etc. of food) and to carefully examine the feelings which come before, during and after it.

You can find an excellent introduction to mindful eating with step-by-step instructions in [this article](#) and on [this website](#).

We recommend mindful eating as it is effective at reducing sweets consumption<sup>[140]</sup> and weight.<sup>[141]</sup> Moreover, unlike standard diet reduction programmes which typically have a temporary effect, mindfulness-enhanced programmes seem to last substantially longer.<sup>[142]</sup>

## Mindful Construal

Mindful construal is essentially more structured mindful eating. As you eat, you answer a series of specific (mainly ‘how’) questions. These include:

‘How does this meal taste and smell?’

‘How important is this meal right now?’

‘How kind are you to yourself now that you eat this meal?’

‘How understanding and patient are you now?’

You can find a full list of questions at the bottom of [this study](#).<sup>[143]</sup> Mindful construal is relatively effortless, increases self-compassion and reduces anxiety related to food.<sup>[144]</sup> Most importantly, mindful construal is easier than full mindfulness training and seems to be equally effective at reducing weight.<sup>[145]</sup>

In summary, we recommend the following:

- start learning mindfulness with a structured training programme (such as Mindfulness Daily)
  - mindfulness has various benefits for self-control, health and beyond
  - mindfulness can help you detach yourself from your cravings

- thus have the freedom to decide not to act on them
- but be careful not to confuse 'acceptance' of cravings with 'indifference' to them
- mindful eating and mindful construal are scientifically-calibrated readily-available techniques that you can start using without training

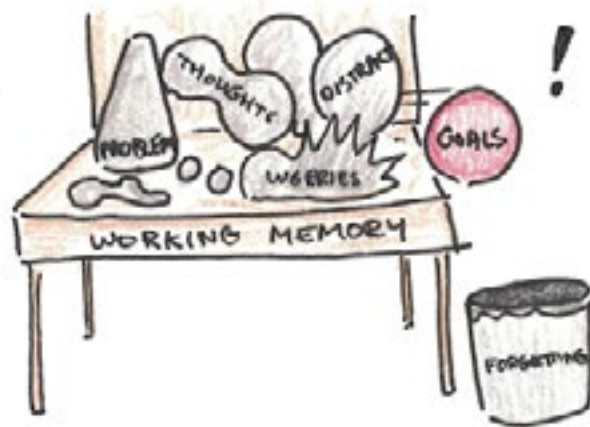
# **Working Memory: Strategically Controlling Distractions**

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Imagine you're sitting in front of a TV. You've opened a bag of crisps. Before you know it, the bag's empty. Imagine another scenario: you've got a craving for sweets. You try to suppress it, but it keeps coming back stronger and stronger. Pictures of delicious snacks and desserts pop into your mind. It's getting harder and harder to resist as you can almost feel the sugary taste in your mouth.

How can you effectively deal with such situations without giving in?

For a self-control conflict to happen, you need to be acutely aware of your long-term goals at the same moment as you decide whether to indulge or not. In other words, you need to actively think about your goal to be healthy when you're faced with a dessert. If you can't do that, then you'll indulge by default, without even knowing that there was a conflict in the first place (unless you've formed a different habit).<sup>[146]</sup>



To be able to keep your goals in your mind, you must have sufficient available [working memory capacity](#). Working memory is your mental bandwidth – it holds together information about the present so that you can weigh different options and make decisions. The problem with working memory is that its capacity is limited. It fills up very quickly – it can hold only 4-7 items (letters, words, numbers, etc.) at the same time.<sup>[147]</sup>

As a consequence, it's quite easy to lose track of our goals, especially when you're distracted or in the middle of a demanding activity which taxes your working memory capacity.<sup>[148]</sup> The good news is that you can strategically control your distractions – remove them or create them (depending on the circumstances) – to successfully avoid temptations.

## Removing Distractions

Distractions cause cognitive load – they fill up your working memory. As a result, there's less space for your long-term goals. A distraction can be anything such as chatting with friends, listening to the radio or watching television.

Scientists have shown that distractions have a powerful effect on eating.<sup>[149]</sup> For instance, In one study, **participants ate 20% more food when distracted compared to the control condition.**<sup>[150]</sup>

The effect of distractions is particularly insidious because it has a larger effect on later eating than immediate eating.<sup>[151]</sup> This is because distractions not only crowd out our goals from working memory, but also worsen our long-term memory. When we're distracted during our meals, we don't remember very well how much we've eaten.<sup>[152]</sup> One study showed that participants who played solitaire during lunch felt less full and ate almost twice as many biscuits later than the control group.<sup>[153]</sup>

Therefore, we strongly recommend that you avoid distractions while eating your meals. Don't watch TV or YouTube, don't listen to music and don't check social media. Don't speak on the phone and don't send messages. Before eating, remind yourself how much food you've already eaten on that day. Maybe you can take a picture of your breakfast/lunch and have a look at it before you start eating. Use mindful eating or mindful construal to pay closer attention to the meal. You can also get rid of food wrappers at the end of the day rather than straight after each meal.<sup>[154]</sup>



## Distracting Yourself

Another reason why you may lose track of your goals has to do with the fact that it's much easier for temptations than long-term goals to enter your working memory and capture your attention.<sup>[155]</sup> Temptations are concrete and tangible – the chocolate bar is waiting in the shop just round the corner (or in your cupboard), whereas your long-term goals (of being slim and healthy) are distant and abstract.

If you fail to redirect your attention away from the temptation, then you'll start thinking about it.<sup>[156]</sup> The thoughts about the sweets, cigarettes or other temptations will then crowd out your long-term goals from your working memory.<sup>[157]</sup> As a result, you'll indulge, often without knowing how that happened (think of the last situation when you suddenly 'woke up' in the middle of having a piece of chocolate in your mouth).

When your working memory is completely filled up, then there's no space left for your long term goals. This is problematic when you're eating food or there's food around you. However, when you're not eating food and there's no food around you, then your limited working memory capacity can actually help you.<sup>[158]</sup>

If you're engrossed in an activity (such as reading a compelling book or deeply engaged with your work), then the activity occupies your working memory and crowds out not only your health goals, but also your cravings. This is exactly what researchers have found in a series of studies, where participants who were under cognitive load were later less likely to choose an unhealthy snack.<sup>[159]</sup>

Therefore, one of the ways you can avoid temptations is by getting busy. Be careful though – if food is within easy reach or there's a risk of your colleague bringing unhealthy food into the office, then the strategy can backfire.

Researchers have designed a specific strategy for distracting yourself away from temptations. It's based on the findings that temptations are often as-

sociated with vivid images. When participants deliberately start imagining something else (such as a rainbow, or the smell of eucalyptus), they don't experience temptations.<sup>[160]</sup> Visual imagery reduces snack consumption<sup>[161]</sup> and cigarette cravings.<sup>[162]</sup>

In addition to visual imagery, you can also use visual noise. In an intriguing study, researchers gave participants a tablet for over 2 weeks. Whenever they had a food craving, the participants were instructed to watch visual noise (flickering black and white cubes) on their tablet. During the course of the study, participants consumed 30% fewer calories.<sup>[163]</sup> You can easily find visual noise on YouTube (for instance [here](#)).

The main advantage of visual techniques is that they're effective immediately. It also doesn't matter if you're good at visualizing or not. The disadvantage is that the effect is only temporary – once you stop, the cravings will come back after a certain period of time. However, if you apply the technique long enough, then you can change your habits in the meantime.<sup>[164]</sup>

Apart from overeating, you can readily apply distractions to other bad habits including cigarette smoking or smartphone checking. Also, you can be creative with the kind of distractions you use. In one study, researchers found that having participants count backward for 30 seconds each time they used their lighter helped them cut down on the number of cigarettes smoked.<sup>[165]</sup> Another study achieved the same effect by having participants smell a pleasant odor (such as chocolate, mint or vanilla).<sup>[166]</sup>

In summary, we recommend the following:

- when you're consuming food, alcohol or cigarettes, remove all distractions
  - don't watch TV or YouTube and don't listen to music
  - don't check social media
  - don't speak on the phone or send messages

- use additional techniques to strengthen your consumption memory:
  - before eating, drinking and smoking, remind yourself how much you've already consumed on that day (with pictures taken of the previous meals/drinks/cigarettes)
  - discard food wrappers at the end of the day rather than straight after each meal, get rid of cigarette packs and bottles at the end of the week or month
- when you're not consuming food, alcohol or cigarettes, distract yourself away from cravings by
  - visualization (=imagining pictures or scents)
  - visual noise
  - counting
  - smelling pleasant odors

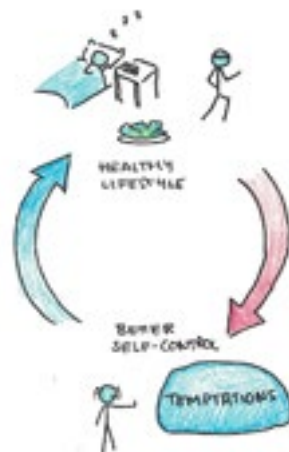
# **Lifestyle: Vicious or Virtuous Cycle?**

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Throughout this guide, we have described various self-control strategies that you can use to change your lifestyle. But what if the relationship between lifestyle and self-control were bi-directional? Could you also boost your self-control by living a healthier lifestyle?

The answer is yes. By eating a low-glycemic diet, exercising, and sleeping well, you can in fact extend the biological constraints on your self-control. This means that if you use some of the strategies we described above, you can get into a virtuous cycle: With better self-control, you'll do more exercise, eat more healthy and sleep better, which will in turn make self-control easier, and so on.

Let's see how this works.



## Low-Glycemic Diet

As we already know, self-control is limited by the supply of glucose to the brain. Given that ingesting glucose can temporarily boost cognitive functions such as memory, [\[167\]\[168\]\[169\]](#) we should also be able to temporarily improve our self-control by eating a meal or having a drink that's high in glucose.

However, despite its immediate benefits, it's a bad idea to use sugar as a

self-control prop. Eating sugar causes a sharp rise in blood glucose levels, which triggers a strong insulin response. This in turn leads to a rapid fall of glucose levels in the blood.<sup>[170]</sup> Eating sugary foods is therefore like being on a roller-coaster – you constantly oscillate between higher and lower glucose levels in the blood.

This has many negative consequences for the brain: It stimulates hunger and cravings,<sup>[171]</sup> impairs cognitive functions<sup>[172]</sup> and increases the risk of mental disorders<sup>[173]</sup>

To enhance your capacity for self-control, it's far better to maintain a stable level of glucose in the blood. The way to do that is by eating food with a low glycemic index. Glycemic index is a number (between 0-100) which tells you how quickly the food is broken down into glucose (relative to glucose itself, which has a GI of 100). The lower is the index, the slower and more gradual the break-down process, and the more stable is your blood glucose level.

Although there hasn't been a study yet directly measuring the effects of a low-GI diet on self-control, it's likely that the effect would be positive – evidence is emerging that eating a low-glycemic diet is beneficial for cognitive functions.<sup>[174][175]</sup>

Since a low-glycemic diet has various other health benefits,<sup>[176][177]</sup> we recommend that you give it a try. If you want to learn more about the GI and foods that have a low GI, check out [this article](#).

## Exercise and Self-Control

When you come back home after a hard day at work, it's much easier to crash on the couch than to do exercise. However, if you manage to coax yourself into a workout, then you'll probably feel energized and in a better mood afterwards.

Researchers have found that exercising improves our executive functions

(an umbrella term for various cognitive functions which overlap with self-regulation and self-control), while sedentary behavior, unsurprisingly, has the opposite effect. [\[178\]](#)[\[179\]](#)

How can exercise help with self-control?

Firstly, it reduces fatigue. [\[180\]](#) This can improve self-control, which is known to be negatively affected by fatigue. [\[181\]](#) Secondly, exercise increases blood flow thus the supply of oxygen and glucose to the brain, which positively affects all cognitive functions. [\[182\]](#)[\[183\]](#) Thirdly, long-term physical activity increases the volume of the frontal lobes – the part of the brain responsible for self-control. [\[184\]](#)

Interestingly, the benefits of exercise transfer to many other domains of self-control. One study showed that exercising had positive effects on smoking, eating, alcohol consumption, study habits, household chores, emotional control and financial decisions. [\[185\]](#)

The beneficial effects of exercise on self-control seem to be automatic, therefore effortless. One study found that after exercising, participants automatically paid less attention to unhealthy food. [\[186\]](#) Even a single workout session is enough to see an immediate improvement: In one study, participants who performed 1 hour of aerobic exercise ended up eating fewer snacks in a fake ‘taste test’ compared to participants who just went for a walk. [\[187\]](#)

### **What’s the best kind of exercise?**

Several studies have found that exercise with the strongest effect are team sports. Team sports require concentration, coordination and social interaction, together with training of motor skills and adaptation to changing circumstances in the game. Team sports therefore provide an excellent workout for cognitive functions. [\[188\]](#)[\[189\]](#)



## What's the best exercise intensity?

In general, the greater the intensity, the bigger the improvements in executive functions, [\[190\]](#)[\[191\]](#) although after a certain point exercise has diminishing returns. [\[192\]](#)

Exercise has so many proven benefits to cognitive functions and health that it's undoubtedly one of the most important things you can do for yourself. [\[193\]](#)

## Sleep Habits

People don't usually consider good sleep habits as a part of a healthy lifestyle. In a survey, only a small minority (16%) mentioned sleep as an important aspect. [\[194\]](#) About 40% of Americans sleep less than 6 hours per night. [\[195\]](#)

A lack of sleep has various negative consequences – it causes cognitive slowing, worsens attention and working memory, impairs decision-making and increases the risk of health conditions. [\[196\]](#) Sleep is essential for cleaning up adenosine (the product of brain metabolism), which inhibits neural function. [\[197\]](#)





Sleep deprived people experience stronger cravings – they eat more,<sup>[198]</sup> choose unhealthy high-calorie food,<sup>[199]</sup> and smoke more cigarettes.<sup>[200]</sup> On the other hand, restoring sleep in sleep-deprived people improves their cognitive performance.<sup>[201]</sup>

Therefore, if you sleep less than the recommended 7-9 hours every night, this can make self-control more difficult.<sup>[202]</sup>

To develop good self-control, you need to have good sleep habits. However, to get good sleep habits, you need to have good self-control in the first place. A lack of sleep and the resulting poor self-control reinforce each other in a particularly vicious circle.<sup>[203]</sup>

Fortunately, there's a possible compensatory strategy for boosting self-control throughout the day – napping. There's preliminary evidence that napping can increase persistence in a frustrating self-control task.<sup>[204]</sup>

So when you come back home after a hard day then you might want to give yourself a quick nap first. After a nap, it could be easier and less effortful to coax yourself to do a workout, exam revision, or everyday chores.

In summary, we recommend the following:

- for optimal self-control, avoid foods with high sugar content
  - instead, maintain a stable level of glucose in your blood by eating foods with a low glycemic index
- take plenty of exercise – this will improve glucose and oxygen supply to your brain and boost the volume of your frontal lobes (which are responsible for self-control)
- to preserve and restore self-control, maintain regular sleep habits and take naps when you're down on energy

# **Hyperopia: Can You Have Too Much Self-Control?**

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So far in this guide, we've only talked about situations when people sacrifice their long-term goals in favor of their immediate desires. Scientists call this kind of self-control problem 'myopia'. But there's also another kind of self-control problem – when people persistently sacrifice their immediate desires for their long term goals. This is called 'hyperopia'.



Do you think you're not enjoying life to the fullest? Do you feel that you don't have enough holidays and family trips? Do you feel that you don't read books, go to the cinema or meet friends as often as you would like? Do you avoid pleasurable activities and invest most of your time and effort to being productive, acting responsibly and accumulating wealth? Are you obsessed with always doing the right thing?

If you've answered yes to any of these questions, then don't worry – you're not alone. Many people perceive themselves as chronically 'underindulging' – not having enough fun and joy in their lives. <sup>[205]</sup> A 2015 survey found that 34% of Americans work at weekends and on average have only 16 vacation days per year. <sup>[206]</sup>

## Causes and Consequences of Hyperopia

Scientists have identified several likely causes for hyperopia. The most proximate cause is 'indulgence guilt'. Hyperopic people consider indulgence as wasteful, irresponsible and sometimes even immoral. <sup>[207]</sup> If they manage to indulge once in a while, then feelings of guilt spoil their experience.

For instance, hyperopic people can't fully enjoy vacations or restaurant dinners because they can't help thinking it's a waste of money, which in their view should be used for more productive purposes such as education, investment, house building, etc. [\[208\]](#)

The ultimate cause of hyperopia is likely the 'productive orientation' that's so heavily pushed by modern capitalism. Through cultural forces, social norms, and even religion, people are taught to work hard, earn money and spend frugally. These are not just recommendations, but ethical obligations. [\[209\]](#)

To maintain their self-integrity (their perceptions of being a morally adequate person), people are forced to think about productivity all the time. This makes it difficult to justify purchasing goods or taking part in activities which are not functional, don't save time or money, or don't lead to career advancement.

Over time, people with a 'productive orientation' experience more and more regret. This was beautifully demonstrated in the following study:

Participants were asked to think about moments from the previous week or five years ago when they chose between work and leisure and rate how much they regretted their decisions. The results showed that they expressed the same amount of regret for working / relaxing for things they did last week. However, their regret was doubled for choosing to work, and halved for choosing to relax for things they did 5 years ago. [\[210\]](#)

This study shows that with the passage of time, hyperopic people feel an increasing sense of missing out on valuable things in their lives.

It's important to note that hyperopia is not the same thing as extremely strong self-control. Although both hyperopic and strong-willed people focus on long-term goals and avoid indulgence, there's a huge difference between the two.

Firstly, high self-control individuals don't regret their decisions. Although they avoid unhealthy indulgence, they do pursue pleasure. Moreover, they can even incorporate some unhealthy indulgence into their lives. In contrast, hyperopic individuals lead lives devoid of all pleasure. [\[211\]](#)

Secondly, high self-control people enjoy good mental and physical health, together with more peaceful relationships. In contrast, hyperopic people tend to engage in excessive work, which leads to a sedentary lifestyle, a lack of exercise, unhealthy eating, and relationship problems. [\[212\]](#)



For these reasons, hyperopia is another kind of self-control failure. Hyperopic people not only sacrifice all immediate pleasure, but also their long-term goals of staying healthy and happy, all in the service of being productive.

Would you like to know if you have hyperopic tendencies? Then try this brief questionnaire. To each answer, give yourself a point from 1-6. 1 stands for strongly disagree, 2 for disagree, 3 for somewhat disagree, 4 for somewhat agree, 5 for agree and 6 for strongly agree. Average the points from each question. The more you score above 3.5, the more hyperopic you are (with 6 being the extreme). The more you score below 3.5, the less hyperopic you are (1 means having not hyperopia at all). [\[213\]](#)

1. I often fail to enjoy attractive opportunities.
2. It's hard for me to make myself indulge.
3. I regret missed opportunities to enjoy rich experiences in the past.
4. I have difficulty pampering myself.

5. “Seizing the day” is difficult for me.
6. I rarely enjoy the luxuries life has to offer

If you have a problem with hyperopia, what can you do to overcome it?

## Overcoming Hyperopia

One of the strategies that some hyperopic people use is pre-commitment to indulgence. Hyperopic people are well-aware that if they receive cash, the money will be spent on necessities rather than leisure. <sup>[214]</sup> If they get a choice, they prefer to get a certificate instead of cash as a gift.

You can use this strategy to plan your trips or holidays. Book your week-end stays / restaurant meals in advance (without paying immediately). The more in advance you do this, the more distant will be the pain of indulging. You can book stays which incur a fee on cancellation. This way you'll harness your loss aversion to counterbalance your indulgence guilt.

Another strategy that has been shown to be effective is reminding yourself that you might regret your decisions in the future.

In a series of studies, participants chose between cash rewards and non-monetary rewards such as subscription to a magazine or chocolates. Those who were asked by researchers to predict how much they would regret their decision in ten years were more likely to choose the non-monetary reward. Also, participants who were asked to anticipate regrets in the future spent more money on pleasure rather than necessities during the following Thanksgiving holiday. <sup>[215]</sup>

There's another way you can make yourself anticipate more regret – by getting into high-level construal. High-level construal will help you see the bigger picture – you'll realize that by avoiding all pleasure, you're in fact sacrificing your long-term goal of living a happy and fulfilling life. <sup>[216]</sup>

The next strategy makes use of the fact that people feel more entitled to



indulge after they've made a lot of effort. One study has shown that participants who made more effort in an experimental task were more likely to choose an indulgence over a healthier or more useful option. <sup>[217]</sup>

Therefore, whenever you feel you've made a lot of effort at work, it's a great window of opportunity to book yourself a place at the restaurant that you've long wanted to visit, or buy a voucher for a holiday stay.

Another way you can trick your hyperopic tendencies is by harnessing people's natural tendency to like discounts and promotions. Scientists have found that participants are more likely to indulge when there's a promotion available. <sup>[218]</sup> Therefore, if you're having trouble with indulging, search for cheap indulgences – discount codes, quantity promotions, two-for-one tickets, etc.

The final strategy is called 'functional alibi'. Whenever you're anticipating indulgence guilt, stop thinking about the hedonic qualities of whatever you'd like to purchase. Instead, start emphasizing its utilitarian value. <sup>[219]</sup>

In summary:

- hyperopia is not the same thing as extremely strong self-control – rather, it's an excessive focus on the distant goal of being productive at all cost
  - the result of hyperopia is a lack of life satisfaction and often poor health
- you can overcome hyperopia by:
  - pre-committing to indulgence (e.g. buying vouchers)
  - anticipating that you'll regret your puritan decisions in the future (with high-level construal)
  - indulging after you've made a lot of effort at work
  - making use of discounts and promotions
  - making up 'functional alibi' (=emphasizing utilitarian value of objects rather than their hedonic qualities)

# Summary of Key Advice

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- **Self-control is the ability to resolve conflicts between your short-term and long-term goals.**
  - Self-control *conflicts* occur when there's a trade off between indulging now and waiting for a bigger reward later.
- **Self-control impacts nearly every area of life.** People with more self-control:
  - Eat better.
  - Sleep better.
  - Drink less.
  - Smoke less.
  - Get better grades.
  - Have better relationships.
  - Have better financial security.
  - Enjoy better physical (and mental) health.
  - Are happier too!
  - ...in short, it pays to have good self-control!
- Is self-control limited?
  - Glucose is consumed by the brain during effortful activity. Self-control is effortful, therefore there may be a resource constraining self-control.
  - BUT, it's not so simple:
    - **Your beliefs about effort influence the amount you can produce.** Those with "limited" theories of self-control tend to have more conflicts than those with "non-limited" theories.
    - **Habits reduce self-control required.** The more automatic a decision, the less self-control required.
    - **Those with successful self-control actually use LESS effort**, by choosing strategies that work without tons of effort.

- Okay then, **which strategies should you AVOID** if you want to have success with self-control:
  - **Don't try to suppress your thoughts.** They tend to rebound later in what is known as ironic processing.
  - **Trying to resist temptations doesn't help either.** Those who succeed avoid temptations in the first place.
  - **Self-control probably isn't a muscle you can train.** It suffers from the same issues of transfer that plague other learning efforts, so being disciplined about one thing may not transfer to other things.
- **Which self-control strategies should you USE instead?**
  - **Increasing the value difference between the temptation and the goal reduces the need for self-control.** (i.e. make the temptation less tempting, or the goal more motivating)
  - Want-to goals are easier to pursue AND result in more success than have-to goals.
    - Find a way to do the task that combines something you WANT with the thing you HAVE to do.
  - **Temptation bundling pairs a goal you have with an indulgence you enjoy.** If you link them tightly you can make the goal more fun.
  - **Commitment contracts raise the price of failure,** so you'll be less likely to succumb to temptation.
  - **Broad-bracketing allows you to reconsider a single temptation as a bunch of temptations,** reducing the risk of epsilon-cost temptations overwhelming your self-control.
  - **Increasing psychological connectedness** (the connection between your current and future self) also improves willpower.
  - **Changing how you think of yourself, through action and affirmation, can also change your identity.** Adjusting your identity can make self-control easier by becoming the kind of person who wouldn't succumb to temptations.

- **Switching to a high-level of construal while facing problems can prevent you from slipping.** Thinking about your goals and more abstract ideals prevent momentary lapses in self-control.
- **Reappraising the activities you have to do, or the ones you're trying to avoid can also make it easier to apply self-control.**
- **Practicing mindfulness, allowing temptations to come and go without reacting to them, can also improve your self-control.**
  - Be careful, however, that mindfulness doesn't become simple indifference, otherwise you may stop caring about your goal as well!
- It is also possible to have **hyperopia**, where you're unable to enjoy pleasures in the moment because you can't indulge yourself. Although rarer, this is different from having lots of self-control, as it prevents you from enjoying things, even though you want to.
  - As with myopia, pre-commitment to enjoy things, such as after putting in a lot of effort, can help you enjoy life more without overindulging either.

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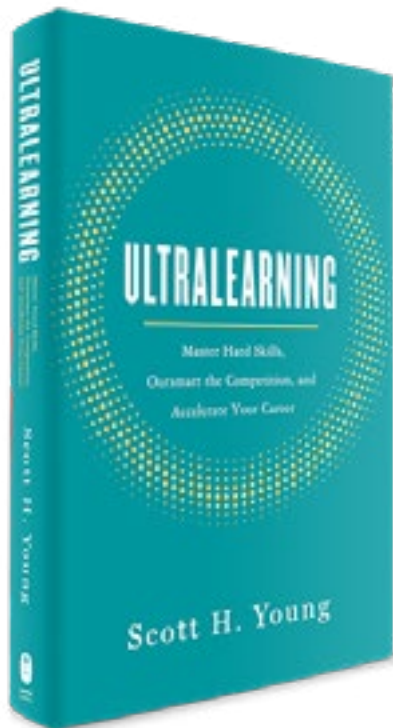
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