



# How to change incorrect habits

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## ABSTRACT

*This article explains, from the perspective of neuroscience, why it is so difficult to change negative habits and particularly a player's behaviour when making mistakes.*

**Key words:** habits, make a pause, breathing, directed attention, neural wiring.

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## INTRODUCTION

A habit is formed in the brain as a response to a behaviour that is regularly repeated. Habits are not just actions, they can also be repetitive thoughts or emotions.

The brain mechanism that produces behaviour patterns responding to environmental stimuli makes the brain a very efficient organ. Making movements and changing from one task to another require an energy from the brain. This energy consumption is even greater when a new task is completed. The human brain, due to habits, passes the stimuli directly to the action, but it does not give the opportunity to think whether the person will still want to act that way. That is why, to enforce a change in behaviour, for example, a technical movement, a way of thinking or a certain behaviour is a very difficult task that requires a great consumption of energy from the brain.

In 1944, the Canadian psychologist Donal Hebb explained that when two or more neurons get connected, they simultaneously trigger a signal. The synaptic connections get stronger and increase the probabilities that: when a neuron switches on again, the other one will switch on as well. Neurons that switch on together, wire together. A practical example to understand this is the following: Imagine crossing a mountain which is covered by a dense forest, the first time, a great effort will need to be made, but a very weak mark will be left along the way. If this is done several times, the mark of the trail will be more evident. There will come a time in which the trail will be very clearly marked, and another one will not want to be chosen, since it will require a greater effort to make a new one. When a tennis stroke, or a thought become mechanic, a hypothetical trail is left in the brain. When this stroke or negative thought has to be changed, each time a shot is made for example, the brain is being required to cross the mountain through the dense forest, which implies an effort and energy expenditure (Bacharach, 2014).

## HOW TO CHANGE HABITS

In order to perform a new task, the brain must inhibit the attention towards the old task. This is very costly for the brain because of the energy expenditure it has to make, in other words, the brain circuits and connections have to work harder when trying to change. Dr. Estanislao Bachrach suggests that in order to change a habit, it is not enough to do it once, it will have to be practiced and repeated many times until it becomes a new habit. Besides, there is a part in the brain which the neuroscientist Mac Leand labels as a reptile brain (responsible

for the survival instinct) which 'likes' repetitive behaviour, routine and for things to always be familiar.

Self-directed neuroplasticity gives a person the tools to be able to re-wire the brain, i.e. to change. This is achieved through a person's expectations, experiences, what and how the individual pays attention to, being able to stifle certain emotions and suppressing thoughts and automatic actions from the brain (Bachrach, 2014).

It is essential for a person to be able to possess a strong commitment, work, discipline and dedication to be able to modify a behaviour. This ultimately activates the part of the brain which is receptive to new challenges through that motivation which activates the left prefrontal cortex and the reward circuits of the brain, which increase the desire and perseverance to change (Goleman, 2011).



If the same behaviour is repeated several times, like hitting the racket or making a wrong technical action, the brain will consider that action as 'preferable', regardless of the effect it has on the person. The actions or inactions of any given day, and on which attention is being focused upon, have an effect on the wiring of the brain, and on how a person will respond automatically to different stimuli.

Commitment is necessary to be able to evoke change, and it must be understood that change is good. NASA specialists established that for change to happen, thirty days of consecutive practice of the new habit are necessary to create new neuronal paths in the brain, to learn and to incorporate this habit.

Literature by (Bacharach, 2014) says that in order to change, first, it is recommended to make a pause. During this pause, a person can think differently and should not act automatically i.e. reacting each time a point is lost or becoming upset because a new stroke has not been successfully corrected. It must be remembered that the brain does not want to spend energy. In essence thinking is a great consumption of energy. If a situation has not been already lived, or a similar one, the brain is signalled to repeat what it has done before. If a person threw their racket and got upset multiple times then this would be continually repeated. Automation, habits, repetition and doing the same thing repeatedly will assure little effort and energy expenditure to the brain and allow for a long survival. What the brain does not know, but the mind does, is that this thoughtless reaction is not at all beneficial for a person and this does not necessarily match the individuals 'targets or objectives'.

And it is just that what is trying to be changed, the reactive behaviour that does not match the targets that are trying to be reached by an individual. The constant negative emotions that are exhibited each time a shot is missed, or the wrong technical actions in a service action do not allow a person to be more effective. These behaviours that often lead to anger, result in a spiral of negative emotions which are very difficult to get away from.

#### PROCEDURE

1) If a stimulus causes negative emotions, try to get visually away from this stimulus, as far as possible. For example, if faced with a negative gesture from an opponent, an angry expression from a coach, or the last point or game has been lost, turn around and walk to the back of the court. If the set has been lost, it is best to go to the bathroom and get momentarily away from the negative situation of having lost the set. It is very important to know oneself and to be able to realise the signs of becoming angry.

2) Breathing deeply, just three or four times, is often sufficient. When negative emotions begin to surface, though sometimes unnoticeably, the rate of breathing accelerates, the brain receives less oxygen and toxins accumulate in the neurons. It may not be realised that the brain is the most toxic organ in the body. Not only does oxygen allow the cells to breathe, it is also a great stimulus for the creation of new cells. So, breathing deeply, is favorable for improving access to nutrients and to provide oxygen to more neurons. Cleaner and better breathing and more well-nourished neurons lead to better thinking.

Breathing deeply favours the use of more neurons to think consciously. Several alternatives can be created in the mind and perhaps different reactions. In the long-term this is part of the process of changing.

3) When a visual stimulus is changed or removed by, for example, turning away from it, and this is done so whilst breathing deeply, it is advised to try to do so whilst maintaining a good upright posture. This will aid in not only being able to breathe better, but it will favour a more efficient transfer of neurochemical messages from the spine to the rest of the body. Research shows that when a person is anxious, impulses can drive reactions even more, and, as has been evidenced, this may go against the long-term objectives of an individual in

trying to change a behaviour. If your mind is distracted, it will fall into the temptation to react without thinking.

This skill has to do with keeping concentration on what really matters, even in tough times. In order to achieve change, it is necessary to train.

The best physiological way of measuring success when practising the pausing exercise is known as the variability of heart rate. Every individual has, to a certain extent, a different heart rate. A healthy person's heart rate has normal variations, even if they are sitting and reading. It increases when inhaling and decreases when exhaling. The more stressed a person is, the greater their heart rate, and the lower the heart rate variability. This happens because the heart is confined to a very fast rate with no variations, and this contributes to the physical feeling of anxiety and anger. Meditation is a technique that has proved to increase the variability of the heart rate. Apart from improving all the skills of self-control and will, this practice will help to improve focused attention, stress management and impulse control.

#### CONCLUSION

The key to modifying habits is by maximum self-directed concentration. Jose Mourinho, a Portuguese football coach, says that it is better to train in five minute series, with maximum concentration, than thirty consecutive minutes. Another suitable piece of advice is to not to try to incorporate everything altogether, it is better to advance little by little. A pause accompanied by breathing to calm down and to focus on the habit that is intended to be changed, is the key to success.

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