



The Patent



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Tobacco consumption

Tobacco consumption is the **leading preventable cause** of premature mortality worldwide.



Further PDF documents

- **The scientific background**
<https://www.luna-medical.com/en/scientific/>
- **The proof-of-principle study**
<https://www.luna-medical.com/en/pop-study/>
- **The patent**
<https://www.luna-medical.com/en/patent/>
- **Cooperations with companies**
<https://www.luna-medical.com/en/companies/>
- **Cooperations with health insurance funds**
<https://www.luna-medical.com/en/health-insurance/>
- **Cooperations with pharmaceutical companies**
<https://www.luna-medical.com/en/pharmaceuticals/>
- **The covered need - Quit smoking "now"**
<https://www.luna-medical.com/en/covered-need/>
- **The enormous healthcare gap - Smoke "less" first**
<https://www.luna-medical.com/en/healthcare-gap/>
- **Smoking - A global overview**
<https://www.luna-medical.com/en/global-overview/>

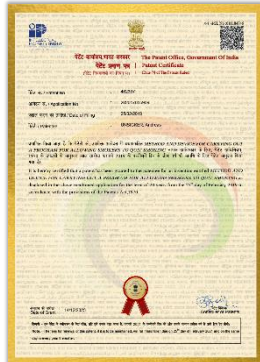
1. The Patent - Status of the patents March 2024

Method and device for restoring the ability to abstain



Patents granted

- European Union
- India
- Eurasian Union
 - Armenia
 - Azerbaijan
 - Belarus
 - Kazakhstan
 - Kyrgyzstan
 - Moldova
 - Russian Federation
 - Tajikistan
 - Turkmenistan



Ability to abstain

Goal

Patents under examination

- USA
- China
- Japan
- South Korea
- Indonesia
- Thailand
- Vietnam
- Brazil

Primarily countries with a high percentage of smokers and a large population.

Important!



Effective patent enforcement

Health insurance companies are legally obliged to cover the costs only for medical devices that are lawfully marketed.

Products that infringe existing patents do not meet this requirement.

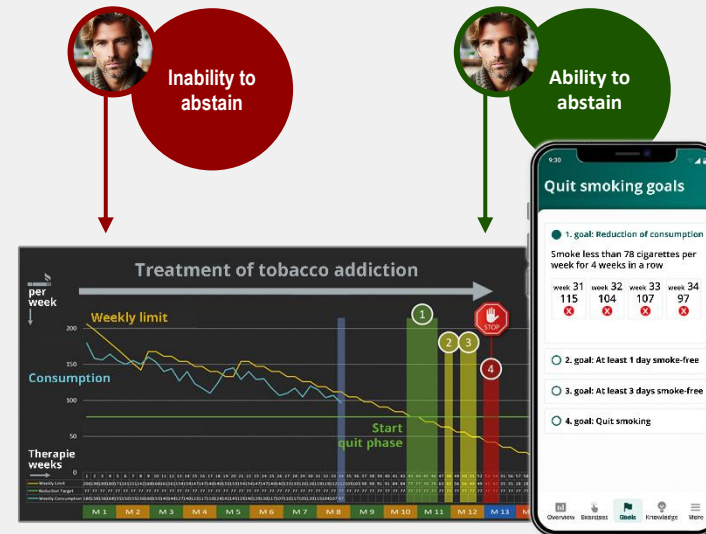
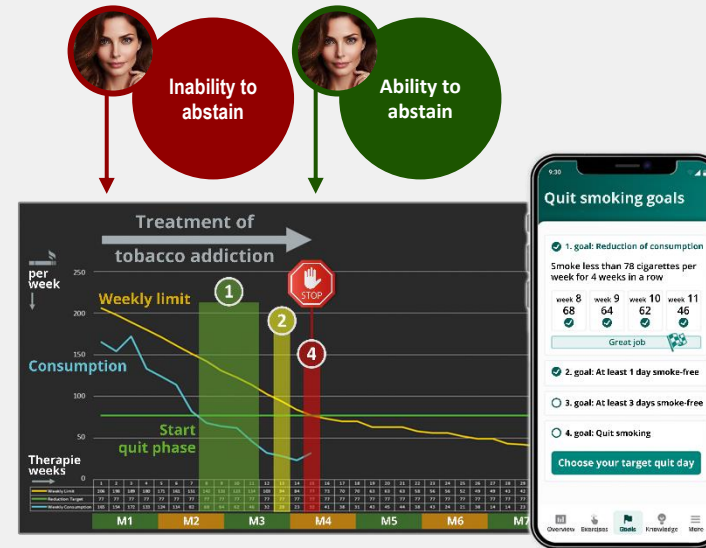
Financing such products would not only violate current laws and regulations but also undermine the integrity of the healthcare system.

1.1 The task of the patent

Restoring the ability to abstain

- motivates to try to quit smoking
- enables to quit successfully

6 months (Basic setting)
Or adaptation to the weaning progress.



CiQuit therapy adapts to the individual abilities of the user.

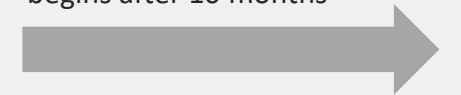
Underload

Smoking cessation is brought forward e.g.: Target Quit Day after 3.5 months



Overload

Quitting phase is extended e.g.: Quitting phase begins after 10 months

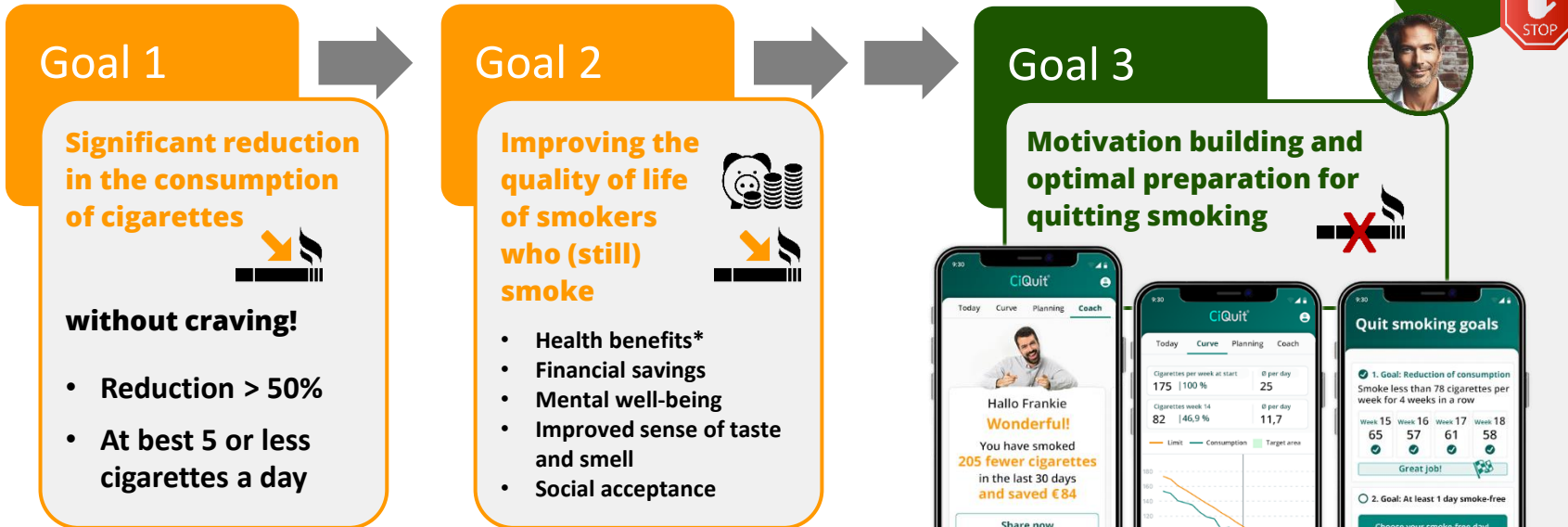


Success takes priority over speed!

1.2 The objectives of the patent

Stepwise **reconditioning** of smoking behavior by unlearning the mental and physical dependency.

Using a proven **milestone approach** towards a **smoke free life**.

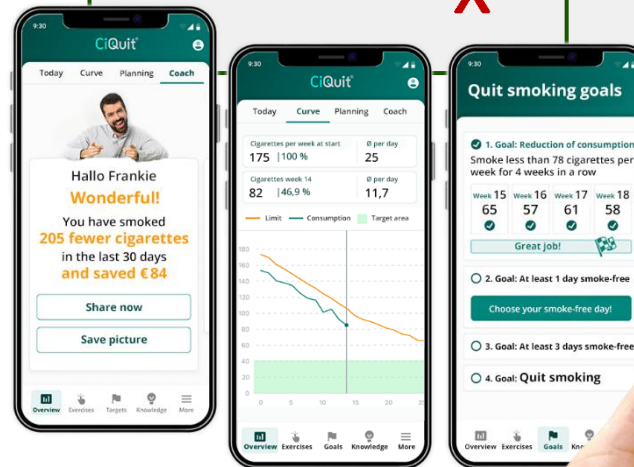


What addiction experts say!

"Smokers who are addicted to tobacco can hardly imagine quitting smoking immediately.

They can only imagine quitting smoking by reducing the cigarette consumption step by step."

*Prof. Dr. Robert Olbrich,
Otto Selz Institute for Applied Psychology*



6 months (Basic setting)
Or adaptation to the progress of weaning.

Reconditioning with CiQuit-Box and CiQuit-App



CiQuit®
Reconditioning



For a detailed explanation see:
www.luna-medical.com/en/scientific



The reduction of smoking ...

- ... increases the likelihood of a future attempt to stop smoking.
- ... strengthens the patient's confidence in their ability to stop smoking completely and increase the number of quit attempts per year.
- ... ***reduces at least some of the risks associated with smoking.**¹

1) Source: https://ensp.network/wp-content/uploads/2020/10/guidelines_2020_english_forprint.pdf | S. 91 ff
2) Source: <https://www.google.com/search?q=20.+t%C3%BCbinger+suchttherapie+2015+suchttherapie+im+wandel+der+letzten+zwei+jahrzehnte+client>

1.3 The effect of the patent

The new way



For a detailed explanation see:
www.luna-medical.com/en/scientific

Previous treatment approach

Medical help



Weaken the effects of nicotine withdrawal

Psychological help



- Hypnosis
- Acupuncture
- Books
- Apps
- Online courses and much more

Overcome the effects of nicotine withdrawal

Problem Quit smoking with inability to abstain



Psychological (mental) dependence +
Physical (bodily) dependence

Addiction centre

Effects of nicotine withdrawal

- Agonizing craving
- Irritability and restlessness
- Frustration and anger
- Anxiety
- Sleep disorders
- Concentration disorders
- Decreased heart rate
- Increased appetite and weight gain

“Hungry nicotine receptors”



Quelle: J. Henningfield

High level of suffering

High relapse rates (despite help)

Next attempt to quit smoking is usually postponed for years

Solution Quit smoking with ability to abstain



~~**Psychological** (mental) dependence +
Physical (bodily) dependence~~

Addiction centre

Effects of nicotine withdrawal

Greatly weakened!
At best, no longer available.

“Hungry nicotine receptors”



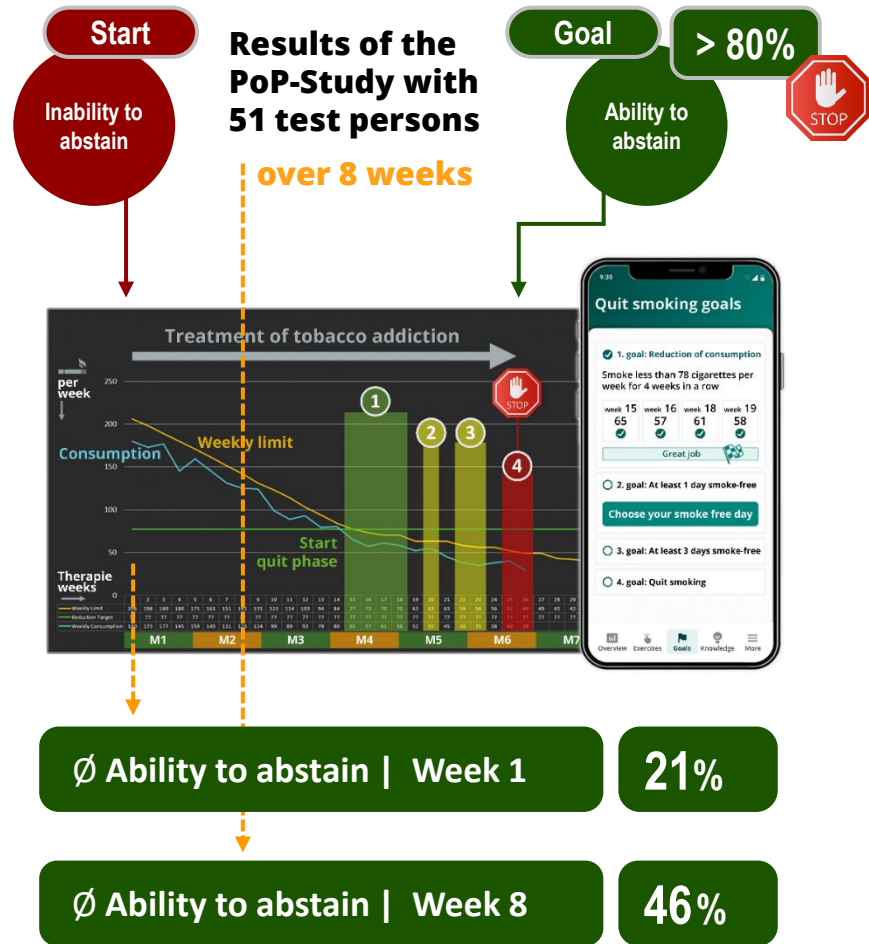
Quelle: J. Henningfield

No or low level of suffering

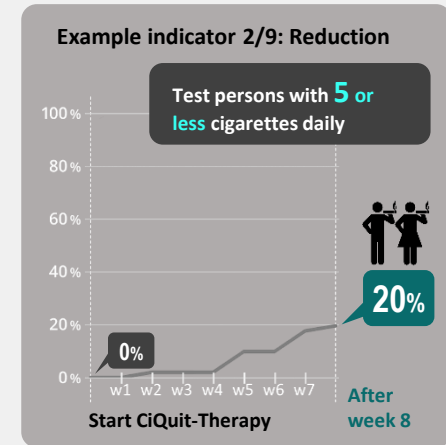
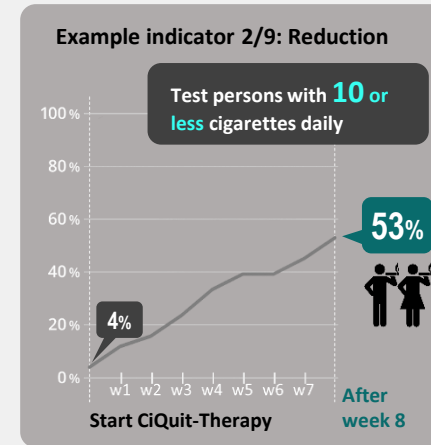
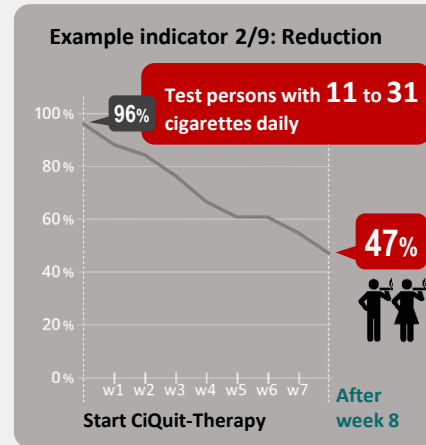
High success rates

In case of relapse, return to CiQuit with low consumption

1.4 The study Proof-of-Principle Study (PoP-Study) on the patent

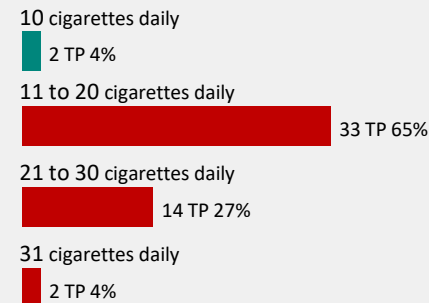


Significant improvements were observed in all 9 indicators of ability to abstain after just 8 weeks!



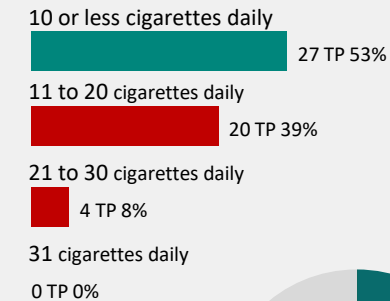
51 test persons (TP)

Start



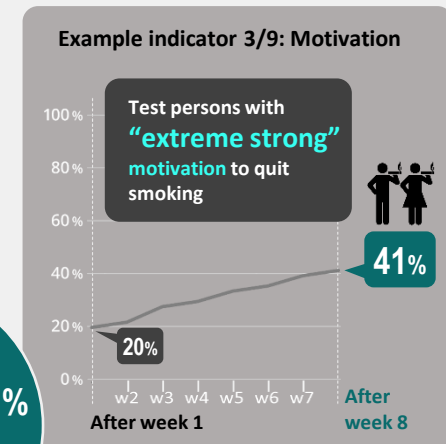
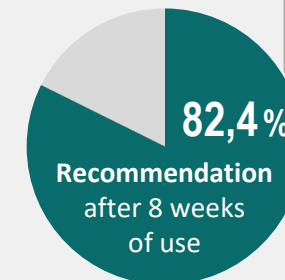
51 test persons (TP)

Week 8



Proof-of-Principle Study

All results at www.luna-medical.com/en/pop-study/



2. The effectiveness of CiQuit

Reconditioning



A core principle from science



"Successful smoking cessation depends on how the learned habit of smoking can be permanently **"deleted"** from the relevant brain area."

*Prof. Dr. Joseph McClernon,
Development of interventions against nicotine addiction*

= **Reconditioning**

The graphic features the CiQuit logo at the top left. To its right, the text "Smoking 'delete!'" is written in large blue font. Below the logo, there are two overlapping circular icons: one showing a lit cigarette and another showing a brain with a red "hot system" label. To the right of these icons is a blue silhouette of a firefighter kneeling and using a hose. At the bottom, three stacked red rounded rectangles contain the text "Subconscious actions", "Reward centre", and "Addiction centre" from top to bottom.

The primary task of CiQuit ...

... reconditioning



The "cool system" must be activated with every reach for a cigarette; only then can the smoking process, which is driven by the "hot system", be reconditioned, meaning unlearned, and non-smoking relearned!



The CiQuit-Box activates the "cool system" with every reach for a cigarette



CiQuit®

Fireman "activate!"

- Planned decisions
- Learning and unlearning
- Reconditioning

The patented technology

CiQuit®



Die CiQuit-Box

Activates the "cool system"

1. Behaviour control on the display
3. Hierarchical reduction

Day 1 Limit		25
Day 90 Limit		13
Day 180 Limit		7



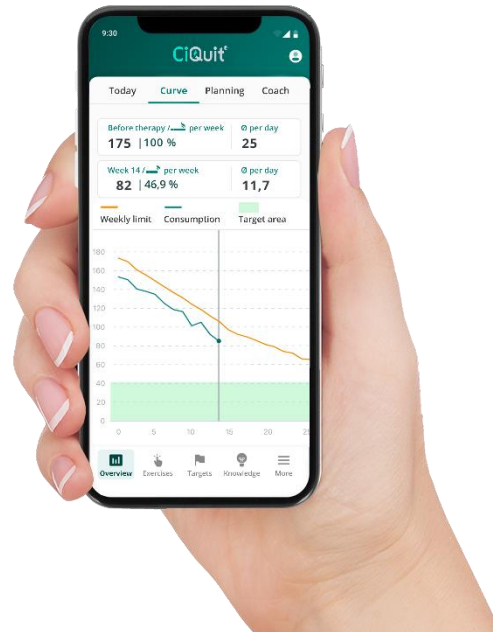
2. Therapy-controlled access delay



Data exchange
All saved data are **automatically** transferred to the app.

Die CiQuit-App

- Visible partial successes
- Motivation
- Roadmap to abstinence
- AI-generated therapy adjustments are transmitted from the app to the box

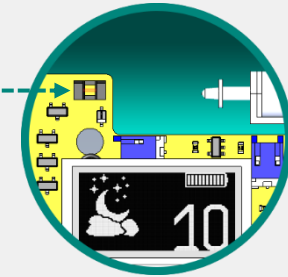


Suitable for everyday use

- No smoker would make an app entry or keep a tally sheet for every cigarette over a longer period of time.
- If the box is ever forgotten, smoked cigarettes can alternatively be entered in the app.

Data exchange

All the necessary data are measured via a **light barrier** when the lid is opened and closed.



CiQuit-Box = **Reconditioning**

- The box accompanies 24/7 and enables unlearning smoking at the exact moment of craving!

CiQuit-App = **Relearning Smoke-Free**

- The app - Permanent maintenance of motivation and AI-supported roadmap to abstinence!

The core principle of CiQuit

CiQuit shifts the process of smoking from the "hot system" to the "cold system" and deletes the habit (addiction) of smoking from the relevant brain regions!

Learning and unlearning "delete!" is not possible in the "hot system"!



The "hot system" is activated through subconscious processes. It generates a craving to satisfy needs that give us a good feeling in the moment. How this behaviour affects us in the long term is not considered by the "hot system".

Learning and unlearning "delete!" can only be implemented in the "cold system"!



The "cool system" makes planned decisions and can realize learning and unlearning processes. It is able to soberly weigh the pros and cons of alternative courses of action.

The "cold system" must be activated when reaching for a cigarette; only then can the smoking impulse, which originates from the "hot system", be counteracted.



1. Scientific fact



A planned change in behaviour is not possible without observing the problematic behaviour and recording the results.

"Simply observing your own smoking behaviour leads to a significant reduction in smoking."

Rainer Tölle, Gerhard Buchkremer - Cigarette smoking: Epidemiology, psychology, pharmacology and therapy

The display directly on the cigarette pack

provides smokers with information about their daily smoking behaviour.

- This means that smoking does not happen unconsciously and automatically, as the smoker has the opportunity to check their smoking intention before lighting up.
- **Suitable for everyday use:** Automatic consumption recording - no smoker would permanently record every cigarette in an app or keep tally sheets.

Behavioural control when reaching for a cigarette



Today smoked

The previous consumption is displayed before each cigarette.

Just available

The box can be opened after the access delay as long as this value is greater than 0.

Later available

This value shows how many additional cigarettes are available until the evening.

"Later available" cigarettes are transferred throughout the day after **"Just available"**.

2. Scientific fact



"The positive aspect is that smoking as a learned behaviour can also be unlearned.

New behavioural patterns and coping strategies can be practiced.

Interrupting automated behaviour is one of the decisive factors."

*Ilse Müller,
Psychotherapist (behavioural therapy), focus on nicotine addiction, among other things*

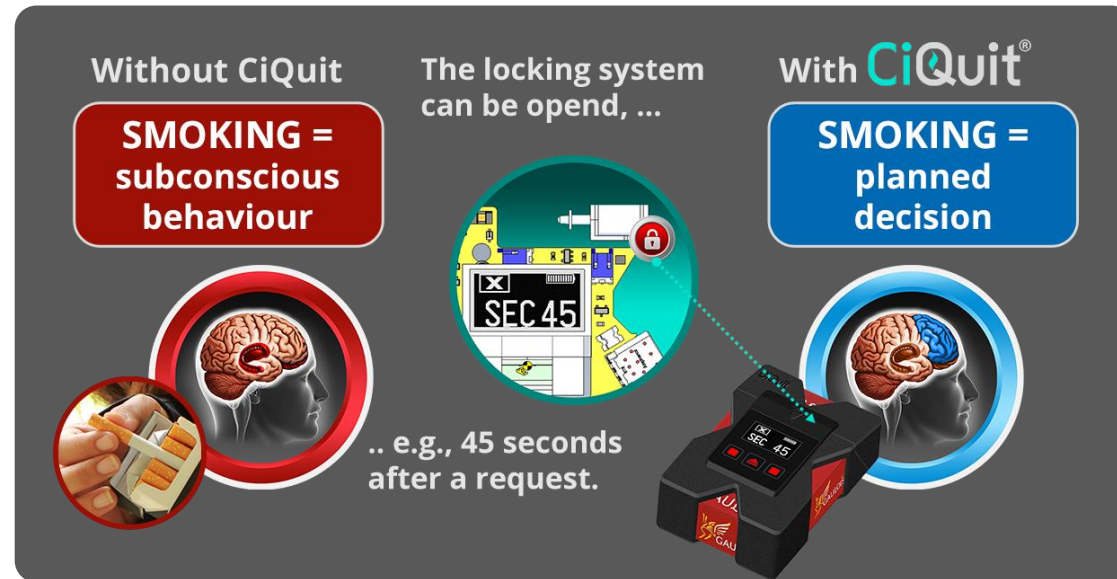


Planned decisions

Learning and unlearning

Reconditioning

Access delay when reaching for a cigarette



Access delays slowly increasing daily!

Examples:

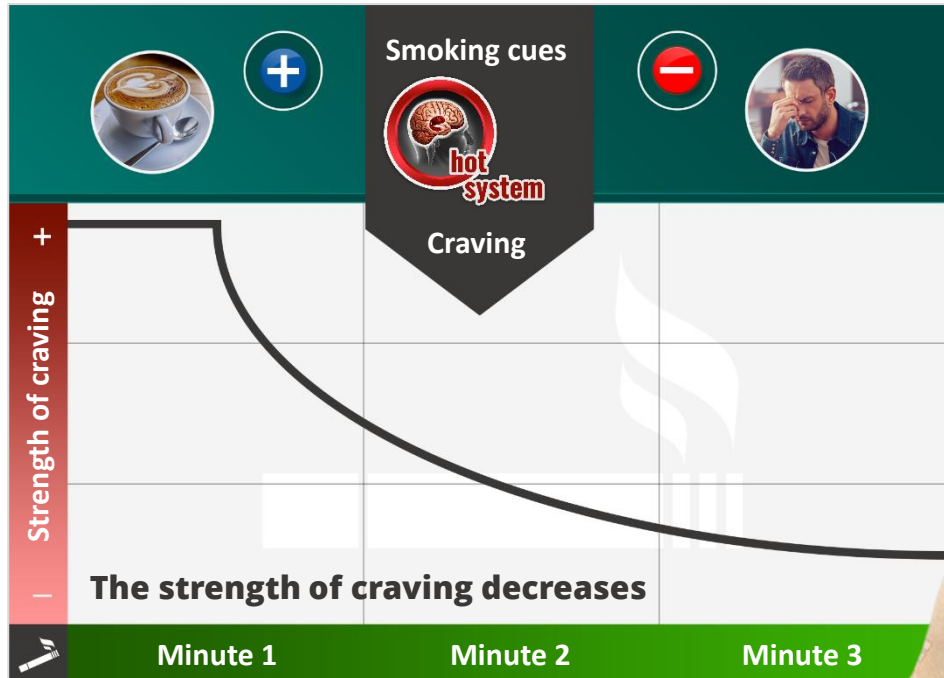
Day 1
20 seconds

Day 39
1:17 minutes

Day 83
2:46 minutes

The access delay

- The brain learns that craving and nicotine satisfaction are becoming more and more separate!
- After about 30 seconds, the craving usually becomes weaker, and it becomes easier to abstain from smoking this cigarette!



During the **access delay**, smokers do not feel any craving pressure. The body and mind adapt to the slowly increasing access delays.

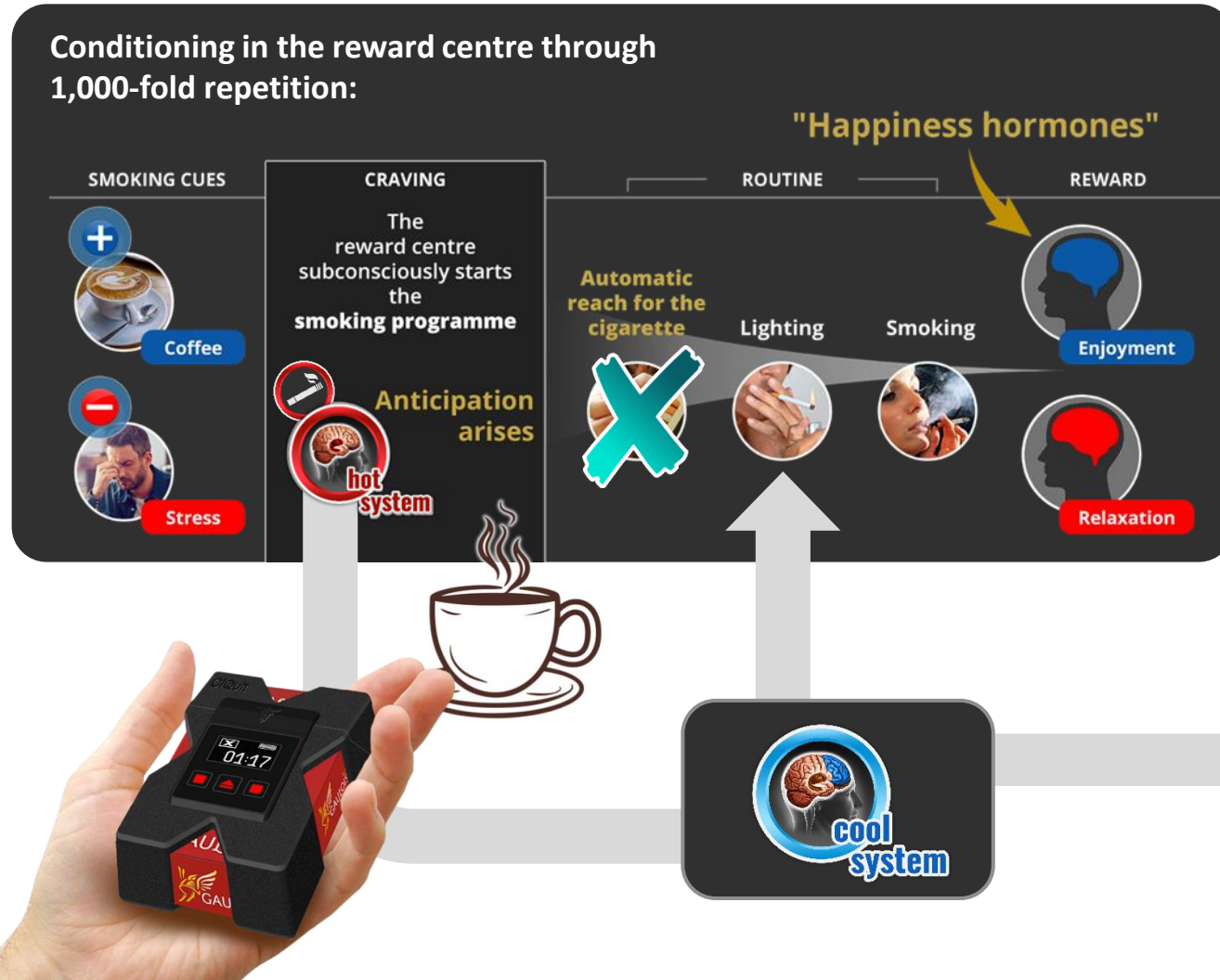
No
addiction pressure



What addiction experts say!

- Such cravings usually only last a short time compared to the periods when you no longer feel like having a cigarette. After 30 seconds to three minutes, the craving almost always subsides.¹
- The craving usually only lasts one to three minutes.²
- Realize that it's only a few minutes that you have to get through.³
- **With every craving attack that you resist, your brain and body learn that you can do without it.**⁴

The access delay - summary



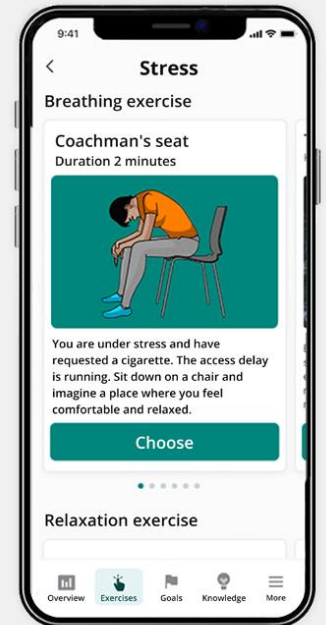
Primary Goal

Timeframe for a planned and conscious decision:

1. Smoking? **No**
2. Alternative action from the app? **Yes/No**
3. Smoking? **Yes**

With each craving attack and every trigger where a cigarette is avoided, both body and mind learn that daily life can function without smoking.

Reconditioning




3. Scientific fact



"Smokers who are addicted to tobacco can hardly imagine quitting smoking immediately.

They can only imagine quitting smoking by reducing the cigarette consumption step by step."

Prof. Dr. Robert Olbrich,
Otto Selz Institute for Applied Psychology



- Planned decisions
- Learning and unlearning
- Reconditioning

„Reduction treatments ...

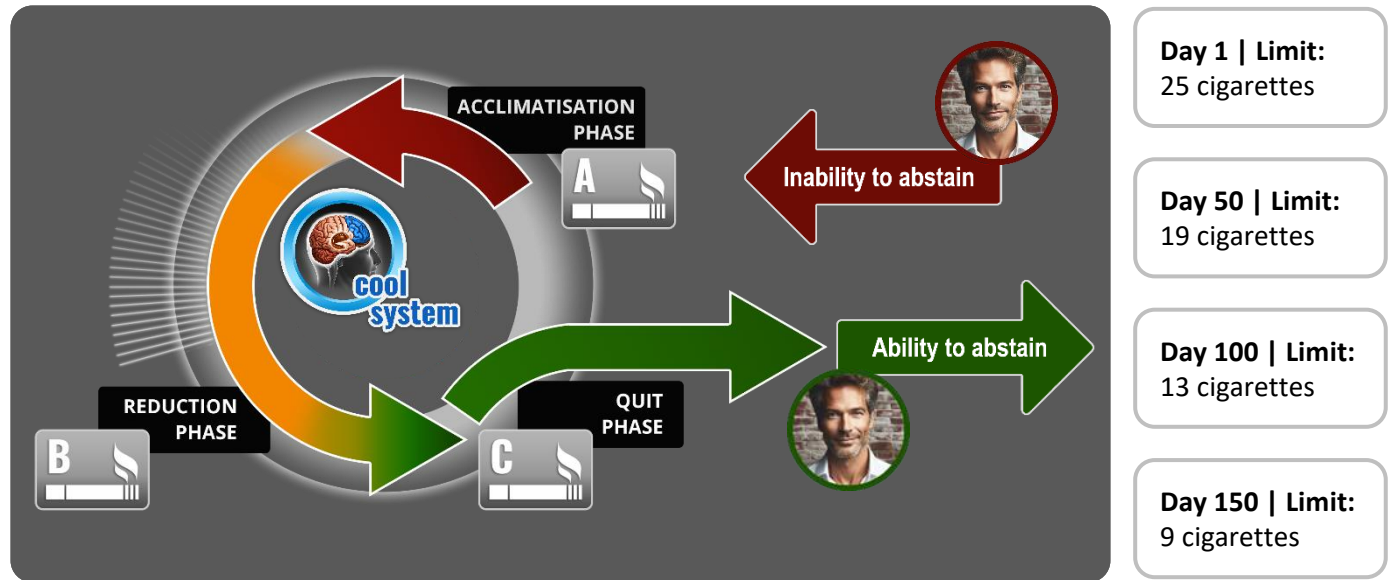
... are aimed at people who are willing to change but are unable or unwilling to lead an abstinent lifestyle. Various field studies, randomised control group studies and meta-analyses have shown **that significantly more people are willing to reduce than to abstain ...**

Prof. Dr. Joachim Körkel u. Matthias Nanz,
The paradigm of open-ended addiction work, 2016,

Hierarchical reduction when reaching for a cigarette




Slowly decreasing daily limits every week!
Example - Start with 25 cigarettes a day:




A = Weak

- Conditioning
- Craving




B = Medium

- Conditioning
- Craving



C = Strong

- Conditioning
- Craving



As a result, CiQuit ensures that reconditioning during the gradual reduction is carried out according to a target-oriented system.

Rapid reduction successes and building up the motivation to reduce by simply giving up A-cigarettes and more easily giving up B-cigarettes.

Step by step, the application teaches the brain to cope with "critical smoking situations" without a C-cigarette.

"In situations where a smoker's conditioned brain expects nicotine, a craving to smoke automatically occurs. Developing skills to cope with smoking cravings is a central element of cognitive-behavioral therapy approaches.

In the **traffic light model**, three phases of smoking craving are distinguished:



= Weak

- Conditioning
- Craving



In the green phase, the addiction pressure is mild and only weakly perceived. In this phase, most smokers manage to cope with the craving by ignoring it without the need for additional help.

A-cigarettes, for example, are the second or third cigarettes smoked in succession. The second or third cigarette is only weakly associated with a triggering stimulus. Giving them up does not pose a significant challenge. The body has already received nicotine from the first cigarette, and the smoking reward system has already been engaged by the first cigarette as well.



= Medium

- Conditioning
- Craving



In the yellow phase, the craving becomes more noticeable as addiction pressure, and the smoker experiences restlessness and lack of concentration. In this phase, the prefrontal cortex still retains control over the emotion center, which continues to increase the addiction pressure. Many smokers find it helpful to use specific techniques such as distracting activities, alternative behaviors, or breathing exercises to deliberately change their thoughts and/or physical state.

B-cigarettes relate to smoking situations that occur infrequently and therefore are only minimally to moderately ingrained as a habit. For example, people might enjoy smoking to pass short waiting times. Giving up this cigarette is not too difficult because the brain typically only has a weak to moderate association between waiting and smoking. A contrasting example would be a taxi driver who smokes, where the situation of waiting for the next customer and smoking is very strongly linked.



= Strong

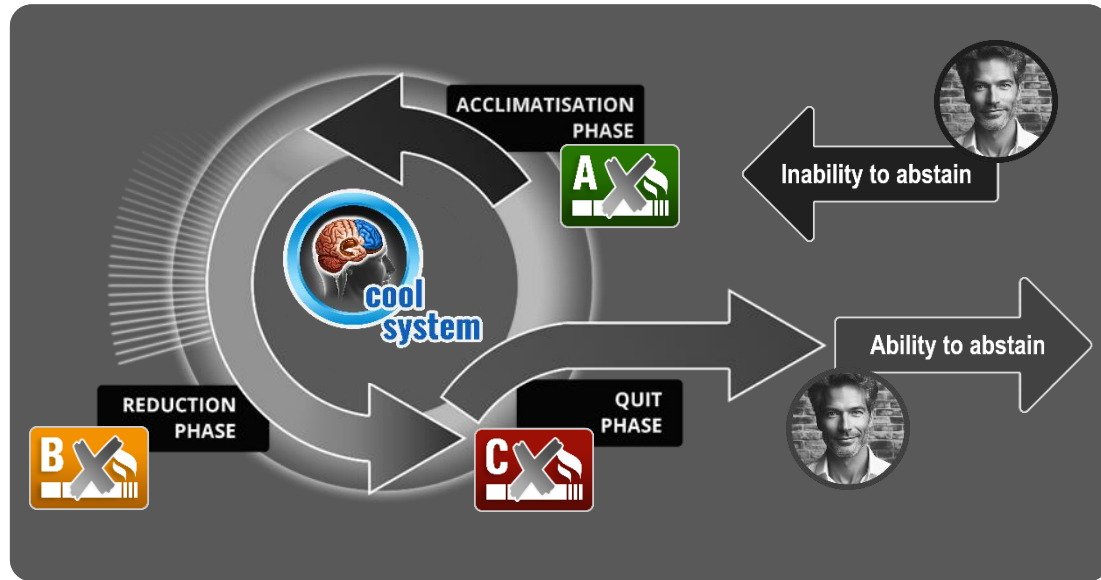
- Conditioning
- Craving



In the red phase, the addiction pressure becomes increasingly intense until the smoker can no longer clearly control their thoughts. In this phase, active engagement, stimulating the senses, as well as actively addressing and questioning the feelings experienced during the addiction pressure can help manage the temptation situations (Szasz et al. 2012)."

C-cigarettes are deeply ingrained as a habit because they are repeated thousands of times. Examples include the morning cigarette with coffee, smoking during stressful situations, when others are smoking, after meals, or in conjunction with alcohol. It is precisely these cigarettes that make quitting smoking so difficult and contribute to high relapse rates.

Treatment strategy



The patented behaviour control enables the smoker, who is willing to quit, to use the remaining and permitted cigarettes for their "critical smoking situations." It is precisely in these smoking situations (C-cigarettes) that the unlearning process (including the disassociation of the triggering stimulus and the cigarette) is most effective in the relevant brain areas.

Behaviour control via the display directly on the cigarette pack.

Smoked today		2
Just available		3
Later available		8

The hierarchical reduction offers crucial advantages for a permanent cessation of smoking:

1. Rapid development of the "SMOKE-FREE" reward system
2. The smoker willing to quit gradually loses the fear of having to cope with negative emotions without a cigarette and learns to enjoy positive situations again without a cigarette.
3. Step by step, the smoker willing to quit comes to the realization that they do not have to give up something "valuable" for the rest of their life.

Three crucial mental factors that motivate smoking cessation and promote successful abstinence!

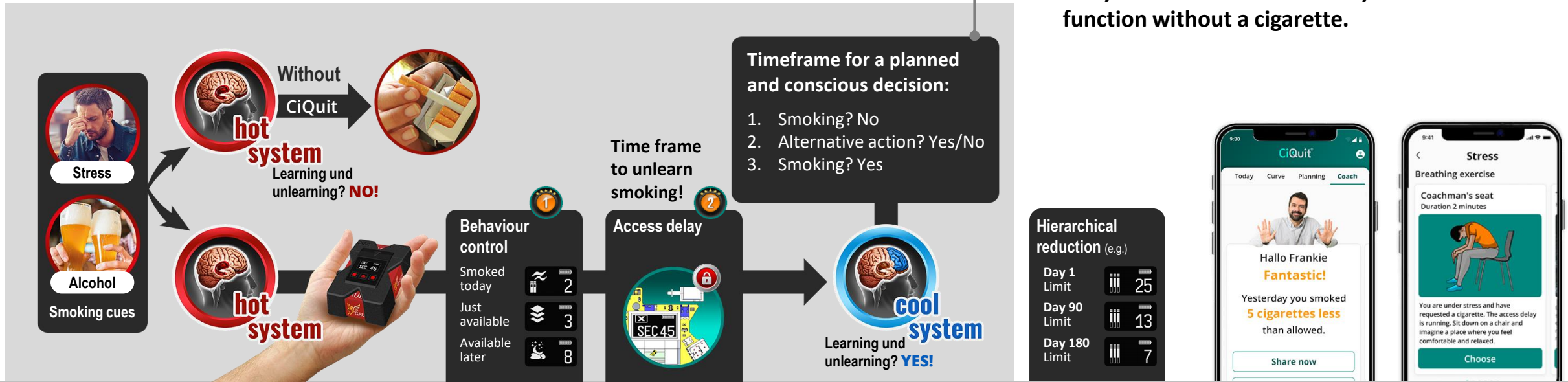


3. The summary of the CiQuit-System

- **The primary task of the CiQuit-Box**
- **The primary task of the CiQuit-App**
- **The primary task of the CiQuit-System**



The primary task of the CiQuit-Box



With every craving and every smoking cue where a cigarette is foregone, both body and mind learn that daily life can function without a cigarette.

The CiQuit-Box

The box accompanies 24/7 and enables **unlearning smoking at the exact moment of craving!**

* The access delay increases slowly every day.

Examples:

Day 1	Day 39	Day 83
20 seconds	1:17 minutes	2:46 minutes

The body and mind adapt to the slowly increasing access delays and do not generate any agonising cravings during the access delays.

- The "hot system" drives us to satisfy needs that promise immediate gratification, without considering the long-term effects on us.
- In contrast, the "cool system" allows for a rational evaluation of action options and is based on the activation of brain regions for self-control, learning and unlearning.
- 1 **Effective behaviour control** requires the observation and documentation of problematic behaviours, with the observation itself leading to positive changes.
- The CiQuit Box prevents uncontrolled and subconscious access to cigarettes by keeping the pack locked, which does not mean denying access to cigarettes.
- 2 Instead, the **access delay** creates a window of time that allows the user to actively unlearn smoking in the relevant brain regions, the "cool system," at the very moment of craving.

The primary task of the CiQuit-App



The CiQuit-App

Permanent maintenance of motivation and AI-supported roadmap to abstinence!

- **Success experiences** in professions, sports, or changing behaviors are crucial for maintaining motivation. Success generates positive emotions, which, through the release of dopamine in the reward center, maintain this motivation.
- **Both self-reinforcement and external reinforcement** (pride, praise, recognition) play a significant role in establishing a new reward system, as these reinforcers create positive emotions (success) and thus initiate the release of dopamine.
- The CiQuit app triggers these reinforcers, among other things, through the **visualization of partial successes and success messages**, further enabling the continuous evaluation of changes and thereby stabilizing the modification process.
- "If-Then" plans are an effective self-regulation strategy to transform good intentions into successful actions. The app offers specific action alternatives for individual smoking situations (promoting reconditioning).

As a result, the interplay between the box and the app realizes a core principle of behavior therapy:

"Smoking can be actively unlearned, and non-smoking can be newly learned."

The primary task of the CiQuit-System

Psychological dependence

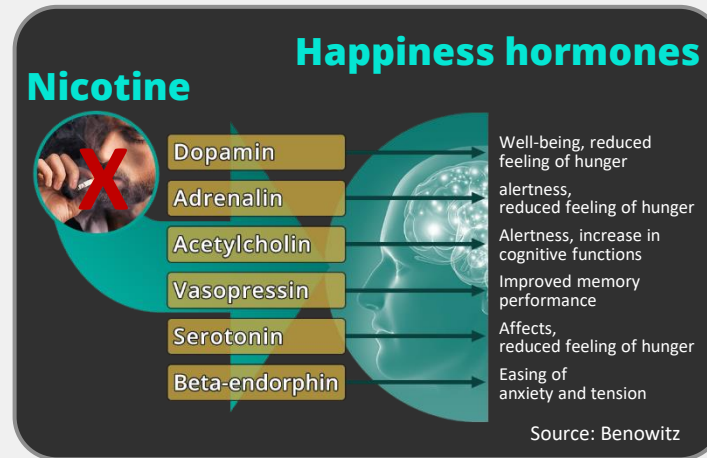
Reconditioning without pressure of addiction



- The functions of the CiQuit Box directly on the cigarette pack, particularly behaviour control and access delay, effectively separate the smoking cues from the cigarette.
- With each craving attack and each smoking cue, when a conscious decision is made to refrain exact this cigarette, the body and mind learn that daily life can function without a cigarette.
- The patented transformation of the smoking process from a subconscious action "hot system" to a planned decision "cool system" is crucial in this regard.

Psychological dependence

Reconditioning without pressure of addiction



- Step by step, CiQuit effectively helps overcome mental dependence and lead a more content life without cigarettes.
- The goal is to recondition the reward system so that the pleasure derived from healthy and constructive activities replaces the perceived nicotine reward (pleasure, relaxation).
- Additionally, CiQuit motivates engagement in sports, social interactions and hobbies, which in turn release natural "happiness hormones".

Physical dependence

Minimise Fagerström score (FTND)

Greatly weakened!
At best, no longer available.

- The FTND primarily measures physical tobacco dependence, where a low score correlates with high chances of success.
- CiQuit aims, among other things, to reduce early morning smoking and daily cigarette consumption, as these two indicators significantly influence the FTND score.
- Physical dependence can usually be overcome in a few weeks. However, psychological dependence, often deeply rooted in habits and social rituals, requires comprehensive reconditioning.

4. Visibility of the CiQuit-System in the target group



Visibility of the CiQuit-System in the target group 1/1

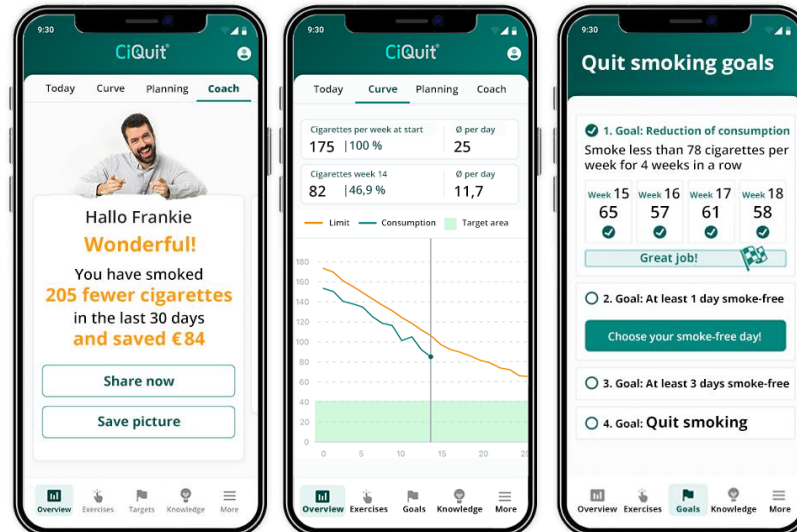
Experience shows that every CiQuit user is immediately approached by other smokers about the **CiQuit-Box**.

Other smokers are asking:

- **What is that?**
- **Where can I get this?**



The CiQuit benefit can be communicated very easily via the **CiQuit-App**!

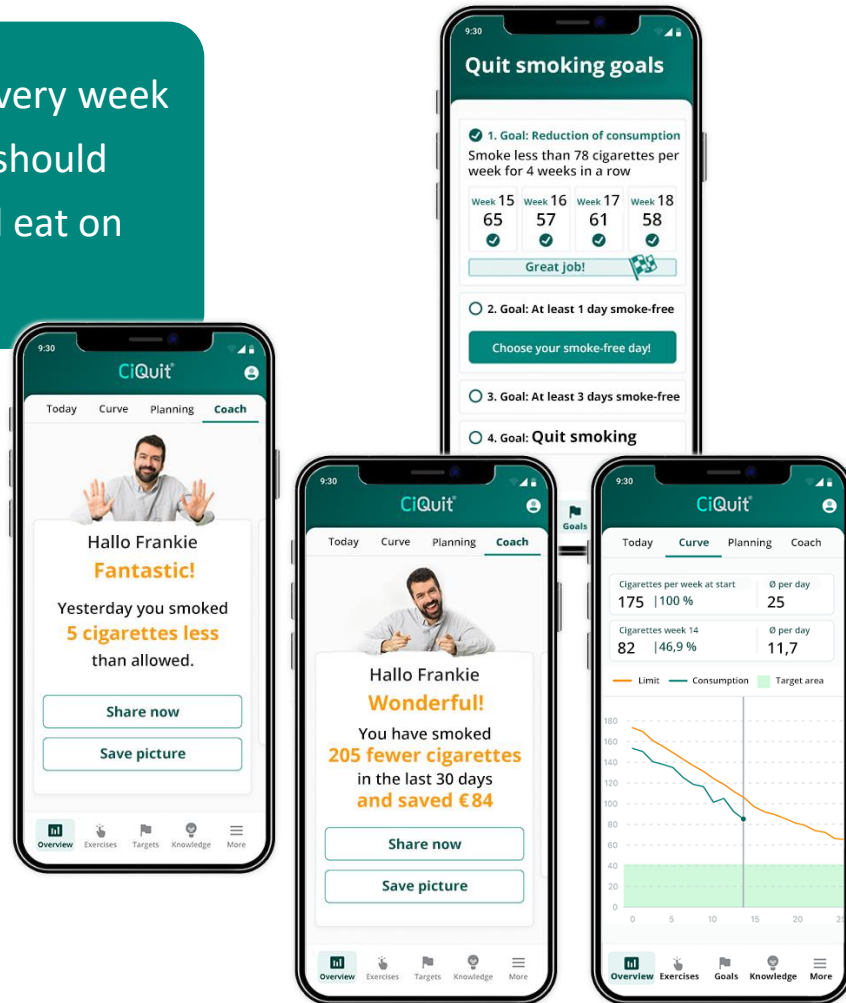


5. The adherence to the CiQuit-System



Why is the CiQuit box not bypassed?

If a diet reduces weight by 1 kilo every week and no hunger attacks occur, why should you deviate from the diet plan and eat on the side?



Keyword

Second cigarette pack

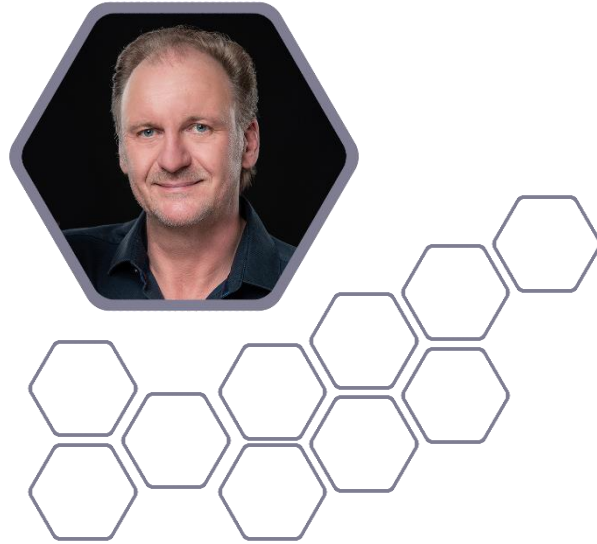


CiQuit

- generates daily and weekly motivating partial successes **without cravings.**
- adjusts in case of overwhelm and **prevents demotivating cravings.**
- weans the body and mind step by step, **prioritizing daily and weekly success over speed.**

If the box is ever forgotten, smoked cigarettes can alternatively be entered into the CiQuit-App.

Thank you very much



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What users say

Statements from the pilot study

"Very good thing, thanks to the control I was able to reduce my cigarette consumption from 18-20 to an average of 13 after just 8 weeks."

Rainer W.

"So I'm very enthusiastic, I arrived on day 30 and I can only say one thing: simply great."

Astrid P.

"The box made me realize how often I had reached for a cigarette without thinking. Now, before every cigarette, I think about whether I really want it and how many I have left to achieve my own daily goal."

Constanze K.

"It's simple to use. The box remembers your smoking behaviour pretty quickly and I have to say that I smile every time the access time is increased. Habit becomes mindfulness!"

Stefan F.

"I no longer light up a cigarette without thinking or reflecting. I can easily do without one or two. It makes you proud and, in retrospect, happy. I believe it is possible to become a real non-smoker. The brain adjusts to it. Great invention!"

Nils O.