

## **The little prince meets the drunkard and he is sorry for him. The little prince is baffled and leaves the alcoholic alone.**

Medicine almost always leaves the alcoholic alone, tells him he should stop, he just has to want it, he should work on himself. He is admitted as an in-patient, sometimes discharged disciplinarily, forced to open up and to admit that he is an alcoholic, then ultimately he is locked up in a rehab clinic. He leaves the clinic after having received the best possible treatment... and relapses in the first 14 days. He is told that he has not understood it and everything starts again. He is alone, he is ashamed, despairs of himself and drinks again. The family is tortured by conflicting feelings of contempt, disgust, anger, disappointment, frustration and then in turn care, help and the intention of absolute support. This drama of familial inner conflict stretches across the years, until finally the whole family is burnt out.

From my experience in classic psychiatry, and in the management of a women's shelter, where beaten women, abused by their alcoholic husbands found refuge, and from my psychosomatic work with children from alcoholic families, I came to the conclusion that we, the doctors are making essential errors in treatment. We know neither what we are treating, nor what this addiction is actually about. We do not understand the disease itself, nor those that suffer from it. We leave him alone with his bottle.

Our treatment attempts with around 80% relapse quota in the first 14 days cannot be sensible treatment methods. It is a helpless attempt to help without knowing what we are actually doing. Brain research seemed to be the only way out of this dilemma for me – to learn and try to understand what effects alcohol actually has on the brain, where which structures are being damaged, and whether there is perhaps a successful treatment, which really liberates from the urge to drink, the turmoil and accompanying fear.

In conversation with alcoholics, the same statement kept coming up: He wants to stop, but he carries on drinking; he really wants it, but he simply cannot do anything else! For me, this means that the intelligence and reason of alcoholics know very well what to do. But there is something in the brain which is stronger than reason and/or sensibility.

Schopenhauer once said, "Man can do what he wills but he can not will what he wills". From this, the following questions arise regarding the treatment of alcoholism:

### **First question: What does alcohol do to the brain?**

Alcohol increases the dopamine distribution in the brain by around 100% (by comparison: cocaine increases it by around 1000%). Alcohol has a long-lasting, repeating effect, and again and again.

## **Second question: Where does the dopamine exert its effects?**

Dopamine is dispersed in the brainstem and is the biggest stimulant there, as the neurotransmitter that signals feelings such as "reward", "fulfilment", "success" and therefore "learning experience".

## **Third question: What is the brainstem?**

120,000 years ago, man had a brain weighing around 300 grams. It was a simple brain structure consisting of basal brain, brainstem and cerebellum. In the past 120,000 years up to the present, the brain has grown to 1200 grams. The rudimentary structures have not disappeared, rather they have been built over, extended and networked with new, highly complex brain areas.

## **Fourth question: What function(s) does the brainstem have?**

How did the brainstem work 120,000 years ago, and does it still work today? The brainstem exclusively works according to the fight or flight principle, i.e. "recognise and reflexively kill the enemy, or run away from it." This strategy is based on pure fear of death, the stark instinct for survival. The brainstem allowed people 120,000 years ago to survive in the wilderness, in fights against jackals, bears, wolves, etc.

American brain researchers investigated the brainstem in-depth, and came to the following conclusion: The reaction sequence from first seeing the stimulant to acting goes via the 3-F-channel, i.e. "fight, flight and fright", and according to measurements is around 1.5 seconds faster than the process of thinking-and-then-acting. The 3-F-channel allowed man to survive. Today, under modern, civilised living conditions, this 3-F-channel is only rarely "used", but it is still there. This structure is important and a first building block in understanding alcoholism.

Alcohol releases dopamine in the brainstem, every day, with every glass, with every sip. The more you drink, the more dopamine floods in. The brainstem is virtually flooded with dopamine.

## **Fifth question: What does the brainstem do?**

The brainstem builds dopamine into the cells, as a substance that is "vital to survival", the DNA of the cells is converted. Dopamine has therefore become indispensable and the brainstem cells now control the absorption of dopamine. This means, a "centre" is built in the brainstem, which controls the dopamine absorption. Subjectively, the addict experiences this as a hunger for alcohol, the so-called "craving", which is nothing more than a hunger for dopamine. For women it takes around 3 years until this centre has been developed, in men 8 to 10 years. So, due to their biology, men are more resistant than women.

## **To summarise:**

In the fast channel in the brainstem, due to continual dopamine distribution, the alcohol builds up a control centre for the hunger for dopamine, controlled by the urge to drink. All reactions via the brainstem are 1.5 seconds faster than the process of thinking-and-then-acting. This means, every thought from the frontal brain region, i.e. where we plan, control and think, is slower and taken over at high speed by the brainstem. The brainstem therefore determines the consumption of alcohol, even before the frontal brain can make its decision. 1.5 seconds is a long time span for the brain!

## **The problem:**

The brainstem and its control cannot be deliberately interrupted. We have no access to the reactions of the brainstem, neither promoting nor inhibiting. Remember: The survival of the individual is ensured via the brainstem, the strongest drive for self-preservation!

"You cannot prevent yourself from trying to save yourself."

You could jump in a river when you are considering suicide. Yet, once you have dived into the water, you will do everything you can to get back to dry land. The "programme of self-preservation" is already running without your knowledge. You can neither switch off nor suppress this process.

You cannot prevent yourself from saving yourself and you also cannot prevent yourself from drinking. Once the programme has been installed, then it runs contrary to any sense, because it is connected to the desire to survive. Or put simply: No survival without alcohol!

## **Alcoholism is a brainstem disease**

With this consideration it became clear to me for the first time that we doctors only address the intelligence and reason of the patients. He consistently shows himself to be insightful here, he WANTS to end his alcohol consumption, he WANTS to work, he WANTS to take care of his family, etc. However, the disease takes place in the brainstem. As doctors we have no access to the brainstem. The cell structures have built up here and formed an autonomy centre, which the ill person has no access to and the doctor has no influence over.

This means: The doctor is helpless and the patient is helpless. This explains the dilemma of treatment.

## **What is the consequence?**

We need a medication, which blocks the control sequence in the brainstem, because our intelligence cannot do it. We must block the biochemical process, which the alcohol started in the cells and which leads to changes in the cell information, in a chemical way. We have worked with Nemexin, with antidepressants and with Baclofen. Baclofen has ultimately showed the best results.

## **What does Baclofen do?**

Baclofen blocks control of the hunger for dopamine, and the urge to drink is suddenly gone. In this way, the alcoholic has 1.5 seconds to think and control their life with the frontal brain again. They can work, drive, do sport. Their urge to drink is gone, they are once again in charge of their life.

The reverse conclusion is that stopping the medication would mean that they would drink again within 2 days. The inhibition due to the medication ceases, and the urge to drink builds up again.

We have treated approx. 400 patients with Baclofen since 2008. The results show a new dimension of alcohol treatment, both for us doctors and for the patients. Our alcoholics are taught about the mechanisms of their disease, about the brain structures and the effect mechanism of the medication. We also give the relatives responsibilities, they share the healing process and are impressed by the result of treatment. The changes in daily life is seen as very positive, which in turn supports healing. By taking Baclofen, a new era begins for the alcoholic and their family!

We now treat patients from Germany, Austria and Switzerland, and are pleased with the successes every day.

Our last patient came to us with the following biographical story: 30 years of alcoholism, an almost endless number of treatment stays in psychiatric clinics, twice for 10 months of treatment with Antabus each time, EU pension since 2009 due to incurable alcoholism.

We have now been treating him with Baclofen since June 2015.

He last came into our practice on the 19th of December 2015 to thank us. He has not been so well for a long time; the family is delighted along with the father about his newly found life without alcohol.

## **The brainstem in its functions leaves us with many questions**

1. The information about the level of the dopamine requirement is stored for a lifetime. What does that mean? Someone drank for 10 years, his daily requirement for alcohol was a bottle of vodka. He ended his consumption and lived abstinely for 5 years. Spontaneously he drinks the first glass of wine, and after a few days he will drink a whole bottle of vodka again. Why?

The brainstem cells have stored the dopamine craving, and regardless of whether it has been 1, 3 or 10 years, they demand the old quantity again – as if the alcoholic had never stopped drinking. The brain once again demands the full dopamine quantity. Which means that one glass is never enough! The famous saying "just one glass" does not work. One glass means the whole fix again, and everything goes back to the old level again, as before the abstinence.

2. It is best to illustrate this problem to you using a case study. Mr X drinks every evening. His evenings always go as follows: He leaves the office, drives to a petrol station with a blue neon sign, fills up the car, buys two six packs and two hip flasks. Then he drives home, turns the television on, drinks until he falls down and falls asleep. The same fixed ritual happens every day after that.

He finally admits himself to long term therapy for three months (!), comes home, goes back to the office recovered, then on the 3rd evening he drives to the petrol station with the blue neon sign, fills up his car, buys two six packs and two hip flasks, drives home, turns on the television and drinks until he falls asleep completely drunk...

The next morning, the telephone rings in my surgery, and Mr X shouts into the receiver: "I can't stand myself and my stupidity any more, please help me..."

## **Why does that happen? What happens in the brainstem?**

The brainstem has its own memory unit, the "corpora amygdala", two small, symmetrically located almond-shaped cores. The "corpora amygdala" save memories sensorily, i.e. they only remember sensory impressions such as smell, taste, sight, hearing and feeling. They save these perceptions without time allocation, which means that this type of memory saves colour, smell, taste, etc. without a fixed time frame.

Up to the age of 5, a child exclusively remembers things in a sensory way. This ensures their survival – the child only needs to know that the oven is hot, the scissors are sharp and the vinegar is sour. However, it does not need to know when it had these sensory experiences because this is not important for survival. A calendrical allocation only begins from 5 years of age.

The child saves sensory impressions in clusters.

Let's take an example: The neighbour tempts a child with chocolate, takes the child into his house. There he plays harmonica, it smells of petrol, and after eating chocolate together, the neighbour hits the child. "Chocolate - harmonica - petrol - hitting" form a sensory unit ("cluster") and mean danger for the child ("the man hit me"). Subsequently, the child will flee in another situation where someone plays a harmonica or if it smells of petrol, because this increases the child's chance of survival and/or integrity.

The storage of sensory experiences in clusters is exactly what helps the child to survive – and leads the alcoholic to every new relapse. For the patient in the above example, the sensory cluster information "blue light on the petrol station - smell of petrol - filling up with petrol - alcohol" was the trigger for the next relapse.

In the child and in the alcoholic, the survival instinct was activated. For the child it means fleeing from the tormentor, for the alcoholic it means access to the "life saver" alcohol. For the alcoholic, the performance that should lead to rescue leads to relapse. The urge for alcohol becomes the only escape!

As if it wasn't bad enough that sensory storage can be called upon as the trigger to explain relapse, it gets even worse: the brainstem has an extremely fast visual perception. It only needs an ultra-fast 0.2 seconds to recognise friend or foe (in this case alcohol!). In this short time span, our "visual cortex" still has not "seen" anything.

In the 60s, there was a film advert which went as follows: For just a short 0.2 seconds image sequences of Coca Cola were inserted into a film. In the break, all the cinema goers went to the Coca Cola stand and consumed the drink.

This form of advertising is called "priming"; it is now forbidden. "Priming" serves the special performance of the brainstem: In 0.2 seconds things are perceived, emotions awakened, needs recalled, completely without our awareness and without using the visual cortex. And that is how an alcohol relapse can be explained: Even the blue neon light of the petrol station, the smell of petrol, the jingling of the money, the filling up with petrol fuel the desire and urge for alcohol. This is then immediately bought and consumed.

Baclofen stops this reaction. The alcoholic can drive to the petrol station, look around and see for himself "this is where I always bought alcohol, but now with Baclofen, I don't do that any more".

I ask my patients to consciously go to the supermarket or petrol station, where they always bought their alcohol, and to observe themselves doing it. All of my patients report to me "I see the shelves with the alcohol, but they don't interest me any more".

Now you will ask for how long you have to take Baclofen? I tell my patients for at least three years.

Why three years? Apart from the brainstem, we have a further problem field: the processual memory.

What does that mean? When we learn to drive, it is laborious: accelerator, brake, clutch, indicator – everything has to be considered. Yet, when we have been driving for 10 years, we no longer think about accelerator, brake, etc. We simply get in and drive. The brain has saved driving in the processual memory from the learning method. This runs automatically, and quick reaction is only switched to in the case of sudden occurrences.

Take your work place. Even blindfold, you would know where to look, and the work is easy. Then, someone comes in the night, rearranges all your drawers, and the next day, you are looking in the wrong place all day. It is no longer easy and you are confused.

You have been drinking for 10 years. The beer, the television and the couch have become a fixed ritual, so to speak a unit in the processual memory. That all runs, like driving, completely automatically. From the point of no longer drinking, the processual memory must be reprogrammed because your day now goes differently to before. Restructuring finishing work breaks the fixed ritual. New ways of life must be practised and the memory must link new content until the new ways of life have been consolidated. This takes around three years, and you should definitely take the Baclofen for this long. Only when you have completely reorganised your life and hobbies fill up the everyday emptiness, you have found new friends and reshaped yourself, can you gradually start to reduce the Baclofen dose within 6 to 10 weeks.

Baclofen should always be available, even if you no longer take it everyday. A blister pack of them, just like condoms, should always be in your pocket or bag just in case... The thought of alcohol, the thought "a beer would be nice right now" or "I can't do it without a Cognac" must be stopped immediately by taking Baclofen. My patients are prepared for this and practice with me, so that they always have the medication with them, like heart patients always carry their Nitrospray with them.

## **What can trigger the urge for alcohol?**

If you dream about alcohol, please take Baclofen immediately in the morning. For the brain it doesn't matter if you only dreamt about drinking or actually did it. Dealing with alcohol makes you restless and greedy.

When life crises happen: the death of a loved relative, financial problems, professional failure, any form of existential threat could activate the urge to drink and the craving for alcohol. For you this means taking a Baclofen tablet with a glass of water and taking a break for 15 minutes. The following days, take the full dose again, until the crisis has passed. Because the brain has an "emergency mode" which is firmly anchored: if nothing helps, there is no hope, then there is just one answer: a l c o h o l!

## **What do we do now with our knowledge? The therapy begins...**

When the alcoholic contacts me, I ask him to drink until he comes into the practice. I do not leave patients alone with the withdrawal, due to the increased risk of an epileptic seizure.

We carry out the withdrawal in our consulting rooms on an outpatient basis. The patient receives daily infusions, including Carbamazepin against a possible seizure. To calm them, Tranxilium is given, not Distraneurin!

We begin with 3x 5mg Baclofen. In addition, glucose infusions with magnesium against muscle shakes and vitamin B12 for general well-being are administered.

On the 2nd day of therapy, further infusions follow, there is a dosage increase to 3x 10mg Baclofen, and there is Tranxilium to help with anxiety.

On the 3rd day, we give infusions again and at least 3x 10mg Baclofen. From the 3rd day, the dosage is individually dependent on the subjective feelings of the patient, i.e. there is either still a desire for alcohol or not. If yes, then the Baclofen will be increased to 25mg (up to three times a day).

The dosage of Baclofen depends on the constitution, size and weight of the patient. The quality of the drink consumed also plays a crucial role. As a rule, beer and wine are well covered by 30 to 50mg Baclofen daily. In the case of patients with higher percentage whisky or vodka as a drink, you need up to 150mg Baclofen per day to suppress the urge to drink. Until now, more than 150mg Baclofen has not been required.

After one week at the latest, we have finally reached the maintenance dose, which will then be taken in the long term. In the case of stress, problems, annoyance or limit situation, one or two additional Baclofen tablets should be taken. With this therapy management, the patients can control their own life and have no desire for alcohol.

Some patients feel so fit and "safe" after three weeks that they stop the medication themselves, with the rash remark "I've got it under control now!" That is already the beginning of the relapse because two days without taking Baclofen is sufficient for the patient to drink again. They drink because they must drink, because the blockade of the brainstem is interrupted without Baclofen and the autonomous control once again takes the helm.

I always tell my patients: "Please contact me immediately, and I will help you again. You can't end the relapse alone. Your brain won't give you a chance!" I explain to my patients that together with me they are going through a learning experience – they must learn to deal with their illness and the medication, and I am getting to know them better.

In my treatment concept there is no punishment, no rejection. There is only support, positive confirmation, praise, recognition and instruction. At some point, they are sure to think "a glass is ok on my birthday, at Christmas, etc.". This is what the patient also has to learn – even this one glass is not ok! Only after months of treatment with Baclofen can you drink a glass of sparkling wine without relapsing. For the most part, the patients then report that the alcohol did not even taste nice. Many patients develop feeling that borders on disgust.

## **Sometimes, the biggest enemy is the doctor on site, who has treated the patient for years**

A patient came to see me, from a town around 400km away from me. His wife wanted him to get a second opinion from the GP. She complained that her husband was now taking Baclofen, and wanted to know what the GP thought about it. He didn't think much of it, and said that the patient should stop taking the medication immediately. No sooner said than done. And he started drinking again on the third day.

Unfortunately, treatment with Baclofen is not generally known in medicine, and so often leads to incorrect assessments. So, the GP frequently makes the concise statement: "Your husband can do it without that rubbish."

The medication cannot be taken in on-off mode, so sometimes yes and sometimes no. This often ends in treatment with "alcohol plus Baclofen". A type of alternating diet has begun. I inform my patients intensively about the medication and the therapy. I tell them that they must take the medication according to the motto "If I don't want to get pregnant, I take the pill, if I don't want to drink, then I will take Baclofen."

Sometimes I explain to my patients how to compare their alcoholism with another brain disorder, Diabetes insipidus. This is a disorder of hormone control in the brain, which results in a daily fluid intake of 10 to 15 litres of water. This is then a very illuminative example, and adherence to the therapy quickly improves. It is simply hard for us humans to accept that, as rational beings, we do not have it under control and it is not possible to master this disease of "alcoholism" with willpower alone.

## **Alcohol consumption at a young age**

However, finally, an important aspect must be noted: The earlier a person has started to drink, the more difficult it will be to stop consumption, even if you give them Baclofen. I am aiming this statement at a group of patients, who were already intensively drinking alcohol at the young age of 12 or 13. It is these patients who frequently fail, and where we have hardly been able to register any lasting success, even with Baclofen.

To this end, we will go back to brain research. The brain is a constantly developing organ, from birth to adulthood. An important phase of brain development takes place between the ages of 10 and 18. In the development phase, the so-called "inhibiting channels" in the frontal brain develop. A child up to the age of 10 has a world of experience that requires immediate satisfaction of needs. It wants to have something and that must definitely happen. Deferring needs is something their parents must do for them. That is not always easy and mostly linked to a great struggle.

However, a 20-year-old man can deny his own needs. Here is an example to illustrate this: A 10-year-old kid wants to go to the cinema with his friend, but the mother says no because the film is too long and he would be tired at school the next day. A 20-year-old man can make this decision himself. He will willingly forego the cinema because school is simply more important to him just before his A-levels.

Suppressing needs for the sake of a more ambitious goal corresponds to mature brain performance. The requirements for this are created between the ages of 10 and 18, when the aforementioned "inhibiting channels" are formed. The formation of these "inhibiting channels" is destroyed by regular alcohol consumption at the crucial development age. This is also one reason why alcohol is illegal for young people. Irreversible damage to brain development can occur under the influence of alcohol. The brain cannot catch up on this lack of development at a later stage. In short: "Inhibiting channels" that are not created between the ages of 10 and 18 are lost forever.

### **What does this mean for adults?**

Young people who consume alcohol, whose "inhibiting channels" have not been formed, will in all likelihood become adults who cannot stick to anything, who in their professional career started the first apprenticeship and broke it off, started the second apprenticeship and broke it off again, and so on. Eventually, they end up in unskilled jobs. The earlier the damage to the inhibiting channels is set in motion, the less the person can say "no" later. They simply have no willpower. They lack the necessary matured brain structures to be able to say "no".

### **What does this mean for the treatment?**

An alcoholic who started drinking at the age of 11 or 13 is lacking the aforementioned "inhibiting channels", which make saying no, abstinence and willing self-denial possible in the first place.

I currently have a 30-year-old patient who has been drinking alcohol since she was 12. With her we only achieve short periods of abstinence, in which she doesn't drink. She lacks the strength to remain abstinent in the long term. Her brain is structurally damaged to such an extent that she cannot persevere. For patients, who have already experienced intensive states of intoxication during puberty, treatment with Baclofen is only marginally effective.