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The numbers are frightening: Round about 1.9 mio people in Germany are suffering are from alcohol abuse. Acc. to inquiries, further 1.6 mio

use alcohol in an abusive manner. According to statistics of the federal authority, alcohol-associated psychiatric- and behaviour-related disorders in the year 2012 accounted for the second most single diagnosis in the hospitals.

Excessive alcohol consume is also the main cause for about 200 fatalities per day. The rate of relapses among alcohol dependent individuals in the first month of abstinence is between fifty to eighty percent. Because also after a detoxification it is difficult for them to cope with alcohol in a adequate manner, according to

studies of the researcher Dr. Katrin Charlet of the clinic for psychiatry and psychotherapy of the Charite University Clinic in Berlin, Germany. This was reported by the 'Deutsche Gesellschaft für Klinische Neurophysiologie und Funktionelle Bildgebung' (DGKN, German Society for clinical neurophysiology and functional imaging). One of the causes is the inability to process negative feelings, says Katrin Charlet.

The studies of Dr. Charlet concentrate mainly on the question how the brain is related to alcohol dependency and which new therapeutic possibilities arise from this. The causes for this are very complex and are not equal for everyone', so Dr. Charlet

. Although nearly all alcoholics fight against negative emotions, that is not the only cause for the relapse. The decisive point is how well affected people can process negative emotions, explains Dr. Charlet the results of the study. We assume that alcoholics find it difficult to recognize emotional facial expressions in contrast to healthy people. They report more interpersonal problems.'

In order to find out the reasons for the high relapse risk the researcher conducted emotion experiments on more than 150 detoxified patients that suffer from alcohol dependency. Afterwards she compared the results with

those of healthy individuals. 'Using functional and structural MRI (magnetic resonance tomography) and Positron Emission Tomography (PET) we were able to identify activity patterns between the cerebral cortex and the limbic system, the centre of emotions, that process and probably also regulate negative emotions such as anxiety or anger', explains Dr. Charlet her research approach. Patients with an intact brain performance of these areas, stayed clean in the critical first six month after detoxification. But when these brain areas were disturbed, i. e. they showed only little activity, those patients could not regulate anxiety and anger easily.

These patients showed more relapses. 'If we use these activity patterns of the brain, it could be possible to differentiate between abstinent patients from relapsing patients', explains Dr. Charlet the scientific progress. The DGKN honored these findings during their recent congress: 'Unlike traditional standard programs, we are able to protect alcoholics that show a high relapse risk in PET or MRI, using a special custom care and special therapies against relapses.

## 'Biological scalpel'

Severe burns have physical and psychological consequences - a new medication therapy opens up higher healing chances and the hope for less scars.

'For the first time in many years, finally there is some hope', says Professor Bert Reichert.

The leading physician of the clinic for plastics, restorative and hand surgery, centre for severely burned patients in the clinic in Nuremberg Soutz, has high hopes for a new medication. He calls it 'biological scalpel', since it is based on the enzyme Bromelain which is extracted from the pineapple stem. It's use for the gentle and targeted removal of deeply damaged tissue could save burns patients some surgeries, explains the specialist

The centre for severely burned patients in the clinic Nuremberg South is one of three centres of this kind in Bavaria, Germany, the other two are in Munich and Murnau. The centre was opened 1996 and is one of the largest and most modern institutions of this kind in Germany, featuring an own OR and eight beds in the intensive care unit for severely burned patients. Each year about 2500 severely burned individuals in Germany are treated here. The clinics also treats of course all other victims of burns. The optimal care requires a special knowledge that normal clinics cannot offer. 'Scars and other visible limitations are a functional and psychological burden for the affected persons, they feel stigmatized and excluded. Therefore it is critical that patients are taken immediately to a specialized centre, emphasizes Professor Reichert. The timeconsuming follow-up care is as important as a special and immediate treatment. Here more specialised rehabilitation institutions are necessary. To fill this gap, the clinic Nuremberg South has now opened a centre for

burn patients 'Our house accommodates all facilities that are necessary for the acute treatment, physical therapy and reconstruction", say the leading physician of the clinic.

Nine senior physicians and nine residents as plastics surgeons, specialized nurses, psychologists and physic and ergo therapists work together with him. Their patients usually arrive with severe burn injuries which were caused by fire scald, explosions, chemicals or electricity. The injuries cover large areas and are deep. But even patients with small burns of the face, hands, feet and in the genital area patients should be taken to the centre at an early stage, as the consequences of such injuries are often underestimated, reminds Professor Reichert. For this reason, he recommends the assessment of the injuries by an expert for burns. A special treatment is especially important in the very frequent case of burned hands, as it is in the patient's interest to reactivate them as soon as possible. Now the pineapple can help markedly with its enzyme. 'This medication is especially valuable for the hands', so Bert Reichert. Only with the help of the enzyme it is possible to remove the tissue destroyed by heat and to keep as much healthy tissue as possible. This would not be possible with the traditional method of peeling of the dead tissue.

Basically, the enzyme Bromelain has two advantages in the treatment of burn injuries. It has anti-inflammatory and anticoagulant effects. To limit blood loss during a procedure is one thing. The other one is to avoid a sepsis caused by open injuries is the other one during treatment of

burn injuries. 'Regarding the treatment of wounds, we are striving to protect the wound against oxygen and infections', explains the expert. Thirty years ago, he learnt that a wound has to stay dry. Today it is well known that cells need a humid environment to stay alive.' After peeling off the scab of the burn, the burn injury can be treated and the living skin tissue can heal. Until then, exact treatment steps are necessary and pain needs to be managed. The patient needs an anaesthesia. Or he is in artificial coma because of the severity of his burns. Then he is prepared for this treatment. For this, a greasy balm is applied on the intact skin around the wound to contain the enzymes on the wound area. These are mixed with gel which is applied carefully on the wound. 'The sticky paste stays exactly there', so Professor Reichert. 'After application we wrap a water- and air tight foil around the treated site to obtain a reactor lilke environment.'

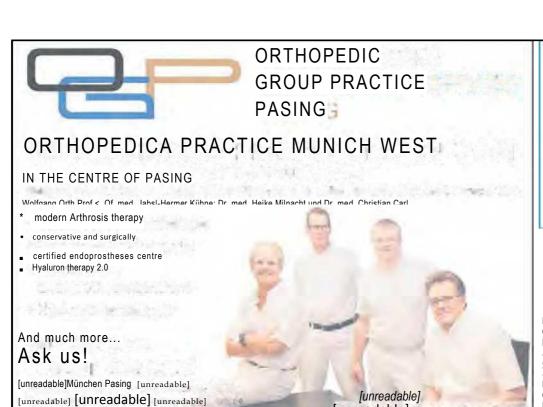
For four hours, the enzymes will work, afterwards the foil can be removed. Gel and detached scab can now be removed easily. 'We now have a clean wound without skin residuals or bacteria', the specialist for burns medicine claims. Unlike with the traditional surgical peeling with the scalpel, there is no risk that also intact tissue will be removed. The wound cannot also heal faster, but also heal without scars. The possibility that a skin transplantation is necessary is thereby reduced. This will only be necessary for more severe burn injuries and always means that the affected individuals need to undergo a prolonged treatment. That this will be

shorter thanks to a medication developed by a professor for plastic surgery in Israel, Lior Rosenberg, gives rise to new hope so burn physician Reichert. 'Of course we have to learn first and to make our own experiences, there is no general principle till now', he adds. Reichert, Professor of the Paracelsus- Medical Private University und his team are participating in an accompanied study for the agent that was found in the 90s and which is cleared since 2014 in Europe.

One thing is already clear for the professor and his team: The medication is suited for the hands, legs and feet - not for the face - for burns of the second and third grade, also for deeper burn injuries with blistering. They don't heal by themselves. The more uniform the depth of the injury, the better the enzyme can work, the latest empirical values show for the Nuremberg clinicians. Also, the colleagues at other centres for severely burned patients use the new medication. Reichert's enthusiasm has motivated them during the 9th Nuremberg Spring Symposium where Lior Rosenberg was a guest speaker 2014, when Reichert was still president of the German Society for burn medicine. 'The path to innovation in the burn medicine can be long', Bert Reichert knows from long professional experience. 'Twice I have experienced drastic changes in the treatment of burn injured and I think we are short ahead of the next'. How desirable this is for each single patient is not in question. Incidents such as the terrorist attacks in Brussels, Paris, Istanbul and Ankara or the disastrous fire in the Bucharest in October last year have driven victim's numbers up again. That the pineapple enzyme also helped Romania that had reached his limit, pleases Bert Reichert enormously. 'His field is a very devoted medicine', so the empathic physician. Ina Berwanger



Bert Reichert, Professor at the Paracelsus-Medical Private University, leade of the centre for severely burned patients in the clinic Nuremberg South. Pictu





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