INTERVIEW WITH PROF. DR MED. RESCH: SAUNA AND DRY SALT INHALATION TO PROTECT AGAINST THE CORONAVIRUS

In recent weeks, we have been receiving more questions about the health-promoting effects of sauna than ever before. We at KLAFS are looking into this and would like to contribute to answering questions about saunas and dry salt inhalation. That is why we are pleased that Prof. Karl-Ludwig Resch from the German Institute for Health Research in Bad Elster was available to answer questions about how sauna heat and dry salt inhalation can be effective against the coronavirus. In recent weeks, he has been researching intensively on the SARS-CoV-2 viruses and finding ways to reduce these viruses as quickly and as easily as possible.

Professor Resch, thank you for taking the time to answer our questions in this turbulent situation. We have been flooded with messages about COVID-19 for weeks. What medical findings do you consider to be really relevant?

The novel coronavirus, now usually referred to as 'SARS-CoV-2', is a type of virus that, so far, primarily affects the respiratory tract and causes damage there. A lot can currently only be presumed based on the assumption that SARS-CoV-2 behaves the same way as other viruses that cause acute respiratory diseases. That is why for much of what is currently being said, you can say 'could be but doesn't have to be'.

What happens if you are infected with COVID-19?

[So-called] droplet infection is likely the most important type of transmission. This would also explain why the SARS-CoV-2 virus typically first spreads in the nasopharynx. While aerosols consist of tiny droplets and are therefore inhaled deep into the lungs, larger droplets and particles are often already trapped in the nose or are deposited in this area. Any virus particles contained in the droplets use special 'arms' to dock to the mucous membrane cells in a sophisticated way. By the way, these arms gave the virus its name: corona, Latin for 'crown', [which] describes the spherical outer shape with the 'contact arms'. Once the virus has succeeded in docking on a cell that is suitable for it, it penetrates the cell and forces it to produce copies of the virus in large quantities and to emit these. This greatly damages these captured cells, and they die. This damage explains the painful symptoms, such as sore throats or coughing. The beginning defensive activities of the body's own immune system are the main cause for the accompanying fever that sets in. Once the virus manages to establish itself deep in the lungs, the associated cell damage has very different consequences. In the lungs, where the exchange of oxygen takes place, there is only a thin layer of cells between 'the inside and the outside'. If this is damaged, a barn door opens, through which the pathogens can make their way into the body. Statistics from the Chinese epicentre of the epidemic, the city of Wuhan, show that sepsis was identified in 100% of the patients who [had] died from COVID-19. This is the medical term for blood poisoning, where the disease-causing bacteria flood the entire body through the bloodstream, causing an infection that the body and its immune system can no longer cope with. In this context, such an excessive defensive reaction of one's own immune system was regularly observed that it seems to get out of control and attacks the [body's] own lung cells without differentiation.

Can an immune system that is functioning well protect against the outbreak of COVID-19?

There are no definitive results from studies about this with the SARS-CoV-2 virus. However, it is conceivable that a 'competent' immune system can successfully intervene at various points in the development of the disease.

Can you train your immune system?

Yes, that is absolutely possible, for example with so-called thermal stimuli, like an ice bath. Much more pleasant are alternating thermal stimuli, especially taking a sauna bath with short intermediate phases of targeted cooling. Studies have proven in recent decades that taking a sauna bath regularly leads to a significant decline in 'susceptibility' to various pathogens of colds after about two to three months, even up to 50% after six months. Those who still get a cold will have a good chance that the cold is shorter and less severe. The long-term and absolutely sustainable improvement of the immune status, however, is unfortunately not a switch that can be quickly flipped, and good intentions unfortunately do not provide effective immediate protection.

What can I do now to protect myself against the disease?

There is currently no drug available worldwide whose effectiveness has been clearly proven by appropriate studies. Anything that could help prevent the onset of the COVID-19 disease or mitigate its severity should be considered. This certainly includes the tried-and-true thermotherapy, which is very popular in the dry (Finnish) and steam sauna. For many decades, the expectation that well-dosed heat/cold test stress is beneficial to health was mainly empirically based, i.e. it was based on observations. It was only in the last twenty-five years that results from basic research on fever and immune defence created the basis to understand what exactly was going on in the body. Especially given the current pandemic, very exciting new prospects could open up [not only] when it comes to long-term preventative effects but also when it comes to the possible immediate therapeutic effects of heat and cold.

Does that mean that taking a sauna bath could have a direct effect?

Yes, and in more than one way. Let me begin with the simplest and most immediate effect. One of the few findings that can certainly be assumed about the SARS-CoV-2 virus is that it usually initially lodges in the nasopharynx. Now we also know that coronaviruses generally – and also the new SARS-CoV-2 virus – are quite sensitive to heat, and we know this about the sauna: 'the hot air in the sauna acts on the skin and the respiratory tracts'. [1] Anyone who has experienced a 'proper' infusion ritual can confirm this. So it is very conceivable that viruses in the upper respiratory tracts are inactivated with every breath in every sauna session.

“AFTER SIX MONTHS OF TAKING SAUNA BATHS REGULARLY, THE SUSCEPTIBILITY TO COLDS CAN DROP BY UP TO 50%”.

In what respect could a visit to the sauna still be good in the era of COVID-19?

The strong heat stimulation and also the usually significant cold stimulation after every sauna bath have reliable and immediate effects on the part of our immune system that is currently particularly important: the innate or non-specific immune system. I want to try to explain this briefly and will start with the other part of our immune system, the acquired part, which is also referred to as the specific immune system or immunological memory. Vaccinations, for example, typically ‘train’ this part of the immune system just like many others that we come into contact with in the course of our lives, especially bacteria and viruses. When certain types of defence cells from the white blood cell family, the B-lymphocytes and T-lymphocytes, encounter a measles virus or pneumonia bacteria for the first time, for example, they analyse its surface and begin to produce antibodies against especially typical structures. Cells that have learned this once memorise it and can quickly produce the right antibodies in large quantities when the intruder tries to attack a second time so that nothing more happens. People say they are ‘immune’ to a disease, but it works at the earliest during the second case of contact because the few cells that have developed the new capability have to multiply as well. That is why it is crucial that the innate immune system works as good as possible as a quick intervention force. Here, too, white blood cells are the actors. They are called monocytes or granulocytes (according to their appearance under the microscope) or killer cells because they attack ‘new’ invaders directly and destroy or devour them.

If no person currently has a functioning immunological memory for SARS-CoV-2, then do ‘killer cells’ etc. determine if the body can successfully defend itself?

Exactly, and this is where it comes full circle because these cells work particularly well at elevated temperatures, which is why nature invented the development of the fever. We have known for a long time that monocytes, for example, are activated this way,[2,3] and this could already be observed immediately after a single visit to the sauna.[1] The SARS-CoV-2 virus fatally seems to know how to interfere with this natural immune response, which explains the observation that the first days after infection are often without ‘resistance’ (recognisable by symptoms of illness and fever),[4] all of which are actually reliable indicators that the immune system has been set in motion. The more successful the virus is, the more difficult it is to the course of the disease,[5] but also, in less dramatic cases, the immune defence seems to be considerably slowed down.[6] Notable five years ago already, scientists discovered that ‘strategic temperature changes’ influence the complex reactions of the immune system in such a way that the ‘cytokine storm’ typical and devastating for severe COVID-19 courses does not occur.[7] If you put two and two together, then it should be a good idea to support the immune system by using your sauna at home regularly to successfully ward off a possible infection before it can cause damage, and to top it off, there [is] some pretty convincing scientific evidence that not only [are] ‘artificial fevers’ effective, but also, ‘artificial colds’ work in the same way. Therefore, both the heat in the sauna itself and the obligatory cooling down after each sauna session should work hand in hand, and new findings from basic research[8] clearly confirm older, practical investigations.[9]

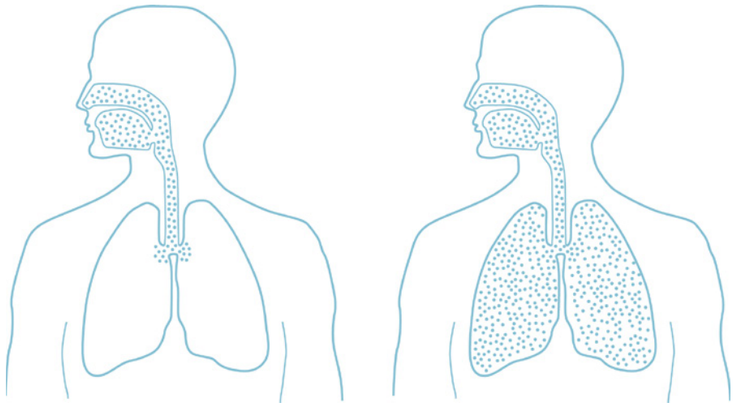
Essential oils are typically added to infusions in the sauna. What effect do those have?

Of course, lots of people find the smell of many essential oils pleasant, but there are also scientific studies that show that essential oils have many and relatively positive effects on one’s health. A scent that is subjectively perceived as pleasant induces increased production and [the] release of many other substances in the body, either directly or as messengers of effective substances, such as the recently popular ‘happiness hormone’, oxytocin, which, on [its] part, [develops] clear positive effects on the immune system. It is easier to imagine here the immediate effects of these oils, which have been much better researched and described than generally expected. There are many – proven by scientific studies – effects of essential oils [not only] against bacteria and fungi but also against viruses and here specifically against so-called RNA viruses, to which the coronaviruses belong.[10]

For some time now, there have been good functioning technical solutions to bring this traditional therapeutic agent for the lungs into the house – or better, into the sauna . . .

The natural remedy of natural brine and its application to the lungs has excited me for many years. [The known] effects of natural brine aerosol can be logically and scientifically plausibly transferred to the topic of COVID-19. Natural brine droplets have a hygroscopic effect. In chemistry and physics, this describes the property to bind moisture from the environment. In the lungs, it works like this: Salt is deposited. It ‘draws’ water through the mucous membrane into the lumen of the lungs. In this way, the mucous lying in the bronchi-like pulmonary alveoli is liquefied. Fine dust particles are dissolved, and thus, the lungs are literally cleaned. Incidentally, the technology of dry natural brine atomisation has an important additional advantage. How deep natural brine particles [make their way] into the lungs [successfully] depends very much on their size. Droplets have the tendency to accumulate so that large drops form. relatively quickly, which then primarily get stuck only in the nose and upper parts of the throat. Modern devices for dry natural brine atomisation can create a type of natural brine fine dust that makes it possible to realise the effects in the deep areas of the lungs.

Mr Resch, thank you for answering our questions.



Penetration depth of the air enriched with salt with conventional technology on the left and micro-salt on the right.

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