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https://www.immunity.org.uk/articles/felix-de-fries/

To those affected
their doctors and caretakers
To Groups and Institutions
To Media

Zurich 3rd August 2022

ref. **The Role of oxidative Stress in Covid-Infections**

Dear Sir/Madam,

Dear Contemporaries

As recently published studies show, the balance between sulfur-containing thiols and disulfides, co-determined by oxidative stress from free radicals (ROS and RNS), is crucial for the entry of SARS-CoV viruses into cells and their subsequent fusion with them. This shows the action of antioxidants such as NADPH, glutathione and redox proteins, which allow the thiol-disulfide balance to be maintained.

Oxidative stress is understood as a mismatch between substances with an antioxidant effect and substances with an oxidative effect in a biological system. Oxygen radicals (ROS) and nitrogen radicals (RNS) are formed in various cellular processes, e.g. in the formation of the energy carrier molecule ATP from reduced oxygen and food components or from NO, which is formed from L-arginine by means of nitric oxide synthase.
These reactive oxygen- and nitrogen species (RONS) play a central role in all cellular signaling pathways, changes in thiols, and the regulation of pro-inflammatory messengers that can trigger damaging effects when the finely tuned redox balance in cells is disturbed.

Substances with unregulated oxygen and nitrogen radicals damage cells in various tissues, its proteins and lipids and its DNA. They also play a central role in the development of respiratory infections such as SARS-CoV and SARS-Cov-2 by determining the interaction of the virus with the ACE-2 receptor, which under normal conditions supports the reduction of oxidative stress in the individual organs.

ACE-2, which acts as a component of counter-regulation in the renin-angiotensin-aldosterone cardiovascular system, activates angiotensin, which regulates blood pressure and binds to the cell envelope of tissues in the lungs, heart, kidney, the gastrointestinal tract, the brain and the breasts. Various studies have identified ACE-2 as a door opener for the entry of SARS-CoV and SARS-CoV-2 into cells of the lining tissue of the lungs.

The two key steps in virus entry into the cell are the binding of a virus particle to the receptor on the cell surface and the subsequent attachment of the viral envelope to the cell envelope.

The prerequisite for this is that the thiol-disulfide balance in the virus envelope and in the cell envelope match. As various studies have shown, the successful penetration of a virus into a cell depends primarily on the prevailing thiol-disulfide balance of the cells.

Changes in this balance are crucial for virus-cell interactions of various viruses. Changes in thiol-disulfide bonds of cell envelopes, which trigger conformational changes in peptides, allow a virus to enter a cell.

Vascular regulation is critical to the survival of multicellular organisms, in which it is primarily performed by vascular endothelial cells, which regulate their expansion and contraction and the charge of substances flowing through them in response to hormonal and environmental stimuli.

An important basis of this regulation is the angiotensin-aldosterone system (RAAS), which uses various proteins

including ACE-1 and ACE-2 for this purpose. The ACE-2 receptor plays a key role in reducing oxidative stress, which in turn plays a central role in the binding ability of proteins involved in SARS-CoV infections.

ACE-2 is responsible for the reduction of Ang II, a vascular contractor, to Ang. 1-7, a vasodilator. Ang II generates RONS (oxygen and nitrogen radicals) by stimulating NADPH oxidase. When ACE-2 binds to the virus's spike protein, the amount of Ang II increases, leading to an increase in free radicals attacking the cells, leading to a vicious cycle of oxidative stress resulting in Covid-19, that can lead to a more severe course of the disease.

Oxidative stress generated at high concentrations of ANG II and low concentrations of Ang 1-7 leads to oxidation of the cysteine stores and peptidase of the ACE-2 receptor and the receptor-binding domain of SARS-CoV and SARS-Cov2 spike proteins. NADPH oxidase is an envelope-bound enzyme complex that reduces oxygen to superoxide and is commonly found in phagocytic cells, epithelial cells, smooth muscle and cardiac muscle-cells.

Binding of the viral spike protein to ACE-2 increases the formation of ANG II since ACE-2 is then no longer available for the reduction of ANG II to Ang 1-7.

Under these conditions, ANG II binds to the angiotensin 1 receptor AT1R, which stimulates NADPH activity, causing increased production of oxygen radicals (ROS) in the cells and consequently to an increased consumption of NADPH.

This makes it clear at one fell, that the corona infections and the illness Covid-19 are caused by oxidative stress and a disruption of the redox balance, as is the case under the prevailing living conditions today, namely air pollution from particulate matter, nitrogen oxide, sulfur dioxide and an increased ozone level.

Cells counteract oxidative stress through glutathione molecules, which reduce ROS to less damaging substances such as water and molecular oxygen.
In this way, glutathione can prevent a virus from penetrating cells and multiplying, lowering the viral load and thus reducing the severe courses of disease after a storm of messenger substances. As we explained years ago in regard of the alleged HIV infection, glutathione is formed in the liver from tetrahydropholate with the help of the enzyme dihydropholate reductase and transported to the cells by means of reduced oxygen.
By administering N-acetyl-cysteine, orally or by infusion, the level of glutathione molecules in the cells can be replenished in viral infections, with the result that the viral load is reduced and a severe course of the disease can be interrupted.

[HTML] **Role of oxidative stress on SARS-CoV (SARS) and SARS-CoV-2 (COVID-19) infection: a review**

[HTML] springer.com

COVID-19: A redox disease—What a stress pandemic can teach us about resilience and what we may learn from the reactive species interactome about its treatment

[PDF] liebertpub.com

N-acetylcysteine replenishes glutathione in HIV infection

[PDF] stanford.edu

Cystine-based MBioF for maintaining the antioxidant–oxidant balance in airway diseases

HTML] nih.gov

Reactive oxygen species modulators in pulmonary medicine

PDF] bmsu.ac.ir

Since no conclusive explanation for the more than 10-fold increase in the binding ability of the spike proteins of SARS-CoV-2 to ACE-2 receptors compared to SARS-CoV in a short period could be presented to date, experts came to the conclusion that this increase could not be the product of the development of the virus in an intermediate host, but rather the product of laboratory experiments at the Wuhan Institute of Virology, where a furin cleavage site could be specifically introduced into corona viruses using genetic engineering methods (gain of function research or serial passage) greatly increasing their ability to bind to the ACE-2 receptor and rendering them infectious on their own without the protease activity of host cells.

[HTML] **High affinity binding of SARS-CoV-2 spike protein enhances ACE2 carboxypeptidase activity**

[HTML] jbc.orgFull View

https://www.immunity.org.uk/wp-content/uploads/2022/04/SARS-Cov-2-as-product-of-laboratory-experiments-new.pdf

https://www.immunity.org.uk/wp-content/uploads/2022/03/The-Development-of-SARS-Cov-2.pdf

https://www.immunity.org.uk/wp-content/uploads/2022/06/Natural-and-unnatural-History-of-the-Coronavirus-new.pdf

The fact that particulate matter triggers an increased formation of oxidative stress in cells and damages cells via oxygen- and nitrogen radicals, which lead to persistent inflammatory reactions in various tissues, which in turn trigger systemic immune reactions, can be learned from a steadily growing number of studies.

[HTML] **A correlation among the COVID-19 spread, particulate matters, and angiotensin-converting enzyme 2: a review**

[HTML] hindawi.com

[HTML] **Viral respiratory infections and air pollutants**

[HTML] springer.com

Urban air PM modifies differently immune defense responses against bacterial and viral infections in vitro

[HTML] nih.gov

Differing toxicity of ambient particulate matter (PM) in global cities

[PDF] qut.edu.au

The storm of cellular messenger substances (cytokine storm) that occurs in Covid-19 patients is not only the product of an artificially modified virus with a greatly increased ability to bind to ACE-2 receptors, but also the product of a growing immune reaction to local inflammation in older age via cellular messengers.

Cytokine storm and COVID-19: a chronicle of pro-inflammatory cytokines

[HTML] royalsocietypublishing.org

“Cytokine storm”, not only in COVID-19 patients. Mini-review

[HTML] nih.gov

[HTML] **Intricate relationship between SARS-CoV-2–induced shedding and cytokine storm generation: A signaling inflammatory pathway augmenting COVID-19**

[HTML] sciencedirect.com

Underlying vulnerabilities to the cytokine storm and adverse COVID-19 outcomes in the aging immune system

HTML] nih.gov

Role of toll-like receptors in modulation of cytokine storm signaling in SARS-CoV-2-induced COVID-19

HTML] nih.gov

[HTML] **SARS-CoV-2 binds platelet ACE2 to enhance thrombosis in COVID-19**

[HTML] biomedcentral.com

The storm of cellular messenger substances occurring in Covid-19 which can trigger disease progression has led to new therapeutic approaches. Plant substances, which can interrupt the storm of messenger substances and the binding of spike proteins to receptors at various levels, could play an important role in prevention and treatment as various studies show.

[HTML] **Flavonoids against the SARS-CoV-2 induced inflammatory storm**

[HTML] sciencedirect.com

Effectiveness of curcumin on outcomes of hospitalized COVID-19 patients: A systematic review of clinical trials

PDF] mdpi.com

[HTML] **Chinese herbal compounds against SARS-CoV-2: puerarin and quercetin impair the binding of viral S-protein to ACE2 receptor**

[HTML] sciencedirect.com

[HTML] **The repurposed ACE2 inhibitors: SARS-CoV-2 entry blockers of Covid-19**

[HTML] springer.com

Background to new treatments for COVID-19, including its chronicity, through altering elements of the cytokine storm

PDF] wiley.com

As was it was demonstrated in a study published in November 2020, lipid nanoparticles (without vaccine content) trigger systemic immune reactions when administrated in pre-existing inflammatory reactions, often occurring with chronic diseases.

Added to pre-existing inflammation, mRNA-lipid nanoparticles induce inflammation exacerbation (IE)

[HTML] nih.gov

Lipid nanoparticles used as a coating for mRNA vaccines from Biontech-Pfizer and Moderna and for protein vaccines such as Novavax are accordingly blamed for post-vaccination cytokine storms and allergic reactions, and the question is raised how far the ingredient, polyethylene glycol (PEG), to which many people have developed allergic reactions today, is responsible for it.

[HTML] Potential implications of lipid nanoparticles in the pathogenesis of myocarditis associated with the use of mRNA vaccines against SARS-CoV-2

HTML] sciencedirect.com

Hyperacute reversible encephalopathy related to cytokine storm following COVID-19 vaccine

[HTML] nih.gov

PDF] Cytokine storm response to COVID-19 vaccinations

[PDF] researchgate.net

COVID-19 disease, women's predominant non-heparin vaccine-induced thrombotic thrombocytopenia and Kounis Syndrome: A passepartout cytokine storm interplay

[PDF] mdpi.com

The incidence and severity of post-vaccination reactions after vaccination against COVID-19

[PDF] mdpi.com

Potential mechanisms of anaphylaxis to COVID-19 mRNA vaccines

[HTML] nih.gov

Allergic reactions and anaphylaxis to LNP-based COVID-19 vaccines

HTML] nih.gov

Basophil reactivity to BNT162b2 is mediated by PEGylated lipid nanoparticles in patients with PEG allergy

[HTML] bvsalud.org

[HTML] Sex differences in the incidence of anaphylaxis to LNP-mRNA COVID-19 vaccines

[HTML] nih.gov

[HTML] COVID-19 vaccine anaphylaxis: PEG or not?

[HTML] nih.gov

[HTML] Anaphylactic reactions to mRNA COVID-19 vaccines: A call for further study

[HTML] nih.gov

https://www.immunity.org.uk/wp-content/uploads/2022/01/Vaccine-Breakthrough-final-new-plus-XL.pdf

pages 16-20 15th December 2021

A question that has hardly interested the promoters of these vaccines, as their statements and further action show. They rely on a second booster, after the vaccination in two doses and a first booster, which, following the Delta variant, is now also intended to help against the Omicron variants and prevent their severe course, until a new Omicron-specific vaccine becomes available. The fact that the effect of these boosters can also quickly dissipate in people with chronic diseases and that people who have developed a high number of antibodies after an infection or vaccination hardly may profit of it, is no reason for them to question their vaccination strategy with booster shots every few months. They let us know, that the situation is under control as the number of severe disease courses decreases with the omicron variants, so that the number of long-Covid cases also decreases, and in addition, various effective therapies for Covid-19 are available today.

[HTML] **Efficacy of a fourth dose of COVID-19 mRNA vaccine against omicron**

[HTML] nejm.org

Risk of long COVID associated with delta versus omicron variants of SARS-CoV-2

[PDF] poder360.com.br

Self-reported long COVID after infection with the Omicron variant in the UK: 6 May 2022
https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/selfreportedlongcovidafterinfectionwiththeomicronvariant/6may2022

Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK: 1 June 2022
https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/latest

Excess Mortality in Massachusetts During the Delta and Omicron Waves of COVID-19

[HTML] jamanetwork.com

Anthony Fauci, the former head of the CDC, who had to experience that new drugs such as Paxlovid from Pfizer, which is said to reduce serious illnesses and deaths by 80%, can prove to be ineffective due to the development of resistance, still believes, that this substance saved him from a serious course of the disease. Recent studies show that Paxlovid and other genetically engineered antivirals can trigger genetic mutations and have cancer-promoting side effects.

[HTML] **COVID-19 Rebound After Paxlovid Treatment: A Case Series and Review of Literature**

HTML] cureus.com

Comparative evaluation of authorized drugs for treating Covid-19 patients

[PDF] wiley.comFull View

As Martina Frei from the Swiss online Magazine Infosperber has shown, non-randomized observational studies, the results of which are constantly being announced by the major media, contain inaccuracies on various levels. They are consistently cited as evidence of the effectiveness of vaccines and the absence of side effects, leading to relevant decisions in healthcare institutions.

Factors influencing estimated effectiveness of COVID-19 vaccines in non-randomised studies

[PDF] bmj.com

A direct comparison of the effectiveness of Covid vaccines has never been carried out by now. Stabell Benn and Peter Aaby have now presented an evaluation of randomized studies, which have come to astonishing results. There were practically the same number of deaths in the vaccinated and unvaccinated over the same period. Recipients of vector vaccines such as Johnson&Johnson, Astra-Zeneca and Sputnik V did not die from heart attack, stroke or cardiovascular disease, whilst recipients of mRNA vaccines (Biotech-Pfizer and Moderna) did.

Randomised Clinical Trials of COVID-19 Vaccines: Do Adenovirus-Vector Vaccines Have Beneficial Non-Specific Effects?

[PDF] arezzoweb.it

A systematic review from 2021 comparing the effects and adverse effects of vaccines came to the result that the viral vector Vaccine Johnsson&Johnsson from Janssen was most effective in reducing mortality.

[HTML] Vaccines to prevent COVID-19: a living systematic review with trial sequential analysis and network meta-analysis of randomized clinical trials

[HTML] plos.org

If these cardiovascular side effects of mRNA-vaccines, which we pointed out based on studies in September and December 2021, should be confirmed further, it would be clear that health authorities in Germany, Switzerland, the USA and many other countries have exposed hundreds of thousands of patients to such health risks, many of whom have developed thrombosis, myocarditis, pericarditis, thrombocytopenia, hemolysis and jaundice etc. following vaccination and subsequent booster vaccinations. Against this background, the longer-term effect of these mRNA vaccinations in relation to the formation of Long Covid would have to be re-examined. The uninterrupted call for vaccination with these vaccines for which there was no alternatives in Switzerland and elsewhere for a long time, whilst in Germany the adenovirus vaccine from Astra-Zeneca available there, was badmouthed by doctors after short-term side effects, thanks to testing requirements and access bans, for home residents, nursing staff and people who come into contact with the public vaccination with mRNA vaccines have become a practical requirement whilst doctors and their representatives, officials, scientists and politicians who promoted or dispensed it do not want to take any responsibility for its adverse effects now.
Whether these side effects of mRNA vaccines and boosters can be prevented by boosting with adenovirus vaccines will now have to be investigated by independent research bodies.

There are many unanswered questions about the frequently cited effect of vaccination on seniors and the very old. In all of the studies presented, it remains unknown how long the vaccines are effective in them and whether they protect against the delta and omicron variants.

Vaccine effectiveness against SARS-CoV-2 infection with the Omicron or Delta variants following a two-dose or booster BNT162b2 or mRNA-1273 vaccination series …

[PDF] medrxiv.org

Already at the very beginning of the pandemic there was a discussion whether vaccines or monoclonal antibodies would be more effective to deal with Covid-19. At that time, the promotors of vaccination won the contest getting urgent registrations for the mRNA vaccines produced by Biontech/Pfizer and Moderna and for adenovirus-vector-vaccines produced by Astra Zeneca, Johnsson & Johnsson and others.)

As we can see today the effect of these vaccines is waning quite fast in people with chronic diseases, many of which only mount weak antibody responses, that cannot be augmented or prolonged by booster vaccinations whereas others who do a negative antibody test, show a robust response after infection.
Whilst the Swiss Federal Commission launches now a debate on the administration of monoclonal antibodies to immune compromised persons to define a policy in regard of the limited availability of monoclonal antibodies, other European countries such as France have already defined the criteria for its administration to persons who are not able to mount an antibody titre above 264 BAU/ml four weeks after the forth vaccination dose or Germany who administrates it only to persons not able to mount an antibody titre above 0 after the forth vaccination or are not fully vaccinated with any available SARS-Cov-2 vaccine owing to a documented history of severe adverse reaction to a SARS-Cov-2 vaccine or any of its components.

Position paper on the use of monoclonal antibodies against ...

In regard of growing doubts about the effectiveness of monoclonal antibodies derived from humans, trials on Eli Lilly's Bebtelovimab demonstrate its effectiveness against all now occurring variants of concern, many of which cannot be controlled by the now available vaccines. If monoclonal antibodies could be produced in the necessary quantities, they

might become an effective treatment against Covid-19 for all members of risk groups.

[HTML] LY-CoV1404 (bebtelovimab) potently neutralizes SARS-CoV-2 variants

[HTML] sciencedirect.com

Live attenuated vaccines (rvx-13 and rvx scpd-9) administered as a nasal spray that activate the mucosal and systemic immune system are in preclinical testing after showing good results in animal studies.

A live attenuated vaccine confers superior mucosal and systemic immunity to SARS-CoV-2 variants

[PDF] biorxiv.orgFree from Publisher

The fact that mRNA vaccines from Biontech-Pfizer and Moderna quickly lose their effect in people with chronic disease, so that new booster vaccinations are constantly needed, is no reason for representatives of the healthcare system in Germany and the USA, who both hold financial stakes in their manufacturers to question their Covid strategy or to investigate possible adverse effects in more detail.
The fact that many unvaccinated people and many who have been infected have effective antibodies against the virus, while many vaccinated and boosted people have to be hospitalized because their immunity is rapidly declining has not led to any broadening of horizons.
Preventive, immune system-supporting therapies using plant substances (Polyphenols such as Curcumin from Tumeric, Resveratrol from Wine leaves or Quercetin from various fruits and vegetables) and N-acetyl-cysteine, which interrupt the binding of the virus to host cells, are just as little an issue for clinical research as the administration of vitamin D and pre-biotics and pro-biotics to support the intestinal

flora, which acts on the mucous membranes of the lungs and their flora via signaling pathways over the bone marrow.

The fact that particulate matter in aerosols, as well as nitric oxide, sulfur dioxide, and carbon dioxide function indoors as vectors of the virus, is now conceded whereas the fact they lead to a greatly increased formation of ACE-2 receptors, is not.

Short-term effective measures to improve indoor air quality in schools, day-care centers, nursing homes, offices and other workplaces using air purification devices are still as rare as measures to improve outdoor air quality through exhaust gas controls, local driving bans, speed limits or air traffic taxes.

Many consumer goods are still transported on container ships that burn heavy oil, so that global warming due to particulate matter emissions is progressing worldwide, as is the Covid pandemic, which under these conditions is constantly producing new virus variants, which in many regions of the world evade the immune responses of populations. In many countries there is currently no sign of a globally coordinated policy to combat global warming.

Not much is left of the joint fight against the pandemic using vaccines, which should become available to people in all countries thanks to the GAVI Foundation led by Bill and Melinda Gates.

Manufacturers such as Moderna or Biontech-Pfizer do not want to make their knowledge freely accessible to poorer countries at any price and assert their interests thanks to influential lobbies in the EU and the individual countries so that their billions in profits continue to flow.

Wealthy countries are hoarding vaccines that are about to expire while their effectiveness against new strains of the virus is questionable. Poorer countries that have relied entirely on these vaccines in the fight against Covid-19 and

urgently need their limited resources to fight endemic diseases and malnutrition are getting nothing.
The concept of fighting a disease in solidarity, for which the SARS-Cov-2 virus alone was supposed to be responsible, that could only be stopped by means of vaccines, turns out to be a classic marketing fairy tale for a product and its spread, to which many countries are bound for years by purchase contracts whilst their citizens are bound to the boosters of these vaccines.

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