

IMCZ NEWS



DECEMBER 2020 / JANUARY 2021



EDITORIAL

The festive season is just round the corner and I'm sure that most of you are already preparing. This year, with Covid-19 rampant, promises to be a bit unusual, but I'm sure we'll all find ways to enjoy at least some of the traditional festivities.

As for club activities, as soon as the Covid-19 restrictions are lifted and it's safe to hold events again, we are planning to resume holding events with renewed vigour. This depends on the situation and BAG / Kantonal rules. We'll keep you informed as soon we know more. In the meantime we'll continue to hold our regular Stammtisch events every Thursday. These are currently virtual, by Zoom, but we'll switch to physical meetings as soon as it is safe to do so.

The good news is that the vaccine developments for SARS-CoV-2 seem to have worked and we can look forward to a more normal 2021, at least from mid-year onwards if not earlier. It seems clear that the first vaccines coming through offer significant protection, and hopefully they will also reduce or eliminate further transmission. I'm sure we'll hear a lot more about these developments in 2021.

So all that remains is for me to wish you an enjoyable holiday season and all the best for a happy and healthy 2021.

Happy New Year!

Alan



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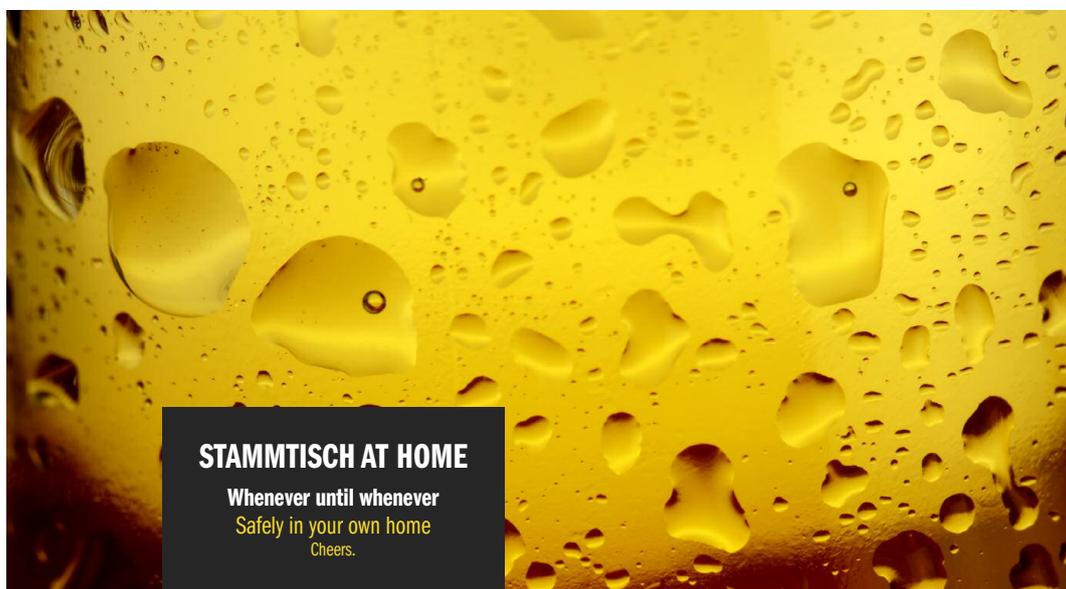
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FUTURE EVENTS

For an overview of our scheduled events, please go to the club website to get the latest information. You can find it on <https://imcz.club/calendar>



STAMMTISCH AT HOME

Whenever until whenever
Safely in your own home
Cheers.



Health and Healthcare in Switzerland

Contributed by honorary member Muthana Kubba

Even at 84, I have always prided myself as being reasonably fit with very rare visits to my doctor. Quite recently, I got up one morning feeling very weak and unwell. It quickly transpired that I had caught a very nasty influenza and was bed-ridden for the best part of a whole week.

My regular doctor was on holiday and his appointed deputy was not available. Barging in on the Andreas Klinik hospital next door, was also not on, as I had no specific ailment. Just *feeling unwell* is not an accepted reason for an emergency admittance without referral. I did not have a running nose or cough, so a Corona infection was out of the question.

Next day I managed to get an appointment with my doctor. Blood and urine samples showed no infection, and the doctor said he could not help. In the meantime, my condition deteriorated further and I had no appetite and was virtually bed-ridden the whole time.

What to do under such circumstances in a country, which prides itself on the high standards of its medical care?

Luckily, I have a daughter, who is a qualified nurse and has 10 years experience working at the Kanton hospital of Luzern. She took further courses on alternative medicine and then opened a practice in Luzern, which proved to be very successful.

I finally managed to go to her practice and she immediately had her OBERON¹ machine check me out. The results were telling: In general, I am in good health, but my gastrointestinal tract is lazy. She proscribed daily exercises and a collection of pills, all allegedly from natural sources. My German born wife applied the instructions martially and to the letter. Think what you may, but two weeks on and I feel back among the living.

Bioenergetics

When my daughter started her career as a self-employed entrepreneur, I supported her and made it possible for her to open her practice. When she asked for additional support to buy the Oberon machine, I was rather sceptical, but agreed in the end, as all fathers would do for their only daughter.

When she called me a few weeks later, saying that Oberon had arrived, has been installed, and is working fully, I went to have a look. The input to the equipment was what looked like a pair of earphones. It did not find any ailments with me. I left at that and hoped that Luma would know what she is doing.

However, now that it had proven its worth with me, I decided to investigate it fully and find out whether it is another fake or a genuine medical innovation. The literature refers to *“weak low frequency magnetic field”*, which, even as an electrical engineer myself, makes no sense. Let me quote what one site says about it:

“How the Oberon Works

Around biological systems exists an exceedingly weak low frequency magnetic field. The scientific discoveries on which the Oberon is based build on oriental medicine and the energetic conception of acupuncture as a means of biological system control.

The distinctive oscillations of every organ and cell are recorded in the Oberon software in the form of a spectral analysis of vortex magnetic fields. Electronic oscillators within the Oberon resonate at electromagnetic wavelengths and energy levels sufficient to break weak bonds and to read the activity of the body tissues while selectively amplifying signals against background noise.”

With all due respect, to the author of the book, it still makes no sense. May be the manufacturer does this on purpose to protect his invention and monopolise the know-how.

Alternative Medicine

There has hardly been a topic, which has provoked more discussions and controversy than the validity and effectiveness of the alternative medicine, also referred to as Complimentary Medicine. At the end of the day, it is of course a personal decision and choice. I did belong to the rank of the sceptics, but am beginning to modify my views. Traditional medicine, also referred to a school medicine, has its limitations, and this is

Alternative Medicine THE NEW MAINSTREAM

Natural Healing • Achieving Balance • Food Cures



where the alternative medicine can and does help. The compulsory health insurance in Switzerland does cover the costs of alternative medicine treatment.

Further reading

¹ Oberon / Metavital Human Systems is a Russian made medical equipment, which makes whole body scans.

² <https://www.energy-medicine.org/oberon.html>

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Selenium status a crucial element in SARS-Covid-19 outcome?

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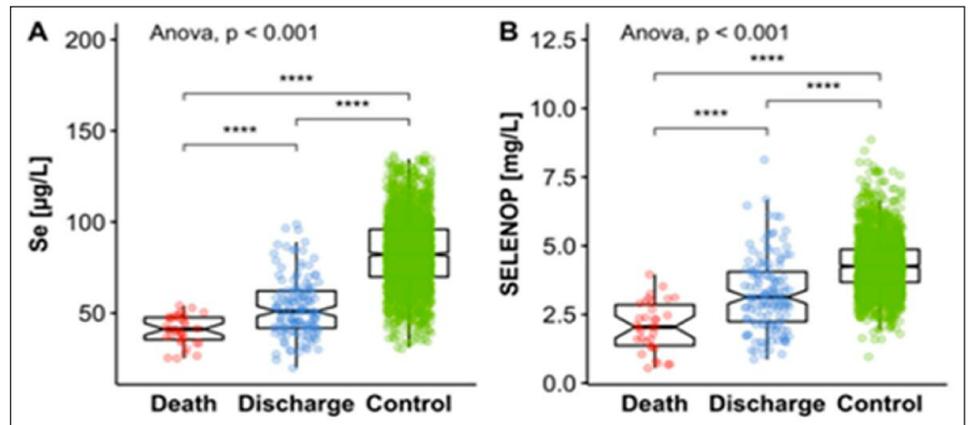


Low selenium (Se) levels in humans is common in European countries. I've covered the dependence of Se on climate and soil in a previous column. Se plays an important role in the protection of cells from oxidative stress, in the immune system and the modulation of the response to inflammation. Se is incorporated as selenocysteine into selenoproteins, which exert immune and anti-inflammatory effects. In its selenite form, Se protects blood vessel walls (endothelial cells) from oxidative damage and has an anti-clotting effect on blood platelets (reducing thrombosis risk).

Se deficiency appears to enhance virulence or progression of viral infections. It has been linked to the promotion of mutation, replication and virulence of RNA viruses, such as "swine flu" virus H1N1 (in Se-deficient geographical areas) or HIV/AIDS (in Se-deficient patients) and subsequent mortality. I will not focus on the well-documented pathways of interaction between Se and RNA viruses, but I cherry-pick data from recent studies correlating (not necessarily causally) Se status and SARS-COVID-19 outcomes, in line with the above-mentioned evidence on RNA viruses and Se. For example, a Chinese study (Zhang 2020) in 17 cities showed a striking correlation between Se status and recovery rate from Covid-19: in the city with the highest Se intakes in the world (Enshi), the recovery rate was almost triple (!) the average for the rest of the cities in Hubei Province. A recent study in Germany (Moghaddam 2020) proved the same association, with very low Se status in 65% of their deceased patients. The lowest serum Se was strongly associated with mortality (see graph).

In the elderly, low or borderline Se levels are reported to influence longevity and mortality rate. In Sweden, by the way, 71% of the elderly are Se deficient when admitted to intensive care units (Broman 2020). Furthermore, 4 years of Se supplementation in Swedish people reduced cardiovascular mortality risk by more than 40%, even 12 years after intervention (Alehagen 2018). Whether or not this contributed to the initially higher death rates during the Cov-2 pandemic in early spring 2020 remains unknown.

obesity prevalence and younger age distribution of infected people in countries such as the US and Mexico reflects this correlation. A meta-analysis (Popkin 2020) found for obese individuals a >48% risk for Covid-19 positive, a 113% higher hospitalisation rate when infected, a 74% increased intensive care unit admission,



Most illnesses tied to worse outcomes in Covid-19 are characterised by underlying low-grade inflammation and oxidative stress such as obesity and cardiovascular disease (metabolic syndrome). Obesity (BMI >30 kg/m²) is now identified as an independent, major risk factor for severe Covid-19 and mortality, as it is for many other diseases as well. The higher

and a 48% increase in mortality. Sufficient Se intake to maintain adequate anti-oxidative and anti-inflammatory capacity might be particularly important for this population group.

Conclusion: short-term supplementation of dietary Se in the elderly and the obese, particularly in those with co-morbidities, may be beneficial as a preventive measure. Long-term supplementation should be supervised if exceeding 200 mcg daily. Selenium metabolism might involve a U-shape relation regarding glucose balance. However, 200 mcg have been given to elderly for years with positive results regarding lower viral infection rates and cardiovascular mortality (Girodon 1997, Alehagen 2020). Other particular important micronutrients discussed with regards to SARS-Covid-19 outcome include vitamin D and zinc, as well as the omega-3 fatty acids and, of course, vitamin C. Even the Swiss Association for Nutrition (SGE, Schweiz. Gesellschaft für Ernährung) – usually rather conservative regarding the use of dietary supplements – recently published a white paper with recommendations to supplement with a defined list of nutrients:



<https://web.archive.org/web/20201015131147/https://www.sge-ssn.ch/grundlagen/forschung/expertenkreis-corona/>

New Vaccine Technologies

Contributed by IMCZ member, Alan Cattell

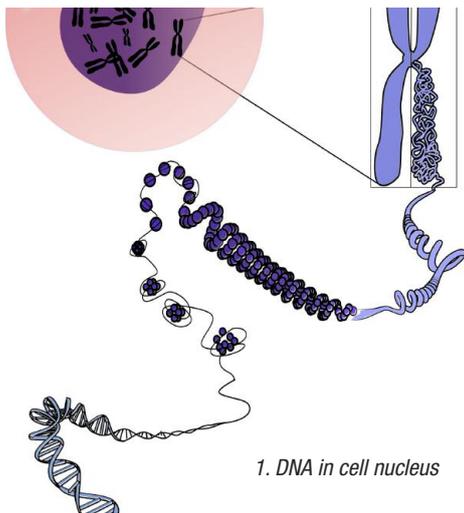
Vaccines against SARS-CoV-2

Recently there have been a few announcements of breakthroughs in vaccine development for Covid-19. Some of these are based on vaccines developed by traditional means but the headlines are being grabbed by vaccines developed using new technology. There are four “new-tech” front-runners currently. Moderna and Pfizer / BioNTech are finalising stage III trials with their mRNA vaccines and have recently reported encouraging results. Johnson & Johnson and AstraZenica are in stage III trials with their viral-vector vaccine technologies. No mRNA vaccine has ever been licensed to date and only one viral-vector vaccine (for Ebola, Merck & Co.) has been licensed, so it’s all very new.

In this article I’ll give a simplified overview of these vaccine technologies – my apologies in advance to all experts for my huge oversimplification of this complex subject. The first step is to explain some basic cell biology (which you can skip if you don’t want the overview or know it already).

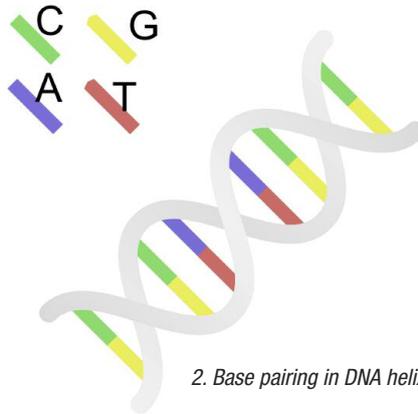
Cell Biology, DNA and RNA

Human (and animal) cells have a nucleus which contains DNA (Deoxyribonucleic acid) in their chromosomes (figure 1). This contains all the information needed for a cell to manufacture any of the proteins required by it, or by the organism of which it is a part. DNA is famously configured as a double-helix. Each



1. DNA in cell nucleus

of the two strands is a polynucleotide chain, and attached to these are nucleotides which incorporate one of the following bases: cytosine (C), guanine (G), adenine (A) or thymine (T). These pair between the strands to create the stable double-helix structure, A with T and C with G, as shown in figure 2. Therefore, each strand of DNA contains a “mirror image” of the information on the other. However, this DNA is not useful for production of proteins while it’s in the nucleus. The information it contains needs to be translated



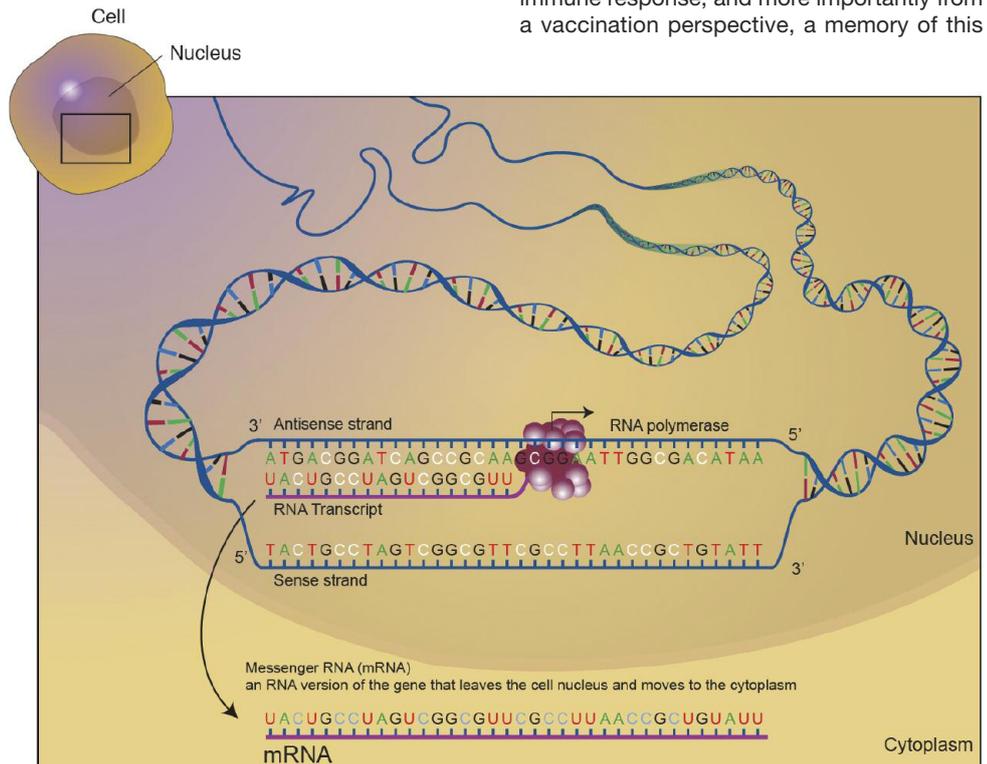
2. Base pairing in DNA helix

to the cell cytoplasm (all of the material inside the cell and outside of the nucleus) where it can be processed. This translation starts by making a “copy” of the DNA information onto a RNA (Ribonucleic acid) strand (figure 3).

RNA is a single strand structure rather than a double helix. In RNA, the base uracil (U) replaces thymine.

The messenger RNA (mRNA) created by the translation process migrates to the cytoplasm where it is available to act as a template for protein production for a short while, until it is decomposed by the usual cellular processes. So, in cells mRNA is continually produced from nuclear DNA “templates”, migrated to the cytoplasm and then destroyed after a period of use.

The RNA code functions in groups of three bases – called a codon. (e.g. UAC or UGC ...)



3. The translation process - mRNA strand in Cytoplasm created from nuclear DNA template

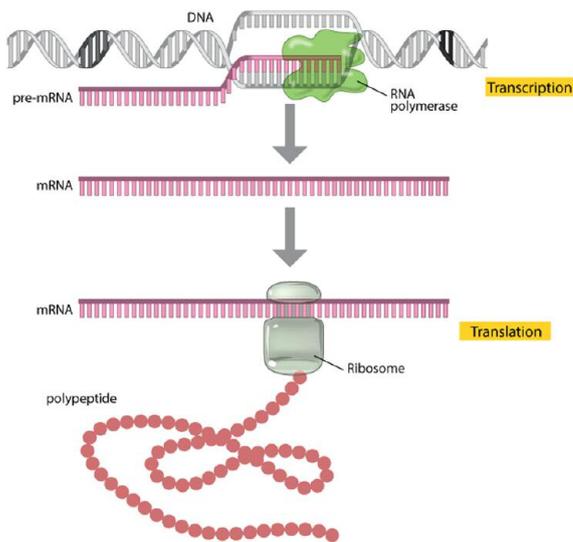
Each codon corresponds to a specific amino acid – Methionine is specified by the base sequence AUG for example. Given 3 base locations in a codon and 4 base types for each, there are 64 possible codons. 61 of these correspond to amino acids and the others are “stop” signals to end protein synthesis. There are only 20 amino acids so many correspond to more than one codon – but each codon has a unique relationship to one amino acid.

In the cytoplasm, the assembly of polypeptide chains occurs in Ribosomes to produce the amino acid chain which (see figure 4), with some subsequent processing (outside the scope of this article), becomes the protein corresponding to the mRNA template. This protein may be structural, or an enzyme or....

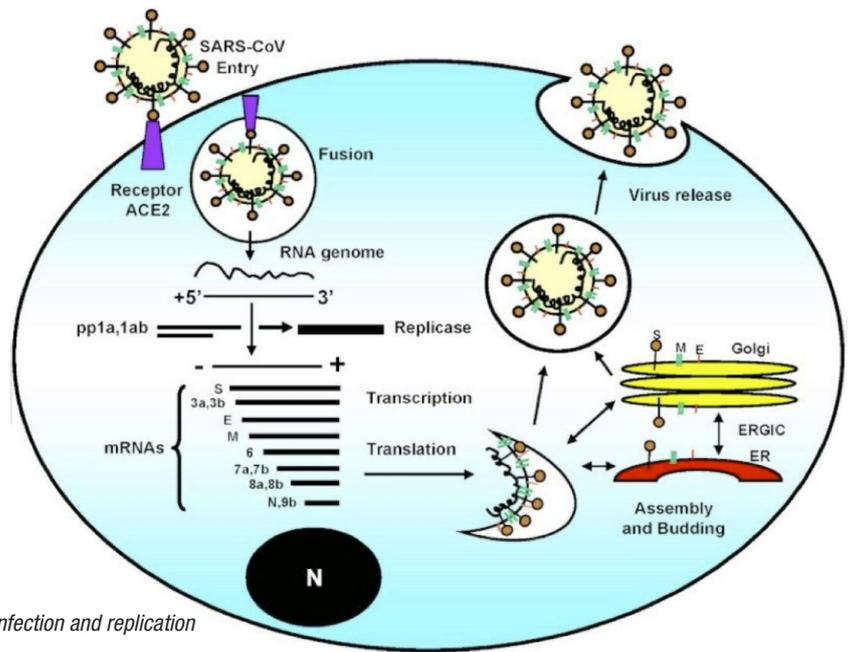
How Viruses Attack

In my article in the April / May 2020 Newsletter, I outlined how the SARS-CoV-2 virus strikes. The translation process described above is hijacked by the virus. It binds to a cell at the ACE2 receptor site and injects its RNA into the host cell cytoplasm. This then causes the cell to produce new virus particles which are released to infect other cells and continue the infection cycle. This run-away process continues until the immune system reacts sufficiently to slow down, and then stop the cycle of infection.

The art of vaccination is to introduce the body to a harmless antigen which looks like the virus which is to be targeted. This triggers an immune response, and more importantly from a vaccination perspective, a memory of this



4. Protein (polypeptide) made from mRNA template with aid of Ribosomes



5. Virus infection and replication

immune response. That means that any subsequent exposure to the virus triggers a targeted immune response very quickly (including specific antibody production), stopping the infection in its tracks before it causes illness and before it can be transmitted to others.

New Vaccine Technology

The traditional approach to vaccine development is to use fragments of the disease organism, a weakened (attenuated) version or a closely related organism to trigger immunity. However, this is a hit-and-miss approach. Now that we can analyse the genetic structure of organisms, there are other options available to us.

Within a few weeks of identifying SARS-CoV-2, its genome was mapped. This process continues to track all variants of the virus, both to look for significant mutations and to track transmission chains. This knowledge means that we are able to identify the precise genetic code responsible for specific features of a virus. In the case of a corona virus, the distinctive spike structure (which is also the part responsible for binding to host cells to

enable release of viral RNA into them) is an obvious target. Using the genome data, a mRNA template for the production of these spikes can be created. If this can be introduced into the cytoplasm of human cells, the mRNA will leverage the normal cellular processes to produce protein with the spike structure of SARS-CoV-2 and express this on the cell surface. This should then trigger a very specific immune response to these structures.

Since mRNA does not survive for long in a cell, there seems to be little to no long term risk – but this needs to be verified through proper clinical studies. In addition, since only mRNA for the spike structure is introduced, and not the whole viral RNA, the destructive aspects of the virus are *never* included in the vaccine, not even in an attenuated form. In essence, a RNA template is introduced into the cell which is a sub-set of the whole-virus RNA. The same mechanism which would cause multiplication of virus particles in the cell is used to produce the spike structure. This triggers an immune response without the damaging aspects of viral multiplication.

Finally, because no DNA modification is being performed, and because mRNA has a short lifetime, no permanent genetic changes are being made.

The big challenge is delivery of the mRNA

The processes which occur once mRNA is introduced to cell cytoplasm are known. But the real problem is how to get viable mRNA into sufficient cells to trigger enough production of antigen fragments to achieve the desired immune response. This is where much of the proprietary development in these new technologies is being undertaken, so I can only give some general outlines from what's available in the literature.

The mRNA needs to be protected against the normal destructive processes the body uses

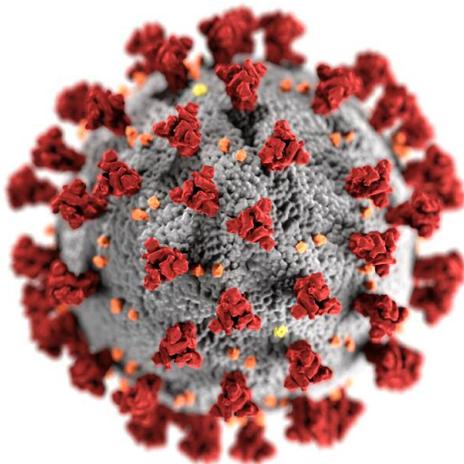
to defend itself in some “package” which helps the mRNA to enter cells in a form which can be used by the cellular production processes to create the desired protein structures.

Viral vector vaccines

These use relatively benign viruses, modified with the additional mRNA required to produce the desired immune response – e.g. the spike structure of SARS-CoV-2. Often weakened adenoviruses are used (human or primate). Adenoviruses are typically responsible for coughs, sore throats, etc. The modified viruses, when injected, will infect human cells in ways similar to the mechanism shown in figure 5. But these modified viruses also carry the “trojan horse” mRNA needed to produce the spike structure of SARS-CoV-2 and these structures will then be produced in quantity in the cytoplasm and expressed on the cell surface. The robust cytotoxic lymphocyte response generated should establish effective immunity to these structures, and therefore to the Covid-19 antigen.

The challenge with viral vector vaccines is the choice of the vector. You want a vector which generates a significant reaction in human hosts, but not an excessively strong reaction (you don't want to make people ill). There is also the problem of pre-existing immunity. Some people may already have immunity to the vector and therefore the whole cycle of infection / replication of the antigen will be interrupted at an early stage, before sufficient quantities of the spike structures can be generated to create a significant immune reaction. The choice of the host vector is therefore critical. Once an effective host is established, it should be possible to use it to deliver a wide range of different mRNA codes which will generate immunity to a number of different diseases. The vector-host and the mRNA which should be delivered are independent of each other.

This technology should be capable of producing low-cost vaccines in quantity which are stable



for long-term refrigerated storage. The viral vector acts to stabilise the “spike” mRNA.

mRNA vaccines

There are two classes of mRNA vaccines, non-replicating and self-amplifying. The non-replicating mRNA vaccine contains mRNA which codes only for the antigen against which immunity is to be induced. The self-amplifying mRNA consists of genetically engineered replicons (mRNA code to make multiple copies of the antigen using normal cellular processes) derived from self-replicating single-stranded RNA viruses. They are delivered as replicon particles which produce multiple copies of the desired mRNA in cellular cytoplasm. This increases the delivered dose, improving immune response.

Getting mRNA into the cytoplasm of sufficient cells to generate enough antigen to trigger a robust immune response is the big challenge. One can't just inject mRNA and expect it to work. As previously mentioned, it will be decomposed rapidly by naturally occurring enzymes in the body before getting to where it should go. Various techniques have been used to get around this problem.

Lipid based delivery has been explored extensively, where the mRNA is encapsulated

or bound to these materials. Peptides and cationic nano-emulsions have also been used. This is a complex area and, for those of a more technical bent, a good summary of the current state can be found in reference 1. The challenge is to identify materials which protect the mRNA, which support delivery to the cytoplasm and which don't damage the functionality of the mRNA in cells.

The other concern here is the stability of the vaccine in storage. The Moderna vaccine requires only normal refrigeration but the Pfizer / BioNTech requires solid CO2 temperatures for long term storage (-79 °C) and this is challenging for the supply chain, especially in less developed countries.

The Future

These vaccination technologies are very exciting because they hold the promise of:

1. Faster development times – using genome analysis and mRNA synthesis rather than trial-and-error techniques
2. Lower development cost
3. Lower risk vaccines because no potentially harmful antigen material is used
3. Higher reliability because immune response can be targeted to parts of the antigen which are less likely to mutate.

Although mRNA treatment in vivo has been explored for 30 years or so, the pace of development and the tools available to create the mRNA needed for effective vaccination are much more mature today. This is clear from the fact that the first stage 1 tests of vaccine candidates began only 10 weeks after the viral genome was first analysed.

In the longer term, the ability of this technology to develop exquisitely targeted vaccines and the potential of mRNA based therapy may lead to a new revolution in medicine. This is a very exciting field which is at an early stage but holds great promise and may well lead to breakthroughs as dramatic as that of the discovery of antibiotics.

Reference

- 1 Formulation and Delivery Technologies for mRNA Vaccines, Current Topics in Microbiology and Immunology, Zeng et. al

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The Douro Barca d'Alva, Castelo Rodrigo

Contributed by IMCZ Webmaster Roger Brooks with photos courtesy of Margareta Pfander

Early in the morning we cast off from Pinhão and made our leisurely way upriver to Barca d'Alva. On the way we passed the vineyards and villas of numerous quintas and the last two locks, Valeira and Pocinho. Between the two locks, we passed under the Ferradosa railway bridge, with barely a foot to spare.

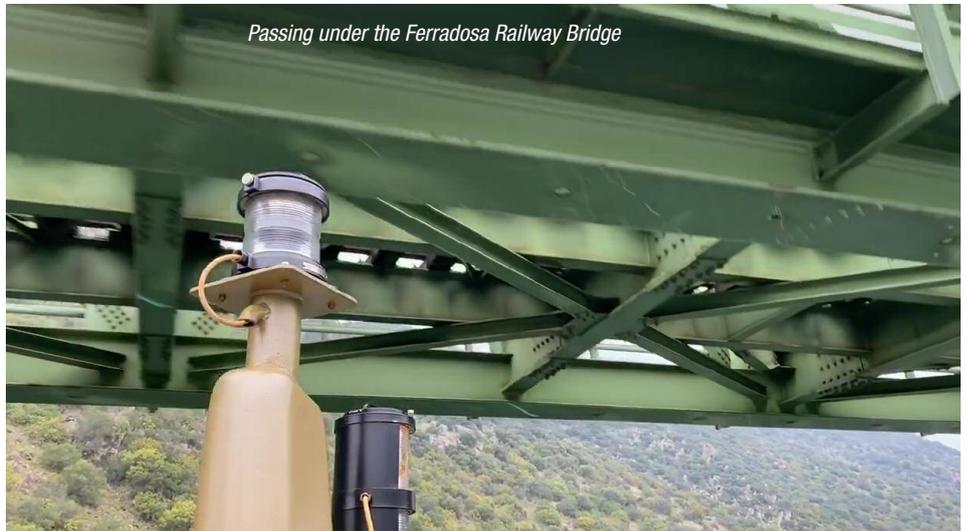
Linha do Douro

The train line from Porto to Barca d'Alva ([Linha do Douro](#)) hugs the northern bank of the Douro as far as Ferradosa, where it crosses over to the southern bank. The 200km rail line was built in the late 19th century and needed over 20 tunnels and 30 bridges. At one time it was possible to travel by train all the way from Porto to Salamanca, Spain, but by the 1980s Portuguese section east of Pocinho and the Spanish section were decommissioned. The line now ends at Pocinho. Tickets for regular trains between Porto and Pocinho are quite inexpensive, but there are also two special offerings for tourists. One is a [historical \(steam\) train](#), which provides snacks on board and plies the stretch from Regua to Tua (at the mouth of the tributary of the same name) every Saturday during the summer, stopping for a visit at the picturesque Pinhão station (see the previous article in this series). The other is the deluxe [Presidential train](#) which serves a gourmet meal on its way from Porto to the Quinta Do Vesuvio (just short of Ferradosa) where a port wine tasting takes place then returns to Porto. In contrast to the historical train, the Presidential train is drawn by a diesel locomotive, but the carriages are turn-of-the-century carriages which were lovingly restored in 2010.

Opening the Vintage Port Wine

Just before lunch we assembled in the dining room for the ceremonial opening of the vintage port. Due to its fortification, port tends to remain drinkable longer than other wines. Vintners must submit all port wines to [IVDP](#) (Instituto dos Vinhos do Douro e Porto) for approval, but to qualify as "vintage", a port must be at least 10 years old and pass additional IVDP tests (both chemical and taste) before bottling. IIRC, the vintage port that was opened on board was a mere 20 years old, but vintage ports can be over 100 years old. Owing to the advanced age, the corks can crumble when the attempt is made to remove them with a corkscrew, so a more conservative method of opening is used.

First, a pair of iron tongs is heated to red heat and then applied to the neck of the bottle for about a minute to a minute and a half. Afterwards, cold water is applied to the same location. Thermal stress then causes the bottle neck to fracture, allowing it to be neatly removed with the cork inside. Our shipboard



Passing under the Ferradosa Railway Bridge



Opening of the Vintage Port

demonstrator had to reapply the tongs, a common problem due to underestimating the time for which the tongs have been applied. There are numerous variations on the theme. The Portuguese usually apply the tongs just above the bottom end of the cork, to ensure that no glass splinters enter the bottle, whereas British and American sommeliers tend to apply the tongs below the cork. When properly done, a clean break results, without risk of splinters. The cold water can simply be poured over the bottleneck or applied with a napkin, but some sommeliers like to apply it with a shaving brush or even a feather.

Afterwards, of course, we were privileged to enjoy a bit of the vintage port with our midday meal before heading off on our shore excursion to the walled town of Castelo Rodrigo.

Barca d'Alva

Barca d'Alva is the last port on the Douro before reaching Spain, just 2 km from the

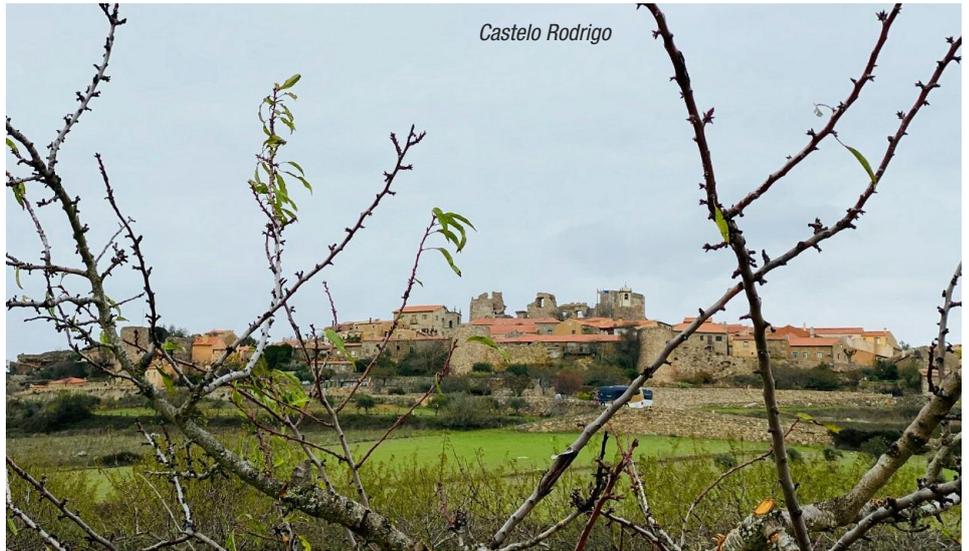
Spanish border. Along with Vega de Terron, across from it on the Spanish side of the border, it marks the end of the navigable portion of the Douro. It is surrounded by rich agricultural land, where almonds and olives are grown in addition to the obligatory grapes, but most of the produce finds its way downriver by truck nowadays, instead of by boat or by train. Barca d'Alva was developed only as a result of the construction of the Linha do Douro. However, since the train station was decommissioned in the late 1980s, Barca d'Alva no longer has much of interest to recommend it. The nearest major attraction is the walled town of Castelo Rodrigo. Both Barca d'Alva and the walled town (Castelo de Castelo Rodrigo) belong to the municipality (concelho) Figueira de Castelo Rodrigo.

Castelo Rodrigo

Castelo Rodrigo is one of a dozen historical villages along the eastern edge of Portugal,

near the border with Spain. The villages are known as the *Aldeias Históricas de Portugal*. The castle of Castelo Rodrigo is situated on a hill commanding an outstanding view of the surrounding countryside. Evidence has been found of a fortified Celtic settlement as early as 500 BCE, but Roman legions razed that settlement in the 1st century BCE. Legend has it that the first castle was built here during Visigoth rule in the 6th century CE. During Moorish rule, Castelo Rodrigo was home to practitioners of all 3 Abrahamic religions (see the first article in this series, “Porto” in the August 2020 newsletter). Ferdinand I conquered Castelo Rodrigo during the Reconquista in the 11th century, and Alfonso Enriques, the first King of Portugal, took it over in the 12th century. However, it was reconquered by the Moors, the Portuguese and the Spaniards before finally becoming Portuguese at the end of the 13th century. Despite additional damage from several subsequent wars, including the *Portuguese Restoration War*, the *War of the Spanish Succession*, the *Seven Years’ War* and the *Peninsular War*, Castelo Rodrigo boasts a surprising number of historical buildings, monuments and artefacts.

A cistern, which also served as a mikveh in medieval times, testifies to the coexistence of Arabs and Jews in Castelo Rodrigo around the 13th century. It has two entrances, one in Gothic style and one in Moorish style. By the



Castelo Rodrigo

end of the 14th century, the economic success of Jews had engendered some resentment, but when Spain expelled their Jews at the end of the 15th century, Portugal under Manuel I welcomed them. He valued them especially for their expertise in weapons manufacture, as war was threatening on several fronts (mostly in the Indian Ocean). However, his marriage to Princess Isabella of Aragon threw a wrench in the works, as her family refused to allow the marriage as long as he tolerated Jews in Portugal. Theoretically, Jews were then

allowed to either leave the country or convert to Christianity. In practice, however, Manuel made it both difficult and unattractive for them to leave, so most converted, at least nominally, although many continued to practice Jewish rites in private.

Most of the village’s population now lives on the plain, with only around 40 still living in the walled town. We opted for a slightly abbreviated bus ride which allowed us a modest walk (about 1 km, 15 minutes) up the hill to the eastern gate of the castle. Once inside, the first thing that caught my eye was the Clock Tower (Torre do Relógio), a few dozen meters inside the gate. The name is a bit misleading as the clock, once powered by granite weights, is gone. Next to the tower stand the remains of the 16th century gate to the Moura Palace (Palácio de *Cristóvão de Moura*). Moura made the castle his personal residence when he served as viceroy under King Philip II of Spain during the 17th century. The palace was destroyed during the Portuguese Restoration War and never rebuilt.

Parish Church

The parish church is likely the oldest and best-preserved building. It was founded in the late 12th century by the Brotherhood of Our Lady of Rocamador, to serve pilgrims on their



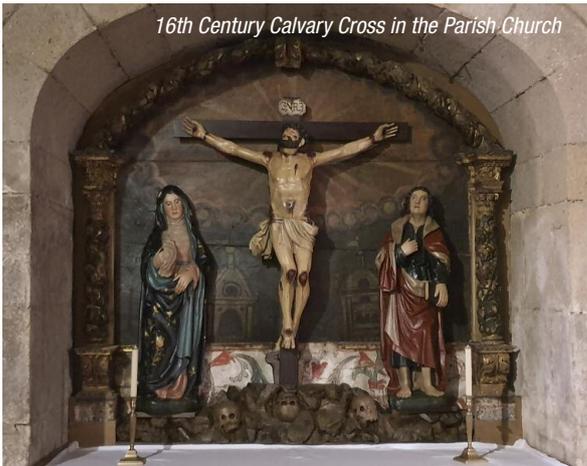
Eastern Gate of Castelo Rodrigo



Clock Tower (l.) with Palace Gate (r.)



Mother Church of Our Lady of Rocamador



16th Century Calvary Cross in the Parish Church



16th Century Pillory

way to Santiago de Compostela. Its original Romanesque form has been preserved, but it was renovated repeatedly in the 16th through 18th centuries and the interior manifests several different styles. The church contains several shrines and altars, including a 16th century Calvary cross. The main altar is Baroque. The church was restored in the late 1990s as part of the Aldeias Históricas de Portugal program.

Manueline Era

Many of the surviving historical features of Castelo Rodrigo stem from the aforementioned reign of [Manuel I](#), which, by virtue of its coincidence with the Age of Discovery, was a time of prosperity in Portugal. Artefacts from this era include the pillory which stands outside the parish church and a window, which was probably looted from the Moura Palace and now graces the wall of #36 Rua da Cadeia (Prison St.).



Rua da Cadeia #36 with Manueline Window

Almonds and Cork

As mentioned earlier, almonds are a local specialty, and were probably introduced into Portugal by the Moors. The last photo shows almond groves on the hillsides descending to the Agueda river, which forms the border with Spain. When we had tired of walking around the town, we paid a visit to the few tourist shops, which offered almonds in every imaginable guise, coated in sugar, salt, spice or sesame seeds. Samples were generously offered, which enticed me to buy a few different varieties to take home. Another local product is cork. Portugal supplies around 50% of world production, cultivated on over 7,000 square km of land. Of course, cork is of great use to Portugal's wine industry, but it also serves many other purposes, some of which we first discovered in Castelo Rodrigo: Margareta returned home with a cork handbag. The bark is harvested from oak trees between May and August, when it can be taken without permanent damage to the trees, which are protected in Portugal. Cork can first be harvested from a tree when it has reached about 25 years of age, and then only every 9 years, to allow its regrowth.

Further Information

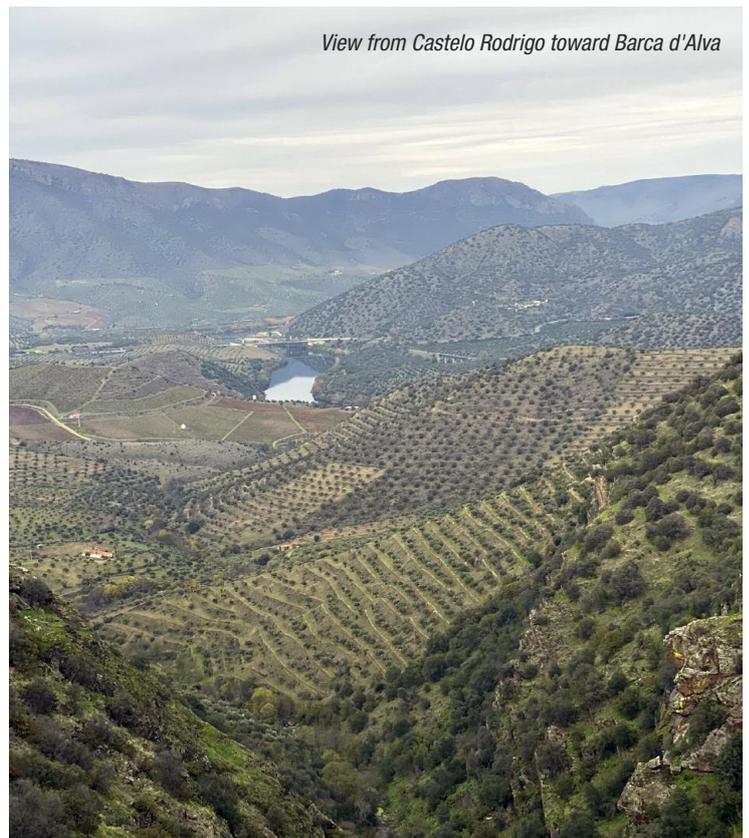
[Linha do Douro](#)

[Opening a bottle of Port Vintage](#)

[Aldeias Históricas de Portugal - Castelo Rodrigo](#)

[Through time in the Historical Village of Castelo Rodrigo](#)

[Portugal Virtual Jewish History Tour](#)



View from Castelo Rodrigo toward Barca d'Alva

Algorithms in the financial world

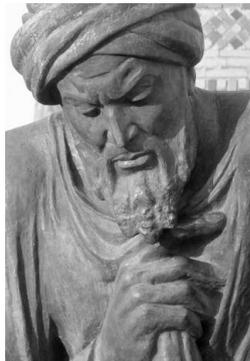
Contributed by IMCZ member Christian Wagner

Today's world is increasingly digital, and there seems no end to the torrent of data which can be captured and processed. The word digital comes from Latin (*digitus* = finger) which still means, in medicine and colloquial language, *concerning the finger, or with the finger*. In Electronic Data Processing (EDP) speak it means *more broken down into discrete steps*. This is in contrast to analogue (stepless, continuous). In a digital clock the digits change in distinct increments, whereas in an analogue clock time changes fluently. The sudden switching of seconds / minutes takes place on the basis of a calculation process (algorithm) that proceeds in precisely defined steps. Algorithms are sequences of mathematical calculations that underpin all forms of data processing.

Also sprach Algorismi

The Persian mathematician and astronomer Mu ammad ibn M s al-Khw rizm , Latinized Algorismi, (c. 780 to c. 846) opened his treatise (*The Compendious Book on Calculation by Completion and Balancing*) on the Arabic-Indian number system and written arithmetic with this linguistic formula. The name algebra derives from the title of the first book, and the term algorithm derives from his name. In the "Astronomical Tables of Sindhind" there is a table with the values of the sine-angle function.

Since algorithms represent the basis of programming and are independent of the programming language used, they are of particular importance. In the example of the digital clock, one must ensure that after an incremental time-step, the time displayed is once again the same as that displayed on the analogue clock. Algorithms are subject to the following criteria: executability, determinacy, unambiguousness, finite nature, timing (both in terms of prerequisites and follow-up).



Securities trading

Algorithmic trading, also known as automated or high-frequency trading, now accounts for a good half of all transactions on stock exchanges. High-performance computers act under the control of people, or even independently, according to previously defined algorithms. The principle of high-speed trading is based on the fact that orders can be placed on several exchanges and as part-orders. The most important parameters of the algorithms of these trading systems concern time, price and quantity.

The benefits of algorithmic trading are obvious. By separating the time and place of trading, very small price differences can be leveraged. With high volumes, the tiny profits per individual transaction add up to a respectable income. Arbitrage of price differences on different trading venues or of different instruments on the same trading venue (static arbitrage), spread trading of price inefficiencies of futures contracts or mean reversion are the most important areas of application.

Asset advice and management

Under the term "Robo-Advisor", attempts have recently been made to introduce automated advice and processing in investment support. The advice is based on the recommendations of an algorithm-based program, even without human involvement. The advantages for the banks are manifold. On the one hand you can optimize processes, and on the other hand you can also save money. Computer-aided digital advice means less effort per customer and a certain degree of standardization, although the solution found is customer-specific (tailor-made). The disadvantages for customers are twofold: little or no personal contact and (so far) the below-

average performance. People (relationship managers) usually play a more important role than is assumed, and the difficulty of finding algorithms which are reliable for longer time period investments is underestimated.

Asset management through an algorithmic computer program is the holy grail of modern finance. This mysterious object which, in medieval poetry , promises its owner earthly and heavenly happiness, can only be found by the person who has already been chosen. As in the Middle Ages, the search for it using algorithms will be long and futile.

Conclusion

Algorithms definitely have their place in the financial world. Where analogue methods were often time-consuming and imprecise, today, with a click, huge amounts of data and information can be processed reliably. The danger here is that we can barely see the forest for the trees. We also delegate thought processes and rely too much on the computer output instead of on our critical judgment.

All algorithms that shorten processing time, i.e. minimise latency, are "worth their weight in gold" in areas such as securities trading. Where time and price have to be taken into account, they are less successful, as important decision-making criteria can be only be programmed poorly, or not at all (e.g. Covid-19). In addition, the composition and importance of different criteria changes all the time. The inclusion of performance criteria is almost impossible because performance can only be measured after-the-fact.

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The New Face of Skiing: Get Ready for the Season of the Mask

Contributed by IMCZ Sports' editor Joseph Dow



Last spring, the coronavirus obliterated a remarkable ski season, buried in snow and soaked in sunshine and blue skies ... but not this time. Instead of making her bed, Frau Holle is demanding all European ski areas remain closed, but Austria has stood up and refused her draconian Covid dictate and luckily, Switzerland remains outside the EU. **«Die Schweiz fährt Ski!»** At least for now, the season looks like it will happen.

Zermatt and a few other Swiss areas have already begun to operate. Still, cumbersome restrictions have been imposed with Après-Ski non-existent and restaurants unable to open at the present time. In late November, I ventured down to the **Matterhorn Paradise** for the annual ski test weekends. Eating take-away from McDonald's in my hotel room every night was not exactly what I had in mind. Nevertheless, skiers appeared in significant numbers.

On the slopes, much seemed normal except for the ubiquitous corona masks. This new, mandatory accessory will become the symbol of the 20/21-ski season like a magic shield protecting those who dare. The mask rule is strictly enforced, as clandestine agents had been busy taking photos of unmasked people riding the lifts. This caused problems for the lift companies with these good, little authoritarians snitching to the fixated media and anxious government. For now, **Seilbahnen Schweiz**, the Swiss lift organization, has managed to fend off these pressures by having their members implement hygiene rules, distancing and masks.

The masks create a nuisance for skiers, especially those of us requiring eyeglasses. The cold and moisture make fogging a real problem

and a safety issue. I, myself, stumbled off an unseen step in the train station and came crashing down with all my gear thanks to fogged lenses. Is the risk of injuries from falls less serious than that of catching Covid? I wonder ... Additionally, restricting breathing at high altitude while schlepping heavy ski equipment to the piste adds substantial physical strain.

Besides the effects of the mask, managing it is also challenging. With a helmet and goggles, it is inefficient to constantly put on and take off the mask. Eyeglass wearers must get the goggles in place and seal off the mask quickly to minimize fogging. Once achieved, one is loath to take the combination off. Therefore, it is essential to choose the correct mask that can be worn during actual skiing.

As detailed in the prior issue from October, I evaluated various masks in search of the best choice for sports use. Skiing is even more demanding on mask performance than normal sporting activities with the added factors of temperature changes, moisture, and fit with other pieces of gear, especially eyeglass, goggles and visors. Fortunately, **Livinguard** just released their new **Fitness Mask** (SFr. 39.90), which provides exceptional breathability (*Livinguard claims it is 5 times greater than standard cotton fabric*) and comfort. Wearing it continuously during the ski day, I had very good results over four days. The fogging was minimal once the goggles were set, provided there was no extreme exertion, such as carrying gear over an extended distance uphill and heating up. Once outside, the fogging cleared quickly and breathing was significantly easier than with any normal community mask including Livinguard's other models. The Fitness Mask is made of

Advanced Lyocell Microfiber, a thin high-tech, fast-drying antiviral material, instead of multiple layers of cotton. Some interesting graphics and colors in addition to the Steel Blue (basically a plain dark bluish grey) would be welcome fashion developments and probably give the company a big seller, similar to the goggle cover trend in ski towns last season.

Gogglesoc protective lens covers provide light protection from scratches for your expensive goggles, while not in use, and come in many cool colors and patterns. The key features for this accessory are a light compact design and an easy on/off. Gogglesoc is the best version I've found and it is more likely to make it into my ski jacket pocket than some more protective but much bulkier options. They are also beginning to produce some Visorsoc models to protect the larger lenses of the popular new visor helmets, which have even more exposure to lens scratching.





Gogglesoc Bad Kitty



Gogglesoc Freedom Soc



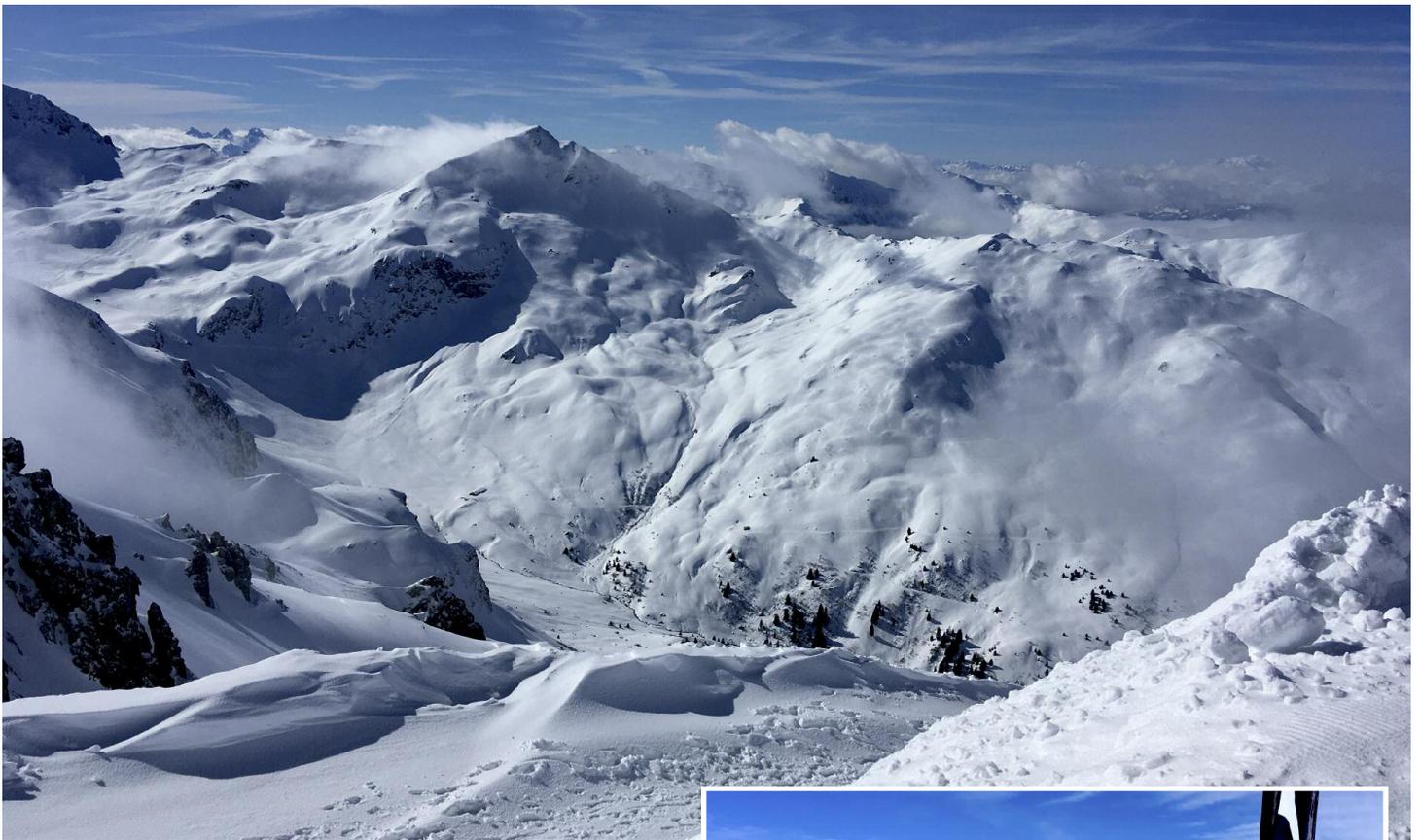
Gogglesoc Skull Soc



Visorsoc on H2



Livinguard Sport Mask



As mentioned, the Zermatt ski tests were held in November and had healthy crowds and an optimistic atmosphere with gorgeous, mild weather. There seems to be a lot of serious ski enthusiasts willing to forgo the parties and fine dining to mask up and make some turns.

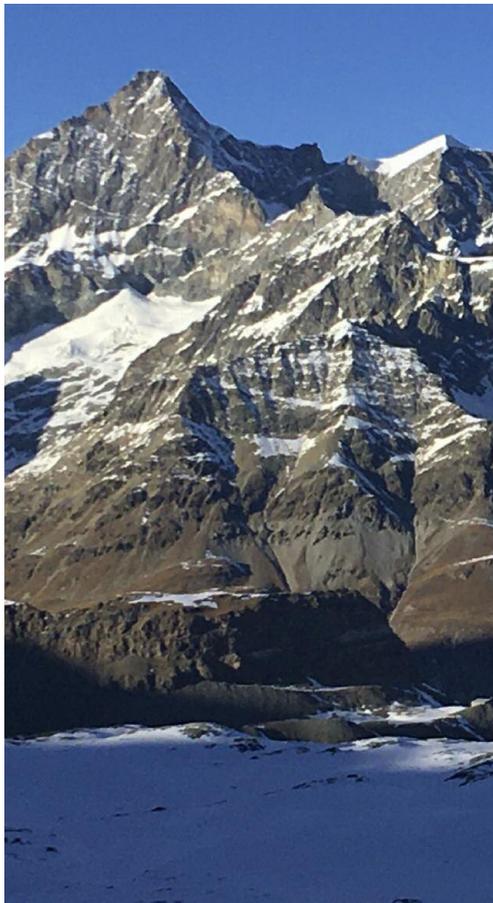
*If you were wondering about the fitting of my **Heierling** custom ski boots, which was postponed last season for obvious reasons, Hans-Martin worked on some shell and footbed adjustments for me back in July. After I get a few more days in them, we will foam a new liner, and I will update you on the progress.*

So, let's keep our fingers crossed and hope for an uninterrupted ski season and get ready to hit the slopes.

Here is my latest recommended list of gear to make your days up on the mountain as comfortable as possible:

SKI GEAR CHECKLIST

- **Skis** (Swiss skis – RTC, Radical, XO)
- **Bindings** (bindings/plates - Vist)
- **Ski Boots** (Swiss custom-fit - Heierling)
- **Ski Poles** (carbon shafts - superior shock absorption & wrist pain relief - Leki)
- **Ski Outfit**
- **Outer Layer**
 - Ski Jacket & Dedicated Ski Pants (insulated - Toni Sailer)
- **Mid-layer Top**
 - Zip-Jacket, Vest, or Sweater (with a full zip for versatility)
 - Down, Merino Wool, Fleece or other Synthetic
- **Base Layer**
 - Tops & Tights (Merino Wool / Microfleece – Icebreaker)
- **Accessories**
 - Helmet (visor helmet - HMR) & Hat
 - Goggles & Sunglasses (POC, Gloryfy)
 - Lens Protectors (for goggles/visors – Gogglesoc)
- **Face Mask** (coronavirus Fitness Mask - Livinguard)
 - Neck Gaiter / Scarf
 - Ski Gloves
 - Ski & Liner Socks
 - Ski Daypack (Exped)
 - Cable Ski Lock (Combiflex 2503/120 - ABUS)
 - Tip Ties & Boot Carrier
 - Lightweight Approach Shoes (waterproof footwear – On Running)
 - Sun Protection / Lip Balm



Additional Information:

Livinguard masks:

livinguard.com/fitness-mask

<https://shop.cilander.com/products/livinguard-fitness-mask?variant=37163212013728>

- «Die Schweiz fährt Ski!» campaign: www.seilbahnen.org/de/Service/Corona-Virus
- **RTC Swiss skis:** rtc-ski.ch
- **Radical Swiss skis:** radical.swiss
- **Exonde XO Swiss skis:** xo-ski.com
- **Exotic skis:** exoticskis.com
- **Vist ski bindings & plates:** vist.it
- **Heierling Swiss custom ski boots:** heierling.ch
- **Leki carbon ski poles:** leki.com
- **Toni Sailer ski clothing:** tonisailer.com
- **Icebreaker clothing:** icebreaker.com
- **HMR helmets:** hmrhelmets.com
- **POC Sports:** pocsports.com
- **Gloryfy sunglasses:** gloryfy.ch
- **Gogglesoc goggle/visor protective covers:** gogglesoc.com
- **Exped packs:** exped.com
- **ABUS locks:** abus.com
- **On-running waterproof sports shoes:** on-running.com
- **SBB Snow 'n Rail program:** sbb.ch/en/leisure-holidays/leisure-offers/snowrail.html
- **REGA:** rega.ch/en/
- **Swiss ski conditions:** snow.myswitzerland.com/snow_reports

PRAY FOR SNOW!!! PRAY FOR SKIING!!! PRAY FOR SNOW!!! PRAY FOR SKIING!!!

If you have questions about skiwear or equipment or want a recommendation, feel free to send me an email: [jjdow\[at\]hotmail.com](mailto:jjdow[at]hotmail.com).



Quick fire humour

Problems:

A reporter is interviewing the celebrated man in the street, and asks, "Which do you think is the more serious problem in modern society, lack of knowledge, or lack of interest?"

The interviewee responds, "I don't know, and I don't care!"

Taxi fare:

A man approaches a taxi driver outside the train station and asks, "How much will you charge to take me to this hotel?"

"Five pounds" responds the taxi driver.

"And how much does it cost for the luggage?"

"Oh, the luggage goes for free."

"In that case, just take my luggage, I'll go on foot."

Adultery:

Adultery is a sin; you can't have your Kate and Edith too!

The Bronx:

I was vacationing in South Florida when I saw a car with a bumper sticker reading: "I miss the Bronx".

So, I broke a window, stole the radio and left a note on the dashboard: "I hope this helps!"

Fairy Tales:

1st Grader: "Do all fairy tales begin with "Once upon a time?"

Schoolteacher: "No, some of them begin with "If elected, I promise..."

Surgery:

Surgeon: "Relax, David, it's just a small surgery; don't panic."

Patient: "But doctor, my name isn't David!"

Surgeon: "I know, I'm David."

IT:

Programming today is a race between software engineers striving to build bigger and better idiot-proof programs, and the Universe trying to produce bigger and better idiots. So far, the Universe is winning.

Counting sheep:

A hiker encounters a shepherd with his flock on the mountainside and asks, "How many sheep do you have?"

The shepherd replies, "I don't know; whenever I try to count them, I fall asleep!"

Glass Coffins:

Will they become popular? Remains to be seen!

Reading fanatic

They say some people 'inhale books'. I know someone who injects books right into his veins. Particularly ones with female protagonists. He's a heroine addict.

Pub Crawl:

The local pub is only a 6-minute walk from my home, but the walk back takes me 56 minutes!

The difference is staggering!

Let the chips fall where they may:

I visited a monastery last week. When I walked past the kitchen, I saw a man frying chips. I asked him, "Are you the friar?"

"No", he replied, "I'm the chip monk!"



Chess

I was playing chess with my friend and he said, "Let's make this interesting". So we stopped playing chess.

The accident

A man came round in hospital after a serious accident.

He shouted, "Doctor, doctor, I can't feel my legs!"

The doctor replied, "I know you can't, I had to amputate your arms"

Get fit

My New Year's resolution is to get in shape. I choose round.

Death of a salesman

Our ice cream man was found lying on the floor of his van covered with hundreds and thousands.

Police say that he topped himself.

Life Hack

When you're too tired to do all the things on your To Do list, try a To Don't list. Simply write all the things you're not going to do and then... don't do them. Huge sense of achievement with none of the effort.

Breakdown

My doctor said to refer to my nervous breakdown as "an episode". To be honest, it was more like a season finale.

Suspicion

An old priest invited a younger colleague to dinner. During dinner, the young priest marvelled at the older priest's attractive housekeeper and wondered if there was anything more to the situation. Noticing his younger colleague's gaze, the old priest said, "Have no fear my son; it's not the way you think."

A few days later, the housekeeper came to the old priest and said, "I'm sorry, but since that young priest's visit, one of the silver spoons is missing." Whereupon the old priest wrote a letter to his younger colleague:

"Dear Colleague, I don't maintain that you stole a silver spoon from us, but I also don't maintain that you didn't. The fact is, that since your visit one of our silver spoons is missing."

The young priest replied: "Dear Colleague, I do not maintain that you are sleeping with your housekeeper, but I also do not maintain that you aren't. The fact is, that had you slept in your own bed since my visit, you would have found the silver spoon."

The Frog

A boy was crossing a road one day when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess."

He bent over, picked up the frog and put it in his pocket.

The frog spoke up again and said, "If you kiss me and turn me back into a beautiful Princess, I will stay with you for one week."

The boy took the frog out of his pocket, smiled at it and returned it to the pocket. The frog then cried out, "If you kiss me and turn me back into a Princess, I'll stay with you and do *anything* you want." Again the boy took the frog out, smiled at it and put it back into his pocket. Finally the frog asked, "What is it? I've told you I'm a beautiful Princess, that I'll stay with you for a week and do *anything* you want. Why won't you kiss me?"

The boy said, "Look, I'm a computer programmer. I don't have time for girlfriends, but a talking frog is really cool."





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