

We are calling for (...) maximum openness of medical data from patients with the SARS-CoV-2 coronavirus, in order to facilitate medical research and the development of new therapies and new avenues of treatment. (...)

The increase in mortality rates from COVID-19 with age raises questions about the characteristics of biological aging that lead to greater susceptibility to this and other infectious diseases. (...)

Perhaps if there were ways to boost or regenerate the immunity of older people, this disease would not kill them.

Excerpts from an open letter to the President of the World Health Organization and Heads of State (the text can be signed [here](#)).

Theme of the month: Coronavirus and longevity

In the last hours of March 2020, there may not be a single adult human being in full possession of their faculties who is unaware of the spread of the viral disease called Covid-19.

This event is unique in many ways. Never in the last five centuries of human history has a health event had such an impact. Never in recent human history has global economic productivity declined so much in such a short period of time. Never before in the history of mankind has a disease been fought so quickly, with so much energy and with so many scientific, economic, political and financial resources...



The economic, sociological and cultural consequences are incalculable. We are living in an apocalyptic film scenario. An invisible organism is spreading rapidly throughout the world and causing an increasing number of deaths everywhere. The streets are deserted by the inhabitants. Humans avoid each other and remain locked down except to buy food. Supermarkets are under siege.

Are all the ingredients there for an apocalyptic film? No. One is missing. The virus doesn't kill everyone who's exposed. In fact, it kills "eclectically", especially the oldest and weakest. According to the data [available to us](#), the fatal outcome appears to be about one in 15 people affected in a worst-case scenario. Other estimates are that it may only be 1 in 100, and there are even researchers who predict an even lower death rate [of around 0.25 %](#). They rely heavily on the idea that many people are asymptomatic carriers of the virus. However, this seems highly unlikely, especially in view of the knowledge gained [in places where whole groups have been tested](#).

In recent weeks, saving lives threatened by the virus has become a top priority. Authorities and citizens are acting with a determination that goes far beyond the normally accepted economic and material "inconveniences".

Longevists had been talking about it [for a long time](#). Those who yesterday considered life to be "long enough as it is" would mobilize if the day came when an illness threatened to shorten lifespan. Nick Bostrom had even considered this under the term [inversion test](#). What no one imagined was the extent of public reaction.

The situation in recent weeks has been one of two snowballing phenomena. As the number of people affected increases, so do the measures taken. Once this double growth has been "launched", it becomes almost impossible to stop it. As long as therapeutic means such as antivirals or vaccines are not discovered, to stop fighting it would be to lose face, to admit that hundreds of billions of euros have been spent in vain and to come to terms with millions of deaths of elderly people. If the human life of the weakest had weighed only slightly less in the balance, many states, perhaps almost all of them, would have limited themselves to more moderate measures, "accepting" more deaths.

The determination of the authorities and citizens is extraordinary and moving. However, care must be taken to ensure that it does not become irrational. Every avoidable human death is a tragedy. A death from coronavirus is no more tragic than a death from influenza or septicemia. But the flu alone causes [hundreds of thousands of deaths each year](#). And the mere application of strict vaccination and hygiene procedures for all people in direct contact with the elderly would probably save hundreds of thousands. Without getting the epidemic under control, millions of women and men are at risk of dying from coronavirus. But tens of millions of women and men will also die from other diseases generally associated with aging in the next 12 months alone.

Covid-19 shows several similarities with all the degradation mechanisms concerning aging. Let's detail some of them.

The age at which people are dying

The probability of dying after infection follows an exponential curve that looks a lot like the [Gompertz curve of aging](#).

For ordinary aging, from the age of about 20, the probability of dying is multiplied by about 2 every 8 years. For deaths due to coronavirus, age is [also, by a long way, the factor that makes the most difference](#). As a result, there are [almost no](#) deaths of children under 10 years of age anywhere in the world. Only 0.2 per cent of young adults die when they are affected and 1.3 per cent of people aged 50-59. But 8 per cent of people aged 70-79 die and more than 20 per cent of persons in their nineties. Coronavirus may be more age-related than any other infectious disease. In Italy, the country now most affected by the epidemic, [the average age of death of infected people is 79.5](#).

It is worth noting that today, infectious diseases are almost all more dangerous for the elderly than for young people. But this has not always been the case. For example, the dreaded post-World War I Spanish flu "targeted" above all young soldiers, exhausted by the war. .

More men than women, more sick people than healthy ones...

All over the world, women live longer than men. At the same time, the coronavirus is less lethal to women than to men. One explanation is that women smoke less than men, which has an impact on a disease that most often causes death from respiratory distress. However, this does not seem to explain the significance of the differences, namely more than 50% more deaths among men.

Not surprisingly, coronavirus, like aging, causes more deaths in people who already have other conditions. The main risk factors are very close to those that most accelerate death as a result of aging: cardiovascular disease, diabetes, chronic respiratory disease, hypertension and cancer.

A deficient immune system

One aspect of aging is immunosenescence. Our immune system becomes less and less effective as we age. It no longer recognizes "friendly" bodies or "enemy" bodies.

This is one of the reasons why infectious diseases, whether viral or not, are much more often fatal in the elderly. That is why vaccines are less effective, even if they remain useful. That is probably why the coronavirus is so lethal in the elderly.

We know a lot, but we have a lot of uncertainty...

For the coronavirus, as with aging, we have accumulated a tremendous amount of knowledge. However, for the coronavirus, as for the mechanisms of aging, we also have huge areas of ignorance. Starting with what is most important: how to stop the developmental processes that lead to death.

But that's where the similarities end.

As far as the coronavirus is concerned, our many uncertainties include:

- The duration of the incubation period
- The degree of contagiousness during incubation, during illness and after illness.
- The number of asymptomatic people and the level of risk of them contaminating other people
- The mortality rate of infected people (already dealt with above)
- la duration of immunity after the disease (if it occurs) and the risks of reinfection

Knowledge is advancing at a rate unparalleled in the study of disease in history. Millions of people and organizations are mobilizing to fight it.

It is essential, as part of containing this crisis, that international efforts be strengthened, coordinated, with anonymized data accessible to all. Under these conditions, it is likely that therapies that greatly reduce mortality will be available in the coming weeks or months. A vaccine may be available in 18 months' time.

The main avenues are:

- [A vaccine](#)
- [Antiviral medicines](#)
- [Antibodies](#) produced by patients who have recovered_

But there are other avenues to be explored, including the [use of stem cells](#)._

When it comes to viruses, cure is better than prevention.

In the meantime, prevention can work. It seems that it will achieve its goal, but at an incredible economic cost. To paraphrase a [phrase from La Fontaine](#), right now "Few die, but all are struck."

Billions of people remain at home. The world's stock markets are collapsing. Millions of companies are threatened. And everywhere, citizens are mobilizing out of fear for themselves, out of an obligation set by the authorities, and also out of a desire to protect the weakest and the oldest which has never been matched.

To put it somewhat provocatively, cure is even better than prevention. Preventing all new diseases by preventing the birth of new viruses lethal to humans is impossible and will remain so for the foreseeable future. Indeed, new kinds of viruses can appear anywhere and at any time. The means to prevent their spread must be improved. Especially since we cannot guarantee there will not be viruses that are much more lethal and have an even longer incubation period.

Finding ways to combat infectious diseases more quickly is therefore an issue that could become a matter of survival, not only for the elderly and weak, but for all humanity. Finding preventive cures for more and more types of viruses that are infectious to humans is impossible today but not unthinkable in the long term. And this can, or even must, be part of a global environment in which everything that makes humans more resilient and capable of living in good health for longer must be sought.

Cure is better than prevention when it comes to age-related illnesses

The prevention of age-related diseases is important. A healthier lifestyle, more sport, less stress, a more balanced and less abundant diet - all of these help to gain a few years of healthy life.

But, even more than in the fight against viruses, progress towards a much longer and healthier life cannot be made without breakthrough medical and scientific progress. Significant progress can only be achieved by mastering the mechanisms leading to a real halt (or radical slowdown) in the aging process.

In the fight against senescence, mobilization is weak and knowledge is progressing slowly. Age-related diseases are still too often seen as acceptable because they are "natural".

However, this has now radically changed for one of the diseases linked to aging, namely the current epidemic. A virus, however, is only natural. Whether it is the plague virus or the 2019 coronavirus. We no longer accept that they kill even the unhealthy elderly who have lived much longer than the average lifespan. And thank goodness for that!

And tomorrow?

The fight got under way, [hardly 100 days ago](#), to control the epidemic, for the sharing of knowledge, for scientific advances and new therapies against Covid-2019. They will be exhausting. But mankind has been through even more difficult times.

By early 2020, we were already caring more than ever for the elderly. We were already living longer. But the qualitative and quantitative leap between January 2020 and March 2020 is gigantic. Every death of an elderly person due to coronavirus has become a tragedy.

Soon we may be able to move from almost unanimously approved scientific research against a new disease that reduces life expectancy to medical research for new remedies that increase life expectancy (in good health, of course).

This month's news: Aged human cells rejuvenated

The main non-coronavirus-related health science news was announced by a team from the famed [Stanford Medical School](#). Californian researchers used proteins called [Yamanaka factors](#) and managed to rejuvenate human cells. They also found that muscle cells from mice, treated in a similar way and re-injected into the mouse body, had a rejuvenating effect on mice.

The researchers want to continue their work so that one day human tissues will be rejuvenated.

To find out more:

- See: heales.org, sens.org, longevityalliance.org and longecity.org.
- [Source of the image](#).