

How We Can Use Nutrients to Support the Immune System to Fight Viral Illnesses Better

We know that nutrition and immunity are related.

During pandemic times it is more important than ever to use nutrition (food) and nutritional supplements (Vitamins, minerals, Enzymes, Fats and others) to support optimal functioning of our metabolism and our immune system.

This overview article will detail what to use at what stage in the infectious process.

Introduction

Supplementation in addition to a generally healthy nutrition is recommended generally due to a reduced nutrient content in modern food, especially in conventionally grown and heavily processed foods.

Traditional Western (conventional) medicine still mostly rejects this notion. My suggestions for a better approach to healthcare - can be found in this recent post [about a framework for reasoning in healthcare](#).

Resource for eating better: [my e-book : "Eating for Vibrant Health and Explosive Energy" \(click Here for free download\)](#)

Supplementation needs to supplement (hence the name) nutrition. That means they have to deliver a form (chemically) and amount of supplements that are

- **Safe for most individuals** (exceptions: people with liver or kidney damage, on medications or with chronic illness need individual attention by a qualified practitioner)
- At least have a **good probability and historic track record of being effective** beyond hear-say and a placebo effect (nothing against a good placebo, though)
- Of **good quality** (the least number of additives, good manufacturing practices, reasonably priced)
-

I try to choose supplements by these criteria.

A Word of Caution:

These recommendations are for generally healthy individuals only and only for educational purposes. For your individual case, especially if you have any severe illness, take medications, are very obese (or underweight), or have any questions regarding your

health or the safety of any drug or supplement, please talk with your family doctor or other qualified health care provider about your individual concerns.

If you or a loved one are seriously ill (e.g., high fever for more than 3 days, increasing weakness, drowsiness, confusion, problems breathing or pain or experience sudden onset of any unusual symptom) please call your family doctor right away or go directly to the nearest emergency room. If needed, call 9-1-1 immediately.

Nutrition and nutritional supplements are generally safe, but allergies, toxicities or other side effects can occur as well as your illness can be such that more and intense medical attention is required.

Don't deny yourself or a loved one conventional medical therapy. It may save your life.

Viral Infections like COVID19 and Our Immune System

For good information about proven COVID-19 specific treatment protocols for clinicians, please see this [link to Covid Care Alliance and COVID protocols](#).

As with any virus, COVID19 (or SARS-COVID-19) relies on our **immune system** to do its job. If our immune system functions optimally, we usually only experience a mild or no disease symptoms.

Many people have a sub-optimal immune system due to genetics, pre-existing illnesses, drugs, sub-optimal nutrition, chronic stress and others.

Many supplements have been proven to support our immune system in different ways. Obviously, immunology is a very complex science, and we still do not know enough about how viruses interact with our immune system and the organism as a whole.

There are many great scholarly articles being written about this topic.

There is an infectious agent out there making people sick, and as with all illnesses, some people die as a consequence. I don't think anyone will doubt this. The discussion whether this coronavirus was man-made or not is futile in this context.

During [pandemics](#), mostly caused by viruses, **death and its inescapability** comes to the forefront of all people's minds, and for some it is the **first time** seriously thinking about it.

As sad as every death is, **death is an unavoidable fact of life**. Fortunately (and as an older adult I don't mean this sarcastically at all) this disease, like many similar diseases (e.g. Influenza), affects mostly older and previously ill individuals in a severe way.

The discussion of "natural selection" and whether "old and ill people are a burden to the healthcare system" or "is a young healthy life worth more than that of an old and sick person" is an ethical one and can lead to highly emotional and irrational discussions but will at some point be necessary. I will not go there at this time.

For full transparency, here is how I feel: I will gladly risk my own life, if I have reason to believe that by this act our children have a better chance to grow up healthy (and not just my own children and grandchildren, but I mean this generally).

The Dangers Of Statistics

At this point I feel I need to say something about **statistics and the dangers of trusting others who prepare statistical analyses** of issues.

As an individual with extensive training in statistics (in Germany, before and in medical school, and in Canada in University) as well as having published several scientific publications myself, I am very aware of pressure applied by employers of scientists and funders of research studies, to achieve certain study outcomes.

I also know from talking with other scientists in private and from personal experience as a young mother and scientist myself that **many succumb to the pressure and conform to the expectations** even if that may mean to falsify or "tweak" data.

I am not sure how big this issue is but it does exist and most scientists that did submit to these financial pressures will never admit that they ever did it because it will ruin their reputation as well as the "fruits" of their labor.

On top of that anyone familiar with statistics knows that the interpretation even of numbers that have been arrived on correctly (if a correct way exists), it often **can be interpreted in different ways** – or different statistic figures can be taken out of context, important caveats omitted or significances overestimated. (we called that "fishing for significance" in statistics class)

So much said, if there are several sound studies without obvious red flags (e.g. who paid for it, very small sample size, obvious errors in method, obvious bias) coming to similar results, these results are probably **valid**. They can then be applied to yourself

and others, especially if there are many more studies arriving at one result and very few saying the opposite. (**preponderance of evidence**)

As usual, especially in newer scientific research, **there is no scientific consensus**. Science evolves from scientists assuming one thing (=hypothesis) and then trying to disprove it. Now, just because you disprove one thing does not mean that the opposite is necessary true or is the only possible truth....

Often, if you find one drug or medication that seems to work better than nothing, that **does not mean there can't be other ways**, whether other drugs or "natural" interventions, e.g. lifestyle and nutrition adjustments or nutritional supplements, that do not work equally well or better.

The "**scientific standard method**" for drug testing is double-blinding, e.g. neither the participant nor the researcher knows whether the participant receives the study drug or a placebo ("sugar pill with no assumed effect")

Obviously, it is impossible to "**double-blind**" lifestyle and nutrition of individuals. Long-term, especially retrospective (=looking back) studies are difficult, take long and have their own statistical fallacies.

Often **correlation/association and causation are confused**.

Here is a classic example:

The use of soap is statistically associated with a higher IQ. There is no doubt about that...

Now even to the layperson it is obvious that soap, even if you ate it, doesn't make you smart.

So there must be something else causing both issues.

In the case of soap and IQ it could be that people with higher IQ have a need to smell better due to their higher socio-economic status... (You can imagine that "Soap makes you SMART" would make a better news headline than the latter, more correct statement...)

The COVID-19-Pandemic – A Global Trust Issue?

Most people – especially in the mostly democratic western societies - have grown up to trust in authorities like doctors, scientist, government officials, police, public health.

And throughout history, the overwhelming majority of time this trust was and still is justified.

Problems arise when – like in Nazi Germany – a democratically elected government starts to transition into a totalitarian regime.

Without taking sides, there are many people in our society that feel that this may happen these days.

Facts are that **the numbers available are often skewed**, there are **major problems in data collection and processing**, and what is reported in **the media often only partially represents (or misrepresents) facts** available nowadays to everyone on detailed research.

The **suppression of free speech** is a major tool totalitarian regimes use, and the banning of many scientists and of any alternate opinions from social media, search engines and many scientific publications accessed by many people is **for many a grave cause of concern**.

In personal conversations I hear from physicians that are pressured by their governing bodies to follow the public narrative – under the threat of losing their license. This has **eroded trust in doctors** as well as increased the **risk of burnout and mental health issues** for physicians.

Long-standing **definitions** of vaccine, herd immunity and even pandemic **have been changed** without good explanation and public input.

Prolonged applications of emergency measures and laws that restrict individual freedom – and the – as perceived by more and more people - over-use of those have **eroded trust** in governments and public health.

Effects of the lockdowns and restrictions as well as the fear-laden reporting of the public media have led to a **massive increase in mental health issues, other health issues, stress and economic burden** mostly for small and medium-sized business and employees. This is perceived as unfair by many.

Overall the **population is more and more being divided** into good = vaccinated and bad = unvaccinated individuals. The advent of mandatory vaccine passports, especially when integrated in a digital ID, will make this division even worse, and open avenues for more control by whoever is operating these systems.

The **media is spreading fear instead of good, rational information** and as such increases this division.

The **language used** is becoming more divisive:

“anti-vaxxers” for all of those who – for whatever reason) - choose to be cautious with the new vaccine (but had all other vaccines so far) – and the minority who do not want vaccines at all.

“The new normal” to euphemize prolonged restrictions and lockdowns

“Spreading of Misinformation” – without a good explanation how this “misinformation” is defined,

and similar terms are certainly concerning for people who have an understanding of historical events.

Now, much of this **can be explained** as a reaction to the pandemic, which has caused overwhelm and fear not only for the general population, but also for our public health officials and others.

There is a reason that **pandemics always have caused fear** (pan...ic)

When people are getting ill and many are dying in a short time, this has always in history led to unreasonable actions and procedures.

It is time for people on all sides of the pandemics measures issues to take a step back, take a deep breath and come together and find common ground in the context of reclaiming a democratic society before we degenerate in strife and public unrest or worse.

And similar terms are certainly concerning for people who have an understanding of historical events.

Now, much of this can be explained as a reaction to the pandemic, which has caused overwhelm and fear not only for the general population, but also for our public health officials and others.

There is a reason that pandemics always have caused fear (pan...ic)

When people are getting ill and many are dying in a short time, this has always in history led to unreasonable actions and procedures.

It is time for people on all sides of these issues to take a step back, take a deep breath and come together and find common ground in the context of reclaiming a democratic society before we degenerate in strife and public unrest or worse.

A Case for Natural Supplements (Vitamins, Minerals, Fats, Amino Acids, Herbs, Spices) in Medicine and Healthcare

Linus Pauling won the Nobel Prize in Chemistry and the Nobel Peace Prize. He is also the founder of Orthomolecular Medicine, a branch in medicine that advocates treatment of illnesses with (sometimes very high doses) of vitamins and minerals. It is not (yet) accepted in conventional medicine, although **vitamins, minerals and herbs have along history of helping people dealing with illness.**

Vitamins and Minerals are essential co-factors in enzyme reactions, protein synthesis, breaking down of nutrients and cell regeneration as well as energy production in our mitochondria. (The whole process of taking in nutrients, fluids and air – producing energy and operating or building (or breaking down) body structures – and then excretion of waste products - is called metabolism).

Our body can produce some of the vitamins it needs from other substances. But certain vitamins, fats and amino acids and all minerals are **essential** (as is water and oxygen in the right concentrations). Some are dependent on other factors for absorption or to be able to be used, made or broken down. Some are even produced by our gut bacteria. Most people do not know that **many animals produce their own Vitamin C** (and when they get an infection, their body produces many times more the usual amount of Vitamin C...)

A steady and sufficient supply of essential nutrients in the right balance (I call it “**nutrient orchestra**”) are essential for optimal health.

Those nutrients do **not just have to be ingested** (e.g. eaten in food, drink or tablet form or applied to the skin or other body surfaces), but also **absorbed** into the bloodstream and then **transported** into the target cells as well as **utilized** properly. Many things can interfere with any of these processes and make the metabolism sluggish. **One of the first sign many people notice is lack of energy, fatigue.**

You get it by now: Our body is complicated, and maintaining life – and health – is complex. **Life is fragile.** Our body and brain need loving care and attention, physically, mentally, spiritually and socially, for optimal function and our best quality of life possible.

I believe that those “alternative” methods should not live separately and be isolated from conventional medicine, but **should be integrated as an addition to the practice of**

“regular” medicine, as it was possible in Germany and still is in many other countries around the world.

Every physician pledges allegiance to the **Hippocratic oath** to “first do no harm”. This can mean at least trying natural supplements in cases where this can be appropriate and not contraindicated.

This applies obviously only for chronic and mild acute illnesses or prevention of disease, not for acute or life-threatening illnesses. Sorry. **If I break my arm or come down with appendicitis, I want modern medicine and I am grateful for it.**

In other cases, alternative use or – better often – **concurrent** (at the same time) **use** of “natural” supplements, lifestyle medicine and “pharmaceutical” drugs **may be giving a better outcome, if carefully and deliberately deployed.**

Sadly, the “education” about natural supplements is often done by a **clerk in a health-food store**. Just because something is “natural”, it is not necessarily harmless for a specific individual.

In our German family practice, we successfully deployed Placebo pills (prepared by a pharmacist and given out by us without label) with the suggestion that “those pills are strong and will make you sleep” to help our patients sleep.

The positive feedback – and the demand for refills for those **potent sleeping pills** (did I mentioned the only ingredient was sugar and helpful suggestions) – **without side effects** - proved the efficacy of these pills and – I stipulate – was more helpful for those patients than it would have been to start them off on “pharmaceutical” drugs, whatever they may be.

Did it work for all of our sleepless patients? Of course not. **We need to have options - as a physician, a patient and a person.**

In that way, *whether you as a practitioner believe that natural supplements work or not, if they are effective and not harmful for your patients, there is a case for them.*

And if they don’t work, the modern pharmaceuticals are still there to try and use.

How Viruses Affect Us and How the Immune System Deals With Viral Illness

Many people are not aware of the fact, that a viral illness – and the immune system response - has several stages

The 3 Stages of Viral Illness – And the Associated Immune Response (Extremely Simplified)

1. Incubation period

A person has come in contact with the virus but has **not developed any symptoms** (and some people never do – this is called a-symptomatic).

Spreading of the infection is possible, but unlikely.

The virus is busy replicating inside the host organism's cells. Shedding can occur through shedding of infected cells, e.g., contact with saliva droplets containing cells with already assembled virus)

From the moment that a person experiences the first symptoms (e.g., scratchy throat) to when all symptoms have ceased, we enter the

Symptom-Period 2a)

During the first 3-5-7 days, (depending on the virus and your immune system response), virus replication is very fast and as cells get destroyed by the number of viruses produced (this is what gives us the symptoms) and virus gets released en masse into adjacent body fluids, these fluids are very infectious and contain many living viruses ready to infect others.

Depending on the size of the virus, the virus gets spread more by larger droplets and spray or direct contact with bodily fluids (for larger viruses, e.g. the HIV-virus) or also or mostly by aerosol (for smaller viruses like Influenza or Corona-Viruses).

Masks reduce spread of viruses to a certain extent by eliminating spray and droplets being propelled forward as people talk, sing, cough, or sneeze.

Aerosols are only partially held back, if at all, and otherwise just take a different direction.

Any wearer of glasses knows that they tend to fog up when you start wearing a mask – that means that your exhalation aerosol (breath) is re-directed upwards under your glasses by the mask and leads to condensation of the water in your warm exhalation breath on the cooler glasses.

Symptom-Period 2b)

During and especially after period 2a), our **immune system kicks in high gear**.

First in line are macrophages (literally meaning: "big eaters") dealing with the infected, dying, and dead cells by releasing cytokines and producing inflammation.

This is **the kind of inflammatory response we need and want**. It helps to eliminate viruses and cleans up debris and initiates cell repair.

After that, different other - **more virus-specific - immune cells (B- and T-cells)** respond and start to produce different types of **antibodies**, which ideally stop the virus from spreading further in the body (and also to others) and produce more or less long-lasting immunity, usually not only from one specific virus, but also most of the possible variants, at least to a certain degree.

Recovered phase:

This is once no more symptoms are present and the immune system has dealt with the virus.

A Note About Vaccines:

Vaccines are meant to give our immune system a "**practice run**" – to induce it to make antibodies by using a weakened virus (or parts of it) that ideally does not lead to any disease symptoms (but sometimes does, usually in much lesser severity than the "real" illness).

Vaccines that do not use a live virus mostly or only induce an **antibody response**, and not much of a cellular response (although all antibodies are made by immune cells). These vaccine-induced antibodies are usually **very specific for one variation of a virus**.

This **can be a problem** when trying to develop vaccines against small RNA viruses which tend to mutate rapidly (like Influenza and Coronaviruses) and can make frequent booster "shots" necessary.

Vaccines thus produce an **immune system "memory"**, which leads to a much faster response if the person later encounters the "real" or wild virus – or, if vaccine-induced antibodies are still present, it can prevent infection by binding or "neutralizing" the virus before it can take hold.

How do you know if a vaccine is effective, if it works?

- An effective vaccine should **protect the vaccinated person from severe illness or death** (when infected by the “real” virus) **without causing major side effects** from the vaccine itself.
- An effective vaccine should also **prevent the further spread of the illness** through the vaccinated, even if they get later infected by the “real” virus.
- ***Only then does it make sense for public health to recommend a vaccine for the whole population.***

Obviously, after a successful vaccination, we should not see deaths or very serious disease in the vaccinated after a reinfection with the “real” virus for a long time.

This has been the case for all vaccines that were recommended so far until 2020. The **final judgement of effectiveness and safety for the currently available and used COVID vaccines is not available yet (Nov 2021)**, and will not be for at least 1-2 years, probably even longer.

There are certainly signals that they may have a decisive benefit, but also very **concerning safety signals** and **questions** about effectiveness against spread and re-infection even a relatively short time after vaccination.

Smallpox: An Example from Recent History:

Smallpox is a viral disease that **devastated mankind** until the 2nd half of the 20th century.

After probably having been brought to the Americas by the settlers in the 15th and 16th century, it had a major impact on the native populations, decimating them (together with Measles, Influenza and other infectious diseases) by 50-90%.

Smallpox had a **death rate** of 30-50 for those infected. Most others ended up with lasting scars on their faces and extremities from the “pocks”.

Edward Jenner, a physician in the late 18th century, made the **observation**, that milkmaids, who often came down with a harmless illness called “cowpox”, never fell ill or died when a smallpox epidemic went through the lands.

He then had the idea to try to give other people (who normally did not come into contact with cows) artificially this harmless disease by scraping the fluid of a skin lesion of a

milkmaid into a scratch on another person's skin. **Vaccination was born. (latin vacca = cow)**

Edward Jenner then coined the term Vaccination for this procedure. The smallpox vaccination was then widely used, refined and **led eventually to the eradication of this disease from planet earth** (except of smallpox viruses kept in "bio-safety" labs in undisclosed locations...)

Similarly, most doctors and younger people haven't seen a child paralyzed by **poliomyelitis**, and **deaths from measles, tetanus, diphtheria, and other childhood "killers" have nearly disappeared.**

These are **examples of vaccines that have been very efficient from a public health standpoint as well as for most individuals.**

Most people accept that for most people to have a benefit, there will be individuals unfortunately affected by vaccine complications.

The difficult task for public health is to weigh the benefits and risks. Another application of statistics...

The Timing of Supplementation to Support the Immune System When Dealing with Viral Illness

Why is this important?

Supplementation needs to have different goals when dealing with infectious disease, depending on the stage of the exposure or infection.

Before Exposure (that means always)

The goal is to **keep our body and mind as healthy as possible** and making sure our body has a **steady supply of all vitamins and minerals needed for proper metabolic and immune function.**

That means:

- Eating well: [see my e-book : "Eating for Vibrant Health and Explosive Energy" \(click Here for free download\)](#)

- Optimizing our Gut, Skin and other Microbiomes (lacto-fermented foods are very helpful)
- Supplementing within reason with elements missing in our “nutrient orchestra”
- Moving our body regularly, preferably in fresh air
- Reasonable sun exposure
- Minimizing exposure to environmental toxins
- Regulating emotional stress

Supplements for regular use by mostly healthy individuals could be:

- A good-quality multi-vitamin-mineral supplement (sorry, the one-a-days don't do it. 2-per-day is minimum)
- A suitable magnesium supplement (mg deficit is best evaluated in a Hair Mineral Analysis or Mg in red blood cells, blood serum levels are not adequate)
- A good quality B-complex supplement (for people over 40 use the methylated form)
- Vitamin D3 (Dosage adjusted to optimal levels according to blood levels)
- Vitamin K2 (to move calcium from the blood into the bones and teeth – not indicated for all individuals)
- Vitamin C 1 g per day (unless not needed due to optimal nutrition) (more only if proven not to be G6-P deficient (a genetic variant))
- Fish-oil, Krill-oil or similar (dosage should be adjusted according to omega3/6 ratio blood levels)
- Vitamin E (full-spectrum, ideally all 8 forms)
- A good, multi-strain probiotic to improve the gut microbiome

In certain people other supplements may be helpful on a regular basis:

- pregnant or menstruating women may need extra iron. Iron supplements should always be adjusted to achieve optimal ferritin levels)
- people who avoid fish, seafood and kelp may need extra iodine to achieve healthy levels of thyroid hormones
- vegans and vegetarians may need extra Vitamin B12 (only found in animal products and certain fermented foods)
- certain medications, restrictive diets and medical conditions affect nutrient status in different ways.
- Essential Amino Acid mixes – (or Stomach Acid supplements (easiest is vinegar) to increase protein breakdown and absorption of many nutrients.)
- Enzymes, herbs, phytonutrients and other nutrient supplements as needed and indicated

Phases 1 and 2a) - If likely or certainly exposed until 3-7 days after beginning of symptoms

Goals need to be to **strengthen the immune system for the upcoming effort to deal with the intruders** by adding pro-oxidative supplements and minerals. In a way **we want the inflammation here**. That is the first phase of how our body destroys unwanted intruders and starts cleaning up.

In this phase we need to :

- Limit or avoid added psychological stressors and strenuous physical exercise
- Add foods that support immune function (e.g., citrus, bone-broth, vegetables)

And add **natural supplements that are known to strengthen immune support**

Examples:

- Echinacea
- Certain mushroom extracts containing beta-glucans
- Vitamin C in higher-than-normal dosages
- Zinc (an additional amount to the maintenance dose) (for sore throat use Zinc acetate lozenges)
- Quercetin (to help the zinc get into the cells)
- Black seed oil (Nigella sativa)
- Consider gargling with diluted Hydrogen Peroxide /maybe with added Iodine, or with an antiseptic mouthwash (even Listerine is better than none).
- Some people report good result from inhaling a diluted hydrogen peroxide solution, but this requires special care, knowledge, and equipment - see download

Symptom-Phase 2b:

Now we need to **switch** from strengthening the oxidative and pro-inflammatory immune response to **supporting the regulation of the immune system** – to cleaning up remaining dead and/or infected cells, re-building the damaged tissues and producing antibodies and **helping the immune system to down-regulate the inflammatory response when it is time to do so**.

In this phase, we want to continue to:

- Limit or avoid added psychological stressors and strenuous physical exercise
- Add foods that support immune function (e.g., citrus, bone-broth, vegetables)

Depending on the virus and the individual, this can mean different things.

In addition to continuing the “Always” measures, we can consider (adjust individually)

- Adding curcumin
- Adding melatonin
- Adding fish-oil
- Continuing Vitamin C in a somewhat lower dose for a somewhat longer time
- Adding NAC (N-acetyl-cysteine, a glutathione pre-cursor) to support detoxification and expectoration of mucus
- Adding other herbs, vitamins, and minerals as necessary

Symptom-Phase 3 and beyond:

Go back to “always” habits.

Long-COVID and long-lasting symptoms

(past 2 months – either after the illness or after Vaccination):

besides using the recommendations below and individual suggestions based on your needs, I highly recommend consulting with an experienced practitioner.

If you feel I may be a good resource for you, feel free to [book a free call with Dr. Christine Sauer](#).

Use the strategies in: <https://covid19criticalcare.com/covid-19-protocols/i-recover-protocol/>

Do not take immune-modulating supplements every day if you are otherwise healthy.

This is at best wasted money and can get your body used to getting too much of certain supplements (thus getting rid of them faster). At worst it could over-stimulate the immune system and contribute to auto-immune diseases, especially if other conditions are present (e.g. disturbed gut microbiome, genetic disposition, certain medications, environmental toxins...). The latter has not been shown to be the case so far to my knowledge, so at this point is a more theoretical concern.

Supplement Suggestions

Here is a collection of supplements that you can review, use or adapt for your own protocols:

Canada:

<https://ca.fullscript.com/protocols/docchristine-pre-vaccine-or-pre-exposure-support>

<https://ca.fullscript.com/protocols/docchristine-post-vaccination-or-infection-support>

USA: (coming soon)

Talk with me about your supplementation needs

Would you like a free chat with Dr. Christine Sauer about your individual situation and get help in choosing supplements for you or your loved ones?

I am here for you.

Book your free call: <https://calendly.com/docchristine/connect>

Some Helpful Links:

- More information about the tests mentioned in this document: <https://docchristine.com/services/lab-testing-information/>
- "Eating for Vibrant Health and Explosive Energy" Book (free .pdf download): <https://docchristine.com/eating-for-vibrant-health-and-explosive-energy/>
- "Rapid Virus Recovery" by Dr. Levy MD (mostly about hydrogen peroxide): <https://archive.org/details/rapid-virus-recovery>
- Link to Covid Care Alliance and COVID protocols: <https://covid19criticalcare.com/covid-19-protocols/>
- "Pandemics, The Fall of Infections and The Rise of Chronic Illness – A Short Historical Perspective": <https://docchristine.com/pandemics-the-fall-of-infections-and-the-rise-of-chronic-illness-a-short-historical-perspective/>
- "How to Find the Zebra Among all the Horses...- A Framework For Reasoning In Healthcare When It Comes To "Abnormal" Medical Symptoms And Lab Test Findings" : <https://docchristine.com/how-to-find-the-zebra-among-the-horses-framework-for-reasoning-in-healthcare/>