Guildford ME/CFS Support Group
(& West Surrey)

Newsletter

March 2020

Future dates

Due to the Covid-19 Pandemic we are unable to offer monthly meetings until further notice. However, our group will be putting thought into how we can enable contact between members during this increased time of isolation. Given the significance of Covid-19 to vulnerable people this newsletter is focused on Covid-19 information that goes beyond that already provided in the mainstream news.

Covid-19 pandemic - face masks, respirators and supplements

Sources: Please refer to end of article for the list of sources

The current pandemic is being caused by a type of respiratory virus called a Coronavirus. Coronaviruses are not new and have existed throughout the world for some time. However, the version that is causing the pandemic is a new version that is particularly contagious and for an unlucky percentage deadly.

The name for the new Coronavirus is “Severe acute respiratory syndrome coronavirus 2” or for short SARS-CoV-2. The disease it causes is called Covid-19.

Obviously, there is relentless information about Covid-19 on the daily news, which will likely be the case in one respect or another for the majority of this year or beyond. You will already be very aware of the need for social distancing, including staying at home for 12 weeks for the elderly and vulnerable people, and more recently a more general lockdown. Something that has been reported as to be repeated in phases throughout the year. While ME/CFS people are not specifically mentioned as vulnerable people for Covid-19 it is generally accepted that the immune system is significant part of ME/CFS issues. The article on Page 7 briefly lists eight reasons why ME/CFS might need to take extra care during the Covid-19 Pandemic.

Some information that may not have been covered particularly well on the news is information about the use of masks during the pandemic. While it is true that surgical masks offer little protection from Covid-19 they can serve a purpose. Further, there are respirator-masks (not to be confused with anything to do with ventilator machines that assist breathing) which are more expensive, better sealed to the face and which effectively filter our viruses. Home isolating is effective at preventing coming into contact with Covid-19 but should you need to take a trip out of the house for medication or food, or enter the room of a self-isolating person who is ill with Covid-19, it may be helpful to better understand mask/respirator options.

Face masks

Global public demand for face masks has soared since the start of Covid-19 and many millions have been supplied by China to other countries and many millions are being manufactured for the American population. The most commonly worn masks are surgical masks, loose-fitting pieces of cloth that cover the nose and mouth. These are frequently worn by doctors and dentists, and are designed to help protect other people and the environment from the mask-wearer by trapping respiratory droplets emitted from the mouth or nose.

Face masks have become ubiquitous in China, sold on the street, and worn by almost everyone in public. A new survey, the Premise Coronavirus Awareness Survey, showed that in Taiwan 79.9% of people questioned said they were wearing masks in an effort to protect themselves from Covid-19. A similar percentage was noted in the Philippines.

The CDC only recommends these masks for people who are already infected with COVID-19, so as “to prevent contamination of the surrounding area when a person coughs or sneezes,” according to the agency’s website.

A 2019 study of health-care workers exposed to the flu suggested that surgical masks may also provide the wearer with some protection from respiratory illness - probably by reducing the number of times a person touches their face, according to researchers. However, the CDC notes that frequent incorrect usage and the slippage of masks when people breathe or talk make them ineffective as protection from respiratory pathogens.

Face masks are not the same as N95 respirators, tight-fitting face protection that filters out airborne particles including viruses and bacteria. N95 respirators are worn by health workers at risk of inhaling hazardous particles, need to be professionally fitted, and are not recommended by the CDC for members of the public. Instead, the best protective measures are the ones recommended for the common cold or the flu.

Respirators

As mentioned above, face masks (e.g. surgical masks) are largely about preventing the spread of the water droplets containing the virus from yourself. Respirators go further to prevent the wearer from breathing in water droplets containing the virus from others. But there are different classifications of respirator.

The US Center for Disease Control (CDC) cites the N95 respirator standard as part of the advised protective equipment in their 2019-nCoV FAQ and their SARS guidance (SARS being a similar type of Corona virus). Which suggests that N95 or better is acceptable.

N95 vs FFP3 & FFP2
The most commonly discussed respirator type is N95. This is an American standard managed by NIOSH – part of the Center for Disease Control (CDC). Europe uses a "filtering face piece" score (FFP). This comes from EN standard 149:2001 – drafted and maintained by CEN (European Committee for Standardization).

Let's see how they compare:

Respirator Standard	Filter Capacity (removes x% of all particles that are 0.3 microns in diameter or larger)
FFP1	80%
FFP2	94%
N95	95%
FFP3	99%
N100	99.97%

As you can see, the closest European equivalent to N95 is an FFP2 (also referred to as P2) rated respirator, which is rated at 94%, compared to the 95% of N95. Likewise, FFP3 (P3) rated respirators are most comparable to N100.

Surgical masks and far more rarely various FFP level respirators are at times available from Amazon UK. As for a lot of products relevant to the pandemic demand is high and outstrips supply or the speed of the supply chain. If you are considering a respirator mask for protection for some circumstance such as having to enter the room of a person who is self-isolating (perhaps an elderly member of the family who needs assistance) then it might be worth also considering eye cover in the form of goggles because the Covid-19 virus can also infect a person by entering through the eyes.

Supplements

By the time this ME newsletter is released the medical world will have had months of experience of tackling Covid-19. Despite extensive medical interventions not all patients have been saved. Obviously, the food supplements that we are going to detail here are subtle in comparison to the more serious interventions in use by the medical world. However, the idea of the supplements we are suggesting here is to support the immune system so that you are giving yourself the best chance of a shorter/easier experience should you have any Cold, Flu or Covid-19 illness.

The supplements in this article focus on immune boosting, anti-viral and anti-inflammatory qualities. It has been reported in the news that the immune system becoming overactive and causing organ damage is one of the dangers of Covid-19 for the unlucky few. As such, taking supplements to enhance the immune system might not sound like a good idea. However, as per the link at the bottom of this page, the immune reaction is secondary to the Covid-19 virus reaching lower parts of the lungs. The idea of supporting the immune system with supplements is in the hope that the immune system is then better able to prevent the Covid-19 virus from being able to reach further into the lungs. As the Newsletter Editor I am simply an ME person like you and not a doctor, but trying to bring you helpful actions that might make a difference. It is up to you to decide if you think the supplements are worth taking and if you do it is at your own risk. That said, it would seem logical that taken together the following supplements would offer better assistance for the immune system than any taken alone.

If you are sensitive to anxiety, you may decide not to use the following link that explores the more dangerous side of Covid-19.

www.bloomberg.com/news/articles/2020-03-08/coronavirus-nears-fatal-tipping-point-when-lungs-are-inflamed

High dose Vitamin C
Vitamin C has been shown to support a vast number of immune mechanisms in the body. For example, your white blood cells are an important component of your immune system. You have several different types of white blood cell, each of which helps to fight off illness-causing viruses and bacteria in a different way. Vitamin C helps to stimulate both the production and function of many of these types of white blood cells. It also helps your body to produce important antibodies: proteins that bind invading microbes to neutralise them.

In addition, Vitamin C's powerful antioxidant properties help to protect certain white blood cells from the toxic compounds they produce in their fight against pathogens. In other words, Vitamin C is an essential nutrient for a healthy immune system response.

A high dose of Vitamin C might be considered anything from 1000mg daily and upwards. Intravenous Vitamin C can deliver something in the order of 50,000mg of Vitamin C.

The typical form of Vitamin C is Ascorbic Acid, but high doses of this has the potential to upset your digestion in various ways. There are alternative (buffered) forms of Vitamin C that are likely to be far better tolerated such as Ester-C (calcium ascorbate) or sodium ascorbate. With each, vitamin C is attached to (and is "buffered" by) calcium or sodium.

High doses of Vitamin C are of most use during infection, when the immune system ramps up and makes use of it. Further information about Vitamin C for viral infections can be found at the following link, which includes examples of doses. Though Dr Myhill recommends far higher doses for the onset of illness and during the illness.

https://riordanclinic.org/2014/02/high-dose-intravenous-vitamin-c-as-a-successful-treatment-of-viral-infections/

Vitamin D
According to national surveys in the UK, across the population approximately 1 in 5 people have low vitamin D levels. According to studies in the following links, restoring Vitamin D levels via supplementation can offer some immune system benefits.

www.sciencedaily.com/releases/2017/02/170216110002.htm
www.ncbi.nlm.nih.gov/pmc/articles/PMC3308600

The required dose is individual and is usually determined via blood tests. I personally take 3000iu of Vitamin D3 daily throughout the year which keeps me in the upper quarter of the NHS acceptable range. Given the self-isolating circumstances of the moment, getting Vitamin D levels tested might be impossible. Perhaps taking 1000iu a day upon onset of illness for the duration of the illness might help to support your immune system without any danger of too much Vitamin D building up in your system. But that dose without a guiding blood test should be considered as a suggestion from a non-medical layperson.

Elderberry Syrup
Elderberries are packed full of anti-viral and anti-inflammatory constituents including antioxidant vitamin C, anthocyanins, lignans and flavonoids. These compounds give elderberries their powerful immune-modulating effects. As an example, research has shown that this humble hedgerow plant can deactivate 10 strains of flu virus as well as hasten recovery time.

From the following link….

"What our study has shown is that the common elderberry has a potent direct antiviral effect against the flu virus," said Dr Golnoosh Torabian.

"It inhibits the early stages of an infection by blocking key viral proteins responsible for both the viral attachment and entry into the host cells."

www.sciencedaily.com/releases/2019/04/190423133644.htm

While Covid-19 is not a flu, the anti-viral properties may still be welcome support. The following are two examples of Elderberry Syrup that are sometimes available from Amazon UK because of the level of demand.

Pukka Herbs Elderberry Syrup, organic blend with ginger and thyme
100ml bottle from Amazon UK £11.99

In addition to Elderberries, the syrup also contains manuka honey which has antiviral, anti-inflammatory and antioxidant benefits. Further, the syrup contains licorice root which works to weaken virus activities by inhibiting virus gene expression and replication, reducing adhesion force and stress, and reducing HMGB1 binding to DNA. (Bio-technical information for anyone who wants that kind of detail).

Sambucol Natural Black Elderberry Immuno Forte (with Vitamin C and Zinc) Immune Support Supplement
120ml bottle from Amazon UK for £9
A similar alternative to the aforementioned 'Pukka Herbs Elderberry Syrup' but without the manuka honey or licorice root.

Beta Glucans

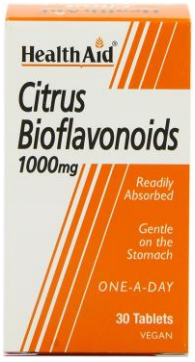
Beta-glucans are sugars that are found in the cell walls of bacteria, fungi, yeasts, algae, lichens, and plants, such as oats and barley. As a supplement Beta Glucans is classified as an Immuno-Modulator which stimulates the immune system (Macrophages, Neutrophils, Basophils, Natural Killer Cells, etc…) boosting activity and effectiveness.

Over 50 years of research has been performed on Beta Glucan. During that time, over 160,000 studies have been published on PubMed.gov and over 100 studies on Glucan are currently being conducted on ClinicalTrials.gov

Beta-glucans may interfere with some medicines. Talk to your doctor before taking this if you are taking any other medicines. Do not take beta-glucans if you take certain blood pressure medicines, drugs that suppress the immune system, or certain non-steroidal medicines unless instructed by your doctor.

As an example supplement on Amazon UK
"Health leads ...working with nature" Beta Glucan 1,3-1,6 (Yestimun) 200mg - 90 Capsules £16.99

Citrus Bioflavonoids



Bioflavonoids (also called flavonoids) are a group of what are called "polyphenolic" plant-derived compounds. There are between 4,000 and 6,000 different varieties known. Some are used in medicine, supplements, or for other health purposes. Two members of our group have separately mentioned bioflavonoids for their anti-viral influence. I've tried to find an explanation that explains the anti-viral effect but so far I can only provide you with the very bio-technical link that I was given. A table on page 6 helps to provide an overview of the potential of Citrus Bioflavonoids in support against the Covid-19 virus. An example available from Amazon UK is "HealthAid Citrus Bioflavonoids - 30 Tablets" for £8.97

www.preprints.org/manuscript/202003.0214/v1

Iodine inhaled via salt pipe
One of Dr Myhill's recommendations for the onset of viral illness associated with the nose, mouth and lungs is to breathe in Iodine vapours using a salt pipe. The salt pipe is only a method of application, it is the Iodine that works against the virus on contact.

Typically, Iodine vapours are considered an irritant to the lungs. But I'm assuming that the method that Dr Myhill recommends is at such small doses of Iodine to the lung that there is no lung irritation.

Examples of Iodine and salt pipe from Amazon UK are as follows…
Lugols Iodine Solution - 15% - 50ml £19.99
Higher Nature Saltpipe Inhaler £24.99

In the following video by Dr Myhill she recommends a few drops of Iodine into the salt pipe and sniffing 10-15 times into the nose the Iodine vapours. A vital point that she makes is to first test the iodine on your skin (e.g. forearm) to see if you are allergic to Iodine. If you are, she states that you will develop a rash. It should be noted that despite having a look I've been unable to find confirmation that Vitamin C kills all pathogens on contact, rather that Vitamin C benefits are via supporting the actions of the immune system.

www.youtube.com/watch?v=mSt8GZ6cOl0&t=6s

I'm not sure how much Iodine is absorbed by sniffing the fumes 10-15 times but an upper tolerable limit (which means before risk of serious side-effect) of iodine is 1.1g per day for an adult according to **Linus Pauling Institute**. The following link provides further information.

www.healthline.com/health/iodine-poisoning

As for all the supplements that are mentioned in our newsletters it is our group trying to bring useful information for you to make your own decisions with. Inhalation of Iodine as per Dr Myhill's recommendation is done at your own risk. That said, I don't think that Dr Myhill would be recommending the inhaled Iodine at the level and method that she has suggested if she thought that is was at all unsafe. Aside from the potential Allergy issue that she covers.

NAC (N-Acetyl Cysteine)
NAC can relieve symptoms of respiratory conditions by acting as an antioxidant and expectorant, loosening mucus in your air passageways. As an antioxidant, NAC helps replenish glutathione levels in your lungs and reduces inflammation in your bronchial tubes and lung tissue.

People with chronic obstructive pulmonary disease (COPD) experience long-term oxidative damage and inflammation of lung tissue, which causes airways to constrict — leading to shortness of breath and coughing.

NAC supplements have been used to improve COPD symptoms, exacerbations and lung decline. In a one-year study, 600 mg of NAC twice a day significantly improved lung function and symptoms in those with stable COPD.

Those with chronic bronchitis can also benefit from NAC. Bronchitis occurs when the mucous membranes in your lungs' bronchial passageways become inflamed, swell and shut off airways to your lungs. By thinning mucus in your bronchial tubes and boosting glutathione levels, NAC may help decrease the severity and frequency of wheezing, coughing and respiratory attacks.

In addition to relieving COPD and bronchitis, NAC may improve other lung and respiratory tract conditions like cystic fibrosis, asthma and pulmonary fibrosis, as well as symptoms of nasal and sinus congestion due to allergies or infections.

Sources of information for this article include:
www.nutralife.com.au/exactly-vitamin-c-help-immune-system-fight-off-colds-flu/

www.the-scientist.com/news-opinion/how-covid-19-is-spread-67143

www.cidrap.umn.edu/news-perspective/2020/02/unmasked-experts-explain-necessary-respiratory-protection-covid-19

https://fastlifehacks.com/n95-vs-ffp/

www.healthline.com/nutrition/nac-benefits#section3

Eight reasons ME/CFS people should take care

Source: www.healthrising.org/blog/2020/03/15/coronavirus-scary-models-chronic-fatigue-syndrome-fibromyaglia-careful

Please note, if it's not obvious, that I'm not a doctor – I'm a patient. Take these musings as you will. We don't know if people with ME/CFS or FM are more at risk of: a) getting COVID-19; or b) coming down with a severe case of it they do. Because both appear to be quite heterogenous diseases, it's possible that some people will be at lowered risk while others will be at higher risk.

It's hard to tell how much risk people with ME/CFS and FM are from COVID-19. Elderly people with a serious disease are at the highest risk. Thus far, the studies coming out of China suggest that having diseases like hypertension, cardiovascular diseases and diabetes, particularly in combination with older age (>65), increase the risk of mortality. Note that diseases thought to have more in common with ME/CFS or FM such as multiple sclerosis, rheumatoid arthritis and migraine are not on the list.

There are some broad factors, however, which suggest people with ME/CFS and/or FM might want to take extra care.

1. Infectious Onset – the most obvious one; if a nasty infection started off your illness – what might a possibly nastier infection do?

2. Poor Sleep – Studies indicate that people getting reduced levels of sleep (<6 hours) are far more likely to come down with a cold than those getting normal amounts of sleep.

During sleep, pathogen-fighting immune cells move to the lymph nodes where they search for evidence of a pathogen. If they find it, those immune cells mount a furious (and metabolically expensive) immune response. Unfortunately, poor sleep also reduces the metabolic reserves our immune cells need to fight off infections!

Plus, having insomnia or late bedtimes reduces hormones that are produced during early sleep which enhance T-cell activity and promote pathogen defense. All in all, now is a good time, if you haven't, to implement some sleep hygiene protocols.

Use the following link for further information about sleep and the immune system
http://simmaronresearch.com/2017/08/sleep-reduced-immunity-vicious-circle-mecfs-fibromyalgia/

3. Reduced Natural Killer Cell Cytotoxicity – reduced NK cell cytotoxicity (NK cell killing ability) is a hallmark of ME/CFS. Because NK cells are amongst the first immune cells to encounter a pathogen, a good NK cell response might be able to ward off an infection before it gets started. A poor one, on the other hand, might give a pathogen more time to get settled. I don't know if there's any evidence, though, that people with ME/CFS and/or FM are more susceptible to colds.

4. Activated Stress Response – The low heart rate variability (HRV), common in both ME/CFS and FM, suggests hyperactivation of the sympathetic nervous system (SNS) (fight or flight system) has occurred. Activated SNS responses are associated with Th2 dominance in the immune system which translates into a reduced ability to fight pathogens such as viruses (and increases risk of autoimmunity). They've also been associated with poor sleep in ME/CFS.

5. Immune Exhaustion / Altered Immune Networking – The Hornig/Lipkin cytokine studies in the blood and cerebral spinal fluid suggest a state of immune exhaustion may be present. Dr. Klimas's immune networking studies – showing odd and blunted networking – back that idea up as well. Dr. Klimas reported that ME/CFS patients are "modestly immunocompromised" and are "a little more" at risk than others.

6. Brainstem Issues – Several Australian studies suggest that damage to the brainstem has occurred in ME/CFS. A recent COVID-19 study (thanks Helen!) demonstrates that the virus can invade the brainstem, in particular, and the brain as well. Invasion of the brainstem could be contributing to the breathing problems found in severe cases. (The virus can also apparently invade the gut at times.)

7. Lack of Exercise – It turns out that exercise is darn good for your immune system. Studies indicate that regular exercise improves immune health and enhances our ability to fight off infections.

8. Bedrest – increased bed rest is associated with reduced levels of the IL-2 cytokine which tells our T and B lymphocytes and NK cells to go out and fight off invaders; i.e. possibly reducing the immune system once again.

All in all – lots of reasons to limit your contacts, rest as much as possible, do things that are relaxing and calming and take care of yourself.

On the brighter side, Dr. Teitelbaum urges people with ME/CFS and FM not to panic. He stated that he's never seen people with these diseases die from the flu, and he doesn't expect, as nasty as this bug can be, that they will from COVID-19.

For the rest of this article please refer to the source link provided at the beginning of this article.

#MEAction Covid-19 resources for ME people

MEAction is providing a variety of Covid-19 information sources at the following link.

https://www.meaction.net/covid-19

Examples include:

- Links to WHO, CDC and John Hopkins information
- Bateman Horne Center: What you need to know about Covid-19
- Dr. Klimas on Covid-19
- NPR: How To Prepare Your Home For Coronavirus (Guide)
- Mclean: Caring for Your Mental Health Despite the Coronavirus
- Tips for Preparing for a Coronavirus Quarantine

Possible vaccines and treatments for Covid-19

Source: www.healthrising.org/blog/2020/03/18/coronavirus-iii-models-singapore-treatments-remdesivir

The Associated Press in America, reports that dozens of research groups around the world are attempting to create a vaccine. Though a drug, not a vaccine, will likely be the first treatment for COVID-19.

First attempt with a vaccine – a Seattle employee from a tech firm got the **first potential coronavirus vaccine**. The vaccine was developed by the NIH and the Moderna drug company.

Inovio vaccine – Another possibility by Inovio Pharmaceuticals is expected to begin its own safety study next month in the U.S., China and South Korea. Francis Collins said it will still take at least a year to get a vaccine out.

Curevac – The Coalition for Epidemic Preparedness (CEPI) and the **German biotech CureVac** have banded together to **develop an mRNA vaccine**. CureVac believes that it will be able to be develop this kind of vaccine more quickly than traditional biologic based vaccines, and hopes to have the vaccine in trial by summer.

Drugs

Drugs, not vaccines, will likely be the first treatment and drug possibilities are pouring out as researchers and doctors across the world engage in an unprecedented effort to fight the virus.

On March 9th, the Bill & Melinda Gates Foundation, Wellcome, and Mastercard today committed up to $125 million in seed funding to identify and make available effective treatments. The effort – called the **COVID-19 Therapeutics Accelerator** – has made explicit their commitment to make the treatments developed available to all. The Accelerator aims to accelerate the evaluation of new and repurposed drugs in the immediate term, and other viral pathogens in the longer-term.

> "If we want to make the world safe from outbreaks like COVID-19, particularly for those most vulnerable, then we need to find a way to make research and development move faster. That requires governments, private enterprise, and philanthropic organizations to act quickly to fund R&D." Mark Suzman, chief executive officer of the Bill & Melinda Gates Foundation.

The clinicaltrials.gov site lists over 100 trials and studies featuring many different drugs that are underway for SARS-CoV-2. **Drugs.com** reported that European researchers have identified over 30 antiviral drugs that could be helpful. It will take time to determine which ones are actually helpful but the outburst in activity provides hope.

Remdesivir to the rescue?

> "We will know reasonably soon whether it (Remdesivir) works, and if it does, we will then have an effective therapy to distribute," Anthony Fauci.

Remdesivir is the top possibility right now. A broad spectrum antiviral drug developed to treat the dreaded **Ebola** and **Marburg virus**, Remdesivir has shown promise in the laboratory with a bunch of other infections (respiratory syncytial virus, Junin virus, Lassa fever virus, Nipah virus, Hendra virus) as well including possibly SARS-CoV-2 – the coronavirus sweeping the world right now – and SARS and MERS.

Francis Collins reported that, "I hope that a drug called **Remdesivir**, which is now in clinical trials in China, Japan, South Korea, and the U.S.— will show that that particular antiviral has considerable efficacy for people who are very sick…"

Remdesivir was administered to a COVID-19 patient with pneumonia in the U.S. in late January in Washington. He improved dramatically the next day. In late January 2020, Chinese reported that of 30 drugs, remdesivir, **chloroquine** and **lopinavir/ritonavir** had "fairly good inhibitory effects" on SARS-CoV-2. On February 6, 2020, a clinical trial of remdesivir began in China.

The **first Remdesivir trial in the U.S**, which began on February 20th at the University of Nebraska at Omaha, included some patients from the Diamond Princess cruise ship. The trial participants will be sick indeed as they must display abnormal x-rays, require oxygen, or be in a ventilator.

Remdesivir
Remdesivir is a broad-spectrum antiviral developed by Gilead to treat the Ebola virus.

That study is part of a large NIH effort expected to assess a variety of novel agents in up to 50 sites globally. **It includes another Remdesivir trial** currently underway at three academic centres in California. Another **large Washington** trial (n=400) is expected to end in May. Note that sometimes trials can be stopped early if efficacy is clearly shown. Remdesivir is not currently FDA-approved to treat any condition.

Other Drugs
Favipiravir or Avigan – A drug used in Japan to treat influenza was "clearly effective" at treating SARS-CoV-2 according to Zhang Xinmin, of China's science and technology ministry (Thanks again, Laurie!). The drug was tested in a large trial of 340 patients in Wuhan and Shenzhen.

> "It has a high degree of safety and is clearly effective in treatment," Zhang

It took just four days for patients given the medicine to knock the virus out of their system. X-rays indicated lung improvements in the vast majority of the patients.

A Japanese health ministry official, however, said the drug was not as effective in the severely ill. **The Guardian** reported that a similar problem has been found with lopinavir and ritonavir, Even if that's true the drug could help less severely ill patient pass the virus more quickly, and possibly prevent them from becoming more sick.

Chloroquine – (a cheap malarial drug) is another possibility. Chloroquine is a malaria drug with potential broad-spectrum antiviral effectiveness. A recent study "**Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies**" found it helpful with SARS-CoV pneumonia). One doctor speculated that chloroquine may be stopping the virus to attacking heme molecules in the blood. He also wondered whether SQ heparin might be able to inhibit or limit SARS-Cov-2 infection in the lungs, intestines and heart.

Hydroxychloroquine (Plaquenil) and Azithromycin – Professor Didier Raoult, the director of the IHU in Marseille, reports that **hydroxychloroquine and Azithromycin**, an antibiotic he states is effective against viruses. effectively reduced the viral load in 24 patients. The French government is now testing the drug combination on a large scale. One person reported that dozens of papers document the antiviral properties of Azithromycin. Medscape has a long and interesting article on **this drug combination**.

A recent "Communication" from China in the "Drug Discoveries and Therapeutics" journal lists some other potential options.

Antivirals – The communication titled, "**Discovering drugs to treat coronavirus disease 2019 (COVID-19)**", pointed out that antiviral drugs including interferon α (IFN-α), lopinavir/ritonavir, chloroquine phosphate, ribavirin, and arbidol were included in the Guidelines for the Prevention, Diagnosis, and Treatment of Novel Coronavirus-induced Pneumonia produced by the National Health Commission (NHC) of the People's Republic of China for tentative treatment of COVID-19. Recommended doses include:

IFN-α – vapor inhalation at a dose of 5 million U (and 2 mL of sterile water for injection) for adults, 2 times/day (in vitro studies suggest it may be effective).

Lopinavir/ritonavir – 400 mg/100 mg for adults, 2 times/day (in vitro studies suggest it may be effective). (A just published study suggests this drug combo is ineffective.)

Ribavirin – via intravenous infusion: 500 mg for adults, 2 to 3 times/day in combination with IFN-α or lopinavir/ritonavir. (Shown effective in SARS study in reducing severe respiratory problems and death).

Chloroquine phosphate – orally administered 500 mg (300 mg for chloroquine) for adults, 2 times/day.

Arbidol is orally administered at a dose of 200 mg for adults, 3 times/day. The duration of treatment is no more than 10 days. (In vitro studies suggest it may be effective.)

Going for the Gusto – Using four drugs (Lopinavir 200mg, Ritonavir 50mg twice a day, chloroquine and oseltamivir (useful in swine flu treatment)), **Indian doctors** reported they cured one woman with COVID-19). A February study published **in Nature** found that chloroquine and Remdesevir, in the lab, at least, worked effectively together to beat back the virus.

Thirty Possibilities Outlined After using a drug screening in silicon and an enzyme activity test, a joint research team of the Shanghai Institute of Materia Medica and Shanghai Tech University reported 30 agents with potential antiviral activity against SARS-CoV-2. They include:

indinavir, saquinavir, lopinavir, carfilzomib, ritonavir, remdesivir, atazanavir, darunavir,tipranavir, fosamprenavir, enzaplatovir, presatovir,abacavir, bortezomib, elvitegravir, maribavir, raltegravir, montelukast, deoxyrhapontin, polydatin, chalcone, disulfiram, carmofur, shikonin, ebselen, tideglusib, PX- 12, TDZD-8, cyclosporin A, and cinanserin.

Chinese herbal medicines such as Rhizoma Polygoni Cuspidati and Radix Sophorae are also possibilities. **Indian Auryvedic pracitioners** recommend neem (Azadirachta Indica), Amalaki or amla (Emblica Officinalis), kutki (Picrorhiza Kurroa), guduchi/glioy (Tinospora Cordifolia), and tulsi (basil) to boost immunity.

Ibuprofen Warning! – the WHO warned individuals with symptoms of the coronavirus not to take Ibuprofen (e.g. Advil) because the drug may boost the levels of an enzyme that may worsen COVID-19 infections – and then took back the warning.

Crunchy flapjack bars

As part of exploring food options that fit with certain food restrictions, our member Cathy Gould has offered the following recipe for crunchy flapjack bars. They are dairy and gluten free, however oats are often dealt with in the same factories as wheat so these might not be ideal if you have a severe intolerance to gluten.

Ingredients:
120mls vegetable oil
100mls honey
50grms dark brown sugar
300grms porridge oats
50grams desiccated coconut
100grms chopped dried apricots
100grms raisins or sultanas

Method:
Put the oil and honey into a saucepan and heat gently until the honey has melted. Remove from the heat and stir in all of the remaining ingredients.
Press the mixture into a lined tin (greaseproof paper) roughly 28cm X 18cm X 3cm.
Bake in oven at gas mark 4/180 Centigrade (reduce to 160 for a fan oven)/350 Fahrenheit, until golden for 20-25 minutes.
Mark into bars while still hot. Cool slightly and cut the bars fully, remove and put on a cooling rack.
Put in a airtight container and they will keep for up to 7 days.