AJEAGAH GIDEON AGHAINDUM

Travelling companion in the wake of COVID: A public health consent

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EXCEEDING EDITION(*EE*)

Dedication

This book is dedicated to travelers around the world, who must keep on moving as the world turns on its North,East, West and South (NEWS) axis in the midst of a ravaging covid pandemic

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Chapter I

INTRODUCTION

Travelling can increase risks to personal health and wellbeing, and these risks should be understood when planning travel, particularly to unfamiliar, distant or remote areas. Taking appropriate precautions before beginning a trip can reduce these risks and ensure a plan is in place in the event that you are injured or suffer from another health condition when away from home. Travellers often experience abrupt and dramatic changes in environmental conditions, which may have detrimental effects on health and well-being. Travel may involve major changes in altitude, temperature and humidity, and exposure to microbes, animals and insects. The negative impact of sudden changes in the environment can be minimized by taking simple precautions. Altitude, heat and humidity, ultraviolet radiation from the sun, foodborne and waterborne health risks, travellers' diarrhea, recreational waters, animals and insects, intestinal parasites.

Depending on the travel destination, travellers may be exposed to a number of infectious diseases; exposure depends on the presence of infectious agents in the area to be visited. The risk of becoming infected will vary according to the purpose of the trip and the itinerary within the area, the standards of accommodation, hygiene and sanitation, as well as the behavior of the traveller. In some instances, disease can be prevented by vaccination, but there are some infectious diseases, including some of the most important and most dangerous, for which no vaccines exist. General precautions can greatly reduce the risk of

exposure to infectious agents and should always be taken for visits to any destination where there is a significant risk of exposure, regardless of whether any vaccinations or medication have been administered.

Many travellers have had their trips ruined by preventable illness. The most common thing these people say about their experience is along the lines of “I had no idea this could happen, if only I had known about such and such, I might have saved myself a lot of trouble” Most people love to travel, whether it’s a weekend getaway close to home or a six-month trekking adventure in the Himalayas. Because travelling allows you to escape the daily grind and experience new frontiers, many believe it must be inherently good for you. However, is that really the case? Is travel good for you? The good news is the answer is almost certainly yes. Going on a trip allows you to embrace new experiences and create long-lasting memories.

Importantly, travel is not only a fun activity, but it also provides some health and personal benefits you may not expect. Whether it’s helping to enhance cognitive abilities or increasing happiness, travel is something that can be transformative for your wellbeing. Certainly, there are some stresses built into travel, especially at the planning stage where organizing flights, accommodations, and itineraries can be frustrating. Of course, those minor annoyances do not dictate how travelling affects your physical and mental health. Below we will look at whether travel benefits you and if it does, in what ways. Amazingly, travel has been linked to some clear health benefits. A 2008 study by Expedia.com looked at 12,000 men and found those who took at least one vacation each year reduced their chances

of dying from heart disease by 30%. Those who did not go on vacation were twice as likely to suffer a heart attack. Other studies have found travel has a similar impact on reducing the risk of depression.

Needless to say, there is evidence that shows travel can profoundly change your overall health. That said, there is a clear caveat to consider. While travel can help boost your chances of avoiding numerous health issues, there are times when there could be an obvious risk to your health. For example, if you travel to a place where vaccinations are needed to stave off disease and you don't get vaccinated. Of course, this would not be caused by the activity of traveling itself but instead because of your own bad decision. That's why it is hugely important to be well prepared before visiting another country. Check with doctors and online resources to see which health risks are prevalent in the place you are visiting and whether you will require a vaccination. Some of the most common diseases that travelers must be aware of include Yellow Fever, Malaria, Polio, and Typhoid.

One of the things most people seek when going on vacation is the chance to unwind and relax. Travel allows you to get away from work, take your mind off the day-to-day grind, and enjoy yourself. Naturally, people's idea of what relaxation is may differ – some preferring to lie on a beach and others preferring to climb Mt. Kilimanjaro – but the result is the same. Studies have shown travel can help to significantly reduce stress and even help people to handle stress when they return home. Feeling more relaxed is important for day-to-day life and can expand into the workplace. Employees who take a vacation have increased productivity, don't miss as much work, and can

handle work demands more efficiently. Travelling is also a fantastic tool for expanding knowledge, broadening horizons, and developing an understanding of other cultures. It is widely accepted that travel helps students to achieve better grades and to have wider academic interests. Whether travel has a negative or positive influence on relationships depends on the situation. For example, if you go on vacation and leave your family at home, that could cause some tension. However, under normal circumstances where people travel together (spouses, family members, friends), travel is known as an excellent way to help make relationships stronger.

This traveling bonanza is critical in the advent of new emerging diseases. The genetic variants of SARS-CoV-2 have been emerging and circulating around the world throughout the COVID-19 pandemic. Viral mutations and variants in the United States are routinely monitored through sequence-based surveillance, laboratory studies, and epidemiological investigations. A US government SARS-CoV-2 Interagency Group (SIG) developed a Variant Classification scheme that defines three classes of SARS-CoV-2 variants: The B.1.1.7 (Alpha), B.1.351 (Beta), B.1.617.2 (Delta), and P.1 (Gamma) variants circulating in the United States are classified as variants of concern. To date, no variants of high consequence have been identified in the United States. Laboratory studies suggest specific monoclonal antibody treatments may be less effective for treating cases of COVID-19 caused by variants with certain substitutions or combinations of substitutions in the spike protein. The Delta variant causes more infections and spreads faster than earlier forms of the virus that causes COVID-19. It might cause more severe illness than previous strains in

unvaccinated people. Vaccines continue to be highly effective at preventing hospitalization and death, including against this variant. Fully vaccinated people with breakthrough infections from this variant appear to be infectious for a shorter period. Get vaccinated and wear masks indoors in public spaces to reduce the spread of this variant. Viruses constantly change through mutation. A variant has one or more mutations that differentiate it from other variants in circulation. As expected, multiple variants of SARS-CoV-2 have been documented in the United States and globally throughout this pandemic. To inform local outbreak investigations and understand national trends, scientists compare genetic differences between viruses to identify variants and how they are related to each other.

A variant with specific genetic markers that have been associated with changes to receptor binding, reduced neutralization by antibodies generated against previous infection or vaccination, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity. Specific genetic markers that are predicted to affect transmission, diagnostics, therapeutics, or immune escape. Evidence that it is the cause of an increased proportion of cases or unique outbreak clusters. Limited prevalence or expansion in the US or in other countries. A variant of interest might require one or more appropriate public health actions, including enhanced sequence surveillance, enhanced laboratory characterization, or epidemiological investigations to assess how easily the virus spreads to others, the severity of disease, the efficacy of therapeutics and whether currently authorized vaccines offer protection. With the discovery of alpha, beta, omega, omicron variants recently in South Africa of covid-19, human health is more preoccupying than ever before.

Chapter II

BENEFITS OF TRAVELLING

INTRODUCTION

Everyone keeps saying how important it is to travel. So what's all this fuss about? Why do people travel and love travelling? More importantly: why should we travel more? The benefits of traveling are not just a one-time thing: traveling changes you physically and psychologically. Having little time or money isn't a valid excuse. You can fly for cheap very easily. If you have a full-time job and a family, you can still travel on the weekends or holidays, even with a baby.2020 has been a tough year for travel - to say the least. But don't let that discourage you from making travel plans in 2021! Here are some of the main benefits of traveling, in case you need convincing. And I'm sure that once you get started, you'll find some more yourself!

1. Traveling Improves Your Health: From cutting down on stress, to lowering your chances of developing a heart disease, the health benefits of traveling are huge. You may stay sitting on a chair all day long at the workplace: including some walking to your trip is sure to make your body feel better. For some people, wandering abroad is even a cure for depression and anxiety. Of course, it's not a foolproof cure, but it might help you feel better, both physically and psychologically. Traveling more is likely to have a tremendous impact on your mental well-being, especially if you're no used to going out of your comfort zone. Trust me: travel more and your doctor will be happy. Be sure to get in touch with your physician, they might recommend

some medication to accompany you in your travels, especially if you're heading to regions of the globe with potentially dangerous diseases.

2. Traveling Lets You Disconnect From Your Daily Life: This is closely related to my previous point. We tend to get so caught up in our daily lives that sometimes, by simply sticking around, we may do ourselves more harm than good. Your boss is taking over your life? Kids are driving you mad? Your parents are trying to make you live the life they want? How long do you think you can handle this pressure before you burst and everything falls apart? Sometimes it is best to take a step back, take a deep breath and take go that Tower Bridge selfie. In all seriousness, travel is not a bad option - it is the most natural way of inducing the feeling you miss someone or that you are missed. The trick is to leave with a bit of preparation to avoid making a mistake during your journey. Plus, if you're flying, you better start thinking about booking your tickets sooner than later.

3. Traveling Makes You Smarter: Get used to picking up new words in a different language every time you travel and you will see improvements in your brain capacities, as Dan Roitman wrote in the Huffington Post. If only this, start getting familiar with travel jargon. Even more than "just" languages, traveling helps you learn about yourself. You might run into challenging situations where you need to be resourceful and think differently. I'm sure that you will develop a new set of skills that you didn't suspect you had within you.

4. Traveling Improves Your Understanding of Other Cultures: Why we travel may differ from one person to another, but people travelling always develop empathy and a deeper understanding of other cultures. Being more understanding and

tolerant about a culture different than ours is part of being smarter, but I consider it as benefits of traveling in itself. There is a quote by Saint Augustine, which goes “The world is a book, and those who do not travel read only one page”. You could think of it this way: if you read what's in the news or watch the news on TV and don't question it, you're missing on a ton of information. You might think that it makes you smarter and more aware of the world, but it's the exact opposite: it narrows your mind to a unique and biased perspective. Sure, you probably feel comfortable where you are, but that is just a fraction of the world! If you are a student, take advantage of programs such as Erasmus to get to know more people, experience and understand their culture. Dare traveling to regions you have a skeptical opinion about. I bet that you will change your mind and realize that everything is not so bad abroad.

5. Traveling Makes You More Interesting: I have no doubt that you're quite the conversationalist. That being said, including a few stories from abroad is likely to grant you even more attention. Mentioning something that most people aren't familiar with or bring a new perspective is always a good way to shine in a social situation. No need to write a whole travel essay, just discuss what you've seen and where you've been: people who are accustomed to their daily life will travel with your words. During my trip to Egypt, my Airbnb host and I went out for dinner. He had been to some many different places, the conversation lasted all night long, and I wasn't bored for one minute. Who do you think people want to listen to: the guy who spent his vacations at home doing some gardening and reading the newspaper, or the one who spent a week in Cuba, driving an

old American car, swimming with dolphins and tasting deliciously spicy food?

6. Traveling Allows You To Try Amazing Food: Speaking of food, I bet you're one hell of a chef and your home meals are delicious. But there is no such thing as trying a typical local dish from another country. Don't trick yourself into going to the Sushi shop next door: you don't know what sushi tastes like until you've been to Japan. As you travel, you discover *the real thing*, and discover that it's usually very different from what you're used to. Eating local food in a new country is an entirely new experience. All the flavors are different. Here me out: I'm French and I love our local recipes. You do to. But let's not kid ourselves: some change would be more than welcome in our daily diet. If only because we're naturally curious. Some food bloggers travel thousands of kilometers for a specific dish! The least you can do is travel and try something new.

7. Traveling Makes You feel Like an Adventurer: Despite the fact that the world has never been as well connected as today, there are still places that are little known to the average tourist. Setting up a list of places you want to visit is extremely motivating. You have something tangible to go after. I'm currently working on my own bucket list, and I think I'll never see the end of it, with all these amazing destinations. The benefit of traveling to a new place is that it forces you to face the unknown and think differently. You don't need to go spend a month in the jungle! If you live in a large city, just going on a hike over the weekend will make you feel different. Adventures require novelty, so get out of your comfort zone. It might be scary, but in retrospect, you'll see it as the best decision you ever made!

8. Traveling Expands Your (Real) Social Network: Believe it or not, social networks were once like a real thing - in real life. Crazy, I know. One of the main reasons why I love traveling is that I believe that establishing connections and building a network abroad is one of the smartest things you can do in today's world. It is sometimes hard to build long-lasting relationship with the people you meet abroad, but it doesn't mean it's not worth meeting new people! Take this example: I've spent last year's New Year's Eve in Tanzania. I slept for two days at the flat of an Egyptian expat. I met him on Couch surfing, once of the best ways to find cheap accommodation when you travel. Now, a year later, this guy invites me to his wedding in Egypt! How amazing is that?! Some connections you make over your travels are surprisingly strong.

9. Traveling Let you Create Lifetime Memories: My grandfather was an amazing story-teller and he used to tell me stories of the trips he made when he was younger. One of my favorites is how he tried eating with chopsticks in China for the first time. He regretted not traveling more as a young man. Years later, he still remembered everything in details: because traveling made a real impression on him. And it probably will on you too.No matter how insignificant it may seem, the fact that you've had an experience abroad, something that was out of the ordinary, creates a memory that you will remember for a long time.I think that creating those memories is why many people keep traveling.

10. Traveling Makes You Love Your Home Even More: "The magic thing about home is that it feels good to leave, and it feels even better to come back". You will truly understand the meaning of those words by Wendy Wunder, only upon your

return home. On the one hand, it would seem that you're back where you started, same setting, same people, same problems. Yet you're not the same - you're new, full of new knowledge and ideas!I know that I was getting bored after living my whole life in the same place. I needed to get out; I need a change of scene. I was focusing only the negative: how there isn't much to do around, how you always meet the same people, how nothing changes. Now, when I come home, I'm glad about all of this and I see only the positive.

11. Travel exposes you to different environments, which create stronger antibodies and boost your immune system significantly: Antibodies are the little proteins that protect your immune system from harmful pathogens. In fact, research shows exposure to some dirt and minor illnesses actually keeps your body and gut stronger. This isn't to say that you shouldn't practice basic hygiene on the road — you should still wash your hands or use a little hand sanitizer here and there — but having some new bacteria in your life isn't a bad thing. One blogger even suggests that after 17 years on the road, travel has been his best probiotic. When you travel from place to place, your body adapts to thousands of new bacteria, which it turn makes it much stronger.

12. Travel lowers stress levels. Like *a lot*, a lot. This one might not come as a big surprise to you, but it's been scientifically proven that travel will increase your happiness, decrease your depression, and chill you the F out. A study found that three days after vacation, travelers felt well-rested, less anxious, and in a better mood. And these improvements didn't disappear when they returned home, they lasted for weeks afterward.

13. Travel improves your brain health: Travel expands your mind. You meet new people. You adapt to new situations. You

become more globally and culturally aware. This is all good for your health because new experiences increase cognitive flexibility, keeping your mind sharp. Studies have shown a connection between travel and an increase in creativity, a deeper sense of cultural and personal awareness. And according to the Journal of Personality and Social Psychology, those who travel and study abroad tend to be more open and stable.

14. Travel will decrease your risk of heart disease. That's because people who wander away from their homes for a little vacation are generally less stressed and anxious — or at least they're willing to take a break from their stressors. Because of this, the long-running Framingham Heart Study found that men and women who traveled annually were less likely to suffer a heart attack or develop heart disease.

15. Travel keeps you fit: Okay so travel often means sitting for hours on end in a series of moving vehicles, but it also means lots of opportunities to force yourself to be active. When we travel, we want to try new things and see all there is to see — we spent money to get there, after all — so we're more likely to attempt an extreme sport, walk the city streets much more than we would back home, or hike to get the best views of our surroundings. Even if you plan to stay all day at the beach, walking on sand will force your muscles to work twice as hard.

16. There are a lot of places on Earth that have healing properties: And they may not be in your own backyard. When you travel, you get to visit healing sites that others don't — like the natural hot springs of Turkey, Iceland or Costa Rica that draw on the earth's healing properties. Soaking in these mineral-rich waters can improve your skin, relieve pain and stress, and increase longevity. Energy vortexes — do exist, first of all — and are also sacred places made up of 'anything that flows,'

whether it be wind, water or electricity. They are the places where the earth's powers converge to heal, uplift, and rejuvenate.

17. Travel will let you live longer : It's true; those who travel tend to have a longer life expectancy. Whether local or global, all forms of travel enhance our lives and can actually increase our life expectancy. Research shows that travel reduces stress, keeps your body healthy inside and out, and boosts brain health. This adds up to an increased chance of living longer and to having more fun doing it. When you return from a vacation feeling relaxed and refreshed, that's not just an emotional response to time away from work and daily worries: you're experiencing some of the nourishing effects of traveling. It turns out that jetting off to relax on the beach in Turks and Caicos or to explore ruins in Tulum isn't an indulgence — research says that vacationing is actually good for your health. Forbes Travel Guide consulted Dr. Mehmet Oz, who elaborated on how traveling for pleasure affects your well-being. He says that: Taking vacations can lower men's risk of death by 21 percent and mortality from cardiovascular disease by 32 percent; Among women, a lack of vacation is associated with a higher risk of heart disease and death from heart disease; Women who go on trips more frequently are less likely to become tense, depressed or tired and are happier with their marriages; Vacationing improves your mood and reduces stress. It also can temporarily help boost productivity. People who travel more frequently are more satisfied with their physical health and well-being; Vacationing can increase creativity.

As you travel, you realize that the world is a much better place than what you can see on TV when watching the news. There is a quote by Mark Twain that I love: "Twenty years from now you will be more disappointed by the things you didn't do than by the ones you did do." Cliché as this may sound, the money you spend on

travel, is an investment in yourself. Travel doesn't make you feel as bad for spending money.

Chapter III

Reasons Why Travelling Is Disruptive To Our Health (And How To Remedy It)

Introduction

We are fortunate to live in an era where international air travel is cheap, fast and easily accessible. With non-stop flights reaching 18 hours, we can get from one corner to the world to the other in a day. Long haul airline travel is a marvelous advancement for business, trade and holiday makers, but there is a down side. The downside is the toll it takes on the human body. Airline travel, especially long duration travel, exposures the body to an array of stressors. Stressors that I have outlined in detail below. Before you think this is an article designed to scare you from ever leaving your home again, think again. I personally love travelling and frequently fly on routes well over 10 hours in length. But am I well aware of the toll these flights take on my body, and that is my intention with this article - to educate you on what the health consequences are when travelling. Also, I have listed various solutions and strategies to protect your body from these dangers. From supplements to seat selection, these tips and tricks will help you minimize the stress load on your body, while increasing recovery and resilience. If you don't want to read the entire article, you can download a free copy of these action points by clicking

1. Non-Native Electromagnetic Fields : Non-native electromagnetic fields (nnEMF) are emitted from devices such

as Wifi routers, cell phones, bluetooth speakers, electrical wiring, radio transmitters and pretty much any electrical device. Though a rather controversial topic, high levels of nnEMF exposure on the human body (or any living body, human or not for that matter) are shown to be damaging to cell health - including: cancer ,depression , fatigue, irritability & headaches, nausea and nose bleeds ,lowered sperm count and libido, and much, much more, As technology - and more specifically wireless technology - use grows exponentially, our bodies are exposed to greater and greater amounts of nnEMF. There are numerous things we can do to protect ourselves from these fields, some of which I will cover below. You have no doubt connected the dots already - being encased in a metal tube, surrounded by electronics, transmitters, tv screens, portable devices and onboard wifi increases the exposure of nnEMF fields on the body. With increased exposure comes an increased stress load on the body and negative biological effects. Flying is one of the most unnatural things humans can do, flying surrounded by technology only makes things worse from a health point of view. Fortunately there are ways to minimize this damage:

1. **Choose Your Seat Wisely -** Avoid sitting over the wing as there are a lot of electronics running underneath. This will drastically increase your exposure to nnEMF.
2. **Distance is your friend -** One way to reduce your nnEMF exposure is through distance - the further you are from TV screens, electronics, or other passenger's wifi devices, the less of the load. Business classes anyone?!

3. **Protect the essentials -** Look at using EMF reducing fabrics over your head, organs and genitals. When flying I wear my Faraday Undies.
4. **Supplement -** Utilise supplements that can help protect against oxidative stress and EMF exposure - I use CoQ10, Vitamin C and Astaxanthin XX whilst
5. **Ground Yourself -** it is still possible to get some form of grounding effect when travelling, simply remove your shoes and socks and place your feet on a metal structural component such as the seat fixings.
6. **Avoid Carriers with Onboard Wifi -** Most airlines offer onboard wifi nowadays, but their are still some carriers (or aircraft) who don't provide this service. If possible, fly on a plane that doesn't have onboard wifi.
7. **Bonus Tip -** Remember, EMFs are also extremely high in the airports as well as on the aircraft. Aim to utilise these tips while waiting for your flight as well as onboard.

2. Jet Lag: Anyone who has traversed across multiple time zones will know how horrible jet lag is.You're tired, lethargic, spaced out and all you want is sleep... but your sleep cycles are so missed up that sleep is hard to come by.Your bodies natural cycles are all off. You may be craving food yet it's the middle of the night in your new environment for example. Many simply views jet lag as a consequent of travel. But there are far more damaging health consequences of jet lag.A disruption of your bodies cycles (broken circadian rhythm cycles) has been linked to: Higher rates of cancer'Diabetes'Heart disease'Obesity'Insulin resistance (leading to diabetes) Leptin resistance Jet Lag can make you sick and fat. Not only that, but studies have found that Jet Lag disrupts your gut health. The

researchers remarked 'We saw that in the presence of jet lag, their microbes were completely messed up. We could very nicely see that transferring the gut microbes from the point where jet lag was at its highest induced much more obesity and glucose intolerance," .What can you do to protect yourself from the dangers of Jet Lag? Read on:

Jet Lag Travel Solutions:

1. **Wear Blue Light Blockers -** Blue light signals to the body that it's day time. By filtering this light you can shift your body clock to align with your destination. I use the Swannies Blue light blocker glasses from SwanwickSleep.com

1. **Use the Human Charger device -** This device has been shown to significantly reduce jet lag symptoms.
2. **Read My Jet Lag Tips article**

3. Poor Air Quality: Given the high altitude that aircraft fly at, there is a need to circulate air within the aircraft. This brings about numerous health issues as the air supply is limited and there are hundreds of passengers onboard, sometimes for up to 18 hours time.It is well known that air quality onboard commercial airlines is far from 'fresh'.The health issues around poor air quality when travelling include:lowered levels of oxygen,increased levels of CO2,extremely low levels of humidity, high levels of ozone, high levels of VOC's and aerosols, All of which can lead to sinus problems, headaches, nosebleeds, dehydration and increased toxin burden on the body (which is linked to fat gain as cover.Fortunately, airlines are aware of these air quality issues and new versions of commercial

airlines have higher humidity levels, improved cabin pressures and advanced air filtration and circulation systems.

Poor Air Quality Travel Solutions:

1. **Wear a Travel Mask When Flying -** not practical for most, but this is an option for those with respiratory issues.
2. **Hydrate -** before, during and after the flight- to help with the loss of fluids from the low humidity onboard
3. Supplement - a quality anti-oxidant supplement like glutathione will help protect against airborne nasties. Also, Oil of Oregano is handy to use when travelling to protect against germs.

4.Airport Stress : Stress not only makes us fat, but makes us sick as well.The body can only handle so much stress at a given point, fortunately we are able to increase our stress resilience and utilise tools and techniques to help lower the impact of stress on our body.So far in this article we have looked at how flying can be damaging to our health. But it's not just what happens in the air that makes travel a burden on our body, it's also what happens on the ground before and after our flight. Airports are a rather stressful place. Lots of people, announcements, security, and people in a hurry, foreign languages, heavy luggage, and flight delays etc.All of these things increase the stress load on the body. Remember, our stress response is a survival mechanism - ideally it is activated in a life or death situation, providing us with a short term solution to ensure we overcome the stressor. Stress brought on by long lines, heavy bags, and angry security staff may not be a life or death situation, but we don't interpret it that way. When we see the 'Last call' label next to our flight our stress system is

activated for example, either hormonal effects of chronically activated stress response cause all sorts of health issues such as insulin and leptin resistance and high blood pressure. Given you are about to embark on a long, stress inducing flight, it's important that you minimize the stress load whilst going through the airport(Figure 1).

Figure 1: Mind searching cases of airport stress

Airport Stress Travel Solutions:

1. **Get To The Airport Early -** If you're prone to anxiety, or fear missing your flight, plan and prepare to get to the airport (and your boarding gate) nice and early.
2. **Fly Premium -** flying in the premium classes allows you access to express checking and boarding gates.
3. **Be Prepared -** Understand that airports can be crazy. Ensure you are well fed and hydrated beforehand, that you have all your documents in a convenient place and you know

important details (flight number, gate number, boarding time etc)

4. **Stress less -** I know this may sound silly, but everyone has a different stress tolerance. Some people blow up when a car cuts them off on the road, others couldn't care less. If possible, try and view the airport stressors and 'first world problems' that aren't going to kill.

5. Radiation Scanners at Security: We have already looked at the high nnEMF exposure while on the plan, but there is another significant amount of radiation exposure that occurs prior to boarding the plane. This happens when we pass through those full body security scanners. The ones that we're told are safe, and are necessary to protect ourselves from 'terrorists'. If you look at the findings of Jason Prall, you will soon see that these scanners are safe on our bodies. These devices produce microwaves with wavelengths that fall exactly bin the microwave spectrum. The power density of millimeter wave scanners fall between 10-8 and 10-7 W/cm2, which seems pretty insignificant.....until you read this paper which shows that millimeter waves at power densities as low as 10-11 W/cm2 have an effect on DNA, RNA, & proteins. Which concluded "Statistically significant changes in CCS (chromatin conformational state aka DNA, RNA, and proteins) were induced by millimeter waves at 10-9 W/cm2."

Radiation Scanners Travel Solutions: Opt Out - You can ask for a 'pat down' instead of going through these harmful scanners. Simply tell the closest security officer that you want a pat down instead of going through the machine. You have a right to this and you don't have to give a reason. I have done this on

numerous airport visits including in Australia, USA and Hong Kong. There are two main downsides to 'opting out' and getting the manual do over.1) It's inconvenient. You will have to wait (in LAX I had to wait 20minutes before an officer came to do the pat down, I wasn't worried as I had 5 hours before my flight was leaving. I think they left me waiting hoping I would simply give up and go through the scanner instead).It's invasive. You don't have to strip down, but you will get a full pat down, including close to and around private parts. You get an officer of the same sex and they do use the back of their hand. Whether you decide to opt out or not is entirely up to you and how much you value your health and freedom.

6. Insecticide Exposure: Insecticide spraying used to be the norm for airline passengers many years ago. Fortunately it's not as common place today, but it still occurs. In fact, a big reason why I'm writing this article today is because of my recent encounter with insecticide spraying while onboard an airplane. Upon landing we were told that we were to remain seated with our seat belts securely fastened as staff were going to go through the cabin spraying insecticide. The announcement concluded that 'the World Health Organisation has stated that the chemicals used are safe for human exposure ‘Knowing that the WHO is far from being the most trust worthy source for health information I looked at my wife in horror. She shared the same look and stopped the flight attendant as she walked past her seat. Fortunately she was able to get us off the aircraft while spraying occurred. Unfortunately our bags had to remain on the aircraft and we had to wait until everyone was offloaded before a staff member could go and collect them (we weren't allowed back on).I decided to do a little bit of research into this insecticide

spraying procedure and see exactly what was being sprayed on this poor folk sitting inside a sealed tube. Here is what I discovered: This procedure is known as aircraft disinfection, It is done to reduce the risk of foreign insects entering a country, WHO recommends the following pesticides be used for this procedure:synthetic pyrethroids (permethrin, d-phenothrin, and 1R-trans-phenothrin).Crew members have reported health issues as a result of disinfection. World Health Organization and the International Civil Aviation Organization stipulate two approaches for aircraft disinfection– (1) spray the aircraft cabin with an aerosolized insecticide while passengers are on board or (2) or spray or treat the aircraft's interior surfaces with a residual insecticide (residual method) while passengers are not on board. As for the safety issues from disinfection spraying: A WHO report stated it was safe but "some individuals may experience transient discomfort following aircraft disinfection by aerosol application, there is no objection to any of the recommended methods of aircraft disinfection from a toxicological perspective. A paper titled Anaphylaxis in an airplane after insecticide spraying found that asthma suffers is likely to be affected from disinfection. Research done on crew exposed to the pesticide spraying concluded: "Flight attendants on commercial aircrafts disinsected with pyrethroid insecticides are exposed to pesticides at levels that result in elevated body burden and internal accumulation comparable to pesticide applicators, exceeding levels in the general U.S. population. It is expected that flying public would be similarly exposed to pesticides on those flights." Pretty scary right? Hopefully by now you're seeing why international travel can be so damaging to your health. As for the action steps to protect your health, it can be a bit tricky, especially if they spray during the flight, or if they

spray prior to boarding (whereby you're exposed to the residues).If they spray upon landing here's what I would do:

Insecticide Exposure Travel Solutions:

Avoid Airlines/Countries That Require Aircraft Disinfection - this may not be practical for all, but it is an effective way to avoid exposure!, **Wear a Mask When They Spray**, **Ask to Opt Out -** If they are spraying when you are still at the gate, ask to get off the plane due to 'medical reasons'. Depending on how open minded your flight attendant is, be prepared to get some eye rolling or a statement that its 'perfectly safe'. If this happens you can explain you suffer from Asthma to help your cause.

7. Flame Retardant Exposure: Flame retardants are commonly added to furniture, carpet padding, electronic devices, and other consumer products to reduce the chance of fires. Flame retardants easily bind to dust particles. There are a variety of flames retardants used in the products we use on a daily basis. Numerous peer reviewed studies have found that PBDE's and other flame retardants have been detected in: Human fat tissue, Blood, Breast Milk, Urine, and Semen. Flame retardants are com. Flame retardants have been linked to thyroid health, pregnancy, fertility, obesity, brain function and cancer.

Flame Retardant Travel Solutions: Unfortunately there is not a lot you can do to minimize your exposure to flame retardants when flying, instead you have to focus on eliminating these toxins: **Sweating -** Post flight, I would suggest a sauna session to promote sweating (shown to help reduce flame retardant levels in the body).

8. Toxic Plane Food: Anyone who has spent a bit of time on airplanes understands that the food quality is far from great

(unless of course you're fortunate to travel on a premium airline in first class!).And even if you are fortunate enough to receive a meal that looks half decent (and even tastes OK) it's safe to assume that the meal contains: GMO products - which are extremely high in glyphosate (read my article 'Why You Need To Eat Organic' for more on the dangers of glyphosate), Toxic additives and preservatives such as MSG, coloring agents and various flavor enhancers, High levels of Poly-unsaturated fatty acids (read why you want to avoid these in the article PUFA's: The Worst Thing For Your Health That You Eat Everyday), Feed lot sourced meat - containing antibiotics, growth hormones and other toxins, High levels of BPA plastic - especially when the plastic trays are heated (Read 'How Toxins Are Making You Sick and Fat' for more on this). You're not going to be eating organic, grass fed, natural food on your long haul flight (unless you bring your own!)

Toxic Plane Food Travel Solutions:

Fly Business Class on a Premium Airline - Take a moment to look at the meal photos .

1. **Pack Your Own Food -** Pack organic snack bars, grass fed jerky, dark chocolate etc to eat while travelling.
2. **Don't Eat -** You could always fast during your flight! Remember, there are plenty of benefits of fasting.

9. Sleep Disruption: Trying to sleep on a cramped air plane seat is rather difficult. Combine the tight sleeping space with passenger disturbance, and less than optimal flight times and you have a recipe for lack of sleep. Unfortunately acute sleep deprivation is a proven way to do a fair amount of health

damage. Lack of sleep causes: Increased insulin sensitivity, Leptin sensitivity issues, Brain fog, Poor decision making, weakened immune function, increased appetite, Irritability. Given that the body is already under an increased stress load when travelling, it's a rather crucial time for quality sleep.

Sleep Disruption Travel Solutions: Book a Lie Flat Seat - It helps! But it can be expensive

10. Cosmic & Solar Radiation: We already looked at the impact of nnEMF on the body when flying in reason number 1. But that focused more on EMF fields generated from within the aircraft itself. Here we look at the radiation from the environment when flying. Our earth is bombarded with solar and cosmic radiation on a daily basis. Fortunately our suns' magnetic field, the earths' magnetic field, and the earths' atmosphere does a great job protecting us from this harmful radiation. But when we are travelling kilometers above the earth's surface, there is less atmosphere to protect us. Cosmic and solar radiation levels are much stronger the higher we go. And if you think the plane's fuselage will protect you, think again. It has been well documented that humans flying at altitude are exposed too much higher levels of radiation. How damaging is that radiation? We know that ionizing radiation is harmful on living cells, but as the saying goes 'the poison is in the dose'. The bigger question is - is airline travel exposing us to levels of radiation that could be harmful? A lot of research has been done looking into this question. While most findings state that the levels passengers are exposed to be safe flight crew, and pregnant passengers should be cautious of regular exposure. Along with this, pilots & flight crew have a higher incidence of skin cancer (attributed to the higher radiation their bodies are exposed to), brain cancer and breast cancer. Researchers have hypothesized that flight attendants who suffer from

miscarriage may be connected to high levels of galactic radiation exposure. If you are a frequent traveller, cosmic and solar radiation exposure should be a bigger concern than if you travel infrequently. Though anyone who is serious about their health and wellbeing should keep radiation exposure from flying in mind.

Cosmic & Solar Radiation Travel Solutions:

1. **Travel at Night -** When solar radiation levels are lower
2. **Travel close to the equator -** Where radiation levels are lower due to earth's magnetic field deflecting radiation towards the poles
3. **Avoid Window seats -** the windows will let in much higher levels of damaging UV-A rays
4. **Follow the tips in the nnEMF section**

11. Dehydration: Dehydration is a common side effect of airline travel. This is a result of the low cabin humidity levels, and often the poor choices of beverages consumed when flying (alcohol and coffee).Dehydration causes: Fatigue, Headaches, Nosebleeds, Confusion, Dizziness, Muscle cramps and spasms. Fortunately, it is easily remedied and generally the effects are not long lasting. But still, dehydration does negatively impact our health.

Dehydration Travel Solutions:

1. **Drink Plenty of Fluids -** Preferably high mineral fluids to help maintain mineral balance.
2. **Say Yes Whenever Water is Offered**
3. **Avoid Alcohol and Coffee Whilst Flying -** These will dehydrate you further
4. **Purchase Bottles of Water At The Airport -** and skip on these frequently throughout the flight

5. **Bonus tip -** Too many things to remember? Download my Free Checklist - The Essential Secrets To Protect Your Health When Travelling

12. Deep Vein Thrombosis: Deep vein thrombosis (DVT), is the formation of a blood clot in a vein deep in the body - generally within the legs. There are various causes behind DVT, but risk increases when flying. This is because of the prolonged periods of inactivity when in an airline seat. The WHO issues a report on air travel and DVT, they found that the risk of DVT doubles after a flight of 4 hours or more. The risk of DVT in healthy passengers for a long haul flight (4 hours or more) is 1 in 6000.Movement is the key when it comes to DVT prevention. So remember to get up and move about when flying.

DVT Travel Solutions:

1. **Drink Plenty of Water** - during the flight. Not only does this help with dehydration, but it will make you need to get up and use the bathroom.
2. **Get Up and Move about the Cabin -** Every hour or so, get up and move about.
3. **Get an Aisle seat -** as you have direct access to the aisle and should a window seat passenger need to get out it will require you also to get up and move.

CONCLUSION

Reasons why long distance travel can damage your health. I simply wanted to share the facts around long distance travel and the impact it has on our health. If you are like me, you are passionate about health and wellbeing, and want to know what impacts your body and health. And in turn you can then make informed decisions about your health. This article is meant to serve that purpose. As I mentioned in the introduction, I do a lot of travel myself. I am aware of the health impact if may have on my body, but at the same time I utilize the strategies outlined above to help mitigate this risk. I hope my 'travel solutions' provided help

provide a counter to the potential health impact travelling may cause. Please don't run out and cancel your 12 hour long haul flight after reading this piece!

Chapter IV

TRAVELLING HEALTH TIPS

Overseas travellers have a 50 per cent chance of suffering from a travel-related illness. The most common travel-related sickness is gastrointestinal infection, which is generally picked up from poorly prepared food and untreated water. Have a medical check-up to make sure you are healthy before you travel and discuss vaccinations with your doctor. Be prepared and aware of health issues when travelling. Prepare for travel, Travel vaccinations, Tips for older travellers, Tips for travellers with a disability, Eating and drinking while travelling, , Avoid mosquito bites when travelling, Sexually transmissible infections and travel, Where to get help. People who travel overseas have up to a 50 per cent chance of suffering a travel-related illness. While most travel-related illness is minor, some very serious infectious diseases are endemic in some parts of the world. All travellers should be prepared for travel and be aware of health issues and measures to protect themselves from sickness.

1. Prepare for travel: There are many things you can do to prepare for a healthy holiday, including: Have a medical check-up. Make sure you are healthy before you travel. Update your vaccinations and ask about other immunizations. Pack a medical kit for yourself and any children travelling with you. Make sure you pack enough of any medications you need, or take a

prescription. Organize travel insurance, including cover if you need to be evacuated to a suitable hospital. Have a dental check-up. Have a vision check and pack a spare pair of glasses.

2. Travel vaccinations: You may want to arrange vaccinations or medications to protect against diseases such as hepatitis, typhoid or malaria. In fact, some countries legally require travellers to have certain vaccinations, such as yellow fever. As you will need to have some vaccinations weeks or months before travel, it is best to see your doctor six to eight weeks before you go. However, if you have to travel at short notice, you can still have some vaccines.
Your doctor will be able to advise which vaccines are suitable for you depending on. Your medical history and age, your destination and likely accommodation, the season in which you are travelling, the length of stay, the type of travel, for example, bus tour or backpacking.

3. Tips for older travellers: For older people, the risk of death or serious illness while travelling is the same, or even less, than staying at home. However, planning is important, so before travelling: See your doctor for a check-up and discuss your fitness for the trip you are planning. See your dentist and optometrist. Pack a spare pair of glasses, any medications you need and a small medical kit. Organize travel health insurance with pre-existing illness cover if needed. Make sure it covers emergency evacuation. Make sure routine immunizations are up to date and get vaccinated against influenza and pneumonia. Consider your back and joints – use luggage with built-in wheels. Take clothes and hats to suit the climate. If you are

concerned about your health or the health of someone you are travelling with, consider taking an organized holiday.

4. Tips for travelers with a disability; Travellers with a disability will need to make sure in advance that their needs can be accommodated while travelling and should consider: making arrangements for wheelchairs, guide dogs and seating needs well in advance, finding out about the medical facilities in the areas you will be visiting, getting a letter from your doctor detailing your medical requirements or conditions, carrying a medical alert bracelet or pendant for specific conditions.

5. Eating and drinking while travelling: The most common travel-related illnesses are gastrointestinal diseases, usually picked up from poorly prepared foods or untreated water. To avoid diarrhea, stomach pains, nausea and vomiting associated with these illnesses: Use boiled or bottled water, or water purifiers or tablets. Avoid ice in drinks. Avoid unpasteurized milk and dairy products. Avoid fruit and vegetables that have been washed in the local water. Eat thick-skinned fruit and vegetables that you can peel yourself, such as bananas, oranges and mandarins. Make sure food is cooked thoroughly and eat it while it's hot. Avoid shellfish. Don't buy food from street stalls – hotels and busy restaurants are safest. Take care with personal hygiene.

6.Avoid mosquito bites when travelling: Some serious infectious diseases such as malaria, Zika virus, yellow fever and dengue fever, are transmitted by mosquitoes. While there are vaccines and medications available to help protect against some of these diseases, travellers are advised to always protect against mosquito bites. Some tips include: Wear mosquito repellent that

contains at least 30 per cent DEET or 20 per cent picaridin. Stay indoors between dusk and dawn. The mosquitoes carrying the malaria parasite generally feed at this time. Clothing, bedding, mosquito nets and tents can be soaked in a safe repellent (such as permethrin) prior to travel. Wear socks, long pants, and long-sleeve shirts when outdoors. Use a bed net. Stay in air-conditioned, screened accommodation.

7.Sexually transmissible infections and travel : HIV and other sexually transmissible infections (STIs) are endemic in many countries, particularly in Africa and Southeast Asia. Always practise safe sex by using condoms. Where to get help, doctor, A pharmacist, A travel health clinic, Your travel agent, Your travel insurance company, Department of Foreign Affairs and Trade. If you do not speak the language, ask for someone who speaks English.) , A doctor, hospital or health service in the area where you are staying. Traveling is an exciting and enjoyable activity that should be enjoyed by many. However, there are certain travellers who cannot simply make the most out of their adventure because of their health conditions. In this guide, we would like to help you enjoy your travel even though if you or your loved one has a chronic illness. Planning your trip can help you expect the unexpected.

People travel to feel relaxed and to enjoy their special time away from stressors. However, travelling with a health condition, especially chronic illnesses, can be stressful itself. Even if you plan your trip thoroughly, there are certain things that cannot be controlled during the course of the trip itself. You are considered as someone with a pre-existing health condition if: You regularly take medication as maintenance; You have a physical disability that affects your mobility, You have an

illness or deficiency that has compromised your immune system over time, and; If you had a previous medical condition that has affected your health in the past, present, and the future. This will help you determine how you can prepare for your next destination, especially here in Australia. Depending on where you are headed, you may want to read further on how to come prepared when visiting here in Australia. Currently, there are no travel health notices for Australia, so the best thing you can do is prepare yourself for any pre-existing health condition that you have.

8.List of Medical Conditions and Travel Information

To prepare for the unexpected, you should be able to determine which underlying health condition you have and how to manage it should you have an attack or if you feel that a situation may aggravate your condition. Here are the most common medical conditions that can be exacerbated by extreme conditions such as stress during travel:

a)ASTHMA

Description: It is a chronic, long-term lung disease that affects a wide spectrum of ages. It is characterized by inflammation and narrowing of the airways, causing periods of wheezing, chest tightness, and coughing.

Management: Asthma has no definite cure. Certain conditions such as stress and irritants can cause it to flare up. To manage an asthma attack, you should determine the cause of the flare up, and treat its symptoms.

Preparations for traveling: Make sure that you've already consulted with your doctor, and you have the necessary medications with you prepared for the trip. Plan thoroughly, and bring extra medication just in case you plan to stay longer. On

the other hand, it pays to know the alternative name of the medications you take so you can buy it yourself should you need to restock.

b)HIGH BLOOD PRESSURE AND HEART CONDITIONS

Description: High blood pressure is defined as blood pressure readings that are consistently 140 over 90, over weeks. A high blood pressure puts extra strain on the heart and your blood vessels, eventually leading to a heart attack or a stroke. Ischaemic heart disease and stroke are the world's biggest killers, accounting for a combined 15 million deaths in 2015, according to the WHO.

Management: Anticipate and manage stress throughout the whole travel experience. Ease out your itinerary and don't try to cram everything on each day. Do not overexert yourself, and steer clear from activities that can trigger extreme emotions.

Preparations for traveling: Avoid over packing. Carrying heavy luggage can only increase your blood pressure. Make sure that you have enough medicine to manage your blood pressure during the trip. If you have a lot of medicine to take for a present condition and for maintenance, it would help to use a pill box to keep all your medicine in check per day. That way, you won't miss any of your meds.

c) CANCER

Description: Cancer encompasses a wide range of medical conditions with varying symptoms and different management regimen. Consult with your doctor on the specifics of your illness.

Management: While it may be challenging to manage every symptom associated with cancer, it is still best to consult with your doctor on what you should prepare for the trip. Consider

ongoing medical needs that must be addressed during the trip. Check immunizations or check against it — some cancer patients have their immunity already compromised, so it is not recommended to take any immunization unless check by a doctor.

Preparations for traveling: Be prepared to bring in some sun shade, as radiotherapy and chemotherapy can make patients sensitive to sunlight. Again, do not cram every activity in one day to avoid exhaustion. Because you can never be too sure of your surroundings, it is advisable that you bring in sanitizing wipes or alcohol to prevent infection. Wash your hands thoroughly, and be careful with what you eat and drink in the location.

d)DIABETES

Description: Diabetes is a disease where your blood has too much sugar or glucose in it. It may be because of your organs malfunctioning, therefore inefficient in producing insulin, or because of dietary and lifestyle choices.

Management: Traveling can surely disrupt your routine, so it's best that you plan your time. The key is to adapt your routine to wherever you're going. Coming to Australia may require you to consider the time zone differences, etc. in administering your insulin shots or taking in your meds. Plan activities and don't exhaust yourself. Be prepared with light snacks should you feel the symptoms of low blood sugar.

Preparations for traveling: Determine whether you share the same strength of insulin in Australia. There may be some insulin shots that have a different brand name with the ones that you have in your country. For a complete list of drugs used in diabetes in Australia, check out this comprehensive list from

Australia's Department of Health. Depending on where you're coming from, travel time to Australia can take up to a day; they also have 13 time zones so prepare to align your schedule with their time so you won't forget. Don't forget to wear your diabetes medical alert identification bracelet so if something happens to you, they will know the correct intervention for your situation.

e)OSTEOPOROSIS

Description: Osteoporosis is the condition where your bone becomes porous and fragile because it loses too much bone or doesn't produce enough to construct a bone. It makes the bone brittle and prone to breakage because of its weak stature.

Management: Most of the management of this condition lies on how you can handle physical activity. With osteoporosis, prevention is better than cure. Make sure to wear comfortable shoes that will aid you gait, weight, and balance for the rest of the trip. We recommend using non-slip soles and wide-heeled shoes for support. If you're taking a lot of medications, let your doctor know that you're going on a trip so he can advise you what can be contraindicated with your diet and medication.

Preparations for traveling: Prepare yourself physically for the trip. Aside from doing regular check-ups and exercises, you should be able to "scout" your destination here in Australia via Google Maps. Australia's has 5 most walkable cities that house its major tourist spots — Sydney (Walk Score: 63), Melbourne (Walk Score: 57), Adelaide (Walk Score: 54), Brisbane (Walk Score: 51), and Perth (Walk Score: 50). Once you come to your accommodation, scout possible obstacles that may increase your risk of fall.

f)Disability and Accessibility

Different countries worldwide have already passed laws on providing services for the disabled. It has been a local, conscious effort to improve each city by passing laws that require public space to become accessible. Let's take a quick trip around the world and check out the countries that are actively providing quality service to people with disabilities. Australia is one of the wheelchair-friendly destination in the world. From tourist spots to accommodations and even transportation, they have everything covered. The Disability Discrimination Act 1992 protects individuals across Australia from unfair treatment in many parts of public life. The Act makes disability discrimination unlawful and promotes equal rights, equal opportunity and equal access for people with disabilities.In France, there are many establishments, transportation and roadways that aren't accessible to persons with disability yet. However, new buildings with public access are required to be accessible for persons with disabilities. Germany has been in the forefront of accessible tourism, with Berlin at its helm. Berlin was awarded in 2012 for "European Access City of the Year" by the European Commission. Germany has set the bar high on accessibility with its "Tourism for All" campaign, making it possible for the disabled to enjoy travelling wherever in Germany. Different cities in the US are already making their public spaces wheelchair-accessible. Cities like Denver, Colorado and Seattle, Washington set the standards on accessibility as different aspects of city living like public transportation, attractions, and hotels are already disabled-friendly. The 1990 Americans with Disability Act protected the civil rights of disabled Americans, as well as ensured them that public spaces will have modifications that will make these locations wheelchair-accessible.

9)Tips for Travelling with a Medical Condition: After going through the necessary preparations and arming ourselves with knowledge on each common medical condition, here are some tips that you can follow to enjoy your vacation here in Australia!

1. Travel with someone who knows your medical condition: You should travel with someone who knows about your medical condition. If something unexpected happens, the person you're with can help in responding to your needs. Moreover, he or she can help in telling the doctor about your condition so they can diagnose the problem right away. It is exciting to be in a vacation; you might even forget to take your meds! Download a pill reminder app or ask your travel companion to remind you should you forget to take your meds.

2. Prepare and Pack early: Create a checklist of what you need to bring, to the essentials down to emergency medications that you may need in your trip. Don't develop the habit of packing until the last minute — it'll be easier to forget packing your essentials for the trip. With your checklist, you should be able to remember to pack your medications such as maintenance meds or an inhaler. It would be easier if all your health medications are stored in a pouch that's accessible anytime, anywhere. Remember to pack it along with your carry on items!

3. Research about Australia's healthcare system: Australia currently doesn't have any health notice that is alarming for travellers. It is ideal to look up on your specific destination, and check if there are any hospitals around your place if you need to be taken to the hospital. On the other hand, ask your doctor on possible alternative medicine brands for your current

medication. Australia may or may not have the brand that you are currently taking so please ask your doctor. On the other hand, if you need any special permission or documentation, you can ask your doctor for a referral or a medical certificate outlining your current condition. Be aware that costs may vary from one city to another; research the cost of healthcare here in Australia to prepare your budget for a trip to the doctor.

4. Wear your medical alert identification: It always helps to wear your own medical alert ID bracelet. If you're out there surfing the waves or skydiving, feel safe that you will still receive the right help for your condition. In Australia, we recognize brands like Mediband and Medic Alert for your medical information.

5. Check if Your Medicine is Legal in Australia: Australia's Department of Health is strict when it comes to bringing in medicine and medical devices. The Australian government may require you to present some documents that prove that you are under treatment and you are carrying what is prescribed to you.

6. Bring extra medication: If you're staying for a long period of time, we recommend stocking up on meds. However, in Australia, you are only required to bring a total of 3 months' worth of supply. Traveling is supposedly your time to unwind and relax, but it can be very stressful if you don't have enough medicine. If you notice that your supply is running out, it's time to consult an Australian-registered doctor for additional meds. Again, it would be very helpful to carry a documentation from your doctor stating your current condition and the different therapies you're undergoing to address what's necessary.

7. Diabetics, Please Pay Close Attention: If you're traveling with diabetes or traveling with a diabetic, pay close attention to these tips: Be early for your flight, and arrive at least two to three hours before your flight. Go through your belongings again and check if you have enough or even twice the supply you need for your trip. Make sure that you have your documentation ready, and place all these meds in a clear pouch that you can secure shut. Always keep your quick-acting glucose with you, whether it be candy or juice, should you experience symptoms of hypoglycaemia or low blood glucose. Don't forget to wear your medical identification bracelet! Should problems arise, they will know what your health condition is right away. That way, they can apply the necessary treatment immediately.

8. Consult your doctor: If you're going away for a long time, you should consult your doctor talk to him about your plans. Ask for advice on the activities that you plan to do during your vacation. Ask him about certain conditions that may affect your well-being when you come here in Australia; Australia has a variety of climates. They can prescribe you some extra medication if you plan to stay for at least three months in the country. You can even ask your physician to refer you to another doctor here in Australia. Express your thoughts, your worries and most of all, ask questions. It pays to be well-informed on what to do in case of emergencies. It's better if you can get your travel companion to tag along.

9. Checklist for Travellers with Medical Condition: To help you get prepared for your upcoming trip, here's a pre-travel checklist for those travelling with medical conditions. This infographic will include seven tips on what you should check or

do prior travelling, along with a Self-Care Kit checklist that will be handy for your travels: Accidents ,Food and Water Precautions, Respiratory Infections, Insect Bite Avoidance, Sexual Health, Blood Borne Virus Infections, Sun Protection, Travel Insurance, Animal Exposures. The following list gives some basic tips regarding the most common health problems faced during travel to any destination.

a)Accidents : You are more likely to be harmed through accidental injury or violence than by infectious disease:
b)Food and Water Precautions : You may be exposed to the harmful organisms that can cause travellers' diarrhoea. These organisms are all spread by human/animal faecal contamination of food and water or hand to mouth contact after touching contaminated surfaces. The risk of developing travelers' can be reduced by practicing good food, water and hand hygiene.

c)Respiratory Infections: Respiratory tract infections, including flu, are common during travel and often associated with crowded areas such as busy hotels, cruise ships and tour groups. Information and advice on protecting yourself against coronavirus (COVID-19) ahead of planning any future travel and when travelling can be found on our COVID-19: Health Considerations for Travel page. You can reduce your risk of acquiring and spreading respiratory infections by practicing good respiratory and hand hygiene, such as: Avoid touching your eyes, nose and mouth with unwashed hands, Washing your hands with soap and water or alcohol hand sanitizer, after coughing or sneezing, after going to the toilet, and prior to eating and drinking, Wherever possible avoid direct contact with people that have a respiratory illness and avoid using their

personal items such as their mobile phone, When coughing or sneezing cover your nose and mouth with disposable tissues and dispose of them in nearest waste bin after use.

d)Insect Bite Avoidance: Insects and ticks can transmit infectious diseases between humans or from animals to humans. When feeding on human blood, vectors such as mosquitoes, ticks, sandflies, fleas, blackflies, tsetse flies and redefied bugs can transmit dangerous disease causing parasites, viruses and bacteria. Insect and tick bite avoidance should always be considered as the first line of defense against these vector-borne diseases.

e)Sexual Health: Sexually transmitted infections (STIs) occur as a result of unprotected sexual intercourse. You should exercise caution with alcohol and recreational drugs: these can impair your judgement and can increase the chance of unprotected sex. Condoms should be used for all forms of sexual activity with new/casual partners, they provide good protection against most STIs, including HIV and Hepatitis B/C if used correctly. Sex during travel is often unplanned, so take UK kite-marked condoms on your trip. See our sexual Health Risks and Contraception pages for information on how to reduce risks.

f)Blood Borne Virus Infections: Hepatitis B, Hepatitis C and HIV are the 3 main blood borne viruses. They are transmitted through exposure of broken skin, mucous membranes and blood to infected blood and body fluids, for example during treatment with reused medical/dental/surgical equipment, body piercings

and tattoos performed with non-sterile equipment or sharing of drug injecting equipment. They are also transmitted sexually.

g)Sun Protection: Sun exposure below the level that leads to sunburn can have benefits, helping our bodies create vitamin D and promoting feelings of general wellbeing. However, sun exposure can lead to skin cancers, usually when exposure is long term, or after short periods of intense exposure and burning. The safest way to enjoy the sun and protect skin from sunburn is to use a combination of shade, clothing and sunscreen.

h)Travel Insurance: Comprehensive travel insurance is essential; ensure cover for accidents, emergency medical treatment, medical evacuation and repatriation is included. Always check your travel insurance coverage covers all your intended destinations and planned activities. Always declare any underlying medical conditions that you may have and any medications that you take (including over-the-counter) to your travel insurer. Failure to do so may invalidate insurance cover.

i**) Precautions:** Bites and scratches from an animal can result in serious infection. Bacteria and viruses in animal saliva can be transmitted. Wounds might get a secondary infection with skin bacteria, especially in hot humid climates. Exercise caution when around domestic animals during travel, especially those that are stray, to reduce the chances of bites and scratches. Maintain distance from wild animals, including monkeys – remember they are likely to be aggressive if under threat. Be rabies aware - this fatal infection can be transmitted through a bite, lick or scratch. Always seek urgent medical attention after potential exposure.See our Rabies page for information on how

to reduce risks, including the benefits of pre-exposure vaccine. Tetanus is a serious bacterial infection affecting the nervous system and can result from an animal bite. Travel safety, Transport safety, Hotel safety, Don't stand out in a crowd when travelling, Don't make yourself an attractive target when travelling, Beware of scams when travelling. Unwary tourists can make easy targets for thieves because they stand out in a crowd, are unused to their surroundings, and are generally carrying money, credit cards and valuables like cameras. You can reduce your risk of being mugged or robbed by taking a few simple precautions. It is a good idea to research the safety of your intended destination with the Department of Foreign Affairs and Trade. This government department keeps an updated bulletin on travel destinations, covering factors such as political unrest or criminal activities that target tourists. You could also consult with your travel agent, or talk to friends who have already visited your intended destination.

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11) Travel safety suggestions include:

a) Keep your travel plans, including accommodation details, to yourself. Don't hitch hike. Try not to travel at night. Avoid 'seedier' areas of the cities you visit, especially at night. Ask your hotel manager for advice on 'safe' versus 'unsafe' local areas. As a general rule, city streets that include children and women suggest the area is safe for families. Carry with you at all times the contact details of the Australian embassy. If your city doesn't have an Australian embassy, find out which other country's embassy is available to help you, such as the British embassy. Keep a photocopy of your passport and all other important documents in a safe place. Use ATMs during the day,

when there are people around. Try to rely more on credit cards and travelers cheques than cash. If you are mugged, don't fight back. It is better to lose a few dollars and a wristwatch than get injured. Avoid incidents such as fights, riots or civil disturbances at all times.

b) Transport for safety include: At the airport, watch for your suitcase as it appears on the carousel. Don't hang back and wait for the crowds to disperse - you might find that someone else has already taken your bag in the meantime. Avoid changing money at airports, as thieves could be watching you. Consult with your hotel manager or tourist information Centre about the public transport in your area. Make sure you know what official taxi cabs look like. A thief may pose as a taxi driver to lure you into their car. Don't share taxis with strangers. Carjacking is a problem in some cities. When driving, keep all doors locked and windows up, make sure your boot is locked.

c) Hotel safety Suggestions include: If possible, choose accommodation that has unmarked 'swipe cards' rather than numbered keys for each room. If you lose your swipe card or if it is stolen, the thief won't know which room to rob. Take note of emergency exits, stairwells, fire escapes and emergency plans, just in case. Always lock your hotel door when retiring for the night. If there is a chain included, use it. When arranging to meet people you've never met before (such as business associates), wait for them in the lobby. Don't ask them to come up to your room.

d) Don't stand out in a crowd when travelling, Suggestions include: Even if you're not sure where you're going, walk like

you've got a purpose. Match your dress style to that of the locals. Don't wear an obvious 'tourist' outfit like a loud shirt with a camera slung around your neck. Be discreet when map reading. Notice the people around you. Be wary if someone seems to be taking more than a passing interest.

e) Don’t make yourself an attractive target when travelling, Suggestions include: Don't wear expensive jewelers on obvious display. Wear valuables (such as traveler’s cheques and credit cards) on a belt worn under the clothes and next to the skin. If feeling particularly vulnerable, wear your money belt somewhere other than around your waist. Thieves know all about money belts too. Consider carrying a 'dummy' wallet holding a small amount of cash. If you are directly confronted by a mugger, you can hand over the dummy wallet and avoid further distress.

f) Beware of scams when travelling: Thieves devise inventive ways to rob you. Some of these may include: Posing as a police officer and asking to check your money for counterfeit bills. Posing as a tour guide and offering to show you the sights of the city. Slipping sedative drugs into your food or drink. Thieves in different cities tend to favor different scams.

g) Things to remember. Research the safety of your intended destination with the Department of Foreign Affairs and Trade. Carry with you at all times the contact details of the Australian embassy. For up-to-date information on 'safe' and 'unsafe' areas of the city, consult with your hotel manager or local tourist information officer. Try to blend in with the locals and avoid looking or acting like a tourist. If you are mugged, don't fight back. It is better to lose a few dollars and a wristwatch than get injured.

Chapter V

TRAVELING IN THE CONTEXT OF COVID

INTRODUCTION

I COVID-19: How to stay healthy while travelling

In efforts to raise awareness on the COVID-19 crisis, the World Health Organization provides tips on how to stay healthy, given that the virus is rapidly spreading in areas out of China.

#1 If you become sick while travelling, inform the crew and seek medical care early

It is important to rapidly inform the crew of any symptom so that they know how to handle the situation. Also, after informing the crew, it is advisable to share your travel history with your health care provider, so they know if you have visited a country with a large number of confirmed cases (Figure 2).

Figure 2: Seeking medical help when travelling

#2 Stay healthy while travelling

When travelling, you must avoid close contact with people suffering from fever and cough, while you should frequently wash your hands by using alcohol-based hand rub or soap and water. WHO highlights that you should avoid touching eyes, nose or mouth (Figure 3).

Figure 3: Staying healthy when travelling

#3 In case of COVID-19 symptoms, avoid travelling

Keeping in mind the symptoms of the coronavirus which are respiratory symptoms, fever, and cough, shortness of breath and breathing difficulties. It is crucial to avoid travel. Therefore, if you have any of these symptoms above, seek medical care early

and share previous travel history with your health care provider (Figure 4).

Figure 4: Some symptoms of ill health

II- WHO: Transmission scenarios for COVID-19 and actions towards

The COVID-19 outbreak remains at the Centre of attention, given that more and more countries report of positively confirmed cases. Thus, the World Health Organization (WHO) issued four transmission scenarios to help people be aware of the situation and know how to deal with the situation**.**

Countries with no cases (No Cases): Countries with 1 or more cases, imported or locally detected (Sporadic Cases); Countries experiencing cases clusters in time, geographic location and/or common exposure (Clusters of cases); Countries experiencing larger outbreaks of local transmission (Community transmission).Countries could experience one or more of these scenarios at the sub-national level and should adjust and tailor their approach to the local context.

#1 Transmission scenario: No reported cases

Aim: Stop transmission and prevent spread. Priority areas of work: **Activate** emergency response mechanisms. Risk

communication and public engagement: Educate and actively communicate with the public through risk communication and community engagement. Case finding, contact tracing and management: Conduct active case finding, contact tracing and monitoring; quarantine of contacts and isolation of cases.Surveillance: Consider testing for COVID-19 using existing respiratory disease surveillance systems and hospital-based surveillance. Public health measures: Hand hygiene, respiratory etiquette, practice social distancing. Laboratory testing: Test suspect cases per WHO case definition, contacts of confirmed cases; test patients identified through respiratory disease surveillance. Case management Prepare to treat patients, Ready hospitals for potential surge and Promote self-initiated isolation of people with mild respiratory. The table presents the four transmission scenarios. Accordingly, the four scenarios are: symptoms to reduce the burden on health systems. IPC: Train staff in IPC and clinical management specifically for COVID-19 / Prepare for surge in health care facility needs, including respiratory support and PPE. Societal response: Develop all-of-society and business continuity plans (Table 1).

#2 Transmission scenario: One or more cases, imported or locally acquired

Aim: **Stop** transmission and prevent spread.

Priority areas of work: **Enhance** emergency response mechanisms

Risk communication and public engagement: **Educate** and actively communicate with the public through risk communication and community engagement

Case finding, contact tracing and management: Enhance active case finding, contact tracing and monitoring; quarantine of contacts and isolation of cases
Surveillance: **Implement testing for COVID-19** using existing respiratory disease surveillance systems and hospital-based surveillance.
Public health measures: Hand hygiene, respiratory etiquette, practice social distancing.
Laboratory testing: Test suspect cases per WHO case definition, contacts of confirmed cases; test patients identified through respiratory disease surveillance
Case management: Treat patients and ready hospitals for surge; develop triage procedures
Promote self-initiated isolation of people with mild respiratory symptoms to reduce the burden on health system
IPC: Train staff in IPC and clinical management specifically for COVID19 / Prepare for surge in health care facility needs, including respiratory support and PP
Societal response: Implement all-of-society, repurpose government and ready business continuity plan

#3 Transmission scenarios: Most cases of local transmission linked to chains of transmission

Aim: **Stop** transmission and prevent spread.
Priority areas of work: **Scale up** emergency response mechanisms
Risk communication and public engagement: Educate and actively communicate with the public through risk communication and community engagement
Case finding, contact tracing and management: **Intensify active case finding**, contact tracing and monitoring; quarantine of contacts and isolation of cases

Surveillance: **Expand testing for COVID-19** using existing respiratory disease surveillance systems and hospital-based surveillance.
Public health measures: Hand hygiene, respiratory etiquette, practice social distancing.
Laboratory testing: Test suspect cases per WHO case definition, contacts of confirmed cases; test patients identified through respiratory disease surveillance
Case management: Treat patients and ready hospitals for surge; enhance triage procedures; activate surge plans for health facilities
Activate surge plans for health facilities (designate referral hospitals, defer elective procedures)
IPC: Train staff in IPC and clinical management specifically for COVID-19 / Advocate for home care for mild cases, if health care systems are overwhelmed, and identify referral systems for high risk groups
Societal response: Implement all-of-society resilience, repurpose government, business continuity, and community services plans
#4 Transmission scenario: Outbreaks with the inability to relate confirmed cases through chains of transmission for a large number of cases, or by increasing positive tests through sentinel samples (routine systematic testing of respiratory samples from established laboratories
Aim: **Slow transmission, reduce case numbers and end community outbreaks.**
Priority areas of work: **Scale up** emergency response mechanisms
Risk communication and public engagement: Educate and actively communicate with the public through risk communication and community engagement / Continue contact

tracing where possible, especially in newly infected areas, quarantine of contacts, & isolation of cases; apply self-initiated isolation for symptomatic individuals
Surveillance: **Adapt existing surveillance systems** to monitor disease activity (e.g. through sentinel sites)
Public health measures: Hand hygiene, respiratory etiquette, practice social distancing.
Laboratory testing: Test suspect cases per WHO case: Test suspect cases per WHO case definition and symptomatic contacts of probable/confirmed cases; test patients identified through respiratory disease surveillance. If testing capacity is overwhelmed prioritize testing in health care settings and vulnerable groups. In closed settings test only the first symptomatic suspect cases.
Case management: Prioritize care and activate triage procedures. Scale up surge plans for health facilities (designate referral hospitals, defer elective procedures) / Implement self-initiated isolation of people with mild respiratory symptoms to reduce the burden on health systems
IPC: Retrain staff in IPC and clinical management specifically for COVID-19/ Implement health facilities surge plans
Societal response: Implement all-of-society resilience, repurpose government, business continuity, and community services plans

III) - Watch: When and how to wear medical masks amid COVID-19?

The stress associated with the global COVID-19 outbreak has triggered many everyday people to wear medical masks. However, if you do not have any respiratory symptoms, such as fever, cough, or runny nose, you do not need to wear a medical **mask, WHO** noted**.** The video, released by the World

Health Organization (WHO), provides guidelines on the use of medical masks:

1. The first thing to watch is that, when used alone, **masks can give you a false feeling of protection and can even be a source of infection when not used correctly**.
2. Masks should only be used by **healthcare workers**, **caretakers** or by **people who are sick with symptoms like fever and cough.** Why? Because healthcare workers and caretakers are in close contact with ill individuals. The latters should be wearing masks to protect others from small droplets that can come out when coughing or sneezing (Figure 5).

Figure 5: Minimize risk of infection from Corona virus

So for the above, **this is how they should wear a mask**: Before wearing the mask, clean your hands with an alcohol-based hand rub or soap and water. Inspect the mask for tears or holes. Verify which sides is the top. Find the metal piece. Identify the inside if the mask, which is usually the white side. Then, fit the mask on your face. Pinch the metal strip or stiff

edge, so it molds to the shape of your nose. Adjust the mask on your face, covering your mouth and chin, making sure there are no gaps between your face and the mask. Do not touch the front of the mask while using it, to avoid contamination. If you accidentally touch it, clean your hands.

To take off the mask:

- Remove the elastics from behind without touching the front, and keep it away from your face. Discard the mask immediately in a closed bin and clean your hands. It is important not to reuse the mask. Replace it with a new one as soon as it gets damp. And remember, the best way to protect yourself from the new coronavirus is by frequently cleaning your hands with an alcohol-based hand rub or soap and water (Figure 6).

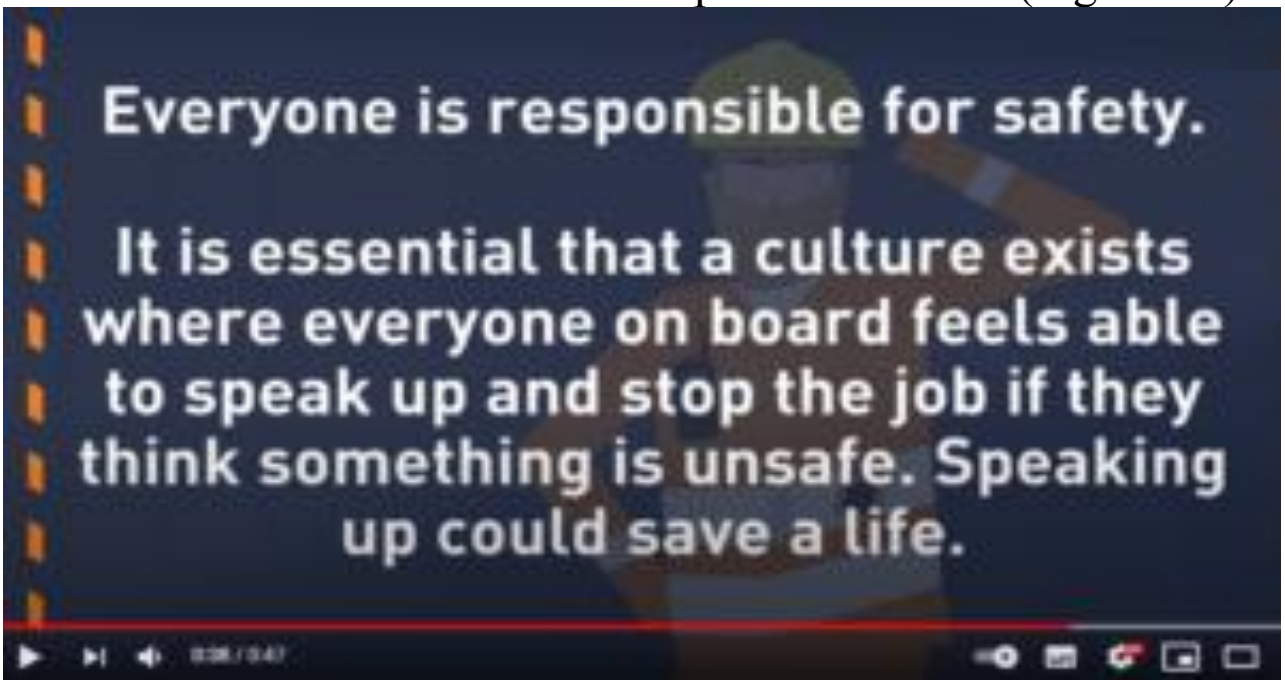


Figure 6: Responsibility for good health

IV- Watch: Tips to protect yourself against COVID-19

The World Health Organization (WHO) has issued video sharing tips on how we can protect from the COVID-19

outbreak. COVID-19 is an infectious disease caused by coronavirus and spread from person to person, mainly through the droplets produced when an infected person speaks, coughs or sneezes. These droplets are too heavy to travel far in the air; they only travel approximately one meter and quickly settle on surfaces. As such, person to person spread is happening mainly between close contacts. The exact time the virus can survive on surfaces is not yet known. So it is wise to clean surfaces regularly, particularly in the vicinity of people infected with COVID-19.Meanwhile, hands touch many surfaces, which can be contaminated with the virus. You should therefore avoid touching your eyes, nose or mouth, since contaminated hands can transfer the virus from the surface to yourself. When coughing or sneezing, cover your mouth and nose with the bend of your elbow or use a disposable tissue. If a tissue is used, discard it immediately into a closed bin. The most effective way to prevent the spread of the new coronavirus is to clean your hands frequently with an alcohol-based hand rub or soap and water. This will eliminate the virus if it is on your hands.Watch here key facts on COVID-19 by WHO (Figure 8):

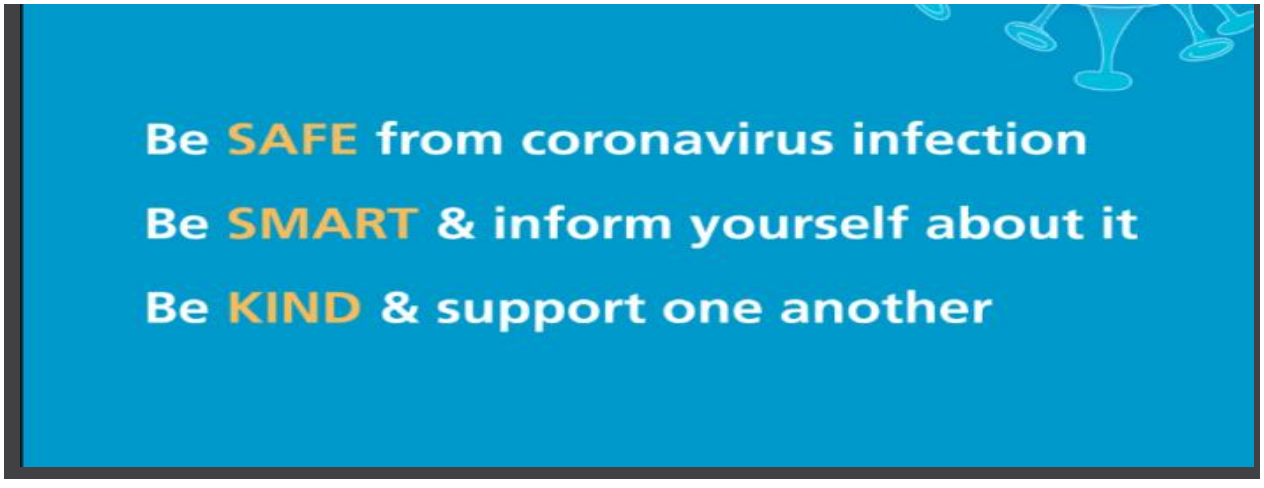


Figure 8: Safety guidelines from Corona Virus

V) COVID-19: Be Safe, Smart and Kind

WHO published updated information about the COVID-19 outbreak? COVID-19 now affects more people outside China, with most people experiencing mild illness and recover. However, the virus can be more severe for others. Everyone should take care of their health and protect others by doing the following:

1. Wash your hands frequently

Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water. Washing your hands with soap and water or using alcohol-based hand rub kills viruses that may be on your hands.

2. Maintain social distancing

Maintain at least 1 metre (3 feet) distance between yourself and anyone who is coughing or sneezing. When someone coughs or sneezes they spray small liquid droplets from their nose or mouth which may contain virus. If you are too close, you can breathe in the droplets, including the COVID-19 virus if the person coughing has the disease.

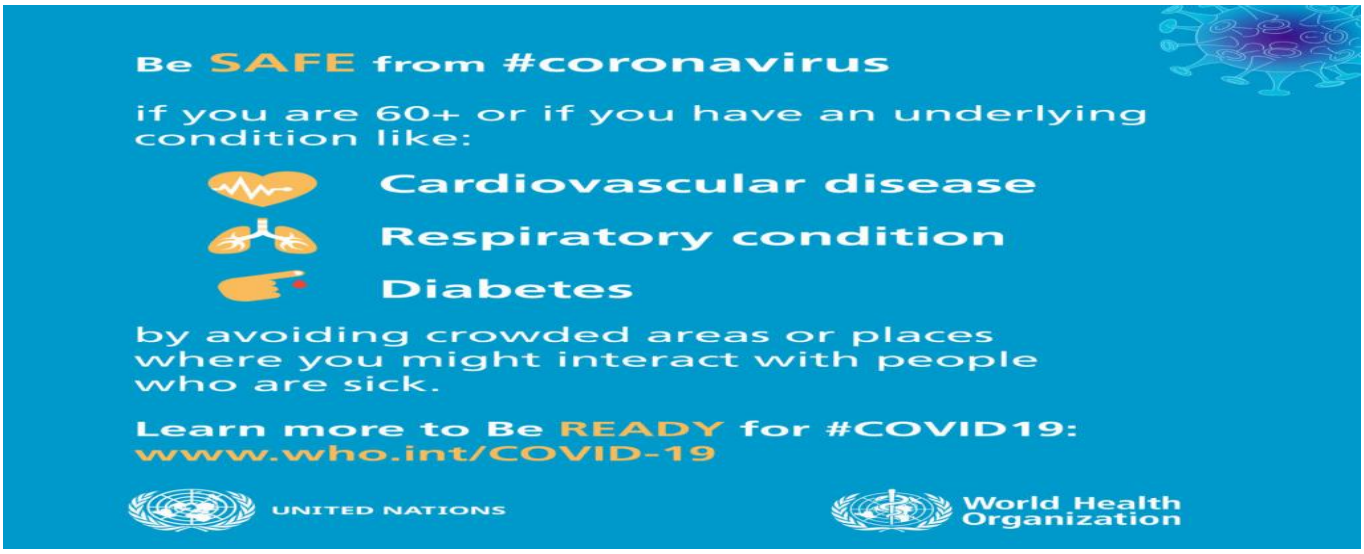
3. Avoid touching eyes, nose and mouth

Hands touch many surfaces and can pick up viruses. Once contaminated, hands can transfer the virus to your eyes, nose or mouth. From there, the virus can enter your body and can make you sick (Figure 9 a and b).

4. Practice respiratory hygiene

Make sure you, and the people around you, follow good respiratory hygiene. This means covering your mouth and nose with your bent elbow or tissue when you cough or sneeze. Then dispose of the used tissue immediately. Droplets spread virus. By following good respiratory hygiene you protect the people

around you from viruses such as cold, flu and COVID-19. If you have fever, cough and difficulty breathing, seek medical care early. Stay home if you feel unwell. If you have a fever, cough and difficulty breathing, seek medical attention and call in advance.



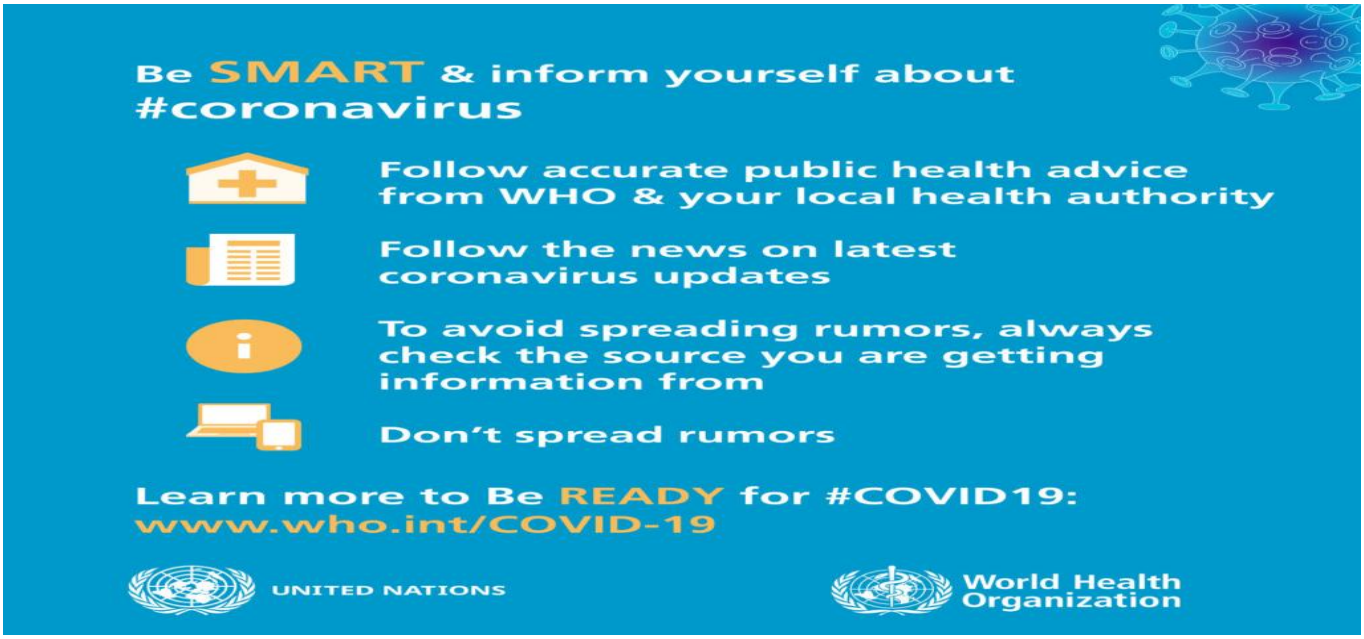


Figure 9a Avoiding diseases and 9b getting appropriate information about corona virus.

National and local authorities will have the most up to date information on the situation in your area. Calling in advance will allow your health care provider to quickly direct you to the right health facility. This will also protect you and help prevent spread of viruses and other infections.

5. Stay informed and follow advice given by your healthcare provider

Stay informed on the latest developments about COVID-19. Follow advice given by your healthcare provider, your national and local public health authority or your employer on how to protect yourself and others from COVID-19.National and local authorities will have the most up to date information on whether COVID-19 is spreading in your area. They are best placed to advise on what people in your area should be doing to protect themselves.

6. Show empathy with those affected: Share WHO information to manage anxiety.

7. Learn about the disease to assess the risk: Share the latest facts and avoid hyperbole. Provide calm and correct advice for your children (Figure 10).

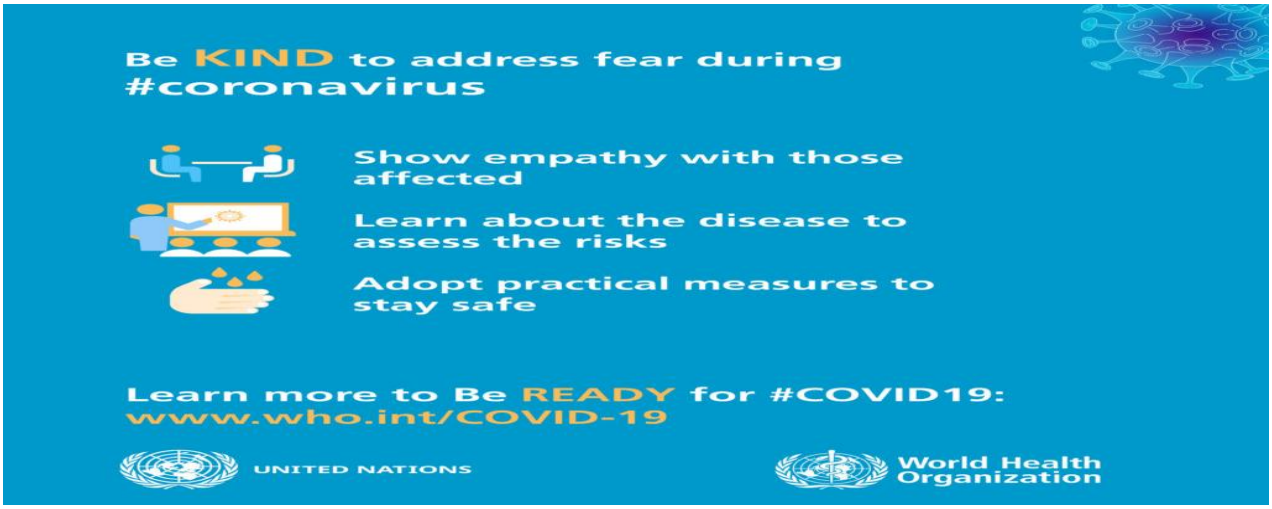


Figure10: Education and affections during the corona crisis

VI- WHO advice on how to cope with stress during COVID-19

The rapid spread of the COVID-19 has largely affected the psychology of people, as many are concerned about themselves and their loved ones. However, there are ways to minimize this stress, and get through this situation as smooth as possible.

1. It is normal to feel sad: Feeling sad, confused, stressed, scare, or even angry is very normal in these situations. Consider talking to people you trust.

2. Maintain a healthy lifestyle: In case you have to stay at home, maintain a healthy lifestyle, including proper diet sleep, exercise and social contacts via e-mail and the phone

3. Don't use smoking, alcohol or drugs: If you feel overwhelmed, talk to a health worker or counsellor. Have a plan, where to go to and how to seek help for physical and mental health needs if required.

4. Get the facts**:** Gather information that will help you accurately determine your risk so that you can take reasonable precautions. Find a credible source you can trust such as WHO website or, a local or state public health agency.

5. Less media: Limit worry and agitation by lessening the time you and your family spend watching or listening to media coverage that you perceive as upsetting.

6. Use past experiences: Draw on skills you have used in the past that have helped you to manage previous life's adversities and use those skills to help you manage your emotions during the challenging time of this outbreak.

7. Support children: Children may respond to stress in different ways such as being more clingy, anxious, withdrawing, angry or agitated, bedwetting etc. Respond to your child's reactions in a supportive way, listen to their concerns and give them extra love and attention.

8. Listen to your kid: Children need adults' love and attention during difficult times. Give them extra time and attention. Remember to listen to your children, speak kindly and reassure them. If possible, make opportunities for the child to play and relax.

9. Keep children close to parents: Try and keep children close to their parents and family and avoid separating children and their caregivers to the extent possible. If separation occurs (e.g. hospitalization) ensure regular contact (e.g. via phone) and re-assurance.

10. Keep regular routines: Keep to regular routines and schedules as much as possible, or help create new ones in a new environment, including school/learning as well as time for safely playing and relaxing.

11. Provide facts: Provide facts about what has happened, explain what is going on now and give them clear information about how to reduce their risk of being infected by the disease in words that they can understand depending on their age. This also includes providing information about what could happen in a re-assuring way (e.g. a family member and/or the child may start not feeling well and may have to go to the hospital for some time so doctors can help them feel better).

CHAPTER V

CASE STUDY:

TRAVELLING IN THE CONTEXT OF YAOUNDE-CAMEROON

INTRODUCTION

This research is to provide governments, health authorities and relevant stakeholders with elements to consider in adjusting travel measures to the changing epidemiological situation of national public health and a contribution to mortality and morbidity. Each country should conduct a risk-benefit analysis and decide on its priorities. WHO recommends that priority should be given to essential travel for emergencies, humanitarian actions (including emergency medical flights and medical evacuation), travel of essential personnel (including emergency responders and providers of public health technical support, critical personnel in transport sector such as seafarers and diplomatic officers and repatriation. Sick travellers and persons at risk including elderly travellers and people with chronic diseases or underlying health conditions, should delay or avoid travelling to and from areas with community transmission (Provost et al; 2001).

There is no "zero risk" when considering the potential importation or exportation of cases in the context of international travel. Therefore, thorough and continuous risk assessment and management will help identify, reduce and mitigate those challenges, while balancing the socio-economic consequences of travel measures (or temporary restrictions) against potential adverse public health consequences. The

following factors should be considered: local epidemiology and transmission patterns, the national public health and social measures for controlling the outbreaks in both departure and in destination countries; public health and health service capacity at national and subnational levels to manage suspect and confirmed cases among travellers, including at points of entry (ports, airports, ground crossings) to mitigate and manage the risk of importation or exportation of the disease. Epidemiological situation and transmission patterns at origin and destination in the urban areas should be considered. It is a stunting reality that there is an imperative need to provide healthcare services to travelers worldwide. As a result a new branch of medicine was created, called travel medicine. According to the World Health Organization (WHO), people who plan to travel need to contact a physician specialized in travel medicine, at least four to six weeks prior to departure. Unfortunately the majority of travelers do not consider the possibility to consult a medical service prior to the departure for an international trip.

Every traveler who wants to consult a travel medical doctor prior to the departure can visit the centers of disease prevention in all European countries. A visit to the centers for disease prevention primarily aims to inform the traveler about potential health hazards of the destination, precautionary vaccinations, according to WHO guidelines and specific medication that might be required as you move in and out of the urban setting. Many infectious diseases are related with consumption of contaminated food and water. Diseases such as Brucellosis, Cholera, Listeriosis, Leptospirosis, Typhoid Fever and Hepatitis A and E and almost especially diarrheal disease are directly associated with the consumption of food and water

(Fournier,2002). It is estimated that over 40% of travelers would suffer from diarrhea known as “traveler’s diarrhea”. This is a mild self-limiting disease with duration of less than five days and is caused by bacterial infection and intestinal parasites (Yandaï, 2000). The incidence rate of malaria among travelers is estimated to be 30,000 annually. In most cases of malaria, transmission occurs through mosquito bites and infection by the Plasmodium of Malaria and could be incurred if the sanitary conditions in traveling agencies are daunting.. The clinical symptoms include high fever, headaches, diarrhea, abdominal pain or cough are also linked to the traveling environment (World Health Organization, 2017; World Health Organization, 2018)

Preparation of the travel should begin at least one month prior to the departure. Travelers must acquire essential information about hygiene conditions of the final destination, the climate and other special conditions. A scheduled visit to a health professional is necessary, especially in the case of travelers suffering from chronic diseases or those taking chronic medication. In many cases vaccination is considered essential for specific destination countries. Consumption of food and-or beverage with caution is considered to be of major importance to protect the health of travelers. Travelers should eat in recommended places and they should under no circumstances buy food and beverage from street cantinas. Fruit and vegetables with thick shells (provided that are well washed), as well as well-cooked and canned foods may also be consumed. Hand hygiene (washing and using alcohol solution), is important before meals or after using the toilet. Partially cooked foods, shellfish, fresh salad, fresh milk and food exposed to ambient temperatures should be avoided.

It is also recommended to use bottled, sealed or boiled water for drinking. In motor parks with poor sanitary living conditions there should be given special attention to the consumption of other beverages such as coffee, tea and mineral water, while beer and wine should be opened up in front of the client. Insects pose a risk factor for travelers' health. Flies, mosquitoes and ticks can become intermediate hosts of various diseases. Protective measures include appropriate clothing covering the limbs, use of closed shoes; and avoiding forests, lakes or still water. Use of insects' repellents can also be of help. Furthermore, research tends to focus on the effects that one or just a few specific factors have on travelers' behavior and illness: destination, length of journey, purpose of travel, gender, risk behavior, and particular diseases associated with diarrhea remained the most common cause for seeking health attention. It is in the context of health risks due to COVID -19 that our major objective is to determine the sanitary conditions of major travelling agencies in the city of Yaounde. The specific objectives is to determine the sanitary conditions of toiletry infrastructures, characterize the urinary infrastructures, assess the level of hand washing equipment and evaluate the general nature of environmental cleanliness of the motor parks in Yaounde.

MATERIALS AND METHODS

Table1a: analytic criterion for the assessment of health infrastructures

per motor park.The city of Yaoundé is located on the western border of the South Cameroon Plateau at an altitude of 3°52'N and a longitude of 11°32'E (Figure 1). This plateau has an average altitude of 750m (Bachelier, 1959). The climate in Yaoundé according to Suchel (1972) is of the equatorial type, it

is hot and humid but attenuated by the altitude. This climate is characterised by moderate precipitations (annual pluviometry mean: 1576 mm) and temperature varies slowly with time from

Type of Cars/ Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation of the agency

22.4 to 27.4°C. The highest daily thermal amplitude is 10.4°C recorded in February, while the lowest value is 7.2 °C and is recorded in July. December, January, February, July and August are the sub-arid months, while April, May, September and October are the months with the highest rainfall. Four seasons can be distinguished in Yaoundé; a long dry season (from December to March), a short rainy season (from April to June), a short dry season(July and August) and a long rainy season(September to November). Yaounde consists of 20 quarters, but in this study only those with a population of more than 100,000 inhabitants were considered (Fig. 1).The six motor parks chosen were finally enrolled because they are the major points of transit of travellers in and out of Yaounde.. Motor parks to this prospective cohort study were identified at visits to all the travelling agencies. Data on the subjects' health and behavior were collected by questionnaires before and after journeys and over a three-week follow-up. In addition, the subjects were asked to fill in health diaries while traveling. Major information. Description of the study site per sampling station was confined in a table as presented below.

RESULTS AND DISCUSSION

The findings on the infrastructures and sanitation of the different parks in Yaounde is presented below in tales I-VI below: The Nvan motor park (Table I) is located in the Yaounde 4th district and regroups numerous agencies transporting passengers to the North, littoral ,South ,East regions and some divisions of the centre region.These agencies mostly use buses, coasters and cars to transport thousands of passengers to the different parts of Cameroon. Of the ten agencies assessed in Nvan , toilet and urinary infrastructures are present in seven, they are very clean in three and six of the agencies are clean, while theothers are dirty as presented in Table Ib below.

Table Ib: The infrastructural and sanitary characteristics of the NVAM motor parks.

	The NVAM motor park					
Motor Parks	Type of Cars/Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation
A	Bus (350)	Present	Very clean	Very clean	Present	Clean
B	Coster (150)	Present	Dirty	Dirty	Absent	Dirty
C	Coster (180)	Present	Dirty	Dirty	Absent	Dirty
D	Coster (150)	absent	absent	absent	Absent	Dirty
E	Bus(250)	absent	absent	absent	Present	Clean

F	Bus (300)	Present	Clean	Clean	Present	Clean
G	Bus (400)	Present	Very clean	Very Clean	Present	Clean
H	Car (120)	absent	absent	absent	Absent	Dirty
I	Bus (350)	Present	Very clean	Very Clean	Present	Clean
J	Car (100)	Present	Clean	Clean	Absent	Clean

The Mimbowman motor(Table II) park is located in the Yaounde 4th district, and regroups more than 10 agencies. They agencies transport passengers to the west, east south regions and some divisions of the center regions. The cleaning of hands is present at the unique entry point that is close to the police station. There exists a single toilette facility that is used by passengers of this motor park. The buses and cars are used to transport passengers all over the country. Of the nine agencies assessed in Mimbowman, toiletry and urinary infrastructures are absent, there are very few hand washing points, and the level of sanitation is good in two of the transport services as presented in table II below.

Table II: The infrastructural and sanitary characteristics of the Mimbowman motor parks.

	MIMBOMAN Motor park					
Motor Par	Type of Cars/Number of	Toilettes infrastructures	State of the infrastruct	State of Urin	Dispositive to wash	Level of sanitat

ks	passengers		ures	ary	hands	ion of the agency
B	bus (420)	absent	absent	Absent	présent	Clean
C	car (180)	absent	absent	Absent	absent	Dirty
D	car (180)	absent	absent	Absent	absent	Dirty
E	car (230)	absent	absent	Absent	absent	Dirty
F	Bus (260	absent	absent	Absent	absent	Dirty
G	Car (100)	absent	absent	Absent	absent	Dirty
H	Car (120)	absent	absent	Absent	absent	Dirty
I	Bus (300)	absent	absent	Absent	absent	clean
J	Bus (250)	absent	absent	Absent	absent	Dirty

The Tongolo Motor park(Table III) is located in the Yaounde 1 district and regroups about 10 agencies that are located transport passengers to the west region and some localities such as Bafia and Ntui. There is an apparent space between the agencies, and the type of vehicles used are mostly buses, coasters and cars. There is a lot of sanitary promiscuity between the passengers who use the streams and bushes around as their main toiletry and urinary infrastructures. Of the nine

agencies assessed, toilet infrastructures are present in four, urinaries are quasi absent and most of the agencies to not take to task the attributes of environmental cleanliness as presented in figure III.

Table III: The infrastructural and sanitary characteristics of the Tongolo motor parks.

	Gare routière de TONGOLO					
Motor Parks	Type of Cars/Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation of the agency
B	Coster (180)	absent	absent	Absent	absent	Dirty
C	Bus (300)	absent	absent	Absent	absent	Dirty
D	Car (200)	present	sale	Absent	absent	Dirty
E	Car (150)	absent	absent	Absent	absent	Dirty
F	Car (90)	present	absent	Absent	absent	Dirty
G	Bus (200)	present	absent	Absent	absent	Dirty
H	Bus (200)	present	absent	Absent	absent	Dirty
I	Car (100)	absent	Very Clean	Very clean	present	Very clean
J	Car (100)	absent	absent	Absent	absent	Dirty

The Etoudi Motor park(Table IV) is located in the Yaounde is district. It regroups more than 10 agencies that transport passengers to the centre, west and North West regions. This motor park under the direct titulage of the council uses buses, touristic coasters to transport passengers all around the country.The sanitary infrastructures to clean the hand are lacking. Of the nine agencies assessed in the Etoudi motor parks, faecal disposal and urinaries are present in two, and there is no adequate upkeep of the level of sanitation as presented in table IV.

Table IV: The infrastructural and sanitary characteristics of the Etoudi motor parks.

	ETOUDI Motor Parks					
Motor Parks	Type of Cars/Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation of the agency
B	Car (100)	absent	absent	Absent	absent	Dirty
C	Bus (120)	present	propre	Propre	present	Clean
D	Car (170)	absent	absent	Absent	absent	Dirty
E	Car (100)	present	propre	Propre	absent	Dirty
F	Car (200)	absent	absent	Absent	present	Clean
G	Car (200)	absent	absent	Absent	absent	Dirty
H	Car (100)	absent	absent	Absent	absent	Dirty
I	voitures de tourisme (50)	absent	absent	Absent	absent	Dirty
J	voitures de tourisme (50)	absent	absent	Absent	absent	Dirty

The Biyem Assi motor park(Table V) is located in the Yaounde 6th district.It regroups numerous agencies which transport passengers to the west, noth west ,south west regions.each agency occupies a specific area of the motor parks.They mostly use big buses to transport the passengers to other places out of Yaounde. Of the nine traveling agencies investigated in the Biyam assi park, four present appropriate toilet and urinary infrastructures, but hand sanitation and water cleaning material is rare. Half of the agencies present an average level of environmental cleanliness(Table V).

Table V: The infrastructural and sanitary characteristics of the Biyem-Assi motor parks.

	BIYEM-ASSI Motor Park					
Motor parks	Type of Cars/Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation of the agency

B	Bus (300)	present	very clean	Very clean	absent	clean
C	Bus (200)	absent	absent	absent	absent	clean
D	Bus (250)	present	clean	clean	absent	clean
E	Bus (200)	absent	absent	absent	absent	Dirty
F	Bus (270)	absent	absent	absent	absent	Dirty
G	Bus (270)	present	Clean	clean	absent	Clean
H	Bus (180)	present	clean	clean	absent	Clean
I	Bus (200)	absent	absent	absent	absent	Dirty
J	Bus (250)	absent	absent	absent	absent	Dirty

The Mokolo motor park(Table VI) is located in the Yaounde 2 district., it regroups numerous traditional car parks transporting passengers to the periphery of Yaounde which is Ekekam, Bissoko, Ekol, Evodoula, Nkolbizi, Nkol-pobla, Mbamze, Elig-doum, Etok, Elat-meyong, Nloudou, Nkol-meyos, Miwoho.Water cleaning material is present at one of the entry points of the motor park.They is a doublé toilettery infrastructure that is used by passengers using this motor parks.The major transportation facilities are small cars of 4 places transformed to 6 places by the car owners. Of the nine agencies analysed in the Mokolo motor parks, toiltes and urinary infrastructures are completely absent, and there isa very low level of environmental sanitation and waste disposal as presented in table VI. Awareness for prevention measures and the appropriate preparation to encounter a potential health problem is expected to surpass undesirable conditions affecting both the safety and the health status as well as the mental and physical well-being of travelers as some are unable to use good toilets, urinary either during departure from Tongolo, Mokolo, Mimbowmam, Mvan, Biyem Assi ans Etoudi or during arrivals into the city as presented in the Tables I-VI.. Additionally is equally important to secure compliance of travelers with regulations to provide a healthy trip.

Table VI: The infrastructural and sanitary characteristics of the Mokolo motor parks.

	MOKOLO Motor parks					
Motor Parks	Type of Cars/Number of passengers	Toilettes infrastructures	State of the infrastructures	State of Urinary	Dispositive to wash hands	Level of sanitation of the agency
B	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
C	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
D	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
E	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
F	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
G	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
H	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
I	Tourism Vehicle (30)	absent	absent	absent	absent	dirty
J	Tourism Vehicle (30)	absent	absent	absent	absent	dirty

Table VII : An assessment of the different diseases in the health installations near travelling agencies

The travel measures (or temporary restrictions) should be based on a thorough risk assessment, taking into account country context, the local epidemiology and transmission patterns, the national health and social measures to control the outbreak, and the capacities of health systems in both departure and destination countries, including at points of entry. Since travel medical services are constantly expanding, the number of people who use these services is expected to further increase. Interventions at an individual level and the contribution to protect public health put the issue in a high priority in both medical and the nursing science.

Name of travelling agency	MIMBOMAN	MVAN	MOKOLO	ETOUDI	TONGOLO	BIYEM-ASSI
Health installation	Minbomam Dispensary	Mvan health center	Cité verte hospial	marie rêne d'Etoudi health centre	La gloire-Tongolo, Health district	Biyem-Assi Clinic
Malaria	Malaria (Very frequent)	Malaria and Gale (frequent)	Malaria (Very frequent)	Malaria(frequent)	Malaria(frequent)	Malaria (Very frequent)
Parasitoses intestinales (Amibiases Ascaridioses and other worms intestinal (very frequent)		Giardiose Oxyrose, Ascaridiose, (very frequent)	Amibiasis intestinales, Filarioses Vers intestinaux, (frequent)	Amibiase, Intestinal worms, (Frequent)	Amibiase (very frequent), Other parasits(frequent)	Intestinales amibiasis, and helminthiasis (Very frequent)
Bacterial diseases	Urinary Infections, (very fréquent)	Sore throat,otite, sinusite, brochitis, pneumonia (meningitis, tuberculosis, (very frequent)	Skin Infections, pneumonia, tuberculosis (very frequent)	RAS	RAS	Pneumonia et tuberculosis (very fréquent)
Peril fecal diseases	Urinar Bilharzia urinaire, typhoïde (very frequent)	Cholera, typhoïde, (very frequent)	Typhoïde, coliformes fecal coliforms (very fréquent)	Fecal Coliforms fecal, Salmonellosis (Very fréquent)	E. coli, coliforms ,fecal and total coliforms, Aeromonas (very frequent)	Typhoïde, coliformes (very frequent)

Travel medicine professionals should be well prepared and provide specialized knowledge **in infectious diseases.** Continuous professional training and education is required to maintain the health level of travelers, and assess their needs to protect them from potential health risks as presented in table's I-VI. Information from trusted internet resources contributes to updated and accessible information, while the expanding services of travel medicine should be supported by the state policies and regulations. In our case, there is less or no internet services giving travellers adequate logistical information on their travel to and out of the city. To get a comprehensive view of travel-associated health problems, prospective study designs should be employed for collecting data on illness, after return, and at follow-up. It is essential to proactively communicate to

the public through traditional media, social media and other channels about the rationale for gradually resuming international travels, the potential risk of travel and the measures required to ensure safe travel for all. By including a post-travel follow-up, we extended the research to symptoms not developing until after return. Destination, gender, age, and duration of travel were shown by multivariable analysis to be factors predisposing to illness.

Despite efficient preventive measures like vaccinations, malaria prophylaxis, and travel advice, the majority fall ill during or after travel. Diarhoea is the most common disease while abroad, followed by skin problems and fever. After travel, the most frequent complaints are fever, respiratory tract infections, and skin problems. Symptoms generally remain mild, not requiring medical care (Duraku and Panariti, 2002)The proportion of newly onset illness among returning travelers is considerable: one-third get health problems after their journeys. Advice regarding this should be given already at pre-travel appointments. These, include capacities for entry/exit screening; early detection through active case finding, isolation and testing of ill passengers (including supply of personal protective equipment at PoE); cleaning and disinfection; case management, including any necessary transportation to a medical facility; identification of contacts for contact-tracing; public information sharing on local policies for adequate hygiene and sanitation measures; physical distancing and wearing of masks; sharing of emergency phone numbers; and risk communication and education on responsible travel behavior.

Adapted procedures for handling baggage, cargo, containers, conveyances, goods and postal parcels should be available and clearly communicated to passengers leaving or entering

Yaounde as presented by Toovey 2004 in South Africa.WHO recommends a comprehensive approach to supporting and managing travellers before departure and on arrival, which includes a combination of measures for consideration before departure and on arrival. General advice for travellers includes personal and hand hygiene, respiratory etiquette, maintaining physical distance of at least one meter from others and use of a mask as appropriate. Sick travellers and persons at risk, including elderly travellers and people with serious chronic diseases or underlying health conditions, should postpone travel internationally to and from areas with community transmission. Crowd control should be put in place to prevent transmission in areas where travellers gather before departure or on arrival from the city as recommended by Han, 2004. Beyond the scientific considerations, there are ethical, legal and human rights aspects related to privacy of personal data, medical confidentiality, and potential risk of falsification or engagement in risky behavior, stigma and discrimination. Travellers should self-monitor for the potential onset of symptoms on arrival for 14 days, report symptoms and travel history to local health facilities and follow national protocols (Keystone et al., 20040). Countries shall not charge travellers for measures required for the protection of health, including (a) examinations to ascertain their health status; (b) vaccination or prophylaxis on arrival (not published 10 days earlier); (c) appropriate isolation or quarantine; (d) certificates specifying the measures applied; or (e) applied to baggage accompanying them. Countries should regularly reiterate the risk assessment process and review the capacity of their public health and other relevant sectors while gradually resuming international travels. In this process countries should also consider new knowledge about travelers disease and its

epidemiology by consulting updated WHO scientific briefs (Steffen R, Lobel,1994).

The decision-making process to safeguard passengers in and out of the city of Yaounde in particular and other major cities in general should be multisectoral and ensure coordination of the measures implemented by national and international transport authorities and other relevant sectors and be aligned with the overall national strategies for adjusting public health and social measures. Any subsequent measure must be proportionate to public health risks and should be adjusted based on a risk assessment, conducted regularly and systematically as the infectious disease situation evolves and communicated regularly to the public. Despite proper preventive measures like vaccinations, malaria prophylaxis, and travel advice, the majority of our subjects fell ill during or after travel. As the symptoms mostly remained mild, health care services are seldomly questioned. Typical profiles of traveling agencies and motor parks reveal a lot of amateurism in the transport sectors, as most toilets were not well cared for if at all they existed, the urinary were inexistent and the sanitary status was deplorable. This essential analytic data thereby provide an essential working tool for pre-travel advice .The Mokolo, Tongolo, Mombowman, Nvan, Biyem- Assi and Etoudi and other moto parks around Yaounde, need to modify their environmental sanitation architecture inorder to safeguard the health and wellbeing of travellers in and of the city, especially as the global network is undergoing an unprecedented health challenge.

CHAPTER VI

CONCLUSION

Traveling can increase your chances of getting sick. A long flight can increase your risk for deep vein thrombosis. Once you arrive, it takes time to adjust to the water, food, and air in another place. Water in developing countries can contain viruses, bacteria, and parasites that cause stomach upset and diarrhea. Be safe by using only bottled or purified water for drinking, making ice cubes, and brushing your teeth. If you use tap water, boil it or use iodine tablets. Food poisoning can also be a risk. Eat only food that is fully cooked and served hot. Avoid unwashed or unpeeled raw fruits and vegetables. If you are traveling out of the country, you might also need vaccinations or medicines to prevent specific illnesses. Which ones you need will depend on what part of the world you're visiting, the time of year, your age, overall health status, and previous vaccinations. See your doctor 4 to 6 weeks before your trip. Most vaccines take time to become effective. Travelers' diarrhea is the most common travel-related illness. It can occur anywhere, but the highest-risk destinations are in Asia (except for Japan and South Korea) as well as the Middle East, Africa, Mexico, and Central and South America. In otherwise healthy adults, diarrhea is rarely serious or life-threatening, but it can make a trip very unpleasant. You can take steps to avoid traveler's diarrhea

Choose food and drinks carefully: Eat only foods that are cooked and served hot. Avoid food that has been sitting on a buffet. Eat raw fruits and vegetables only if you have washed them in clean water or peeled them. Only drink beverages from

factory-sealed containers, and avoid ice because it may have been made from unclean water.

Wash your hands: Wash your hands often with soap and water, especially after using the bathroom and before eating. If soap and water aren't available, use an alcohol-based hand sanitizer. In general, it's a good idea to keep your hands away from your mouth.

Learn some ways to treat traveler's diarrhea: **Drink lots of fluids**: If you get diarrhea, drink lots of fluids to stay hydrated. In serious cases of travelers' diarrhea, oral rehydration solution—available online or in pharmacies in developing countries—can be used for fluid replacements.

Take over-the-counter drugs: Several drugs, such as loperamide, can be bought over-the-counter to treat the symptoms of diarrhea. These drugs decrease the frequency and urgency of needing to use the bathroom, and may make it easier for you to ride on a bus or airplane while waiting for an antibiotic to take effect.

Only take antibiotics if needed: Your doctor may give you antibiotics to treat traveler's diarrhea, but consider using them only for severe cases. If you take antibiotics, take them *exactly* as your doctor instructs. If severe diarrhea develops soon after you return from your trip, see a doctor and ask for stool tests so you can find out which antibiotic will work for you

Chapter VI

The COVID VACCINATION SAGA

I.INTRODUCTION

When a crisis hits, it doesn't hit everyone equally. Its effect depends on the existing situation of those most affected. Without a doubt, this is the case with COVID-19. An urgent problem is the convergence of persisting inequalities with the total new set of problems that arose. Undoubtedly, those most affected are people who have fewer possibilities of staying home, those who lack access to running water to meet basic sanitary standards, those with no formal employment, women, who work longer days when along with working away from home they also take care of both household duties and children, the disadvantaged people who, when they have formal jobs, work in riskier jobs that other people refuse to do, among other examples. One thing to keep in mind is how these groups in vulnerable situation will be equipped when the pandemic stops, because we do expect it to stop, at some point. The only sustainable solution to the COVID-19 crisis is the identification and roll-out of an effective vaccine keeping in mind that the low-income segment of the population is both more vulnerable to COVID-19 and also has more uneven access to health facilities. At the same time among certain segments of the population, there is significant skepticism regarding vaccines. For instance, 12% of people without primary education believe vaccines are not effective and is a waste of time and energy.

In sum, we see that the long-lasting inequalities that hamper the access to vaccines due to barriers such as distance or lack of time to go to health facilities are now met by a new trend of emerging mistrust in vaccines. The qualitative study will complement the information on the accessibility to the vaccin. Carrying out survey experiments help to test messages on immunization. When working to cancel out the mistrust to secure willingness to get vaccinated we should also consider limitations in the access to vaccines. In many countries, the state provides several vaccines universally and enforces their mandatory use by all the citizens. However: a question arises: do people who have ample access to health facilities? Is there public transportation? Are vaccine centers open during hours that allow working parents to go? Can single mothers leave some children home to take siblings to vaccines centers? It is crucial to consider the crucial problem of access and assess limitations in all its dimensions. So in addition to understanding the long-lasting barriers to access, we aim to identify the scope and sources of mistrust of vaccines in the low-income population, which is the **most affected** during COVID-19. We also aim to **identify specific contents and sources** (social media, WhatsApp, acquaintances, brochures, television, etc) of misconceptions and misinformation on vaccines behind the mistrust of groups in vulnerable situations. To a**ssess the demographics** of both mistrust and its behavioral effects, seeing how both are distributed across families and young people regarding vaccination compliance (willingness to get vaccinated by young people and the intention and willingness of mothers to have children vaccinated).A related problem is how proper information is received and if people understand the messages on good

practices in health care and immunization. In this regard, other goal will be to a**mplify the influence of credible information,** sources on vaccines by identifying role models at the neighborhood level. And lastly to **understand and develop messages** that potentially can cancel out misinformation and misconceptions behind mistrust of vaccines that can be inputs for the governments' strategies to broaden health care coverage amidst the COVID-19 crisis.

II.COVID-19 Vaccine Effectiveness Research

Before the U.S. Food and Drug Administration (FDA) determines whether to approve a vaccine or authorize a vaccine for emergency use, clinical trials are conducted to determine vaccine efficacy. After FDA approves a vaccine or authorizes a vaccine for emergency use, it continues to be studied to determine how well it works under real-world conditions. CDC and other federal partners will be assessing COVID-19 vaccine effectiveness under real-world conditions. Such evaluations will help us understand if vaccines are performing as expected outside the more controlled setting of a clinical trial. As vaccine uptake increases nationally, we will also try to understand how well the vaccines: Perform in specific subpopulations, Reduce the risk of infection (including infection without symptoms), Protect against milder COVID-19 illness, Prevent more serious outcomes, including hospitalization, Prevent spread of illness (e.g., whether people who have been vaccinated can still spread COVID-19 to others, Provide long-term protection (i.e., assess duration of protection), Protect against changes in the virus (new variants, Protect against COVID-19 when the vaccine is administered using a single dose or when the second dose is

delayed, if these dosing regimens occur under real-world conditions. Several factors can affect real-world vaccine effectiveness, including: Population host factors (e.g., people not included in clinical trials who may respond differently to the vaccine, Virus factors (e.g., variants), Programmatic factors (e.g., adherence to dosing schedules or storage/handling of vaccines)

III. Myths and Facts about COVID-19 Vaccines

Now that there are authorized and recommended COVID-19 vaccines in the United States, accurate vaccine information is critical and can help stop common myths and rumors. How do I know which COVID-19 vaccine information are accurate?. It can be difficult to know which sources of information you can trust. Before considering vaccine information on the Internet, check that the information comes from a credible source and is updated on a regular basis. Receiving a COVID-19 vaccine will not make you magnetic, including at the site of vaccination which is usually your arm. COVID-19 vaccines do not contain ingredients that can produce an electromagnetic field at the site of your injection. All COVID-19 vaccines are free from metals such as iron, nickel, cobalt, lithium, and rare earth alloys, as well as any manufactured products such as microelectronics, electrodes, carbon nanotubes, and nanowire semiconductors. In addition, the typical dose for a COVID-19 vaccine is less than a milliliter, which is not enough to allow magnets to be attracted to your vaccination site even if the vaccine was filled with a magnetic metal. Vaccine shedding is the term used to describe the release or discharge of any of the vaccine components in or outside of the body. Vaccine shedding can only occur when a

vaccine contains a weakened version of the virus. None of the vaccines authorized for use in the United States contain a live virus. Vaccine components are not shed by COVID-19 vaccines, so it is not possible for the any of the vaccine components to accumulate in the body's tissue or organs, including the ovaries. The mRNA and viral vector vaccines are the two types of currently authorized COVID-19 vaccines available. If you are trying to become pregnant now or want to get pregnant in the future, you may get a COVID-19 vaccine when one is available to you. There is currently no evidence that COVID-19 vaccination causes any problems with pregnancy, including the development of the placenta. In addition, there is no evidence that fertility problems are a side effect of any vaccine, including COVID-19 vaccines. Like all vaccines, scientists are studying COVID-19 vaccines carefully for side effects now and will continue to study them for many years**.** COVID-19 vaccines do not change or interact with your DNA in any way. There are currently two types of COVID-19 vaccines that have been authorized and recommended for use in the United States: messenger RNA (mRNA) vaccines and a viral vector vaccine. Both mRNA and viral vector COVID-19 vaccines deliver instructions (genetic material) to our cells to start building protection against the virus that causes COVID-19. However, the material never enters the nucleus of the cell, which is where our DNA is kept. This means the genetic material in the vaccines cannot affect or interact with our DNA in any way. All COVID-19 vaccines work with the body's natural defenses to safely develop immunity to disease. None of the authorized and recommended COVID-19 vaccines cause you to test positive on viral tests, which are used to see if you have a **current infection**. Neither can any of the COVID-19 vaccines currently

in clinical trials in the United States. Vaccinations protect most people from getting sick. However, a small percentage of fully vaccinated people will still get COVID-19. There is some evidence that vaccination may make illness less severe in people who get vaccinated but still get sick. If your body develops an immune response to vaccination, which is the goal, you may test positive on some antibody tests. Antibody tests indicate you had a **previous infection** and that you may have some level of protection against the virus. Experts are currently looking at how COVID-19 vaccination may affect antibody testing results. None of the authorized and recommended COVID-19 vaccines or COVID-19 vaccines currently in development in the United States contains the live virus that causes COVID-19. This means that a COVID-19 vaccine **cannot** make you sick with COVID-19.COVID-19 vaccines teach our immune systems how to recognize and fight the virus that causes COVID-19. Sometimes this process can cause symptoms, such as fever. These symptoms are normal and are signs that the body is building protection against the virus that causes COVID-19. Learn more about how COVID-19 vaccines work. It typically takes a few weeks for the body to build immunity (protection against the virus that causes COVID-19) after vaccination. That means it's possible a person could be infected with the virus that causes COVID-19 just before or just after vaccination and still get sick. This is because the vaccine has not had enough time to provide protection. Your menstrual cycle cannot be affected by being near someone who received a COVID-19 vaccine. Many things can affect menstrual cycles, including stress, changes in your schedule, problems with sleep, and changes in diet or exercise. Infections may also affect menstrual cycles

IV. The different types of COVID-19 vaccines

As of December 2020, there are over 200 vaccine candidates for COVID-19 being developed. Of these, at least 52 candidate vaccines are in human trials. There are several others currently in phase I/II, which will enter phase III in the coming months (for more information on the clinical trial phases, see part three of our Vaccine Explained series).Typically, many vaccine candidates will be evaluated before any are found to be both safe and effective. For example, of all the vaccines that are studied in the lab and laboratory animals, roughly 7 out of every 100 will be considered good enough to move into clinical trials in humans. Of the vaccines that do make it to clinical trials, just one in five is successful. Having lots of different vaccines in development increases the chances that there will be one or more successful vaccines that will be shown to be safe and efficacious for the intended prioritized populations. There are three main approaches to designing a vaccine. Their differences lie in whether they use a **whole** virus or bacterium; just the **parts** of the germ that triggers the immune system; or just the **genetic material** that provides the instructions for making specific proteins and not the whole virus. The first way to make a vaccine is to take the disease-carrying virus or bacterium, or one very similar to it, and inactivate or kill it using chemicals, heat or radiation. This approach uses technology that's been proven to work in people – this is the way the flu and polio vaccines are made – and vaccines can be manufactured on a reasonable scale. However, it requires special laboratory facilities to grow the virus or bacterium safely, can have a relatively long production time, and will likely require two or three doses to be administered. A live-attenuated vaccine uses a living but weakened version of the virus or one that's very similar. The measles, mumps and rubella (MMR) vaccine and the chickenpox and shingles vaccine are examples of this type of vaccine. This approach uses similar technology to the inactivated

vaccine and can be manufactured at scale. However, vaccines like this may not be suitable for people with compromised immune systems. This type of vaccine uses a safe virus to deliver specific sub-parts – called proteins – of the germ of interest so that it can trigger an immune response without causing disease. To do this, the instructions for making particular parts of the pathogen of interest are inserted into a safe virus. The safe virus then serves as a platform or vector to deliver the protein into the body. The protein triggers the immune response. The Ebola vaccine is a viral vector vaccine and this type can be developed rapidly. A subunit vaccine is one that only uses the very specific parts (the subunits) of a virus or bacterium that the immune system needs to recognize. It doesn't contain the whole microbe or use a safe virus as a vector. The subunits may be proteins or sugars. Most of the vaccines on the childhood schedule are subunit vaccines, protecting people from diseases such as whooping cough, tetanus, diphtheria and meningococcal meningitis. Unlike vaccine approaches that use either a weakened or dead whole microbe or parts of one, a nucleic acid vaccine just uses a section of genetic material that provides the instructions for specific proteins, not the whole microbe. DNA and RNA are the instructions our cells use to make proteins. In our cells, DNA is first turned into messenger RNA, which is then used as the blueprint to make specific proteins. A nucleic acid vaccine delivers a specific set of instructions to our cells, either as DNA or mRNA, for them to make the specific protein that we want our immune system to recognize and respond to. The nucleic acid approach is a new way of developing vaccines. Before the COVID-19 pandemic, none had yet been through the full approvals process for use in humans, though some DNA vaccines, including for particular cancers, were undergoing human trials. Because of the pandemic, research in this area has progressed very fast and some mRNA vaccines for COVID-19 are getting emergency use authorization, which means they can now be given to people beyond using them only in clinical trials. They are Pfizer, astra Zeneca, moderna ,Johnson and Johnson vaccines existing.

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COVID-19 Genomic Epidemiology Toolk

Prof Ajeagah GideonAghaindum is a full Professor of Hydrobiology, Environmental engineering and Public Health from the University of Yaounde 1(Cameroon).Formerly Vice Dean incharge of Scolarite , He is the Head of Division of Academic affairs Scolarite and Research in the Faculty of Science, University of Yaounde 1,Cameroon.An international consultant in sustainable and ecosystemic exploitation of aquatic resources, environnemt and public health.Email:ajeagahg@yahoo.com;Tel:75 916857

Travellers often experience abrupt and dramatic changes in environmental conditions, which may have detrimental effects on health and well-being. Travel may involve major changes in altitude, temperature and humidity, and exposure to microbes, animals and insects. The negative impact of sudden changes in the environment can be minimized by taking simple precautions. Altitude, heat and humidity, ultraviolet radiation from the sun, foodborne and waterborne health risks, travellers' diarrhea, recreational waters, animals and insects, intestinal parasites. Epidemiological situation and transmission patterns at origin and destination in the urban areas should be considered. The following factors should be considered: local epidemiology and transmission patterns, the national public health and social measures for controlling the outbreaks in both departure and in destination countries; public health and health service capacity at international, national and subnational levels to manage suspect and confirmed cases among travellers, including at points of entry (ports, airports, ground crossings) to mitigate and manage the risk of importation or exportation of the disease. WHO recommends in the advent of COVID that priority should be given to essential travel for emergencies, humanitarian actions (including emergency medical flights and medical evacuation), travel of essential personnel (including emergency responders and providers of public health technical support, critical personnel in transport sector such as seafarers and diplomatic officers and repatriation. This book highlights the essentials of traveling and health on the world platform in the context of global barrier measures.

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