



GRAMERCY

HEART AND VASCULAR CENTRE



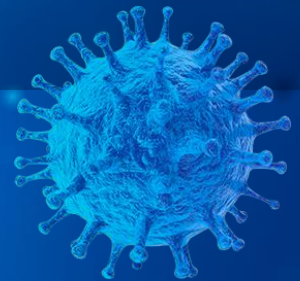
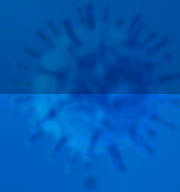
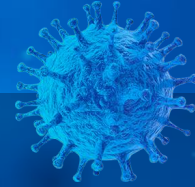


Dr. Nikolas Wanahita

MD, MHA, FACC, FSCAI

**Internist, General and Interventional Cardiologist
Medical Director – Gramercy Heart and Vascular Centre
Mount Elizabeth Novena Hospital**

Jantung Sehat & Covid-19





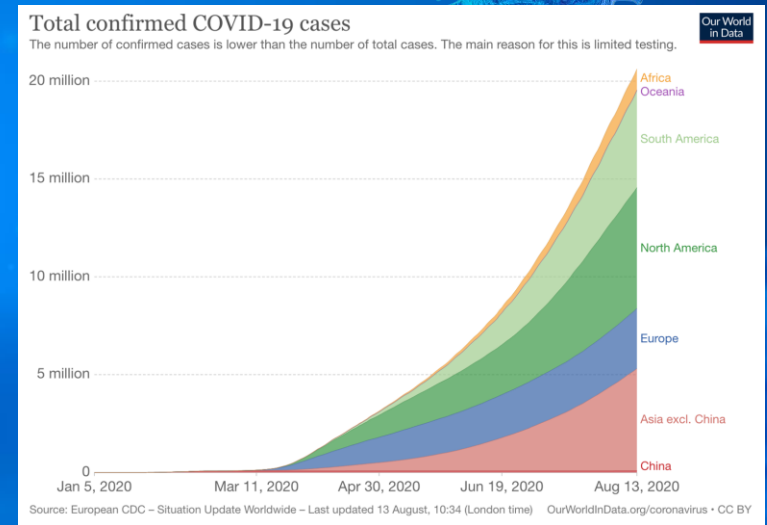
1. Covid 19 Statistics

Cases Worldwide

Confirmed	Recovered	Deaths
22.6 million	15.3 million	790 K

The number of cases worldwide has surpassed 22 millions on August 20, with death toll of more than 791,000.

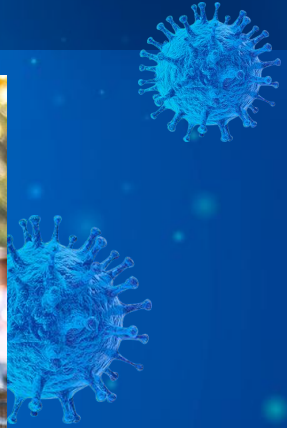
It took almost 6 months for the first 10 million cases, but only 43 days to double to 20 million.



A healthcare worker in full personal protective equipment (PPE), including a blue gown, gloves, a face shield, and a surgical cap, is attending to a patient in a hospital bed. The patient is wearing a blue hospital gown and a white ventilator mask with a clear plastic face shield. The patient is lying in a hospital bed with white linens. The background shows a hospital room with a wall-mounted light fixture and various medical equipment. A semi-transparent dark blue banner with white text is overlaid on the left side of the image.

2. Severe Symptoms vs No symptoms

Immune system





Another Factor?

Why immune system is not the only reason for symptoms

Young, healthy people dying from Covid



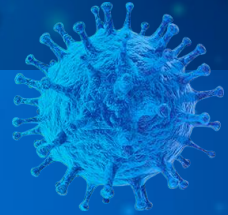
Around the world, we see young and healthy doctors and frontliners dying from COVID-19 despite having no comorbidities.

These people have no previous health issues and were young and healthy. This suggests another factor other than immune systems.



Viral Load or Inoculum

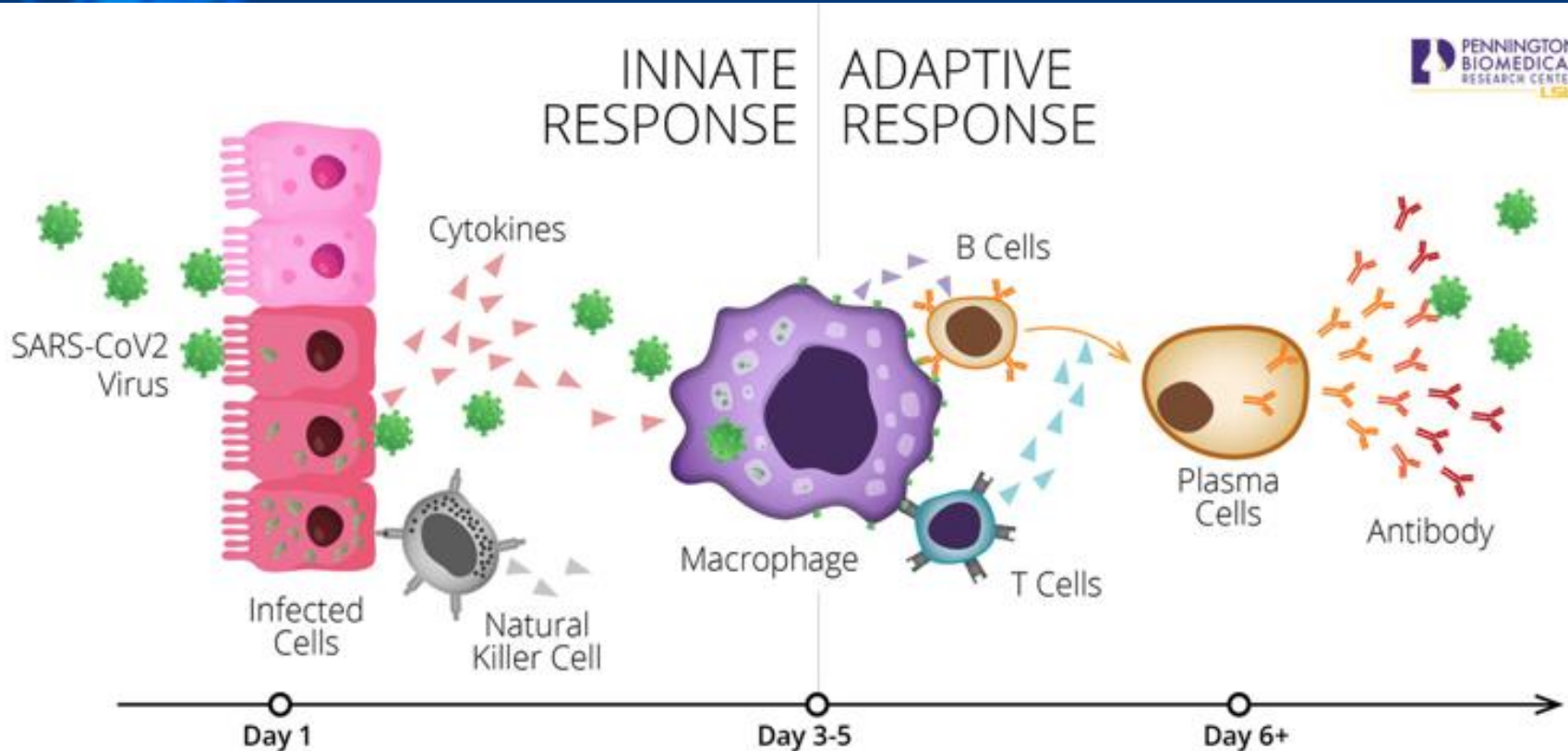
The quantitative amount of viral particles that enters our body at the time of infection/exposure



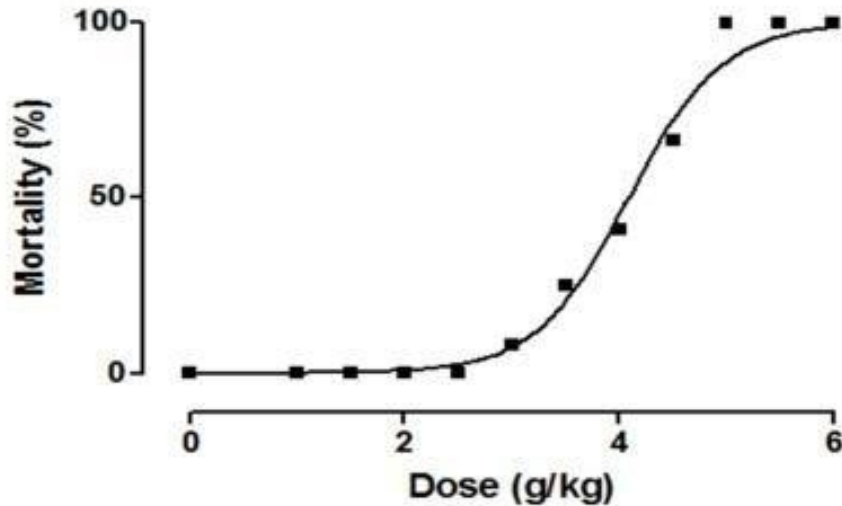
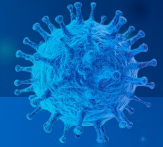
3. The Virus



Virus Exposure



Concept of Viral Load



Theory

The theory that exposure to lower inoculum or dose of any virus can make illness less severe has been introduced in 1938 (dose-mortality curve).

A woman with dark hair, wearing a blue surgical mask and a patterned scarf, is looking out a window. The window is covered in condensation, and a city building is visible outside. A dark horizontal bar is overlaid across the middle of the image, containing the text.

4. Why do masks work?

Why Universal Masking Works

Protect Others

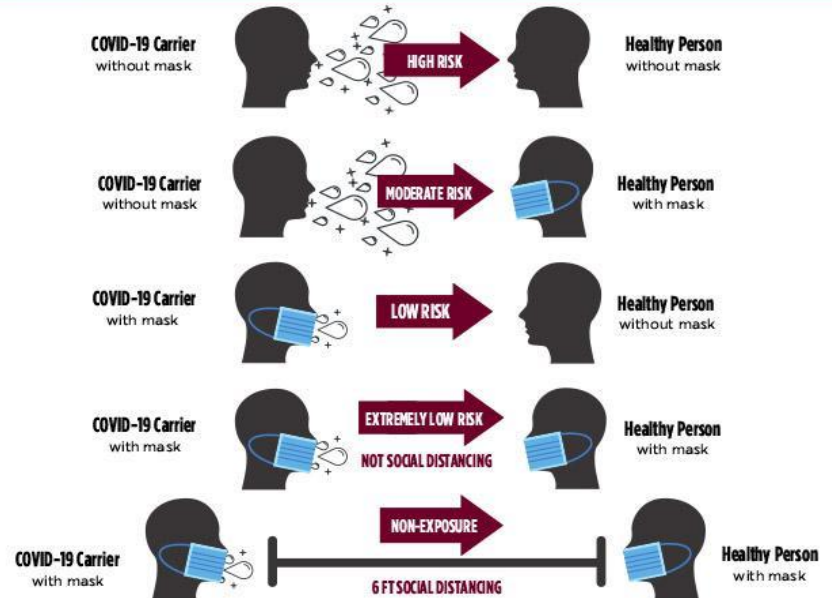
When you are infected you avoid spreading the virus.

Protect Yourself

Beyond decreasing the chance of touching your face, wearing your mask does much more.



Levels of Exposure Keeping Yourself and Others Safe



Countries with Mandatory Mask Use

What do Japan, Hong Kong, Taiwan, Thailand, South Korea and Singapore have in common?



Viral Load Testing for COVID

It is unethical to do human experiments with SARS- COV 2 (virus of Covid-19).

However, there have been studies with hamsters that proved with masks, the viral load is less and symptoms become less severe.



Rate of Infection in Closed Settings



Without Mask: 80% of people with

With Mask: 20% of people have symptoms

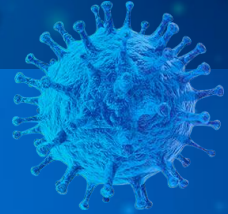
Asymptomatic Infection

The exposure to the COVID-19 virus while wearing masks can lead to greater community-level immunity and slow down spread of virus as we wait for effective vaccine.

Wear Masks when you go out and meet people – this approach coupled with social distancing has been shown to be more effective and beneficial than lockdown strategy.

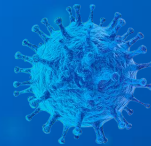
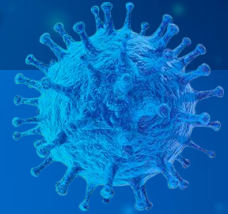


COVID-19 and Our Heart



Cardiac Manifestation of COVID 19

- Heart Failure
- Arrhythmia
- Myocardial Injury – Myocarditis and Myocardial Infarction (Heart Attack)
- Cardiogenic Shock
- Other cardiovascular manifestations: Cerebrovascular Accident (Stroke) and Pulmonary Embolism

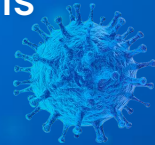
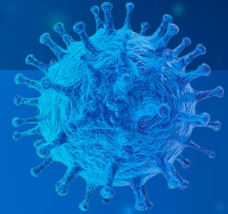


Who is at Risk?

- Hypertension
- Pre-existing condition:
Cardiovascular/Coronary Artery Disease
- Diabetes mellitus

Why this Virus Affect the Heart

- Severe immune system over-reaction (likely due to exposure to high inoculum/viral load) resulting in cytokine storm leading to increased level of Angiotensin II causing inflammation, hypertension, and thrombosis.
- Inflammation and hypertension will lead to heart failure in susceptible patients.
- Inflammation, hypertension and increased tendency for thrombosis lead to increased risk of ruptured plaque which is the main cause of heart attack.



Other Potential Cardiovascular Harms from COVID-19

- Increased risk of blood clot in the lung (Pulmonary Embolism) and blood clot in the brain artery (Stroke).
- D-Dimer level on blood test may help to detect who is at risk for thrombotic complications and may need to be placed on anti-coagulation (blood thinner).

These complications which can be fatal.

What Can We Do to Keep our Heart Healthy During This Pandemic?

For Hypertension and Diabetes



Make sure numbers are well controlled.

Ideal BP is 110-140/60-90 mmHg.

Good fasting sugar level is < 108 g/dL.

HbA1c (a 3-month average) for someone with diabetes, the goal is $< 7\%$.

Pre Existing Cardiovascular Disease - See your Cardiologist to make sure your heart condition is optimal

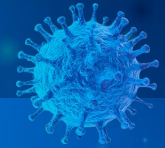


Dr. Nikolas Wanahita
Gramercy Heart and Vascular Centre
Mount Elizabeth Novena Specialist Centre
38 Irrawaddy Road #05-45 (S, 329563).
Tel/WA : +65 6250-2662

Email :

Website : www.gramercyheart.com.sg

Maintain Strong Immune System



Aerobic Exercise



Sleep



Vitamin D3



Eating well

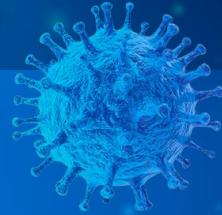


Manage Stress



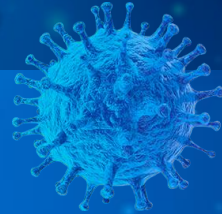
Other Vaccinations

- Studies showed Previous Vaccinations might help to build stronger immunity response toward COVID-19.
- Pneumococcal Vaccines
- Influenza Vaccines
(Elderly, children and those at high risk)



What NOT to do

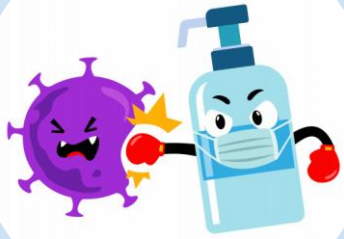
- Trying out unproven medications or supplements
- Intentionally exposing ourselves to COVID-19 Virus.
- Excessive worries and anxiety
- Do not stop any high blood pressure, diabetic or heart medications without consulting your doctor
- Do not trust everything that we read on the internet or listen to our friends/family members – everyone has different medical conditions.



What NOT to do

Do not be afraid to go to your physician or nearest hospital, if you have an urgent medical conditions, such as shortness of breath, chest pain, lightheadedness/passing out, or weakness in one side of the body. The chance of dying from cardiovascular cause is still much higher than from COVID-19

Conclusion



Use Sanitizer



Wash Hands



**Don't Be Afraid
to Visit Hospitals**



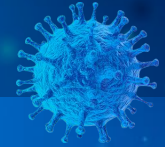
**Don't Spread
Fake News**



**Avoid Large
Gatherings**



Mask Up



- ▶ COVID-19 is here to stay with us for at least another half a year. We have to learn to live with it.
- ▶ Universal Masking with good personal hygiene and social distancing is the most effective way to decrease fatalities.
- ▶ Masking is possibly more effective than more stringent lockdown strategy.

“

“It was a mistake to deny COVID.
It was a mistake to say it was just the flu.
The truth is COVID is serious.
It is deadly serious.
It is deadly serious for all of us.”

**NY State Governor
Andrew Cuomo**

“

Thank you