

The background of the slide features a microscopic view of cells and virus particles. On the left, there is a large, detailed view of a cell with a nucleus and various organelles. In the center and right, there are several spherical virus particles with a characteristic spiky surface, representing the COVID-19 virus. The entire scene is rendered in shades of green and blue, with a dark background.

COVID-19

Current Diagnosis Methods

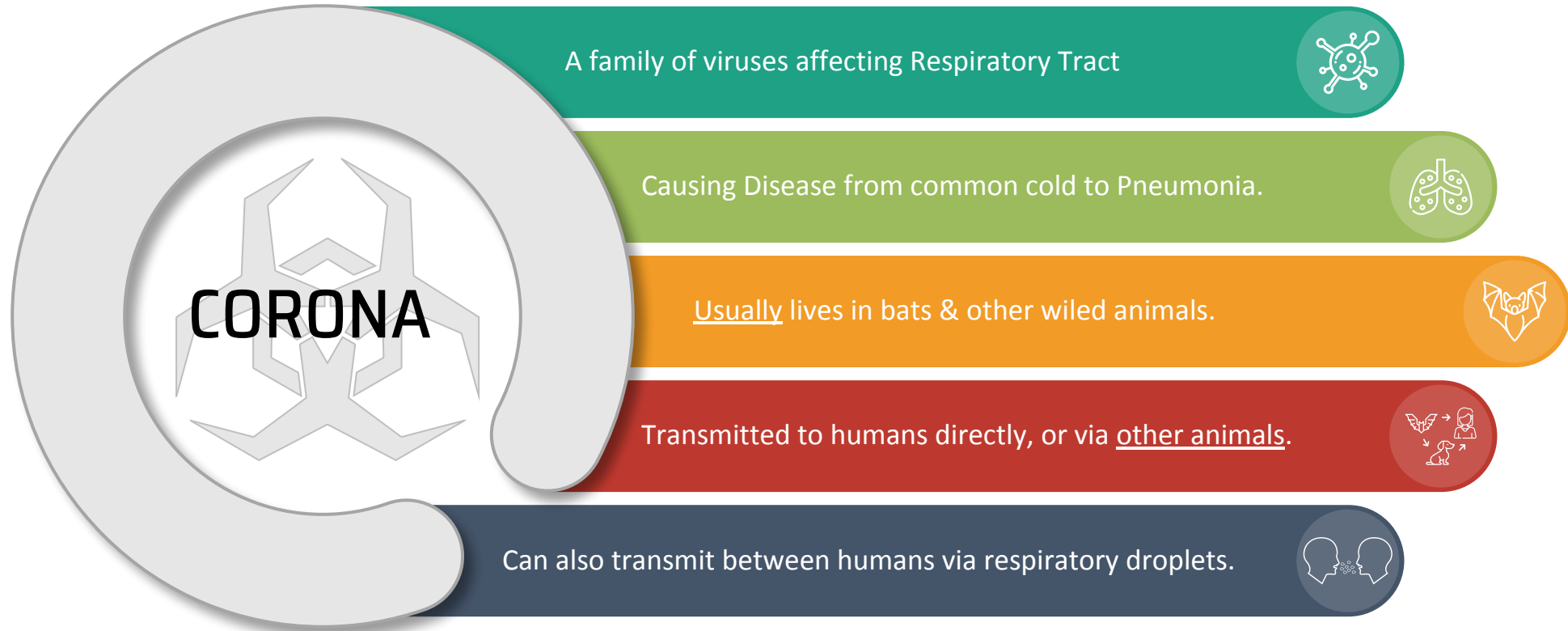
Present By

Assist.Lecture. Anmar Alrawas

CORONA VIRUS (COVID-19)

Current Diagnosis Methods

What's a Coronavirus?



A family of viruses affecting Respiratory Tract



Causing Disease from common cold to Pneumonia.



Usually lives in bats & other wild animals.



Transmitted to humans directly, or via other animals.

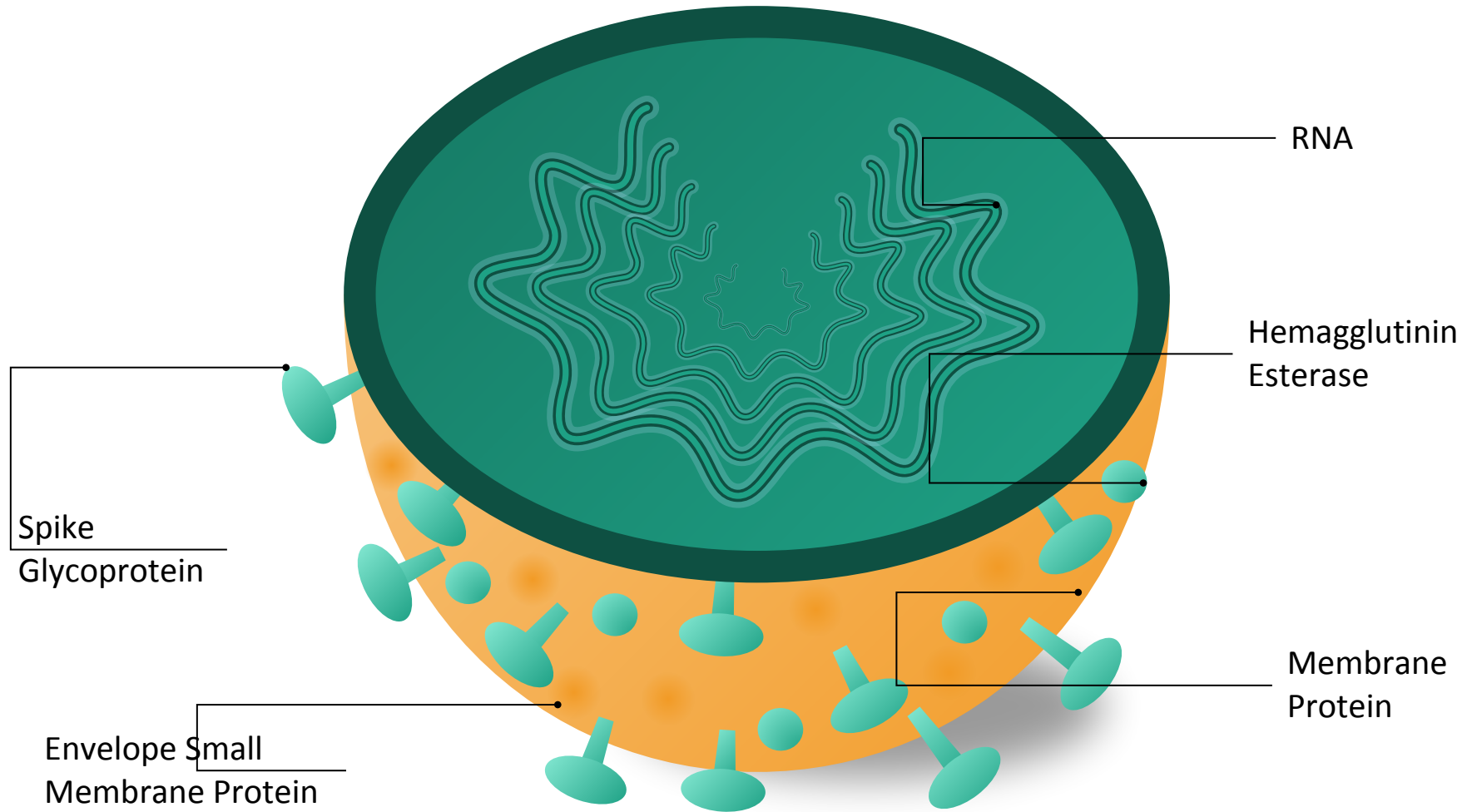


Can also transmit between humans via respiratory droplets.



CORONA VIRUS (COVID-19)

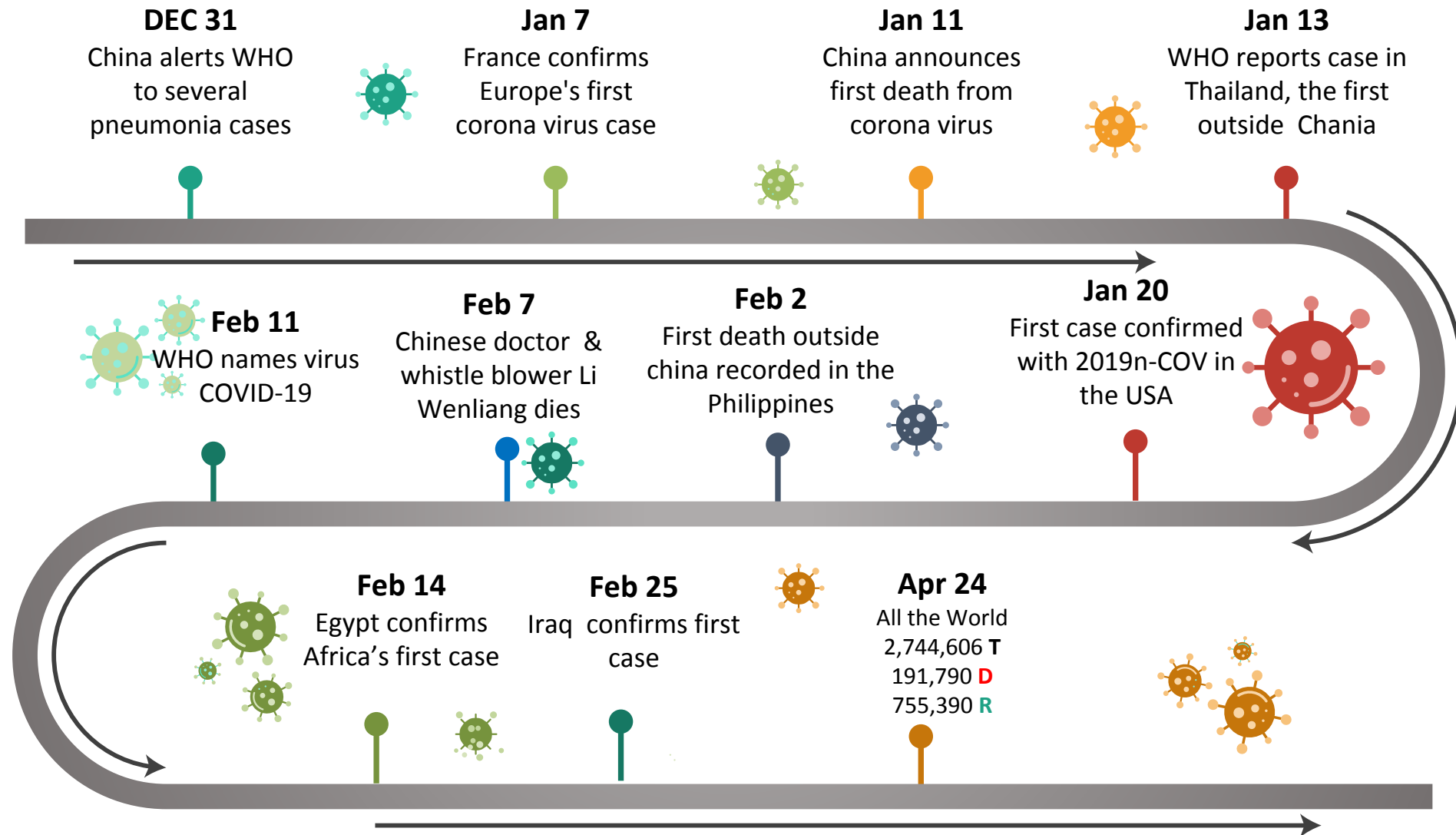
Current Diagnosis Methods
Virus Structure



CORONA VIRUS (COVID-19)

Current Diagnosis Methods

The Story how began !

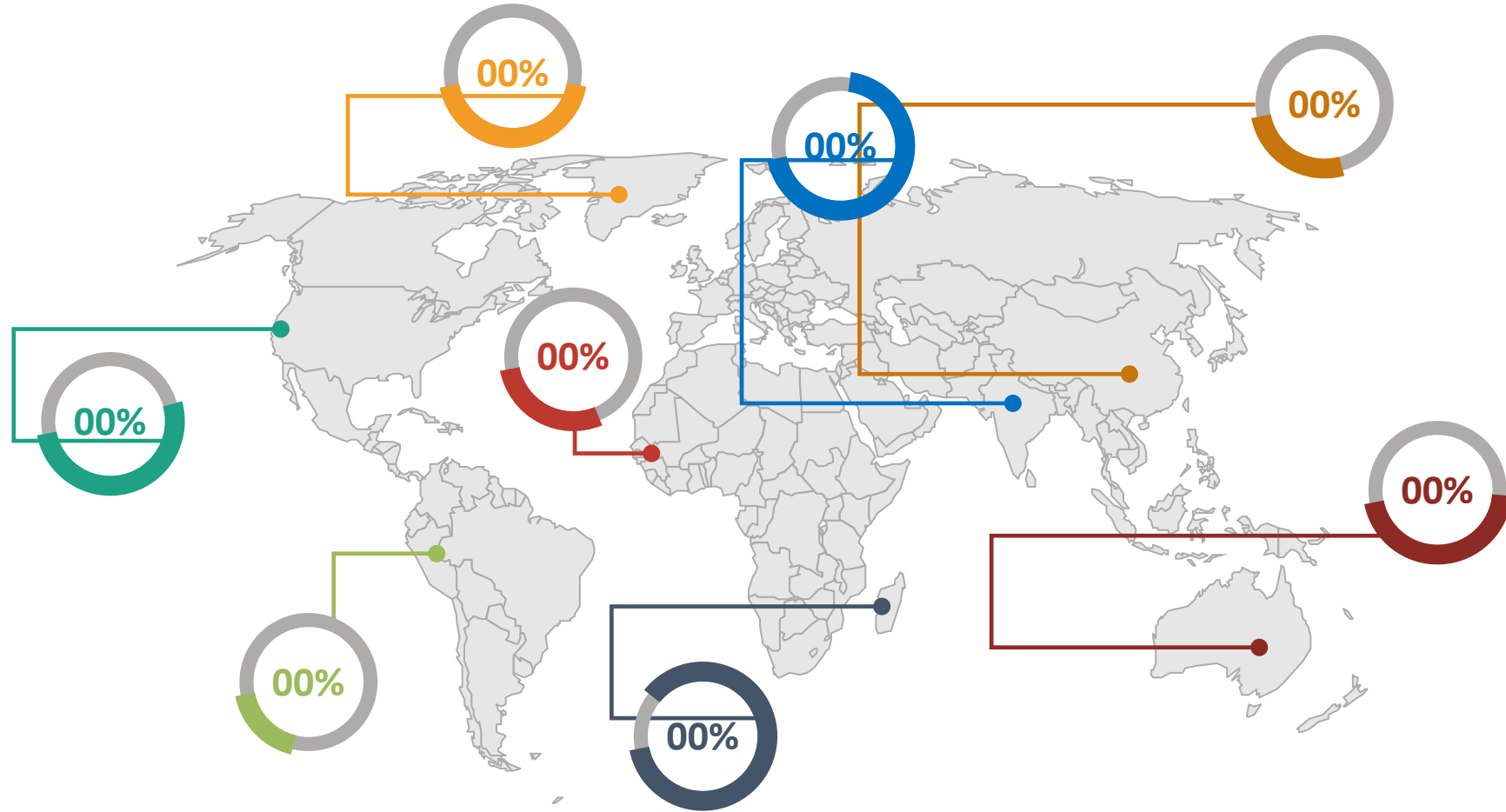


CORONA VIRUS (COVID-19)

Current Diagnosis Methods

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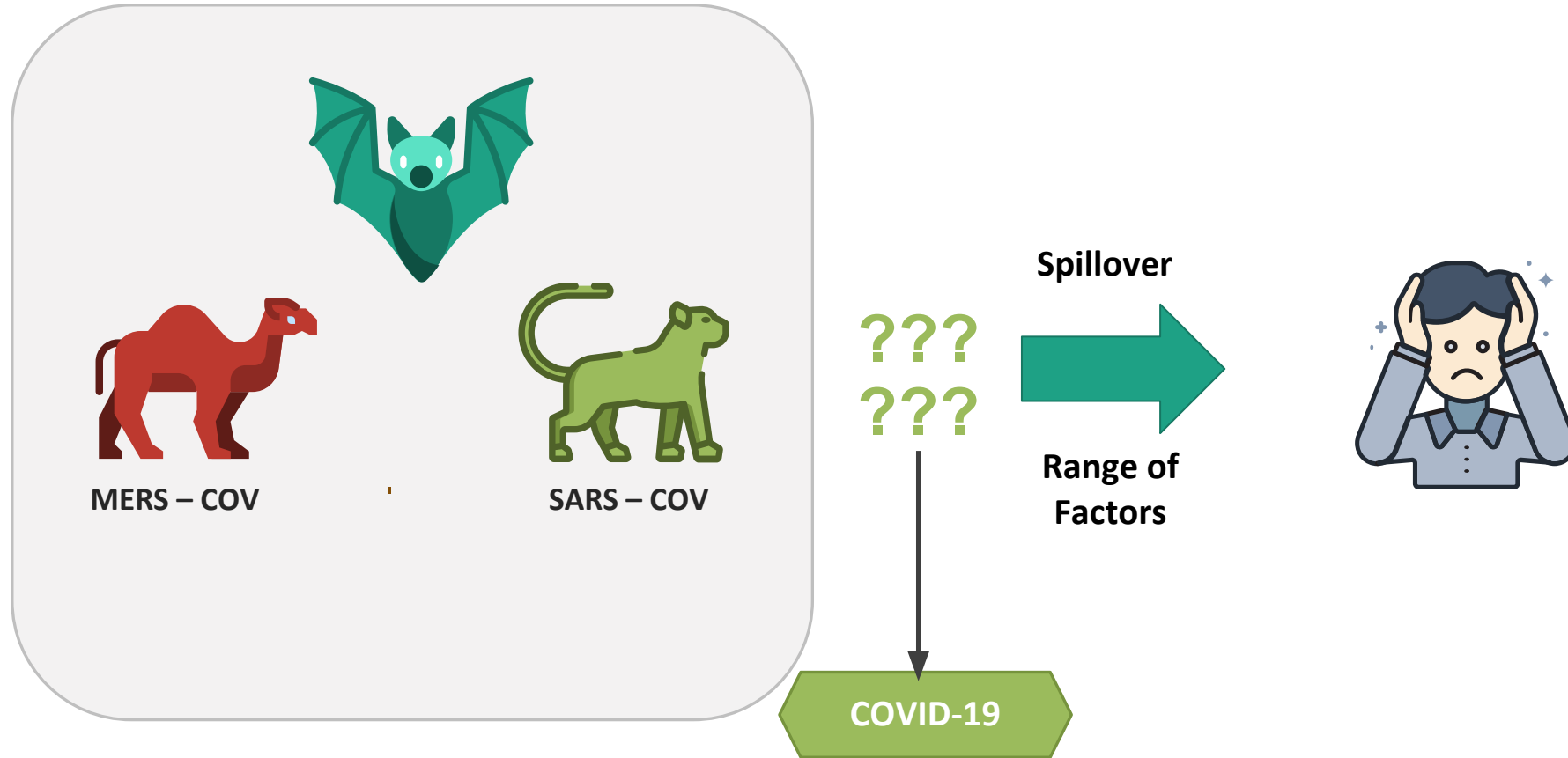
**Note: Below numbers are just for representation. You may change them accordingly.*



CORONA VIRUS (COVID-19)

Current Diagnosis Methods

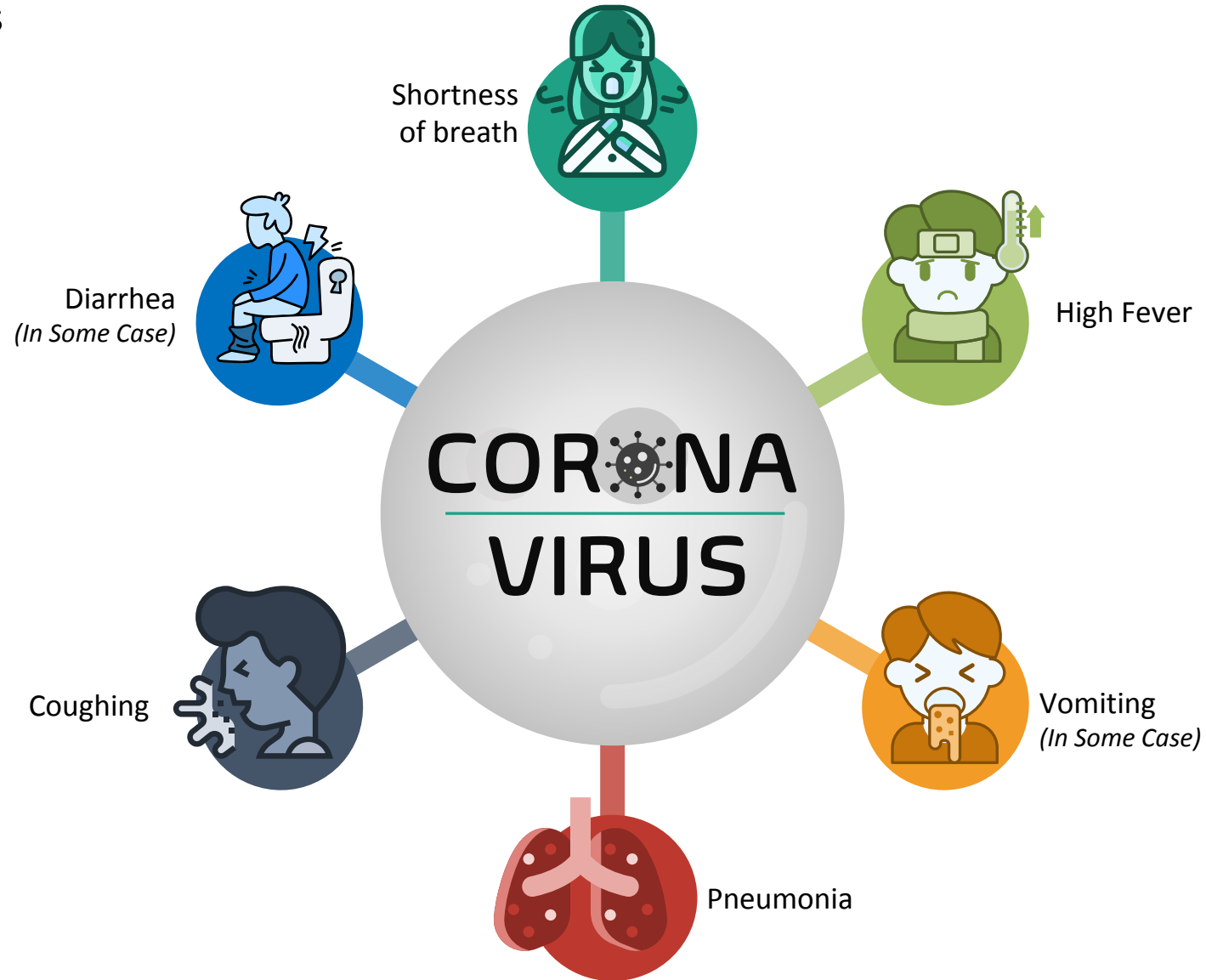
Origin of the Virus Circulate in a Range of animals



CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Corona Virus Symptoms



CORONA VIRUS (COVID-19)

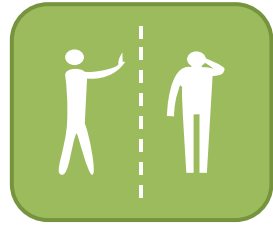
Current Diagnosis Methods

How We Can Help To Stop Spreading The Virus

PREVENTION



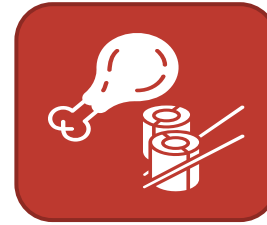
Wash Hands with water and soap/Sanitizer, at least 20 Seconds



Avoid contact with sick people



Don't touch eyes, nose or mouth with unwashed hands



Don't eat raw food, thoroughly cook meat and eggs



Avoid contact with animals and animal products

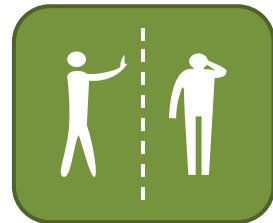
Avoid travelling to affected areas.



IF YOU ARE INFECTED



Stay at home



Avoid Contact with others



Cover your nose and mouth when sneezing



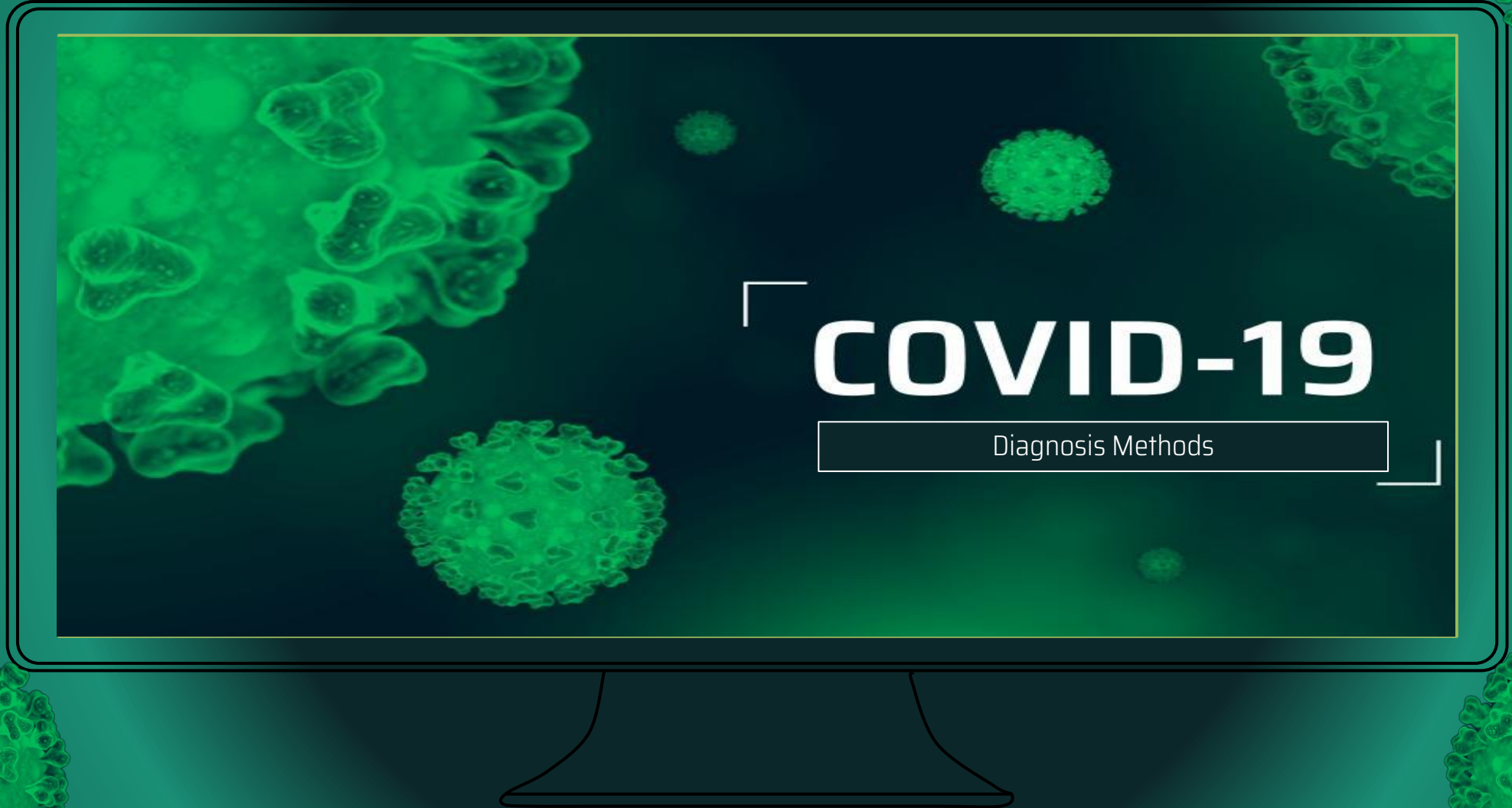
Keep objects and surface clean



Wear a surgical mask

CORONA VIRUS (COVID-19)

Current Diagnosis Methods

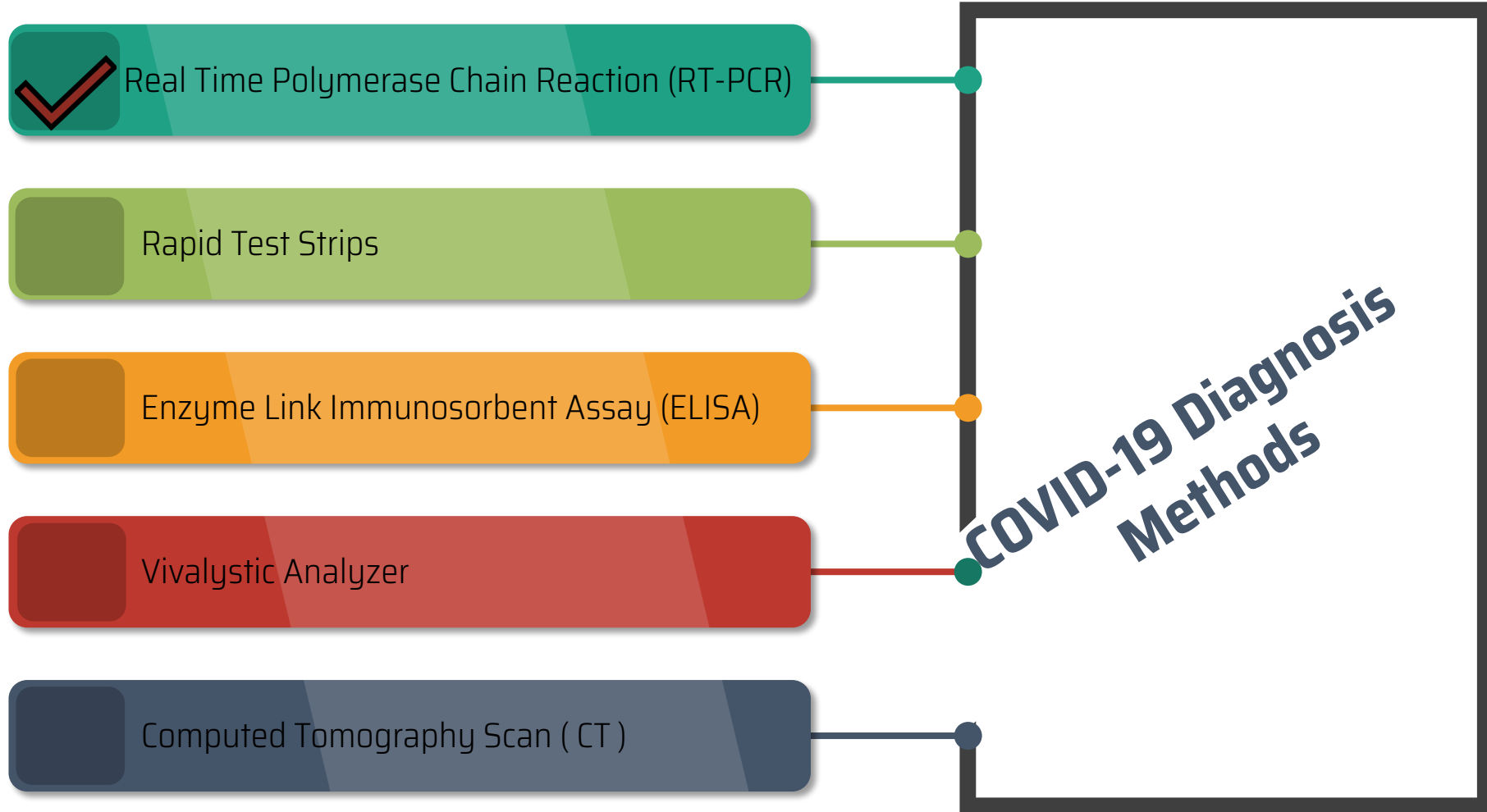


COVID-19

Diagnosis Methods

CORONA VIRUS (COVID-19)

Current Diagnosis Methods



CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Computed Tomography Scan (CT)



3 Days of having fever



5 Days of having fever




DOI:

CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Vivalytic Rapid Analyzer

The rapid test can detect a SARS-CoV-2 coronavirus infection in patients in  **BOSCH** under two and a half hours
Invented for life



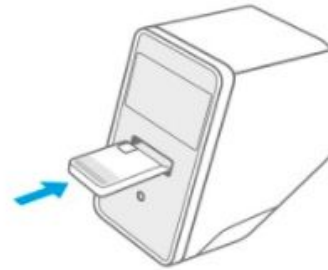
01 Scan the sample code.



02 Scan the cartridge code.



03 Fill in the sample and close the cartridge cover.



04 Insert the cartridge. Test starts automatically.



Sample material:

Nasopharyngeal / Oropharyngeal swab samples

Principle:

Integration of sample preparation (including process controls), DNA amplification, detection (μ Array) and analysis on a single cartridge

Purpose:

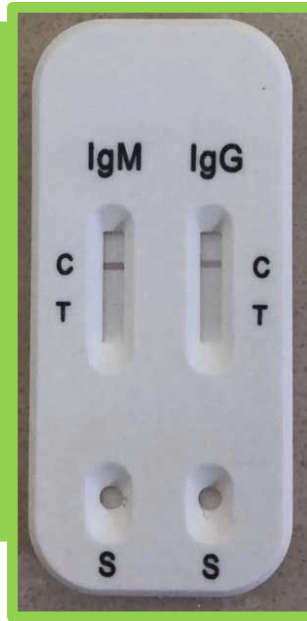
Nucleic acid based testing for direct identification of viral pathogens

<https://www.bosch.com/stories/vivalytic-rapid-test-for-covid-19/>

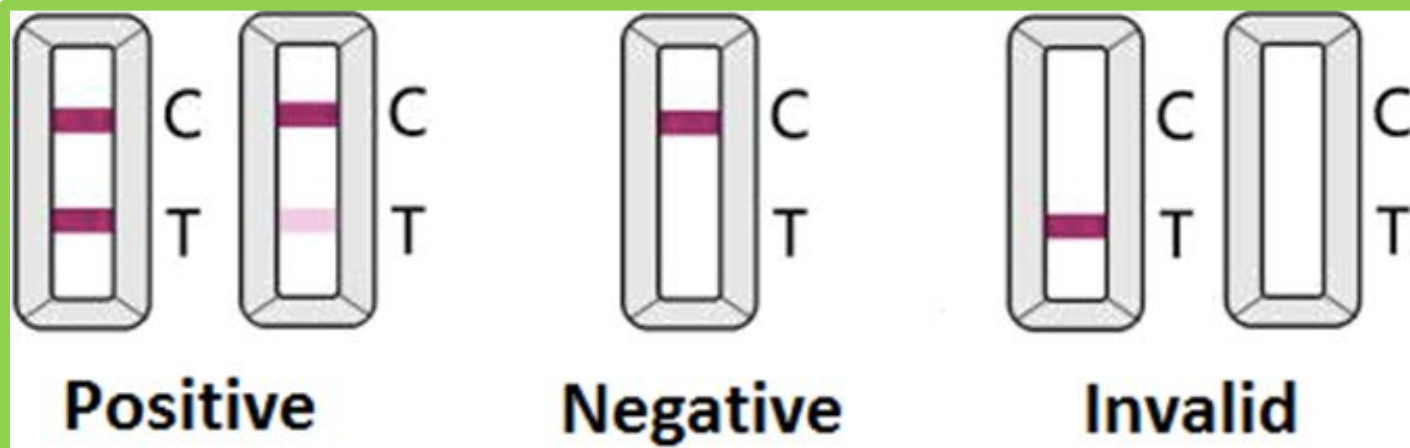
CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Rapid Test Strips/ Lateral Flow Assay

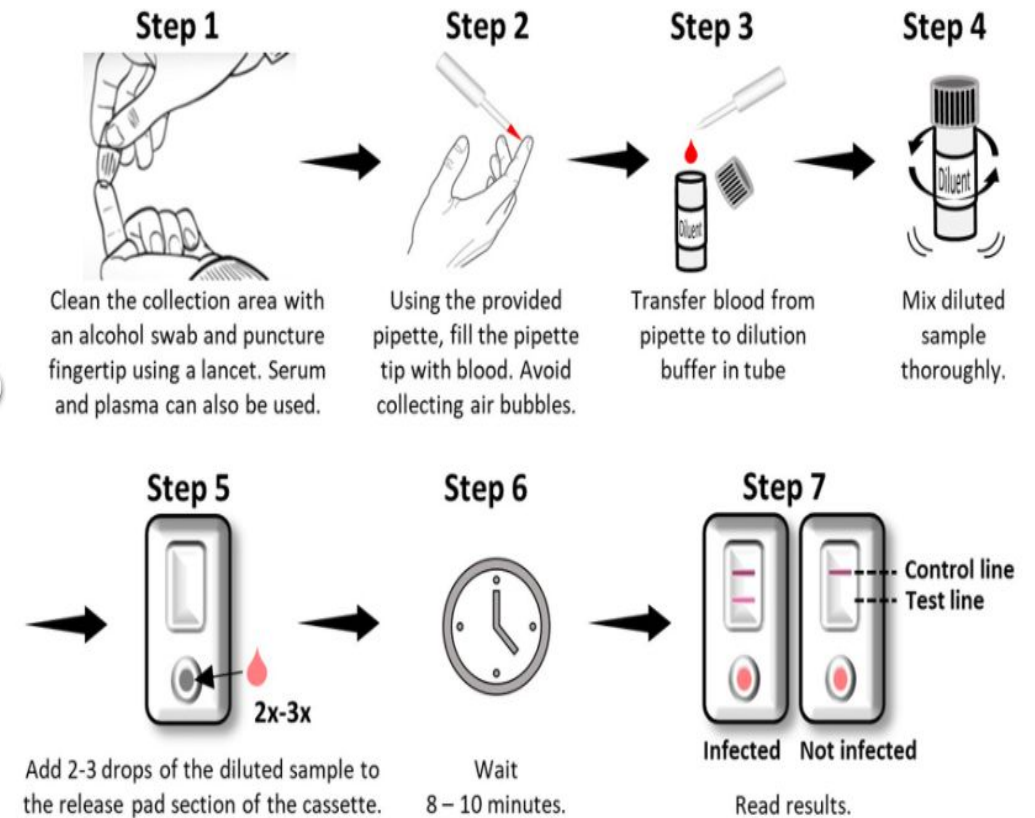


1. The test is for in vitro diagnostic use only.
2. The test results of this kit are for clinical reference only.



Quick Reference Guide*

Coronavirus (COVID-19) IgM/IgG Rapid Test Kits

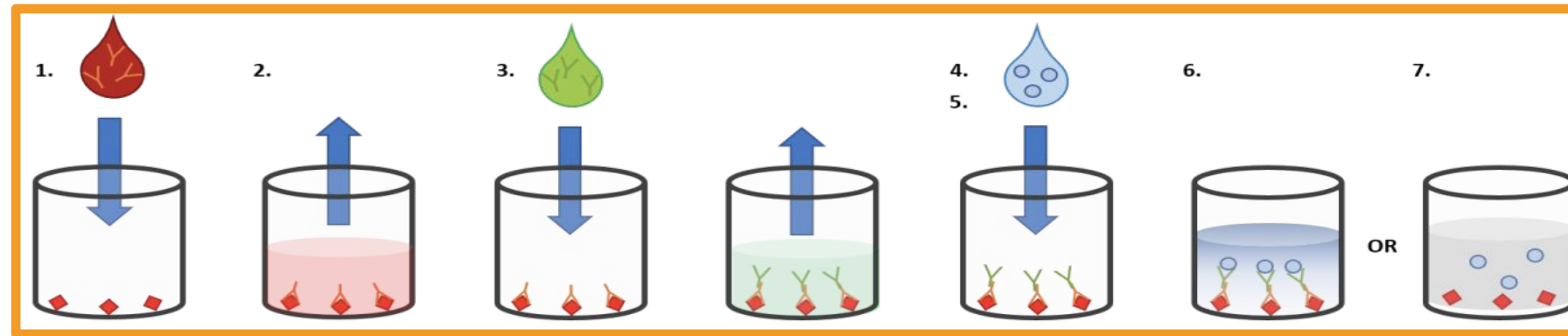


CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Enzyme Link Immunosorbent assay (ELISA)

ELISA) is a common biochemical technique that can be used to detect antigens or antibodies, depending on the type of test used.



Advantages:

- ELISA is a simple and cheap laboratory technique and well established and documented within science and medicine.
- Results can typically be produced within 2 to 3 hours of collecting a patient sample.
- Because it is so quick to perform it can be done in a hospital laboratory, cutting down the time to diagnosis.
- ELISA testing can be completed on multiple samples at once, so it can be used for rapid testing scaled up to test larger numbers of patients.

Disadvantages:

- ELISA tests are not yet well established for SARS-CoV-2 COVID-19 testing, although many companies are working hard to produce them and test them in patients

CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Real Time Polymerase Chain Reaction (RT-PCR) / Reverse-Transcription Polymerase Chain Reaction

PCR is a very common scientific technique that has been widely used in research and medicine for around 20-30 years to detect genetic information

RT-PCR is a special version used when RNA is being detected and it is now being used as a test to detect the virus COVID-19

RT-PCR tests are quick, sensitive and reliable, capable of producing results in 3-4 hours.

What does the test detect?

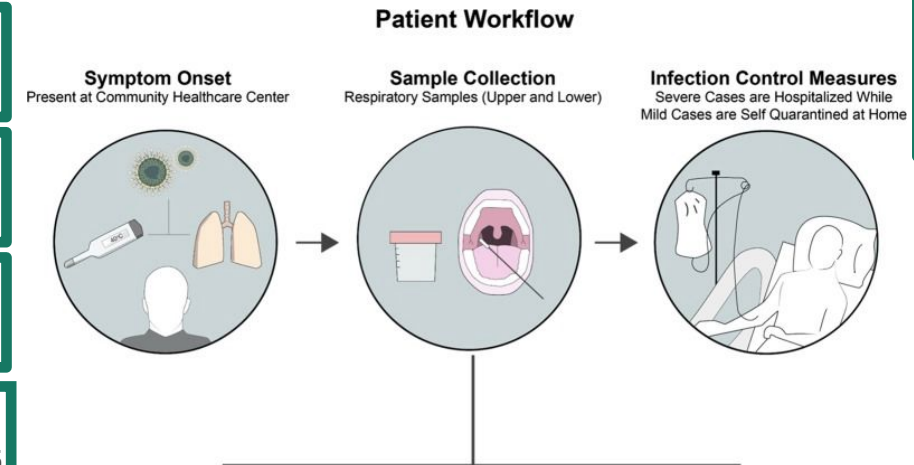
RT-PCR detects whether or not viral RNA is present in samples from a patient. It does this by capturing and amplifying regions of the virus' genetic material, usually the Spike protein, N protein or Envelope

The RT-PCR test cannot detect if a person has had the virus and then cleared it after the end of the COVID-19 disease, i.e. whether a person had the disease, as it only detects when active virus is present.

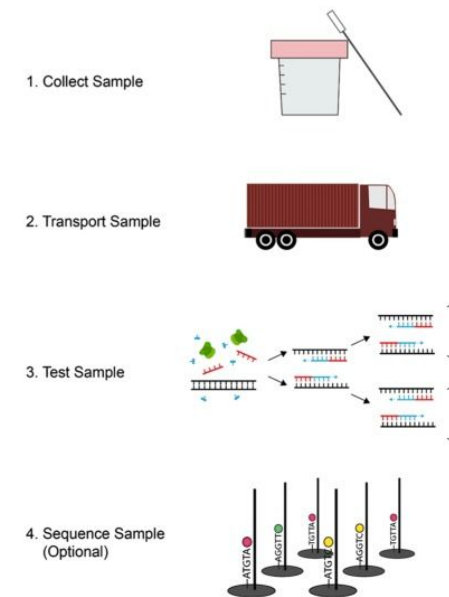
- Sample collection.
- Virus Isolation using (VTM).
- RNA Extraction.
- cDNA preparation
- RT-PCR.
- Results analysis.

Primers

5'-GTGARATGGTCATGTTGTGGCGG-3' (Forward),
5'-CARATGTAAASACACTATTAGCATA-3' (Reverse)



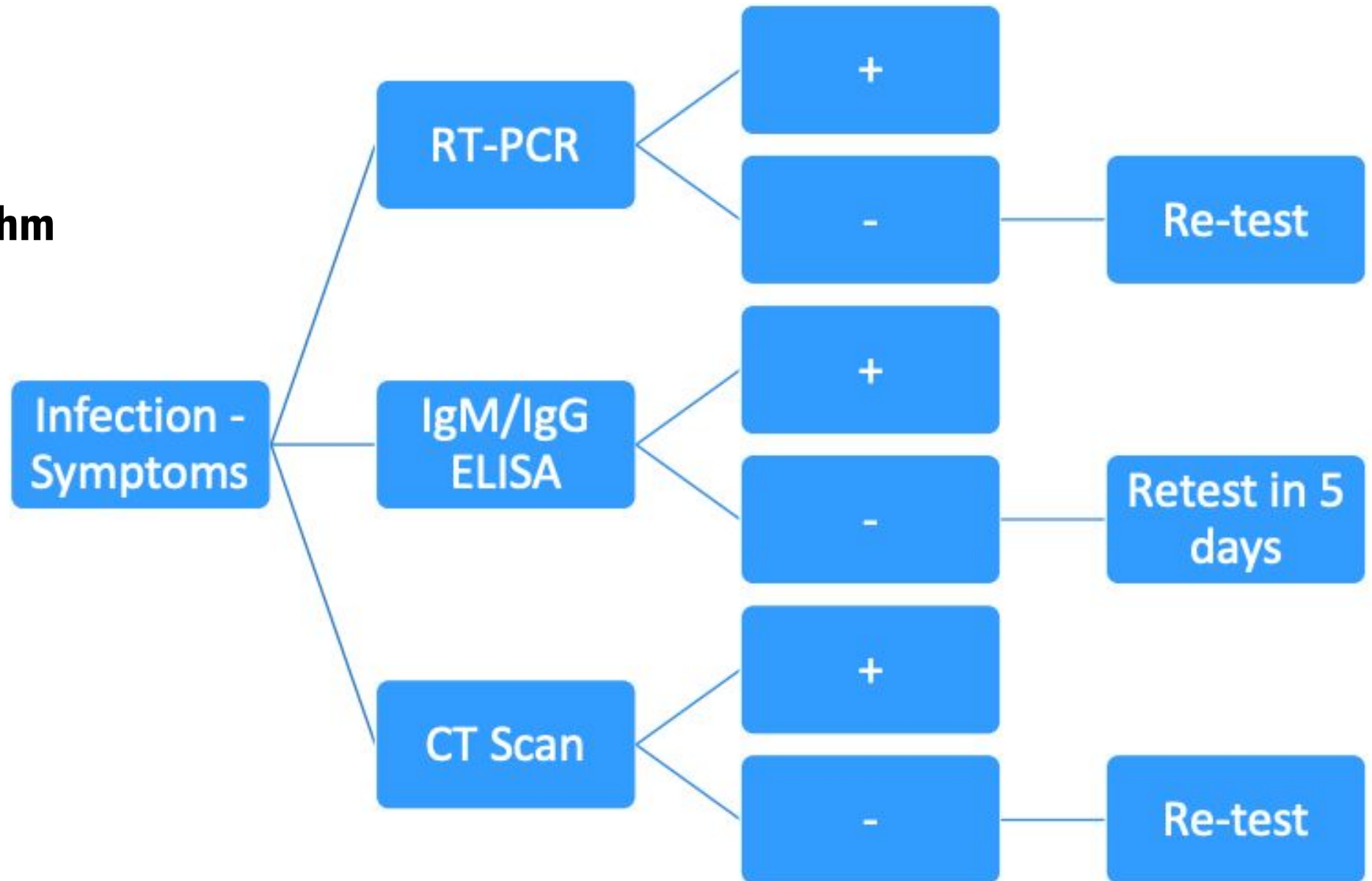
Sample Workflow



CORONA VIRUS (COVID-19)

Current Diagnosis Methods

Clinical Algorithm



CORONA VIRUS (COVID-19)

Current Diagnosis Methods



THANKS!

Do you have any questions?

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