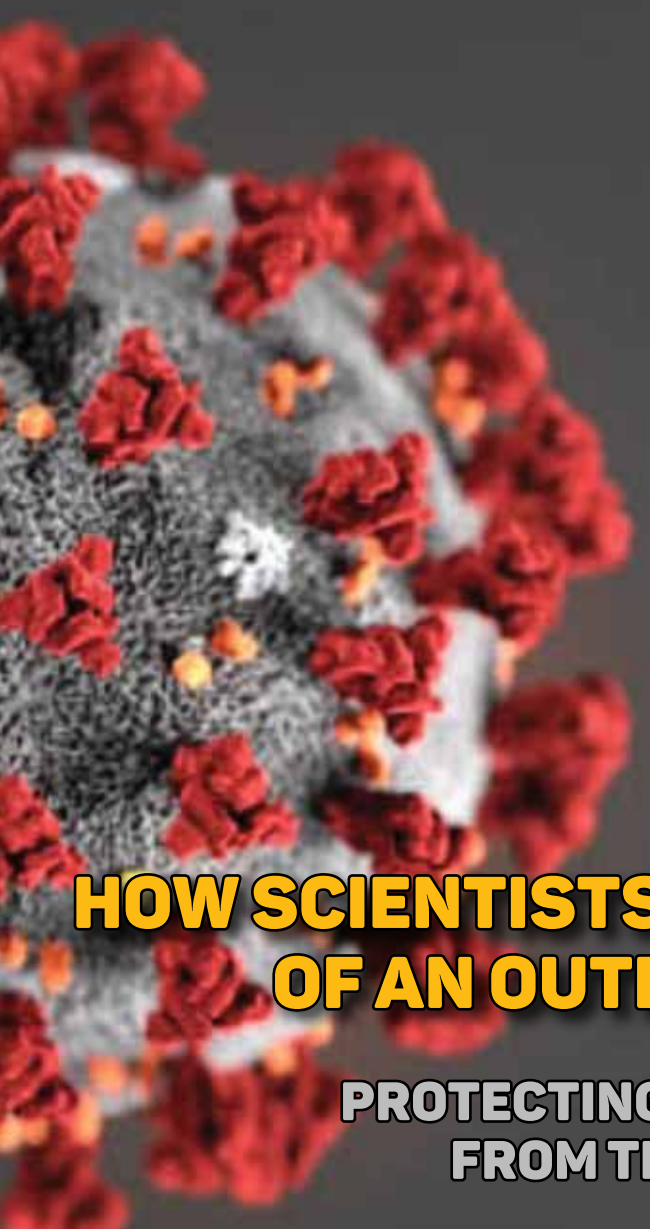


# DIAGNOSTICS



## COVID-19

Novel Coronavirus

**HOW SCIENTISTS QUANTIFY THE INTENSITY OF AN OUTBREAK LIKE COVID-19** - Pg 03

**PROTECTING YOURSELF AND OTHERS FROM THE SPREAD COVID-19** - Pg 04

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Novel Coronavirus

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#### Dear Reader

One of the great aspects of this job is having the opportunity to talk with and listen to the many different manufacturers, distributors, and of course the huge network of dealers that is the backbone of our industry.

Years ago I never would have ever imagined I would be in this position, and it is amazing. To say I really enjoy this job is an understatement.

What makes Diagnostics Update.com so unique is their informative and educative ways to the nation.

The staff and management is always looking for ways to inform their readers on how to tackle different medical issues. Basically, you want more people to enjoy reading more and more.

That said, there is still the need to get more readers to embrace healthy routines within and outside the homestead.

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# HOW SCIENTISTS QUANTIFY THE INTENSITY OF AN OUTBREAK LIKE COVID-19

## An epidemiologist explains the term "R0" and how many people one person with the coronavirus can infect.

If you saw the 2011 movie "Contagion," about a worldwide pandemic of a new virus, then you've heard the term "R0."

Pronounced "R naught," this isn't just jargon made up in Hollywood. It represents an important concept in epidemiology and is a crucial part of public health planning during an outbreak, like the current coronavirus pandemic that's spread globally since it was first identified in China.

Scientists use R0 – the reproduction number – to describe the intensity of an infectious disease outbreak. R0 estimates have been an important part of characterizing pandemics or large publicized outbreaks, including the 2003 SARS pandemic, the 2009 H1N1 influenza pandemic and the 2014 Ebola epidemic in West Africa. It's something epidemiologists are racing to nail down about SARS-CoV-2, the virus that causes COVID-19.

### How much will a disease spread?

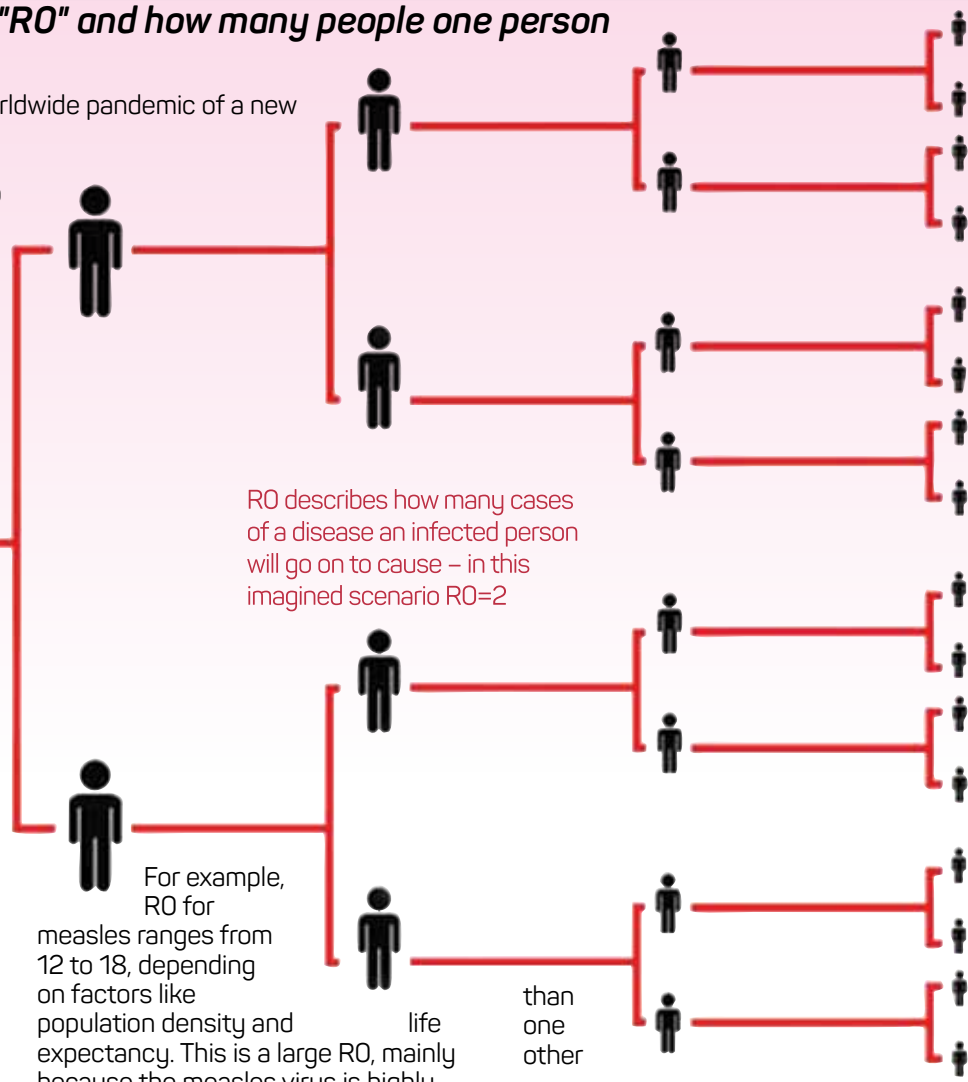
The formal definition of a disease's R0 is the number of cases, on average, an infected person will cause during their infectious period.

The term is used in two different ways.

The basic reproduction number represents the maximum epidemic potential of a pathogen. It describes what would happen if an infectious person were to enter a fully susceptible community, and therefore is an estimate based on an idealized scenario.

The effective reproduction number depends on the population's current susceptibility. This measure of transmission potential is likely lower than the basic reproduction number, based on factors like whether some of the people are vaccinated against the disease, or whether some people have immunity due to prior exposure with the pathogen. Therefore, the effective R0 changes over time and is an estimate based on a more realistic situation within the population.

It's important to realize that both the basic and effective R0 are situation-dependent. It's affected by the properties of the pathogen, such as how infectious it is. It's affected by the host population – for instance, how susceptible people are due to nutritional status or other illnesses that may compromise one's immune system. And it's affected by the environment, including things like demographics, socioeconomic and climatic factors.



On the other hand, the influenza virus is less infectious, with its R0 ranging from 2 to 3. Influenza, therefore, doesn't cause the same explosive outbreaks as measles, but it persists due to its ability to mutate and evade the human immune system.

### What makes R0 useful in public health?

Demographer Alfred Lotka proposed the reproduction number in the 1920s, as a measure of the rate of reproduction in a given population.

In the 1950s, epidemiologist George MacDonald suggested using it to describe the transmission potential of malaria. He proposed that, if R0 is less than 1, the disease will die out in a population, because on average an infectious person will transmit to fewer

susceptible person. On the other hand, if R0 is greater than 1, the disease will spread.

When public health agencies are figuring out how to deal with an outbreak, they are trying to bring R0 down to less than 1. This is tough for diseases like measles that have a high R0. It's especially challenging for measles in densely populated regions like India and China, where R0 is higher, compared to places where people are more spread out.

For the SARS pandemic in 2003, scientists estimated the original R0 to be around 2.75. A month or two later, the effective R0 dropped below 1, thanks to the tremendous effort that went into intervention strategies, including isolation and quarantine activities.

TO PAGE 05

# PROTECTING YOURSELF AND

**You can reduce your chances of being infected or spreading COVID-19 by taking some simple precautions:**

- Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water. Why? Washing your hands with soap and water or using alcohol-based hand rub kills viruses that may be on your hands.
- Maintain at least 1 metre (3 feet) distance between yourself and others. Why? When someone coughs, sneezes, or speaks 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 has the disease.
- Avoid going to crowded places. Why? Where people come together in crowds, you are more likely to come into close contact with someone that has COVID-19 and it is more difficult to maintain physical distance of 1 metre (3 feet).
- Avoid touching eyes, nose and mouth. Why? 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 infect you.

- 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 and wash your hands. Why? Droplets spread virus. By following good respiratory hygiene, you protect the people around you from viruses such as cold, flu and COVID-19.
- Stay home and self-isolate even with minor symptoms such as cough, headache, mild fever, until you recover. Have someone bring you supplies. If you need to leave your house, wear a mask to avoid infecting others. Why? Avoiding contact with others will protect them from possible COVID-19 and other viruses.
- If you have a fever, cough and difficulty breathing, seek medical attention, but

call by telephone in advance if possible and follow the directions of your local health authority. Why? 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.

- Keep up to date on the latest information from trusted sources, such as WHO or your local and national health authorities. Why? Local and national authorities are best placed to advise on what people in your area should be doing to protect themselves.

## Advice on the safe use of alcohol-based hand sanitizers

To protect yourself and others against COVID-19, clean your hands frequently and thoroughly. Use alcohol-based hand sanitizer or wash your hands with soap and water. If you use an alcohol-based hand sanitizer, make sure you use and store it

**Wash your hands**

Wash your hands with soap and running water when hands are visibly dirty



If your hands are not visibly dirty, frequently clean them by using alcohol-based hand rub or soap and water



World Health Organization

**Protect yourself and others from getting sick**

**Wash your hands**

- after coughing or sneezing
- when caring for the sick
- before, during and after you prepare food
- before eating
- after toilet use
- when hands are visibly dirty
- after handling animals or animal waste



World Health Organization

**Protect others from getting sick**

When coughing and sneezing cover mouth and nose with flexed elbow or tissue



Throw tissue into closed bin immediately after use




Clean hands with alcohol-based hand rub or soap and water after coughing or sneezing and when caring for the sick



World Health Organization

**Should I avoid shaking hands because of the new coronavirus?**

Yes. Respiratory viruses can be passed by shaking hands and touching your eyes, nose and mouth. Greet people with a wave, a nod or a bow instead.



World Health Organization #Coronavirus #COVID19

**Is wearing rubber gloves while out in public effective in preventing the new coronavirus infection?**

No. Regularly washing your bare hands offers more protection against catching COVID-19 than wearing rubber gloves. You can still pick up COVID-19 contamination on rubber gloves. If you then touch your face, the contamination goes from your glove to your face and can infect you.



World Health Organization #Coronavirus #COVID19

# OTHERS FROM THE SPREAD COVID-19

carefully.

- Keep alcohol-based hand sanitizers out of children's reach. Teach them how to apply the sanitizer and monitor its use.
- Apply a coin-sized amount on your hands. There is no need to use a large amount of the product.
- Avoid touching your eyes, mouth and nose immediately after using an alcohol-based hand sanitizer, as it can cause irritation.
- Hand sanitizers recommended to protect against COVID-19 are alcohol-based and therefore can be flammable. Do not use before handling fire or cooking.

**How can I grocery shop safely in the time of COVID-19?**

When grocery shopping, keep at least 1-metre distance from others and avoid touching your eyes, mouth and nose. If possible, sanitize the handles of shopping trolleys or baskets before shopping. Once home, wash your hands thoroughly and also after handling and storing your purchased products. There is currently no confirmed case of COVID-19 transmitted through food or food packaging.



#Coronavirus #COVID19 World Health Organization

**How should I wash fruit and vegetables in the time of COVID-19?**

Wash them the same way you would in any other circumstance. Before handling them, wash your hands with soap and water. Then, wash fruit and vegetables thoroughly with clean water, especially if you eat them raw.



#Coronavirus #COVID19 World Health Organization

- Under no circumstance, drink or let children swallow an alcohol-based hand sanitizer. It can be poisonous.
- Remember that washing your hands

with soap and water is also effective against COVID-19.

Source: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

**Can COVID-19 be spread through coins and banknotes?**

There is currently no evidence to confirm or disprove that COVID-19 virus can be transmitted through coins or banknotes. However, respiratory droplets expelled from an infected person can contaminate and persist on surfaces. Wash your hands regularly and thoroughly after touching any frequently-touched surface or object, including coins or banknotes. Avoid touching your eyes, mouth and nose, if your hands are not cleaned.



#Coronavirus #COVID19 World Health Organization

**Do I need to use a washing machine and drier to wash and dry clothes, towels and bed linen, if no one in my household is a suspected or confirmed COVID-19 patient?**

There is no need to use a washing machine or drier, nor extremely hot water. Do your laundry as you normally would, using detergent or soap. Once dry, make sure you clean your hands before handling and storing your clothes, towels and bed linen.



#Coronavirus #COVID19 World Health Organization

**How should I wash and dry clothes, towels and bed linen, if someone in my household is a suspected or confirmed COVID-19 patient?**

- Wash the patient's clothes, towels and bed linen separately.
- If possible, wear heavy-duty gloves before handling them.
- Never carry soiled linen against your body; place soiled linen in a clearly labelled, leak-proof container (e.g. bag, bucket).
- Straggle off solid excrement (e.g. faeces or vomit) with a flat, firm object and dispose of in the patient's toilet before putting linen in the designated container. Place the excrement in a covered bucket to dispose of in the toilet, if this is not in the patient's room.
- Wash and disinfect linen: Machine wash at 60-95°C with laundry detergent. Alternatively, soak linen in hot water and soap in a large drum, using a stick to stir, avoiding splashing. If hot water is not available, soak linen in 0.05% chlorine for approximately 30 minutes. Rinse with clean water and let linen dry in the sunlight.
- Do not forget to wash your hands at the end of the process.



#Coronavirus #COVID19 World Health Organization

## HOW SCIENTISTS QUANTIFY THE INTENSITY OF AN OUTBREAK

### FROM PAGE 03

However, the pandemic continued. While on average, an infectious person transmitted to fewer than one susceptible individual, occasionally one person transmitted to tens or even hundreds of other cases. This phenomenon is called super spreading. Officials documented super spreader events a number of times during the SARS epidemic in Singapore, Hong Kong and Beijing.

### RO for coronavirus SARS-CoV-2

A number of groups have estimated RO for this new coronavirus. The Imperial College group has estimated RO to be somewhere between 1.5 and 3.5. Most modeling simulations that project future cases are using ROs in that range.

These differences are not surprising; there's uncertainty about many of the factors that go into estimating RO, such

as in estimating the number of cases, especially early on in an outbreak.

Based on these current estimates, projections of the future number of cases of coronavirus are fraught with high levels of uncertainty and will likely be somewhat inaccurate.

The difficulties arise for a number of reasons.

First, the basic properties of this viral pathogen – like the infectious period – are as yet unknown.

Second, researchers don't know how many mild cases or infections that don't result in symptoms have been missed by surveillance but nevertheless are spreading the disease.

Third, the majority of people who come down with this new coronavirus do recover,

and are likely then immune to coming down with it again. It's unclear how the changing susceptibility of the population will affect the future spread of infection. As the virus moves into new regions and communities, it encounters people with varying health conditions that affect their susceptibility to disease, as well as different social structures, both of which affect its transmissibility.

Finally, and likely the most important reason, no one knows the future impacts of current disease control measures. Epidemiologists' current estimates of RO say nothing about how measures such as travel restrictions, social distancing and self-quarantine efforts will influence the virus's continued spread.

This story was originally published by the University of Michigan

Source: <https://www.aau.edu/research-scholarship/featured-research-topics>

# DONATING BLOOD DURING A PANDEMIC:

## Why it is crucial, and how to do it safely

### DESPITE LOCKDOWN MEASURES BEING IN PLACE TO CURB THE SPREAD OF SARS-COV-2, IT IS CRUCIAL THAT PEOPLE STILL DONATE BLOOD



COVID-19's sudden emergence and rapid spread across the world have fundamentally changed how societies function, requiring radical restrictions on movement.

These lockdowns aim to limit the transmission of the SARS-CoV-2 virus to reduce both the number of people dying after becoming infected and the strain on overloaded intensive care units.

However, while staying at home as much as possible is important, it is also crucial that many essential workers can leave their homes safely. These individuals include care workers in hospitals and the community, public service workers, and people working in food industries, as well as anyone else who plays a key role in helping the country keep functioning, whether there is a pandemic or not.

#### DONATING BLOOD

As well as these key workers, other people who are crucial for maintaining the health of a population are those who donate blood.

A country's blood supply is integral to supporting people in a critical condition. According to the National Heart, Lung, and Blood Institute (NHLBI), blood transfusions are necessary if a person loses too much blood due to injury or during a surgical procedure. They can also be necessary if a person's body is not producing blood properly.

Depending on the reason why a person needs a blood transfusion, the NHLBI highlight that it is possible to give four different types of blood product during transfusion: whole blood, red blood cells, platelets, or plasma.

According to the Centers for Disease Control and Prevention (CDC), blood transfusions are lifesaving procedures that occur every day in hospitals. There are a number of blood donors who are crucial for the country's blood supply.

Without ready access to supplies of blood, many people would not be able to undergo lifesaving blood transfusion procedures.

#### "DRAMATIC REDUCTION" IN BLOOD DONATIONS DURING LOCKDOWN

As with all the other resources that a country depends on, supply and demand largely determine its blood reserves. At a local level, if there is a significant accident causing a loss of blood from many people, blood reserves may become stretched as the demand increases.

Conversely, too few people donating blood can put pressure on the blood reserves, as the supply of blood cannot meet the demand.

The physical distancing policies that authorities have implemented during the SARS-CoV-2 outbreak have put severe pressure on the supply of blood.

According to Dr. Peter Marks, Director of the FDA's Center for Biologics Evaluation and Research, "[t]he COVID-19 pandemic has caused unprecedented challenges to the blood supply. Donor centers have experienced a dramatic reduction in donations due to the implementation of physical distancing and the cancellation of blood drives."

Dr. Marks describes people who donate blood as "part of our

critical infrastructure industries." Despite the physical lockdown measures, it is crucial that people continue to donate blood.

It is the responsibility of local governments to encourage people to donate blood and to help them do it in a safe way that does not significantly increase their risk of getting or passing on SARS-CoV-2.

In short, the benefits of giving blood at this critical stage of the pandemic far outweigh the negative consequences of the increased number of people traveling from their homes. Donating blood safely

While it is crucial that people continue to donate blood, doing so safely is, of course, also important.

As with other people who are critical to the functioning of society and thus unable to stay at home, people who donate blood should adhere to physical distancing policies when traveling outside, wear masks in areas where they are unable to keep 6 feet apart from other people, and frequently wash their hands to reduce their chances of catching or spreading the virus.

As Dr. Marks points out, blood donation centers are ideally placed to manage the donations of blood safely during the pandemic, as they are highly skilled in infection control practices.

In Dr. Marks' words, "[b]lood donation centers always take steps to prevent staff and donors who are not feeling well or who have a fever from reaching the donor area, and they are now taking additional social distancing

precautions wherever possible, consistent with the President's Coronavirus Guidelines."

"Donating blood is safe and takes only a little of your time. At many blood donation centers, those who are interested in donating can make an appointment to minimize the time it takes to donate blood. Centers can arrange to call a donor's mobile phone when they're ready for the donor to come in."

For blood and plasma collection facilities on how to operate safely during the pandemic, here are some recommendations:

- maintaining good respiratory hygiene and cough etiquette
- following hand hygiene practices
- cleaning and disinfecting surfaces regularly
- placing seats 6 feet apart in waiting areas and the collection area
- ensuring that donation center workers do not work if they have COVID-19 symptoms
- making sure that all staff are aware of the latest policies and safety procedures in response to the pandemic.

Source: [www.medicalnewstoday.com](http://www.medicalnewstoday.com)



# Why immunisation is important

*Immunisation is one of the best ways you can protect yourself, your children and future generations from infectious diseases. In other words, if you vaccinate, you help wipe out disease that could spread now and into the future.*



**B**y making sure you and your family are fully vaccinated, you are not only looking after your own family but also protecting vulnerable people in your community. The more people who are vaccinated, the fewer people will be infected, and the less widely can a disease spread.

Immunisation saves lives. As recently as the 1950s, thousands of children died every year from diseases such as tetanus, diphtheria and whooping cough (pertussis). Luckily, it is rare for anyone to die from these infectious diseases now, thanks to the major vaccination programs introduced in the 1960s and 1970s, which continue today.

## HOW DO VACCINATIONS WORK?

All immunisations work in the same way. The vaccination uses your body's immune system to increase protection to an infection before you come into contact with that infection. In other words, it is like being infected with the disease without suffering the actual symptoms.

If you come into contact with an infection after you've been vaccinated, your body works to stop you from getting the disease, or you may get just a mild case. Unlike other proposed approaches to immunisation (such as homeopathy), vaccinations have been rigorously tested to demonstrate their safety and effectiveness in protecting against infectious disease.

## WHAT ABOUT PEOPLE WHO CANNOT BE IMMUNISED?

Some people in our community cannot be vaccinated. This might

be because they are too young or too sick. You can help protect these vulnerable people by keeping your family's vaccinations up to date.

When enough people in the community are vaccinated, the spread of a disease slows down or stops completely. So as long as enough people are vaccinated, the disease will not spread. This is called herd immunity.

## MODERN OUTBREAKS OF INFECTIOUS DISEASES

Many infectious diseases are rare or not around anymore, thanks to vaccination. But there are still infectious disease outbreaks happening around the world today:

- **flu, chicken pox, whooping cough and measles** – these diseases still have occasional outbreaks, mainly when introduced from overseas. They could make a strong comeback if people stop vaccinating. In January 2019, 62,225 measles cases were notified globally compared to the same period in 2018 when only 23,535 cases were notified

- **Zika** – in February 2016 the World Health Organization (WHO) declared the Zika virus an international public health emergency following outbreaks in Central and South America. There is ongoing evidence of transmission throughout the Americas, Africa and other regions of the world. As of 2018, a total of 86 countries and territories have reported evidence of mosquito-transmitted Zika infection

- **Ebola** – the latest outbreak of Ebola virus disease started in Democratic Republic of Congo in August 2018, and is ongoing. 584

deaths have been confirmed during this outbreak

- **HIV/AIDS** – The first cases of HIV/AIDS were identified in the gay community in America in 1981 and, by 1985, at least one case had been reported from each region of the world. In 2017, more than 36.9 million people around the world were living with HIV/AIDS. There is still no cure, but current treatments allow patients to live long and healthy lives. No vaccines exist for Zika, Ebola or HIV/AIDS, but research is underway.

## IMMUNISATION SURVEILLANCE

To keep you, your family and your community safe, governments need a complete picture of immunisation. That is where immunisation surveillance comes in. Immunisation surveillance involves researching and collating information on immunisation programs.

Many countries have an official immunisation surveillance body and focuses on:

- surveillance of vaccine preventable diseases
- vaccination coverage and adverse events
- program evaluations

## HOW NEW VACCINES ARE DEVELOPED

It takes a long time to develop a new vaccine, usually between 10 and 15 years. The development process is rigorous and the vaccine is constantly monitored – even after it is being used – to make sure it is safe and effective.

A new vaccine goes through many phases of development, including research, discovery, pre-clinical testing, clinical testing (which can take up to seven years) and regulatory approval. Once the vaccine is approved (another lengthy process of up to two years), the vaccine is then manufactured and shipped to where it's needed.

After vaccines are introduced into immunisation schedules, they are

closely monitored through trials and surveillance to see if they are effective and safe for any adverse events following immunisation. This is necessary, as sometimes unexpected side effects occur after vaccines are registered for use.

Some vaccines, such as the flu vaccination, need to be updated every year to respond to changing infection strains and conditions. For these updates, the process is compressed to ensure the vaccine is available as needed.

## WHO NEEDS TO BE VACCINATED?

The answer is simple – almost everyone! There are some exceptions – usually people with a serious medical condition (for example, a weak immune system). But don't ever decide against immunisation without checking with your GP first. Your doctor will advise which vaccinations you need based on your HALO: health condition, age, lifestyle and occupation.

If 95 per cent of us are vaccinated, the spread of disease is reduced, which helps to protect everyone. Vaccination is particularly recommended if you:

- are a newborn or young child (as per the NIP schedule)
- have a newborn baby
- are pregnant or planning for a baby
- are caring for very young babies (for example, parents, grandparents and carers)
- are an older person
- are an Aboriginal or Torres Strait Islander child or adult
- have plans to travel outside your country
- are medically at risk due to certain conditions (such as asthma) or treatment.

Remember, if you are not sure about what immunisations you need, talk with to your GP. If you find you are not up to date with your vaccinations, your GP will tell you about catch-up and booster shots.

Source: [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)



# DIAGNOFIRM DONATES

**M**inistry of Health and Wellness Covid-19 testing capabilities have been boosted as they received a donation of a Laboratory Extractor machine from Diagnofirm Medical Laboratories. The donation was made to Minister Dr Lemogang Kwape this morning at the National Public Health Laboratory (NPHL).

When receiving the donation, Dr Kwape thanked Diagnofirm for their good gesture to help in the fight against Covid-19. The machine will be used in the testing process of the Coronavirus. Dr Kwape said the extractor will go a long way in speeding up the testing process as the samples continues to increase. He said Batswana will benefit a lot from this gesture since he believes that testing will now be done quicker than before.

Dr Kwape also took the opportunity to thank NPHL workers for their relentless efforts in the fight against Covid-19. He said working day and night to perform the tests is evident of their tireless efforts. He also thanked their families for letting them do the work they





# TO MINISTRY OF HEALTH

are doing. Dr Kwape also thanked all the frontline workers and urged them not to give up.

Diagnofirm Medical Director Dr Mohammed Chand said they decided to donate the extractor to help government in the battle against Covid-19 and to give back to the community.



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# TOP 6 WINTER HEALTH HAZARDS

## and How to Beat Them

### *Battling arthritis, dry skin, depression, weight gain*

When the arctic winds blow, your health can suffer. What are the biggest challenges winter can bring? We asked six of our experts:

#### **1. DRY, ITCHY SKIN**

"Dry skin and the itching it causes are very common during winter," says a dermatologist and recommends on how to combat them:

- Using creams instead of lotions. Thicker creams protect you better. "Use them generously, as often as needed.
- Protecting your face when out in the snow. Apply a layer of petroleum jelly or Aquaphor® ointment, even under winter gear, to reduce risks of windburn and frostbite.
- Seeking help for persistent itching. If moisturizers don't temper the itching, see a dermatologist. You may have an underlying skin condition that needs to be addressed.
- To minimize dry skin all year, avoid long, hot showers and use warm, tepid water instead. Apply body lotion within three to five minutes to seal in moisture.

#### **2. ARTHRITIS PAIN**

Winter tends to bring on more arthritic pains, says orthopaedic specialist. Cold and wet weather, along with changes in barometric pressure, are the most frequent culprits.

- To minimize the impact of cold weather on joints, dress warmly and in layers. When going outdoors, wear mittens, socks and a hat.

- Staying active throughout winter is good for the joints. Try cold-weather-friendly activities like walking indoors, swimming and aerobics classes.

- You can also consider vitamin D supplements. We don't get enough vitamin D from the sunlight in the dreary winter months.

#### **3. DEPRESSION**

For some people, winter's grayness, lack of sun and short days wear on the psyche. "It's the time of year people with seasonal affective disorder (SAD) find most challenging," says psychologist.

In SAD, depression surfaces in late fall or early winter, fading by spring or early summer.

Treatment involves purchasing a light that emits 10,000 lux. Thirty 30 minutes of light exposure per day — ideally in the morning — are enough to lift mood. "Light therapy is effective for about 70 percent of those who use it as prescribed."

Also, the reduced physical and social activity in winter can dampen anyone's spirit. "We can all benefit from finding ways to keep our bodies moving and to liven up our social calendars."

#### **4. COLDS AND VIRUSES**

Fever, chills, head congestion, postnasal drip and cough — and sometimes nausea, vomiting or diarrhea. Each winter, this constellation of symptoms brings patients to family medicine - by a physician.

"Respiratory and flu-like illnesses are the most common acute illnesses we see," the

overwhelming majority are viral and do not require antibiotics.

When should you visit the doctor? Only if you've been sick for more than 10 days OR you can't function well due to persistent shortness of breath, high fever, etc.

Your doctor will likely recommend rest, fluids, a bland diet and medications for specific symptoms. To stay healthy, follow this decades-old advice: Get proper rest, eat a healthy diet, wash your hands often, reduce stress and exercise.

#### **5. WEIGHT GAIN**

Putting on weight between Thanksgiving and New Year's prompts many people to start working out again. Check with your doctor before you begin, advises exercise physiologist.

For specific advice on the right routine, speak to an exercise professional. No two people are alike, so all exercise and workout routines should be customized. A customized workout will factor in your:

- Health history
- Cardiovascular endurance and strength
- Personal goals
- Times/days available for exercise
- Access to exercise equipment
- Favored forms of exercise and what you've done

Age should not determine which exercise is safe or effective for you — you should exercise to your ability.

Generally, 150 minutes of moderate-intensity cardiovascular exercise are recommended per week. As long as you exercise for 10 continuous minutes — even walking — it's cardio. Add resistance training at least two days a week (not back-to-back), and stretch daily, or as needed.

#### **6. FROSTBITE**

You don't have to be a mountain climber — the very young, the elderly and the chronically ill are susceptible to frostbite, too.

"The colder it is, the quicker frostbite can develop," warns emergency medicine specialist. In frostbite, water in the skin's soft tissues (typically the fingers, nose, toes and face) starts to freeze.

As damage continues, you can ultimately lose fingers, toes and extremities. Anyone with symptoms — including pain and skin discoloration — should get inside quickly, then head to the emergency room.

Warm up those extremities and keep them warm. Don't let them re-freeze. A doctor's examination is vital. Damage is often more severe than it appears.

It's best to stay indoors in very cold weather. If you venture out, cover your hands, ears and face, and keep clothing dry.

Adopting these healthy habits should help you minimize winter's hazards, and thrive — not merely survive — in the cold months.

Source: [health.clevelandclinic.org](http://health.clevelandclinic.org)

# Hepatitis

Inflammation of the Liver



Hepatitis A	Hepatitis B	Hepatitis C	Hepatitis D	Hepatitis E
<b>Hepatitis A Virus</b> <b>Fecal-Oral Route</b>	<b>Hepatitis B Virus</b> Sexual Contact Contaminated Needles (Also spread via infected tears/saliva)	<b>Hepatitis C Virus</b> Blood-to-Blood Transmission	<b>Hepatitis D Virus</b> Can only be infected with Hepatitis B If you have Hepatitis B already Hepatitis D resides INSIDE Hepatitis B	<b>Hepatitis E Virus</b> Fecal-Oral Route 2-8 WEEKS DURATION
<b>Symptoms:</b> Loss of appetite Diarrhea Fever Nausea (Sickness) Malaise (General discomfort) Jaundice (yellow skin)	<b>Cirrhosis of Liver?</b> <b>Liver Cancer?</b> Vaccine available for prevention	<b>Liver Cirrhosis?</b> <b>Liver Cancer?</b> Asymptomatic Flu-like symptoms	<b>Greater RISK of Liver Failure</b> INCREASED RISK + PROGRESSION TO LIVER CIRRHOSIS	<b>Symptoms:</b> Jaundice Nausea Fatigue
<b>6 WEEKS RECOVERY TIME</b> No permanent damage to liver			<b>TRANSMISSION:</b> Contaminated Needles Sexual contact	<b>CHRONIC STAGE:</b> WEAK IMMUNE SYSTEM PREGNANCY <b>GREATER RISK:</b> FULMINANT LIVER FAILURE CIRRHOSIS

## HEPATITIS: TYPE, CAUSE, SYMPTOMS AND TREATMENT

### WHAT IS HEPATITIS?

Hepatitis refers to an inflammatory condition of the liver. It's commonly caused by a viral infection, but there are other possible causes of hepatitis. These include autoimmune hepatitis and hepatitis that occurs as a secondary result of medications, drugs, toxins, and alcohol. Autoimmune hepatitis is a disease that occurs when your body makes antibodies against your liver tissue.

Your liver is located in the right upper area of your abdomen. It performs many critical functions that affect metabolism throughout your body, including:

- bile production, which is essential to digestion
- filtering of toxins from your body
- excretion of bilirubin (a product of broken-down red blood cells), cholesterol, hormones, and drugs
- breakdown of carbohydrates, fats, and proteins
- activation of enzymes, which are specialized proteins essential to body functions
- storage of glycogen (a form of sugar), minerals, and vitamins (A, D, E, and K)
- synthesis of blood proteins, such as albumin
- synthesis of clotting factors

Treatment options vary depending on which type of hepatitis you have. You can prevent some forms of hepatitis through immunizations and lifestyle precautions.

### The 5 types of viral hepatitis

Viral infections of the liver that are classified as hepatitis include hepatitis A, B, C, D, and E. A different virus is responsible for each type of virally transmitted hepatitis.

Hepatitis A is always an acute, short-term disease, while hepatitis B, C, and D are most likely to become ongoing and chronic. Hepatitis E is usually acute but can be particularly dangerous in pregnant women.

#### Hepatitis A

Hepatitis A is caused by an infection with the hepatitis A virus (HAV). This type of hepatitis is most commonly transmitted by consuming food or water contaminated by feces from a person infected with hepatitis A.

#### Hepatitis B

Hepatitis B is transmitted through contact with infectious body fluids, such as blood, vaginal secretions, or semen, containing the hepatitis B virus (HBV). Injection drug use, having

sex with an infected partner, or sharing razors with an infected person increase your risk of getting hepatitis B.

#### Hepatitis C

Hepatitis C comes from the hepatitis C virus (HCV). Hepatitis C is transmitted through direct contact with infected body fluids, typically through injection drug use and sexual contact.

#### Hepatitis D

Also called delta hepatitis, hepatitis D is a serious liver disease caused by the hepatitis D virus (HDV). HDV is contracted through direct contact with infected blood. Hepatitis D is a rare form of hepatitis that only occurs in conjunction with hepatitis B infection. The hepatitis D virus can't multiply without the presence of hepatitis B.

#### Hepatitis E

Hepatitis E is a waterborne disease caused by the hepatitis E virus (HEV). Hepatitis E is mainly found in areas with poor sanitation and typically results from ingesting fecal matter that contaminates the water supply.

### CAUSES OF NONINFECTIOUS HEPATITIS

Alcohol and other toxins

Excessive alcohol consumption can cause liver damage and inflammation. This is sometimes referred to as alcoholic hepatitis. The alcohol directly injures the cells of your liver. Over time, it can cause permanent damage and lead to liver failure and cirrhosis, a thickening and scarring of the liver.

Other toxic causes of hepatitis include overuse or overdose of medications and exposure to poisons.

### Autoimmune system response

In some cases, the immune system mistakes the liver as a harmful object and begins to attack it. It causes ongoing inflammation that can range from mild to severe, often hindering liver function. It's three times more common in women than in men.

### Common symptoms of hepatitis

If you have infectious forms of hepatitis that are chronic, like hepatitis B and C, you may not have symptoms in the beginning. Symptoms may not occur until the damage affects liver function.

Signs and symptoms of acute hepatitis appear quickly. They

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# BENEFITS OF USING AN ACCREDITED MEDICAL LABORATORY

*Choosing an accredited laboratory provides peace of mind and an assurance of a job well done*



You wouldn't drive a car that isn't roadworthy – because the risks are obvious. The same is true of services from medical laboratories – you need to make sure that your choice is safe and assured.

You need the confidence that the laboratory operates within defined procedures and to established standards. You want to know that your tests will be undertaken by a laboratory that has the right people, facilities, expertise, systems and track record to do the job right – first time and every time.

That's what laboratory accreditation is all about.

**Accreditation** is a means of determining the technical competence of testing, calibration and medical laboratories to perform specific types of testing, measurement and calibration. It provides formal recognition that laboratories are competent, impartial and independent, therefore providing a ready means for customers to identify and select reliable testing, measurement and calibration services that are able to meet their needs. To maintain this recognition, laboratories are re-evaluated regularly by a recognised accreditation body to ensure their continued compliance with requirements, and to check that their standard of operation is being maintained.

Laboratory accreditation is highly regarded both nationally and internationally as a reliable indicator of technical competence.

Accreditation uses criteria and procedures specifically developed to determine technical competence. Specialist technical assessors conduct a thorough evaluation of all factors in a laboratory that affect the laboratory results.

The criteria are based on the international standards called ISO 15189, which are used to evaluate medical laboratories throughout the world.

## WHAT FACTORS ARE IMPORTANT WHEN CHOOSING A LABORATORY?

When selecting a testing, calibration or measurement laboratory, you need to be sure that it can supply you with accurate and reliable results that meet your requirements. The list of the test, calibration, or measurement procedures for which the laboratory is accredited is specified in a laboratory's Scope of Accreditation, which can either be provided by the laboratory upon request, or is contained within the directory of accredited laboratories produced by the accreditation body. You should check that the laboratory is accredited for the specific work that you require to be undertaken.

The technical competence of a laboratory depends on a number of factors, including:

- Qualifications, training and experience of the staff
- Correct equipment – properly calibrated and maintained
- Adequate quality assurance procedures
- Proper sampling practices
- Appropriate and valid testing procedures and methods
- Traceability of measurements to national standards
- Accurate recording and reporting procedures
- Suitable testing facilities

By being accredited, the laboratory is demonstrating that these requirements, amongst others, have been and continue to be met, thus assuring you, the client, that your laboratory's examination results are accurate and reliable.

Advantages of using an accredited laboratory  
Most of the accreditation bodies have adopted ISO 15189 as the basis of accrediting medical laboratories. This has helped countries employ a uniform approach to determining laboratory competence. This uniform approach allows countries

to establish agreements among themselves, based on mutual evaluation and acceptance of each other's accreditation systems. Such international agreements, called mutual recognition arrangements (MRAs), are crucial in enabling laboratory data to be accepted between countries. This effectively reduces costs to the patients as it eliminates the need for re-testing in another laboratory.

## Other benefits to the client include:

- **The knowledge that results are traceable to international standards**
- **The knowledge that tests have been carried out by competent staff** on well-maintained, regularly calibrated equipment
- **The knowledge that results are as reliable as possible**
- In the event of a dispute the **results will carry far more weight than results from a non-accredited laboratory.**

## HOW DOES USING AN ACCREDITED LAB BENEFIT GOVERNMENT AND REGULATORS?

Government bodies and regulators are constantly called upon to make decisions related to:

- Protecting the health and welfare of consumers and the public
- Protecting the environment
- Developing new regulations and requirements
- Measuring compliance with regulatory and legal requirements
- Allocating resources, both technical and financial

In order to make informed decisions, they must have confidence in the data generated by laboratories carrying out testing, measurement or calibration in these fields. Using an accredited laboratory can help establish and assure this confidence.

When a laboratory is accredited by a recognised accreditation body, it has demonstrated that a prescribed level of technical competence to perform specific types of testing, measurement or calibration activities has been achieved. The result is assurance that the laboratory is capable of producing data that is accurate, traceable and reproducible – critical components in governmental decision-making.

## Using an accredited laboratory benefits government and regulators by:

- Increasing confidence in data that is used to establish baselines for key analyses and decisions
- Reducing uncertainties associated with decisions that affect the protection of human health and the environment
- Increasing public confidence, because accreditation is a recognisable mark of approval
- Eliminating redundant reviews and improving the efficiency of the assessment process (which may reduce costs)

## Using an accredited laboratory also increases confidence that:

- Decisions regarding multiple facilities are based on comparable data
- Costs associated with laboratory problems, including re-testing, re-sampling, and lost time are minimised
- False positives and negatives, which can directly affect compliance with regulations, are minimised

## POTENTIAL HAZARDS TO ONE'S HEALTH WHEN USING NON-ACCREDITED LAB

Reporting a wrong result can have potentially devastating effects on the patient. For example, one patient could receive wrong medical or surgical treatment while another doesn't get the treatment he or she needs. Either situation can result in severe, irreversible consequences.

# HEPATITIS: TYPE, CAUSE, SYMPTOMS AND TREATMENT

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include:

- fatigue
- flu-like symptoms
- dark urine
- pale stool
- abdominal pain
- loss of appetite
- unexplained weight loss
- yellow skin and eyes, which may be signs of jaundice

Chronic hepatitis develops slowly, so these signs and symptoms may be too subtle to notice.

## HOW HEPATITIS IS DIAGNOSED

### History and physical exam

To diagnose hepatitis, first your doctor will take your history to determine any risk factors you may have for infectious or noninfectious hepatitis.

During a physical examination, your doctor may press down gently on your abdomen to see if there's pain or tenderness. Your doctor may also feel to see if your liver is enlarged. If your skin or eyes are yellow, your doctor will note this during the exam.

### Liver function tests

Liver function tests use blood samples to determine how efficiently your liver works. Abnormal results of these tests may be the first indication that there is a problem, especially if you don't show any signs on a physical exam of liver disease. High liver enzyme levels may indicate that your liver is stressed, damaged, or not functioning properly.

### Other blood tests

If your liver function tests are abnormal, your doctor will likely order other bloodtests to detect the source of the problem. These tests can check for the viruses that cause hepatitis. They can also be used to check for antibodies that are common in conditions like autoimmune hepatitis.

### Ultrasound

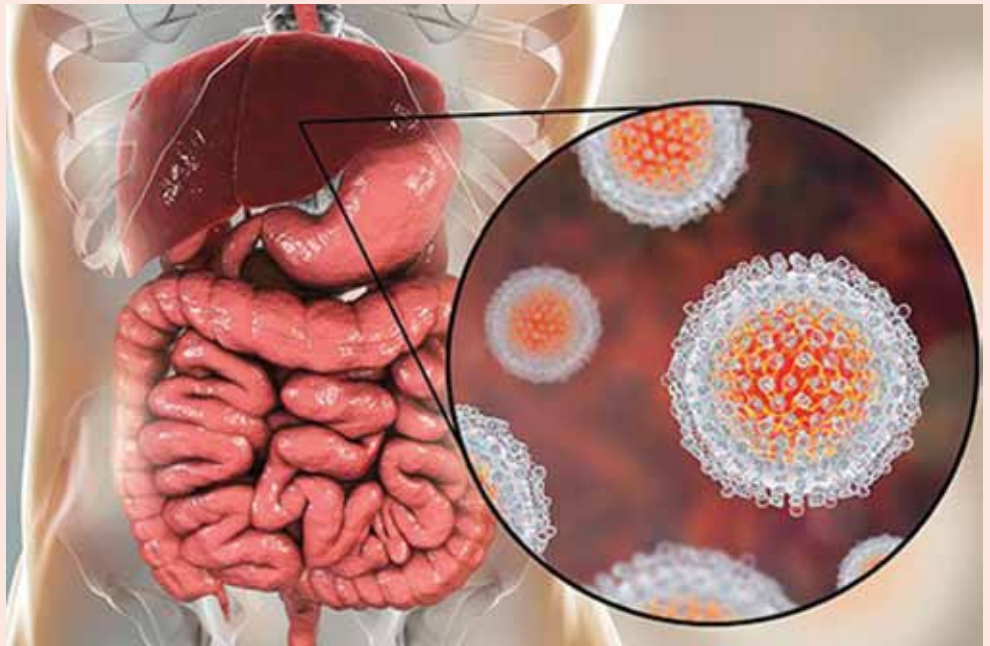
An abdominal ultrasound uses ultrasound waves to create an image of the organs within your abdomen. This test allows your doctor to take a close at your liver and nearby organs. It can reveal:

- fluid in your abdomen
- liver damage or enlargement
- liver tumors
- abnormalities of your gallbladder

Sometimes the pancreas shows up on ultrasound images as well. This can be a useful test in determining the cause of your abnormal liver function.

### Liver biopsy

A liver biopsy is an invasive procedure that



involves your doctor taking a sample of tissue from your liver. It can be done through your skin with a needle and doesn't require surgery. Typically, an ultrasound is used to guide your doctor when taking the biopsy sample.

This test allows your doctor to determine how infection or inflammation has affected your liver. It can also be used to sample any areas in your liver that appear abnormal.

## HOW HEPATITIS IS TREATED

Treatment options are determined by which type of hepatitis you have and whether the infection is acute or chronic.

### Hepatitis A

Hepatitis A usually doesn't require treatment because it's a short-term illness. Bed rest may be recommended if symptoms cause a great deal of discomfort. If you experience vomiting or diarrhea, follow your doctor's orders for hydration and nutrition.

The hepatitis A vaccine is available to prevent this infection. Most children begin vaccination between ages 12 and 18 months. It's a series of two vaccines. Vaccination for hepatitis A is also available for adults and can be combined with the hepatitis B vaccine.

### Hepatitis B

Acute hepatitis B doesn't require specific treatment.

Chronic hepatitis B is treated with antiviral medications. This form of treatment can be costly because it must be continued for several months or years. Treatment for chronic hepatitis B also requires regular medical evaluations and monitoring to determine if the virus is responding to treatment.

Hepatitis B can be prevented with vaccination. The CDC Trusted Source recommends hepatitis B vaccinations for all newborns. The series of three vaccines is typically completed over the first six months of childhood. The vaccine is also recommended for all healthcare and medical personnel.

### Hepatitis C

Antiviral medications are used to treat both acute and chronic forms of hepatitis C. People who develop chronic hepatitis C are typically treated with a combination of antiviral drug therapies. They may also need further testing to determine the best form of treatment.

People who develop cirrhosis (scarring of the liver) or liver disease as a result of chronic hepatitis C may be candidates for a liver transplant. Currently, there is no vaccination for hepatitis C.

### Hepatitis D

No antiviral medications exist for the treatment of hepatitis D at this time. According to a 2013 study Trusted Source, a drug called alpha interferon can be used to treat hepatitis D, but it only shows improvement in about 25 to 30 percent of people.

Hepatitis D can be prevented by getting the vaccination for hepatitis B, as infection with hepatitis B is necessary for hepatitis D to develop.

### Hepatitis E

Currently, no specific medical therapies are available to treat hepatitis E. Because the infection is often acute, it typically resolves on its own. People with this type

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# HEPATITIS: TYPE, CAUSE, SYMPTOMS AND TREATMENT

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of infection are often advised to get adequate rest, drink plenty of fluids, get enough nutrients, and avoid alcohol. However, pregnant women who develop this infection require close monitoring and care.

### Autoimmune hepatitis

Corticosteroids, like prednisone or budesonide, are extremely important in the early treatment of autoimmune hepatitis. They're effective in about 80 percent of people with this condition.

Azathioprine (Imuran), a drug that suppresses the immune system, is often included in treatment. It can be used with or without steroids.

Other immune suppressing drugs like mycophenolate (CellCept), tacrolimus (Prograf) and cyclosporine (Neoral) can also be used as alternatives to azathioprine for treatment.

### TIPS TO PREVENT HEPATITIS

#### Hygiene

Practicing good hygiene is one key way to avoid contracting hepatitis A and E. If you're traveling to a developing country, you should avoid:

- local water
- ice
- raw or undercooked shellfish and oysters

- raw fruit and vegetables

Hepatitis B, C, and D contracted through contaminated blood can be prevented by:

- not sharing drug needles
- not sharing razors
- not using someone else's toothbrush
- not touching spilled blood

Hepatitis B and C can also be contracted through sexual intercourse and intimate sexual contact. Practicing safe sex by using condoms and dental dams can help decrease the risk of infection. You can find many options available for purchase online.

### Vaccines

The use of vaccines is an important key to preventing hepatitis. Vaccinations are available to prevent the development of hepatitis A and B. Experts are currently developing vaccines against hepatitis C.

### Complications of hepatitis

Chronic hepatitis B or C can often lead to more serious health problems. Because the virus affects the liver, people with chronic hepatitis B or C are at risk for:

- chronic liver disease
- cirrhosis
- liver cancer

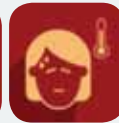
Symptoms of Hepatitis A, B and C can include:



Fatigue



Nausea



Mild fever



Yellow skin or eyes



Stomach pain



Dark urine

When your liver stops functioning normally, liver failure can occur. Complications of liver failure include:

- bleeding disorders
- a buildup of fluid in your abdomen, known as ascites
- increased blood pressure in portal veins that enter your liver, known as portal hypertension
- kidney failure
- hepatic encephalopathy, which can involve fatigue, memory loss, and diminished mental abilities due to the buildup of toxins, like ammonia, that affect brain

function  
-hepatocellular carcinoma, which is a form of liver cancer  
-death

People with chronic hepatitis B and C are encouraged to avoid alcohol because it can accelerate liver disease and failure. Certain supplements and medications can also affect liver function. If you have chronic hepatitis B or C, check with your doctor before taking any new medications

Source: [www.healthline.com](http://www.healthline.com)

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Refractive Services Co-ordinator, PEEK Vision Botswana, Ministry of Health

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Tel: 395 0007 Fax: 395 7980  
Mon-Fri: 07:00AM - 06:00PM  
Sat: 07:00AM - 01:00PM

## DEPOTS AROUND GABORONE

### Independence Depot

Plot 258/259/260,  
Molefi Close, Extension5,  
Gaborone  
Tel: 395 0007  
Ext: 243  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:00PM

### Broadhurst Depot

Plot 13128/O2,  
Legae Centre, Broadhurst,  
Gaborone  
Tel: 395 0007  
Ext: 245  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:30PM

### Fairgrounds Depot

Medswana House,  
Fairgrounds,  
Gaborone  
Tel: 395 0007  
Ext: 240  
Mon-Fri: 08:00AM - 05:00PM  
Sat: Closed

### Village Depot

Plot 4921,  
Village Medical Centre, Village  
Gaborone  
Tel: 395 0007  
Fax: 247  
Mon-Fri: 08:00AM - 05:00PM  
Sat: Closed

### Extension 2 Depot

Plot 838, Pabalelo Way,  
Extension 2,  
Gaborone  
Tel: 395 0007  
Ext: 248  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:30PM

### Broadhurst Industrial Depot

Plot 4754,  
Dr.Kadiyala Surgery,  
Gaborone  
Tel: 395 0007  
Ext: 249  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:30AM - 12:30PM

### Extension 10 Depot

Plot 2819, Thebe Circle,  
Extension 10  
Gaborone  
Tel: 395 0007  
Ext: 250  
Mon-Fri: 08:30AM - 05:30PM  
Sat: Closed

### Karong Clinic Depot

Plot 334, Marina Park  
Extension 5,  
Gaborone  
Tel: 395 0007  
Ext: 241  
Mon-Fri: 08:00AM - 05:00PM  
Sat: Closed

### CBD Depot

Inside Medplus Clinic  
iTowers complex, CBD  
Gaborone  
Tel: 395 0007  
Ext: 251  
Mon-Fri: 07:00AM - 04:00PM  
Sat: Closed

### Mogoditshane Depot

Plot 956,  
Medihealth Family Clinic,  
Mogoditshane, Gaborone  
Tel: 395 0007  
Ext: 246  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 09:00AM - 01:00PM

### Sebele Depot

Unit 30,  
Sebele Shopping Mall,  
Gaborone  
Tel: 395 0007  
Ext: 252  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 09:00AM - 12:30PM

### Molapo Depot

Unit 107,  
Molapo Crossing Mall,  
Gaborone  
Tel: 395 0007  
Ext: 253  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 09:00AM - 01:00PM

## BRANCHES AROUND BOTSWANA

### Francistown Laboratory

Plot 467, Unit-7,  
Blue Jacket Street.  
Francistown  
Tel: 241 2610  
Fax: 241 2613  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Palapye Laboratory

Plot 1707, Unit-1B,  
Lotsane Complex,  
Palapye  
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Fax: 490 0181  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Kazungula Laboratory

Shop 25,  
Borogo Junction Mall,  
Kazungula  
Tel: 625 2244  
Fax: 625 2268  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Selebi Phikwe Laboratory

Inside BCL Mine Hospital  
Selebi Phikwe  
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Fax: 260 1633  
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Sat: 08:00AM - 01:00PM

### Maun Laboratory

Plot 726,  
Old Mall, Maun.  
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Fax: 686 0296  
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Sat: 08:00AM - 01:00PM

### Mahalapye Depot

Unit-6, Plot 4729,  
Kimberley Fashion Mall,  
Mahalapye  
Cell: 7784 9813  
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Sat: 08:00AM - 01:00PM

### Kasane Depot

Plot 720,  
President Avenue,  
Kasane  
Cell: 7677 1341  
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### Serowe Depot

Plot 100,  
Jet Hardware Complex,  
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Cell: 7677 1340  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Kanye Depot

Plot 262,  
Desai ShoppingComplex,  
Sebonego Ward, Kanye.  
Tel: 544 1739  
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Sat: 08:00AM - 01:00PM

### Lobatse Depot

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Tel: 530 0162  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Francistown Depot

1st Floor,  
Botswana Life Building,  
Francistown.  
Tel: 241 2610  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Molepolole Depot

Plot 7088, Unit-4&5,  
Inside A O Clinic,  
Molepolole  
Cell: 7784 8741  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Bodiba Mall Depot

Plot 13446, Unit 8A,  
Bodiba Mall  
Gaborone  
Tel: 395 0007  
Ext: 242  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:00PM

### Extension 12 Depot

Plot 3417,  
HospitalWay Medical Centre  
Extension12, Gaborone  
Tel: 395 0007  
Ext: 254  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:00PM

### Mochudi Depot

Unit 176,  
Raserura Road,  
Inside Botsogo Medical Centre  
Mochudi  
Cell: 7566 1125  
Mon-Fri: 08:00AM - 06:00PM  
Sat: 08:00AM - 02:00PM

### Mogoditshane Depot

Plot 1296, Unit-1,  
Mogoditshane  
Gaborone  
Tel: 395 0007  
Ext: 256  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 01:00PM

### Railpark Mall Depot

Plot 471, Unit-G37A,  
Railpark Mall,  
Gaborone  
Tel: 395 0007  
Ext: 255  
Mon-Fri: 09:00AM - 07:00PM  
Sat: 09:00AM - 07:00PM

### Airport Junction Depot

Plot 70665, Unit-24&24A,  
Inside MRI Clinic  
Gaborone  
Tel: 395 0007  
Ext: 258  
Mon-Fri: 09:00AM - 07:00PM  
Sat: 09:00AM - 01:00PM

### Turn Right Mall

Plot 62, Shop 15,  
Inside AO Clinic  
Mogoditshane, Gaborone  
Tel: 395 0007  
Ext: 260  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 09:00AM - 12:30PM

### Acacia Mall Depot

Plot 75123, Unit-14A,  
Inside Medexo Clinic  
Phakalane  
Tel: 395 0007  
Ext: 259  
Mon-Fri: 08:00AM - 08:00PM  
Sat: 08:00AM - 03:00PM

### Phakalane Depot

Plot 42794, Unit-2,  
Phakalane Medical Centre  
Phakalane  
Tel: 395 0007  
Ext: 257  
Mon-Fri: 08:00AM - 05:00PM  
Sat: 08:00AM - 12:00PM

Note: All our depots are closed for lunch from 01:00PM to 02:00PM



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