Botswana's Premier Health Journal

DIAGNOSTICS

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Different paths to the same destination: screening for COVID-19

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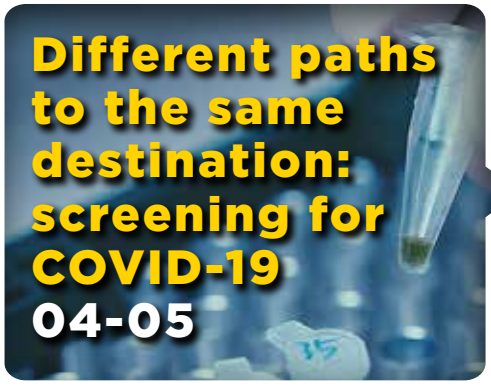

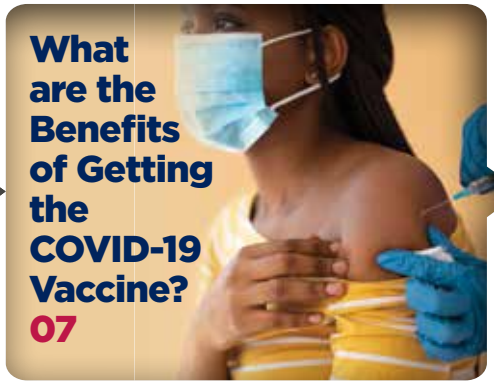

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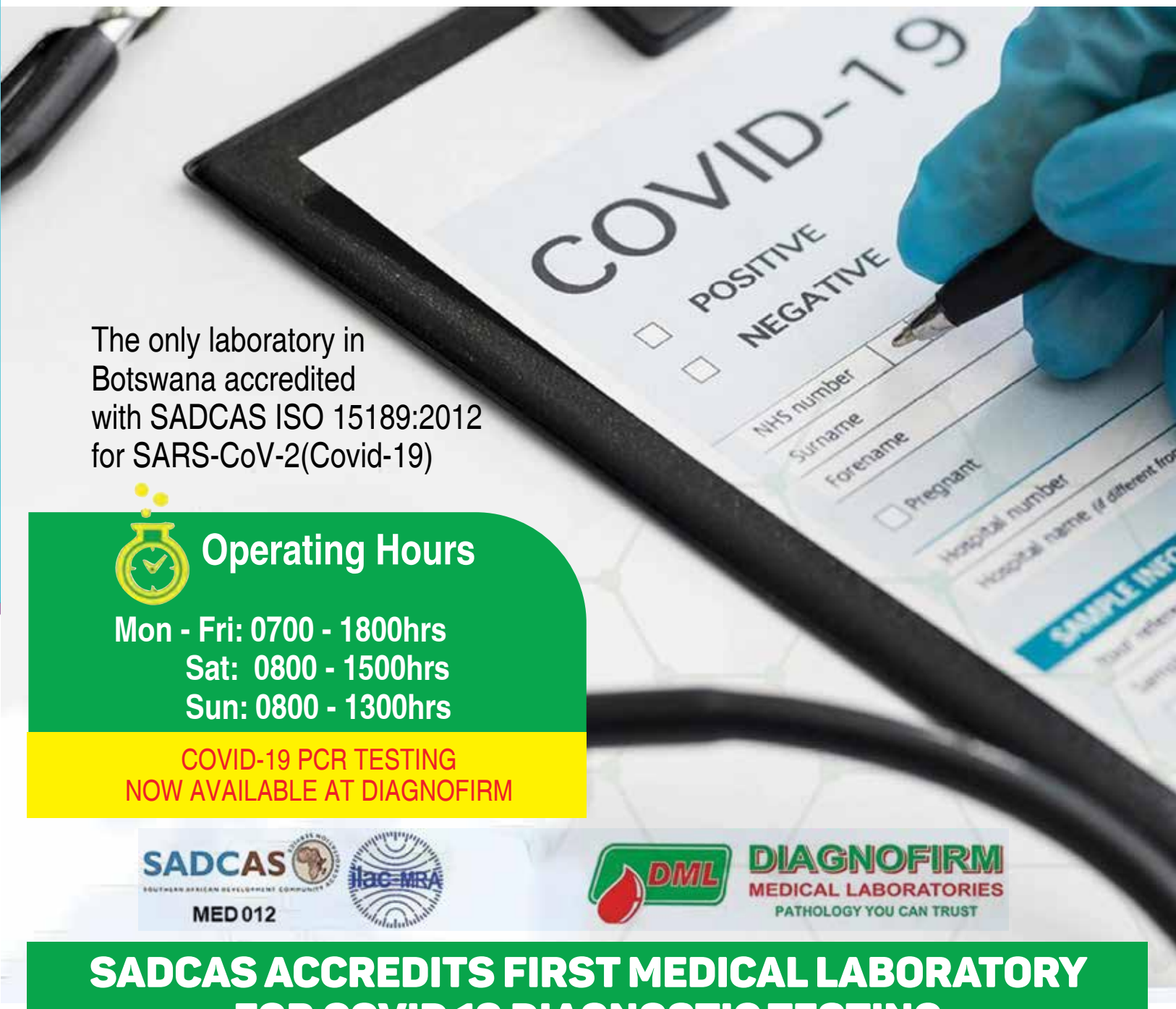
Dear Reader,

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.



The only laboratory in Botswana accredited with SADCAS ISO 15189:2012 for SARS-CoV-2(Covid-19)

Operating Hours

Mon - Fri: 0700 - 1800hrs
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SADCAS ACCREDITS FIRST MEDICAL LABORATORY FOR COVID 19 DIAGNOSTIC TESTING

SADCAS is proud to announce the accreditation of its very first medical laboratory for conducting Coronavirus disease 2019 (COVID-19) diagnostic testing.

Diagnofirm Medical Laboratories Gaborone situated at Plot Number 12583, Nyerere Drive, Middlestar, Gaborone, Botswana has been accredited to ISO 15189:2012 for SARS-CoV-2/COVID-19 testing using the PCR/ Bioer Extraction and Amplification System. The accreditation is a scope extension in the "Molecular Biology" scope. Diagnofirm was first accredited by SADCAS on 25 June 2015 to ISO 15189: 2012 and granted the accreditation number MED 012 for the following scopes: Chemistry; Endocrinology; Haematology; Microbiology; Molecular Biology; and Serology.

Diagnofirm Medical Laboratories Gaborone was re-assessed and renewal of accreditation was granted on 31 July 2020.

For COVID-19 Testing, Diagnofirm Medical Laboratories Gaborone underwent a scope extension assessment on 8 December 2020 by a team of two including Technical Assessor competent in the scope molecular biology. The assessment which was conducted virtually involved a vertical assessment and witnessing the scientist undertaking the test. No findings were raised during the assessment after which a decision to accredit in the test method "SARS-CoV-2/COVID-19" using the PCR Bioer Extraction and Amplification System was made by the SADCAS Accreditation Approvals Committee on 11 December 2020 based on the assessment team's recommendation.

The COVID-19 pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is now a major public health problem globally. Medical laboratories play a critical role in the healthcare delivery system by providing information for patient management, public health, disease control and surveillance. Reliable results of medical laboratories conducting tests to detect the SARS-CoV-2 virus are essential in the management of the pandemic. Accurate and early detection of SARS-CoV-2 in infected people are key in limiting transmission of COVID-19 and informing interventional measures.

Accreditation to ISO 15189:2012 is a vital tool for laboratories to improve quality performance, efficiency and reliability. The SADCAS. *Source: www.sadcas.org*

DIFFERENT PATHS TO THE SAME DESTINATION: SCREENING FOR COVID-19

Take a look at the differences between PCR, LFT and antibody tests for Covid-19.

Over the course of the Covid-19 crisis, the importance of reliable, accessible testing to screen for the disease has become increasingly apparent. Tests for Covid-19 can be divided into antigen or antibody tests, both of which use different kinds of samples to search for different hallmarks of the SARS-CoV-2 virus. Medical Device Network takes a closer look at the different types of Covid-19 test.

What are the different types of COVID-19 test?

- Polymerase chain reaction (PCR) tests are sent away to a lab to diagnose disease

- Lateral flow tests (LFTs) can diagnose Covid-19 on the spot, but aren't as accurate as PCR tests

- Antibody (or serology) tests can't diagnose active infection, but they can help to tell if a person has immunity to Covid-19

What is PCR testing?

PCR tests are used to directly screen for the presence of viral RNA, which will be detectable in the body before antibodies form or symptoms of the disease are present. This means the tests can tell whether or not someone has the virus very early on in their illness.

During Covid-19 PCR testing, substances known as reverse transcriptase or DNA polymerase are added to a nasopharyngeal sample in a lab. These substances work to make numerous copies of any viral RNA that may be present. This is so that enough copies of the RNA are present to signal a positive result, as specifically designed primers and probes attach themselves to sequences of the genetic code of the virus to signal that a pathogen has been found.

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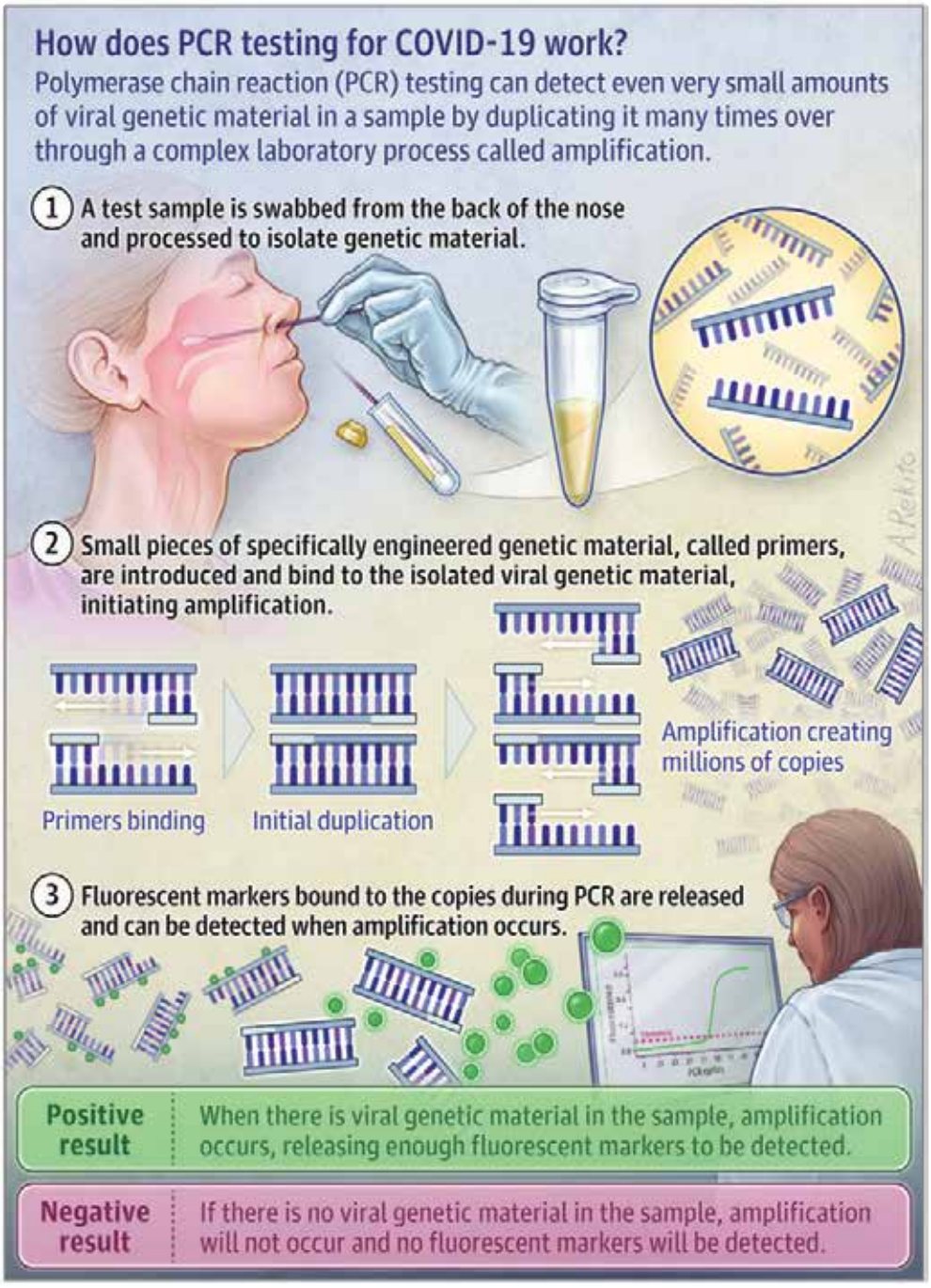

FROM PAGE 4

PCR gives us a good indication of who is infected, They can be isolated and get in contact with people they've been in touch with so they can be quarantined too, just in case. That's the true advantage of the current major diagnostic tests; you can break that transmission chain and get a clearer picture of what's happening.

By scaling PCR testing to screen vast swathes of nasopharyngeal swab samples from within a population, public health officials can get a clearer picture of the spread of a disease like Covid-19. However, PCR still has its caveats. These types of Covid-19 test need to be sent away to a laboratory for analysis, meaning it can take days for people to find out their results.

False negatives can occur up to 30% of the time with different PCR tests, meaning they're more useful for confirming the presence of an infection than giving a patient the all-clear.

They can also provide false positive results, as they're so sensitive they can potentially signal a positive result upon detecting dead, deactivated virus still present in the body of someone who has recovered from Covid-19.

During the course of the outbreak, the PCR testing has been refined from the initial testing procedures and with the addition of greater automation to reduce errors. As we are looking at swabs taken from people, who have lots of other organisms floating around, we are essentially dealing with the question of how 'right' the result we are looking at is.

How about a lateral flow test?

LFTs are similar to PCR tests, in that they're both types of antigen test, designed to pick up active Covid-19 infection rather than antibodies to the disease.

With a Covid-19 LFT, a nasopharyngeal sample is placed on a small absorbent pad, which is then drawn along the pad via a capillary line to a strip coated in antibodies, which bind to SARS-Cov-2 proteins. If these proteins are present, this will show as a coloured line on the test, indicating infection.

The major benefit of LFTs over PCRs is that they do not need to be sent away for confirmation, and instead provide results within 15 to 30 minutes. However, what they gain in speed they sacrifice in accuracy.

What is antibody testing?

An antibody test tells us what proportion of the population has been infected. It won't tell you who is infected, because the antibodies are generated after a week or two, after which time the virus should have been cleared from the system. But it tells you who's been infected and who should be immune to the virus.

People who recover from even mild cases of Covid-19 produce antibodies for at least five to seven months, and could do so for much longer.

Historical studies have indicated that people who survived the sudden acute respiratory syndrome (SARS) outbreak in the early 2000s had antibodies in their blood for years after recovery. Both SARS and Covid-19 are caused by similar coronaviruses, so it's not unreasonable to think that Covid-19 could have a similar effect.

"If there's a high enough level of people in the population who have immunity, they will then stop this virus from circulating within the population, which is known as herd immunity," says Wright. "If someone is infected, as long as the people around them have immunity the virus won't be able to spread."

Unlike PCR tests, which commonly use swabs to detect Covid-19, blood samples are usually used for antibody tests. This is because there will be a very small amount of Covid-19 circulating in the blood compared to the respiratory tract, but a significant and measurable antibody presence in the blood following infection.

Antibody tests are being used to evaluate the immune responses in people who have been vaccinated against Covid-19.

Researchers don't yet know how long vaccine-induced immunity will last or if booster shots will be needed. There has been some indication that Covid-19 variants are making certain vaccines less effective, but thus far they still appear to generally provide enough protection to guard against severe or fatal disease.

Source: **https://www.medicaldevice-network.com/**

TEST FOR PAST INFECTION

Antibody or serology tests look for antibodies in your blood that fight the virus that causes COVID-19.

• Antibodies are proteins created by your immune system that help you fight off infections. They are made after you have been infected or have been vaccinated against an infection.

• Vaccination is a safe, effective way to teach your body to create antibodies.

• Antibodies can protect you from getting those infections for some period of time afterward. How long this protection lasts is different for each disease and each person.-

• Antibody tests should generally not be used to diagnose a current infection with the virus that causes COVID-19. An antibody test may not show if you have a current infection because it can take 1 to 3 weeks after the infection for your body to make antibodies.

Effect of vaccination

• COVID-19 vaccines teach your body to produce antibodies to fight infection from the virus that causes COVID-19. If you get an antibody test after receiving a vaccine, you might test positive by some (but not all) antibody tests. This depends on which type of antibody the specific test detects.

• Antibody testing is not currently recommended to determine if you are immune to COVID-19 following COVID-19 vaccination. Antibody testing should also not be used to decide if someone needs to be vaccinated. CDC's Interim Guidelines for COVID-19 Antibody Testing provide more information on how antibody testing should be used and interpreted.

Whether you test positive or negative for COVID-19 antibodies using an antibody test, you still should take steps, including getting vaccinated, to protect yourself and others.
How to get an antibody test

Antibody tests for COVID-19 are available through healthcare professionals and laboratories.

What do your results mean?

If you test positive

• A positive antibody test result shows you may have antibodies from a previous infection or from vaccination for the virus that causes COVID-19.

• Some antibodies made for the virus that causes COVID-19 provide protection from getting infected. CDC is evaluating antibody protection and how long protection from antibodies might last. Cases of reinfection and infection after vaccination have been reported, but remain rare. But getting vaccinated, even if you have already had COVID-19, can help your body make more of these antibodies.

• You may test positive for antibodies even if you have never had symptoms of COVID-19 or have not yet received a COVID-19 vaccine. This can happen if you had an infection without symptoms, which is called an asymptomatic infection.

• Sometimes a person can test positive for SARS-CoV-2 antibodies when they do not actually have those specific antibodies. This is called a false positive.

• Talk with your healthcare professional about your test result and the type of test you took to understand what your result means. Your healthcare professional may suggest you take a second type of antibody test to see if the first test was accurate.

If you test negative

• You may not have COVID-19 antibodies. This could be because you have not had an infection with the virus that causes COVID-19 or have not received a COVID-19 vaccine.

• Antibody testing is not currently recommended to determine if you are immune to COVID-19 following COVID-19 vaccination.

• Some antibody tests will only detect antibodies from infection, not from vaccination with the virus that causes COVID-19.

• You could have a current infection, been recently infected, or been recently vaccinated. It typically takes 1 to 3 weeks after infection or vaccination for your body to make antibodies. If you are infected, you may get sick and spread the virus before you develop antibodies.

• Some people may take even longer to develop antibodies, and a small portion of people who are infected or vaccinated may never develop antibodies.

• Sometimes people test negative for SARS-CoV-2 antibodies when they have those specific antibodies. This is called a false negative.

• Talk with your healthcare professional about your test result and the type of test you took to understand what your result means.

If you have symptoms of COVID-19, you should get a viral test to detect a current infection, even if you were previously infected or vaccinated.

Until we know more, continue to take steps including getting vaccinated to protect yourself and others.

Source:**https://www.cdc.gov/coronavirus/2019-ncov/testing/serology**

WHAT ARE THE BENEFITS OF GETTING THE COVID-19 VACCINE?

If you've already received the vaccine, great job!

Share these facts with others who might be hesitant. If you're unsure whether the vaccine is right for you, consider these four benefits the vaccine could provide you and your loved ones.

The vaccine reduces your risk of infection

Once you receive your first shot, your body begins producing antibodies to the coronavirus. These antibodies help your immune system fight the virus if you happen to be exposed, so it reduces your chance of getting the disease.

It's true that you can still become infected after being vaccinated, but once more of the population is vaccinated, those chances are further reduced thanks to something called herd immunity. So, getting vaccinated not only reduces your chance of being infected, it also contributes to community protection, reducing the likelihood of virus transmission.

The vaccine can help your unborn baby or newborn

A new study found that expectant mothers who receive the COVID-19 vaccine create antibodies to the virus and pass those to their unborn baby through the placenta. Mothers were also shown to pass antibodies to their newborns through breast milk. This suggests those newborns have some immunity to the virus, which is especially important as young children cannot get the vaccine.

The vaccine protects against severe illness

During studies, the three authorized vaccines have shown to be effective at preventing severe illness from COVID-19. So even if you were vaccinated and become infected, you are very unlikely to become severely ill.

The vaccines are also effective against the new variants we're beginning to see circulate, such as the Delta variant. Much like the original strand, all vaccines will protect you against severe illness and reduce the likelihood for hospitalization.

Studies have shown vaccinated people who do get infected have mild to moderate cases of COVID-19 compared to those who aren't vaccinated. So, your risk of hospitalization and death because of COVID-19 is nearly eliminated once you are fully vaccinated.

The vaccine helped us ditch the mask

The vaccine is the final step in our effort to get back to a more normal way of life. Public health measures such as mask wearing, physical distancing and hand-washing were implemented to slow the spread of the virus, and they have proven to work.

Evidence suggests that vaccinated people who might be infected with the coronavirus have fewer virus particles in their nose and mouth and are less likely to spread it to others. This finding is important as getting vaccinated now not only protects you, but also limits spreading the virus to loved ones and friends. As more people continue to receive the vaccine, we might reach herd immunity, which means the spread of the virus becomes unlikely. It's important we all receive the vaccine to help us achieve this public health goal.

The vaccine will help you reconnect with friends and family

Once you've received the vaccine and waited the recommended time for your body to build immunity, you can visit in person with other people who have been vaccinated without wearing a mask. Also, if you've been around someone who has tested positive for COVID-19, you do not need to quarantine if you are fully vaccinated and not experiencing symptoms.

After a year of uncertainty, the vaccine has arrived and has clear benefits that should make everyone strongly considered getting the shot. By choosing to be vaccinated, you can protect not only yourself and your family but your community as well.

Source: https://www.muhealth.org/

CORONAVIRUS AND BLOOD DONATION

Amid COVID-19 pandemic, lifesaving mission for blood, platelets, or plasma continue to be carried out to ensure preparedness in support of health agencies in varies communities with individuals who feel healthy.

Safety protocols for blood donors:

• Appointments are preferred: To remain in compliance with guidelines for social distancing

• Face mask or face covering required for donors: Visitors and staff are required to wear a face mask or face covering.

• Complete iDonate: Limit time at the appointment and answer the health history questionnaire in advance of your appointment, on the day of your donation.

• Additional screening: Additional screening policies are in place for both visitors or donors. Please stay home if you:

• have experienced symptoms of COVID-19 in the last 14 days, such as fever, chills, cough, shortness of breath, difficulty breathing

• have had a positive COVID-19 diagnostic test (nasal swab test) in the last 14 days

• have been told to self-quarantine due to exposure risk, including travel

Source: **https://www.mbc.org/**

Frequently Asked Questions

Do I need to wear a mask in the blood center if I have been fully vaccinated?

All donors and healthcare staff must wear a mask regardless of vaccination status. Any location where there is collection of blood is considered a healthcare setting and a careful approach to protect the safety of blood donors and healthcare staff is implemented.

Can I donate after receiving the COVID-19 vaccine?

If you are vaccined you may donate blood, platelets, or regular plasma immediately after vaccination as long as you are feeling well and all other donor criteria are met.

How to determine if people are eligible to donate blood?

Health questionnaire and laboratory screening are designed to identify donors who may be at risk for transfusion transmitted infections.

Can I donate blood if I've traveled recently?

Individuals who are told by public health officials to self-quarantine due to travel-related coronavirus exposure should not donate blood while they are in quarantine status. This is for the protection of the healthcare staff and other blood donors.

What measures are being taken to make sure donor centers are virus-free?

Blood donors and healthcare staff who do not feeling well are required to stay at home. Blood collection sites are disinfected frequently, with extra precautions to help prevent the person-to-person spread of COVID-19.

Can I catch Coronavirus by donating blood?

No. Donating blood is safe by using new sterile needles that are discarded after use.

Can you catch Coronavirus from a blood transfusion?

There is no evidence that coronaviruses are transmitted by blood transfusion. Furthermore, pre-donation screening procedures are designed to prevent donations from people who are experiencing symptoms of respiratory illnesses.

Why is it important to donate now?

It's important for everyone to donate today so that we can build up a strong blood supply.

Blood is a critical component of emergency preparedness because it's perishable and the supply must be constantly replenished. The blood that's on the shelf now is the blood that will save lives if there's an emergency.

Will we run out of blood?

If future blood drives are cancelled, our community's blood supply will drop. We need to build up our reserves now so that we have enough blood available to withstand any temporary shortages and help those in need.

Are face masks being worn by donors and donor center staff?

All staff and donors, regardless of vaccination status, must wear a mask that covers their mouth and nose.

Source: **https://savealifenow.org/**

SMOKING AND COVID-19 CAN EACH KILL

And when you compound one's effect on the other, the harm is clearly evident.

Amid a pandemic that has killed, there has been a significant drop in the number of people who are attempting to quit smoking using services provided by healthcare organizations.

This is alarming considering the dangers of smoking amid the current coronavirus infecting people across the global.

Smokers are at a higher risk for greater complications such as death, admission to intensive care and mechanical ventilation when they contract COVID-19. When someone is smoking or vaping, they can't wear a mask, so there is concern that not only are they exposing you to secondhand smoke but also are increasing the risk for spreading or contracting COVID-19.

Why Are Health Experts Worried?

Many studies suggest that smoking is correlated with the prognosis of COVID-19. Patients who smoke have a higher risk of mortality than non-smoking patients - even with new variants spreading.

Moreover, numerous researchers have accurately linked smoking exposure with readouts that distinguish infection from sickness and provide an objective assessment of confounding factors. In addition to COVID-19, longer duration of smoking is associated with increased risk for lung cancer, lung cancer death, and coronary heart disease.

Its facts like these that illustrate why health experts are concerned.

They are also worried about similar connections between the use of e-cigarettes and vapes to higher COVID risks - especially since vaping causes lung irritation and injury. The development of e-cigarette and vaping products has also increased among youth smokers, and people who vape are five times as likely to get COVID-19.

Suffer a heavy burden of COVID-19 cases, deaths, other health inequities, reducing smoking is an important public health tool.

This is especially true for those who are suffering mental illness amid the pandemic. Rates of anxiety and depression have also been on the rise over the past year.

Can Help You Quit Smoking

During the pandemic, it's especially important for smokers to consider quitting, according to researchers

Quitting smoking isn't easy, as nicotine is addictive. But the impact is immediate.

"Quitting will help your lungs and heart to work better from the moment you stop. Within 20 minutes of quitting, elevated heart rate and blood pressure drop. After 12 hours, the carbon monoxide level in the bloodstream drops to normal," according to the World Health Organization (WHO). "Within 2-12 weeks, circulation improves and lung function increases. After 1-9 months, coughing and shortness of breath decrease. Quitting will help to protect your loved ones, especially children, from exposure to second-hand smoke."

Smokers have the power to slow the spread of COVID-19 by taking it outside and away from people, protecting them from the known secondhand smoke dangers and the possibility of coronavirus airborne transmission. Smokers who do not smoke indoors deserve a thank you.

Most know that smoking harms the smoker, but few realize there is solid research linking secondhand smoke to asthma, SIDS, COPD, recurrent ear and pulmonary infections, many cancers, and, potentially, COVID-19. The personal, social, and financial costs of secondhand smoke are incalculable.

Source: **https://salud-america.org/**

SEMEN ANALYSIS

WHY GET TESTED?

As part of infertility testing if your partner is having trouble becoming pregnant or after a vasectomy to determine if the operation was successful

WHEN TO GET TESTED?

When you think you might have a fertility problem or about three months after you have had a vasectomy

SAMPLE REQUIRED?

A semen sample collected in a sterile, wide-mouth container provided by the lab; often collected on-site, but sometimes it may be collected at home using a special condom obtained from a healthcare practitioner. For infertility testing, the sample must be analyzed within one hour of collection. Two separate collections on two separate days may be required.

TEST PREPARATION NEEDED?

For infertility testing, refrain from having sex or masturbation for 2-5 days before sample collection; carefully follow instructions provided.

WHAT IS BEING TESTED?

A complete semen analysis measures the quantity and quality of the fluid released during ejaculation. It evaluates both the liquid portion, called semen or seminal fluid, and the microscopic, moving cells called sperm. It is often used in the evaluation of male infertility. A shorter version of this test checks solely for the presence of sperm in semen a few months after a man has had a vasectomy to determine whether the surgery was successful.

Semen is a viscous, whitish liquid that contains sperm and the products from several glands. It is fairly thick at ejaculation but thins out, or liquefies, within 10 to 30 minutes. Sperm are reproductive cells in semen that have a head, midsection, and a tail and contain one copy of each chromosome (all of the male's genes). Sperm are motile, normally moving forward through the semen. Inside a woman's body, this property enables them to travel to and fuse with the female's egg, resulting in fertilization. Each semen sample is between 1.5 and 5.5 milliliters (about one teaspoon) of fluid, containing at least 20 million sperm per milliliter, and varying amounts of fructose (a sugar), buffers, coagulating substances, lubricants, and enzymes that are intended to support the sperm and the fertilization process.

A TYPICAL SEMEN ANALYSIS MEASURES:

- Volume of semen
- Viscosity—consistency or thickness of the semen
- Sperm count—total number of sperm
- Sperm concentration (density)—number of sperm per volume of semen
- Sperm motility—percent able to move as well as how vigorously and straight the sperm move
- Number or percent of normal and abnormal (defective) sperm in terms of size and shape (morphology)
- Coagulation and liquefaction—how quickly the semen turns from thick consistency to liquid
- Fructose—a sugar in semen that gives energy to sperm
- pH—measures acidity
- Number of immature sperm
- Number of white blood cells (cells

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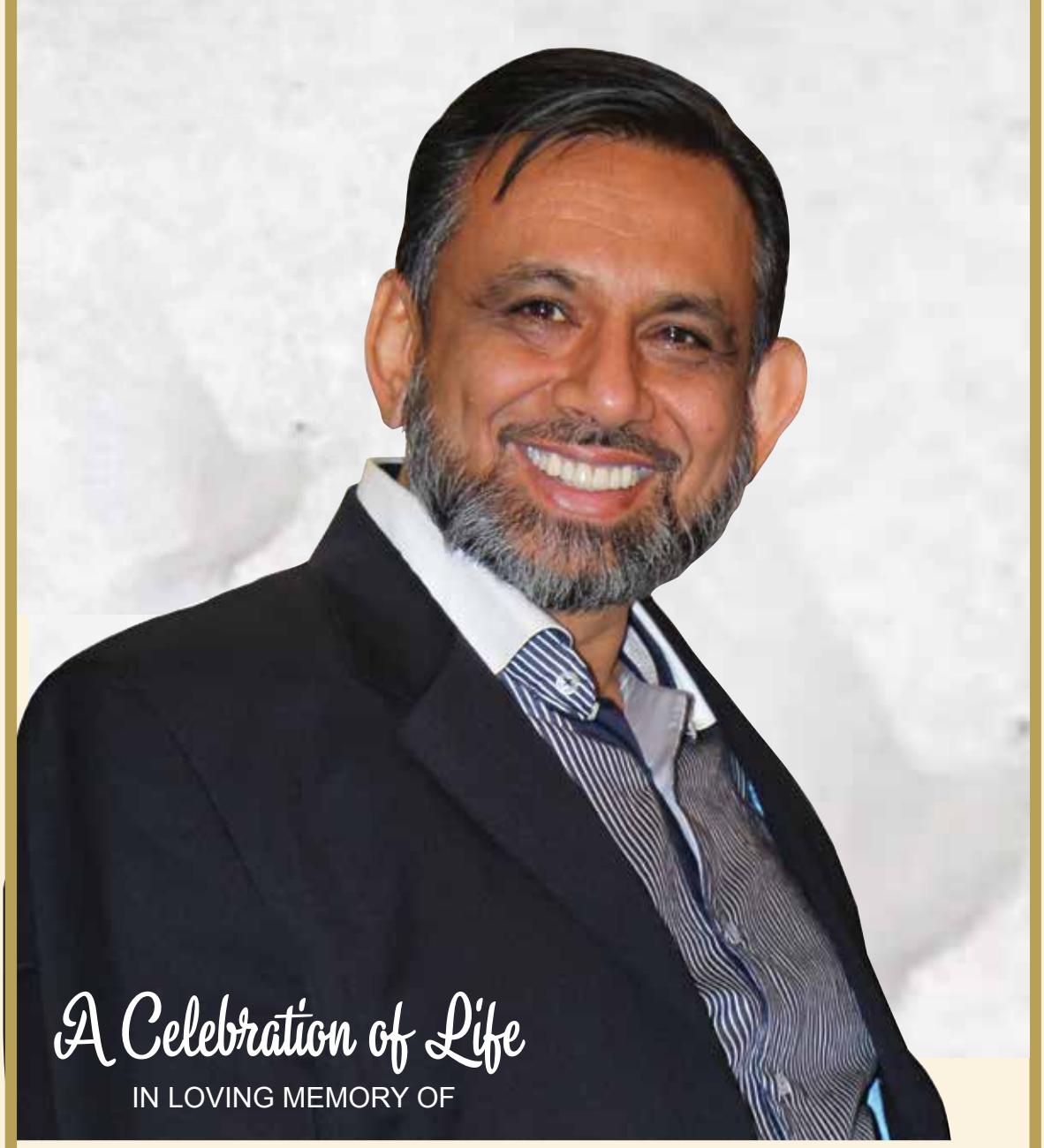

HON. PROF MOHAMMED IQBAL CHAND

It is with our depest sorrow that we inform you of the passing of our belopved father, founder and CEO Hon. Prof Mohammed Iqbnal Chand on the 13th of June 2021. Hon Prof Chand is survived by his wife, Mrs Waheeda Chand, Son Dr. Mohammed Chand, Daughters - Dr Zakiyyah Chand and Ayesha Chand. Son-In-Law Mr. Ebrahim Alli, Daughter-In-Law Raeesa Mohamed and four grandchgildren, Hammaad Chand, Yusuf Chand, Nabihah Alli and Fatima Zahra Alli.

Hon. Prof Chand founded Diagnofirm in 1989 and has been instrumental in its growth up to a level where it now employes over 200 staff and 40 centres cutting across Botswana. He was a big advocate for quality laboratory serices in Botswana.

He completed Masters in Clinical Biochemistry at University of Leeds and Bachelor of Science (Hons) at University of Sussex. His illustrious carrier includes beiogn Associated with Botswana Harvard. Bana Trial for HIV Monitoring. Worked with BOTUSA for ARV Study. He was in the BHPC registration panel and was an actie member of BICLIP.

May his soul resin ib eternal peace and the Chand family be conforted in this time..

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SEMEN ANALYSIS

From page 09

Additional tests may be performed if the sperm count is low, if the sperm show decreased motility or abnormal morphology, or if the seminal fluid is found to be abnormal. These additional tests may help identify abnormalities such as the presence of sperm antibodies, abnormal hormone levels (testosterone, FSH, LH, prolactin), excessive number of white blood cells, and genetic tests for conditions that may affect fertility, such as Klinefelter syndrome, cystic fibrosis, or other chromosomal abnormality.

In some instances, imaging tests such as ultrasound, CAT scan, or MRI may be required. A biopsy of the testicle may also be needed. Sometimes a test called cryosurvival is done to see how well semen will survive for long-term storage if a couple would like to store sperm for future pregnancies.

HOW IS THE SAMPLE COLLECTED FOR TESTING?

Post-vasectomy sperm check: a semen sample is collected in a clean, wide-mouth container provided by the lab.

Infertility evaluation: Most laboratories require samples to be collected on-site as the semen needs to be examined within 60 minutes after ejaculation in order to maintain the quality of the specimen.

Semen is collected in a private area by self-stimulation. Some men, for religious or other reasons, might want to collect semen during the act of intercourse, using a condom. If this is the case, the healthcare practitioner should provide the condom or sheath because lubricated condoms can affect test results.

Sperm are very temperature-sensitive. If collection is done at home, the sample should be kept at body temperature (98.6oF/37oC) by keeping it next to the body during transportation. It should not be left at room temperature for an extended period of time and should not be refrigerated.

Sperm motility decreases after ejaculation; thus, timing and temperature are critical to obtaining accurate results. If the sample is poor, repeat testing might be needed.

IS ANY TEST PREPARATION NEEDED TO ENSURE THE QUALITY OF THE SAMPLE?

For infertility testing: To give sperm a chance to replenish, abstain from ejaculating for 2 to 5 days before the sample is collected. Longer periods of abstinence may result in a greater volume of semen but decreased sperm motility. You may also be asked to avoid alcohol consumption for a few days before the test as well. Follow any instructions that are provided.

Post-vasectomy: Men may be advised to have regular ejaculations every 3-4 days to clear sperm from the reproductive tract more quickly.

COMMON QUESTIONS

How is the test used?

A semen analysis is used to determine whether a man might be infertile—unable to get a woman pregnant. The semen analysis consists of a series of tests that evaluate the quality and quantity of the sperm as well as the semen, the fluid that contains them. The test may be used, in conjunction with other infertility tests, to help determine the cause of a couple's inability to get pregnant (conceive) and to help guide decisions about infertility treatment.

The semen analysis also can be used to determine whether sperm are present in semen after a man has sperm from being released within the ejaculate. This surgery is considered a permanent method of birth control (99.9%) when performed successfully.

WHEN IS IT ORDERED?

A semen analysis is performed when a healthcare practitioner thinks that a man or couple might have a fertility problem. Infertility is typically diagnosed when a couple has tried to get pregnant for 12 months without success.

A semen analysis to determine fertility should be performed on a minimum of two samples collected within 2 to 3 week intervals. Sperm count and semen consistency can vary from day to day, and some conditions can temporarily affect sperm motility and numbers.

When a semen analysis shows abnormal findings, the test is repeated at intervals as determined by the healthcare practitioner.

A shorter version of a semen analysis, a sperm check, is typically ordered about 3 months following a vasectomy to confirm success of the procedure and may be repeated as necessary until sperm are no longer present in the semen sample.

WHAT DOES THE TEST RESULT MEAN?

Post-vasectomy sperm check: Couples may discontinue using other methods of contraception when there are no sperm or rare non-motile sperm seen in the semen. If sperm are present in the semen, the man and his partner will have to take precautions to avoid pregnancy. Testing may be repeated until sperm are no longer present in his sample(s).

Infertility testing: In an evaluation of a man's fertility, each aspect of the semen analysis is considered, as well as the findings as a whole. Semen from a man can vary widely from sample to sample. Abnormal results on one sample may not indicate a cause of infertility, and multiple samples may need to be tested before a diagnosis is made.

- Volume—the typical volume of semen collected is between 1.5 and 5 milliliters (about a teaspoon) of fluid per ejaculation. Decreased volume of semen would indicate fewer sperm, which diminishes opportunities for successful fertilization and subsequent pregnancy. Excessive seminal fluid may dilute the concentration of sperm.
- Viscosity—the semen should initially be thick and then liquefy within 15 to 20 minutes. If this does not occur, then it may impede sperm movement.
- Sperm concentration (also called sperm count or sperm density)—this is measured in millions of sperm per milliliter of semen. Normal is at least 20 million or more sperm per milliliter, with a total ejaculate volume of 80 million or more sperm. Fewer sperm and/or a lower sperm concentration may impair fertility.
- Motility—the percentage of moving sperm in a sample; it is graded based on speed and direction travelled. At least 50% should be motile one hour after ejaculation, moving forward in a straight line with good speed. The progression of the sperm is rated on a basis from zero (no motion) to 4, with 3-4 representing good motility. If less than half of the sperm are motile, a stain is used to identify the percentage of dead sperm. This is called a sperm viability test.
- Morphology—the study of the size, shape, and appearance of the sperm cells; the analysis evaluates the structure of the sperm. More than 50% of those cells examined should be normal in size, shape, and length. The more abnormal sperm that are present, the greater the likelihood of infertility. Abnormal forms may include defective heads, midsections, tails, and immature forms. To see an image of a normal sperm, see the MedlinePlus Medical Encyclopedia page on sperm.
- Semen pH—should be between 7.2 and 7.8. A pH of 8.0 or higher may indicate an infection, while a pH less than 7.0 suggests contamination with urine or an obstruction in the ejaculatory ducts.
- Fructose—concentration should be greater than 150 milligrams per deciliter of semen.
- White blood cells—there should be fewer than 1 million white blood cells per milliliter.
- Agglutination of sperm—this occurs when sperm stick together in a specific and consistent manner (head to head, tail to tail, etc.), suggesting the presence of antisperm antibodies. Clumping of sperm in a nonspecific manner may be due to bacterial infection or tissue contamination.

WHAT PROPORTION OF INFERTILITY CASES ARE CAUSED BY MALE FERTILITY PROBLEMS?

About one-third of cases are due to men's problems with fertility, another third are due to women's problems, and the remaining cases are due to a combination of men's and women's infertility issues or have no clear identifiable reasons for infertility.

IS A HOME SPERM COUNT TEST AVAILABLE?

Yes, there is a home test available that measures sperm count and gives a result within a few minutes. However, it is important to understand that a sperm count is only one part of a semen analysis for determination of male fertility and is only one aspect of a complex process. For more about home tests, including the benefits and cautions, see the article With Home Testing, Consumers Take Charge of Their Health.

WHAT CAUSES MALE INFERTILITY?

Some of the common causes of male infertility include damage to the testicles from infections (such as mumps), chemotherapy/radiation, trauma or surgery, obstruction of the tubes that carry semen to the penis caused by scarring from an infection or having cystic fibrosis, a varicocele (an enlarged collection of blood vessels in the scrotum that raises the temperature of the testicles, which can lead to low sperm production), having the genetic condition Klinefelter syndrome, and anything that lowers levels of the hormones LH and FSH, such as a pituitary tumor. Chronic illness, poor overall health, obesity, certain medications, and drug abuse may also decrease sperm production and fertility.

WHAT IS THE TREATMENT FOR MALE INFERTILITY?

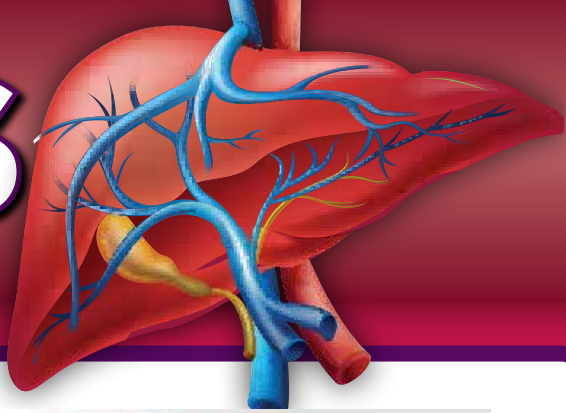
Treatment will depend on the cause. It could include surgery to repair a varicocele or a blockage, hormone injections, or use of assisted reproductive technologies. To learn more, read the article on Infertility.

Is there anything else I should know?
While abnormal results decrease the chances of fertilization, some couples with poor results on infertility tests may still conceive, with or without assistance, and those with apparently good results may experience difficulties.

Several factors can affect the sperm count or other semen analysis values, including use of alcohol, tobacco, caffeine, many recreational and prescription drugs (e.g., cimetidine), and some herbal medicines

If you want to know more about fertility tests contact Diagnofirm medical laboratory or visit your doctor.
Source:labtestsonline.org/tests/semen-analysis

HEPATITIS



Hepatitis is an inflammation of the liver that can be caused by a virus in most cases, but also by the consumption of toxic (alcohol, drugs, etc.)

Symptoms, Causes, Treatment and Prevention

What is viral hepatitis?

Viral hepatitis is an infection with a liver tissue virus. There are five main viruses of main hepatitis: A, B, C, D and E. The severity of the disease and treatment to follow depend on the type of hepatitis and the individual, this sometimes causes cirrhosis or a Cancer. Hepatitis manifests itself by a yellow skin (jaundice or jaundice), dark urine, nausea, vomiting and abdominal pain.

Hepatitis A: acute viral hepatitis caused by the hepatitis A virus. It is often caused by contaminated food or water.

Hepatitis A: Symptoms, vaccine, how long does it last?

Hepatitis A is a viral disease of the liver that is mainly transmitted by ingestion of infected food or water in fecal materials. Fortunately, a vaccine exists to prevent contagion. What are the symptoms and are there treatments to treat it?

Hepatitis B: acute viral hepatitis caused by the HBV virus. It is transmitted from human to humans during sex, contact with blood or contaminated objects.

Hepatitis C: Acute or chronic hepatitis caused by the VHC virus or by the consumption of toxic (alcohol, drugs, etc.)

Hepatitis C: Symptoms, Treatments, Contagion

This viral liver disease remains silent for a long time, which is why one in three people does not know they are infected. Update on symptoms, contagion mode, treatments and chances of recovery.

Hepatitis D: Acute or chronic hepatitis caused by the HDV virus that needs hepatitis B virus to reproduce. There can be no hepatitis D if there has been no infection with hepatitis B before.

Hepatitis E: viral hepatitis transmitted animals to humans. It is mainly transmitted by eating raw or insufficient pork.

Hepatitis E: symptoms, treatment, how are it transmitted?

Less known than hepatitis B and C, hepatitis E is also a liver disease.

Acute viral hepatitis: This can be acute, that is to say occurring at a given moment and disappear spontaneously as for hepatitis A, or become chronic after an infection, such as hepatitis C or hepatitis C more rarely from hepatitis B . "Viral symptoms of viral hepatitis usually occur as flu syndrome with fever, fatigue, joint pain and pains, headaches and digestive signs sometimes, followed by yellow discoloration Skin and mucous membranes called jaundice.

Chronic hepatitis: It is a chronic inflammation of the liver that most often follows acute hepatitis. Chronic hepatitis is more serious, with possible progression of cirrhosis or liver cancer. Note that other viruses such as cytomegalovirus (CMV) or herpes virus can give hepatitis.

Fulminant hepatitis: Fulminant hepatitis is a rare syndrome combining a massive necrosis of hepatic parenchyma and a decrease in liver size (acute atrophy) that occurs during infection with certain hepatitis viruses or in case of toxicity or drug. The hepatitis B virus is sometimes responsible for the fulminant hepatitis and up to 50% of the fulminating hepatitis B implies co-infection with the hepatitis D virus.

Causes:

Viral hepatitis is caused by infection with a virus. Hepatitis D and E viruses are also responsible for hepatitis.

Non-viral hepatitis is mainly caused by the ingestion of products toxic to the liver (alcohol, drugs, toxic chemicals, etc.). They can also be the result of diseases affecting the liver, such as fatty liver (NASH or "fatty liver").

Symptoms:

Intense fatigue similar to that of flu syndrome

- Loss of appetite
- Diarrhea
- Jaundice
- Yellowing of the skin and eyes
- Coloring of urine (dark urine)
- Nausea and vomiting

Transmission:

Hepatitis is transmitted differently according to the virus involved, by accidental ingestion of feces for hepatitis A, bodily secretions such as saliva, sexual secretions or by blood contamination for hepatitis.

Treatments

Treatments vary depending on the type of hepatitis:

Hepatitis A: "Normally, the body is able to fight against the hepatitis A virus. So this disease does not require special medical treatment,

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HEPATITIS

FROM PAGE 12

but the rest and a good diet are indicated. The symptoms disappear after 4 to 6 weeks "Remember our interlocutor.

Hepatitis B: In the vast majority of cases (90%), infection with hepatitis B virus resolves spontaneously and no pharmacological treatment is necessary. The recommendations are then the same as for hepatitis A: rest and healthy food. When infection persists beyond 6 months, it means that the body cannot eliminate the virus. He then needs help. In this case, several drugs can be used.

Evolution and risks

Hepatitis healed in a few weeks without treatment. We observe prolonged forms over several weeks healing. Hepatitis never advances with a chronic infection (unlike hepatitis B or hepatitis C). Hepatitis A is cured and induces immunity of life (a second infection with the HAV virus is impossible).

Acute hepatitis B progresses healing in the majority of cases (more than 90%). When acute infection does not recover, the evolution is towards chronic hepatitis B, defined by the persistence of the virus in the body for more than six months. Chronic hepatitis B takes place in 2 to 10% of cases and requires long-term follow-up and sometimes treatment.

In 90% of cases, hepatitis C goes unnoticed; Its diagnosis can then be performed when screening for hepatitis C. Acute hepatitis C can progress in two different ways:
To recovery in 15 to 30% of cases; towards the passage to chronicity (chronic hepatitis C) in 70 to 85% of cases. Chronic hepatitis C is defined by the persistence of the virus in the body for more than six months.

Prevention:

There are vaccines for hepatitis A and B. Hepatitis A vaccination only concerns people exposed to this virus. It has the effect of significantly reducing the risk of contracting this infection.

Source: **https://www.pacehospital.com/**

Understanding Viral Hepatitis

Hepatitis A (HAV)
Can spread due to contaminated food and water or close physical contact.

Hepatitis C (HCV)
Is contracted with contaminated blood enters the bloodstream of an uninflected person

Hepatitis B (HBV)
Is transmitted through contact with direct body fluids or sexual contact

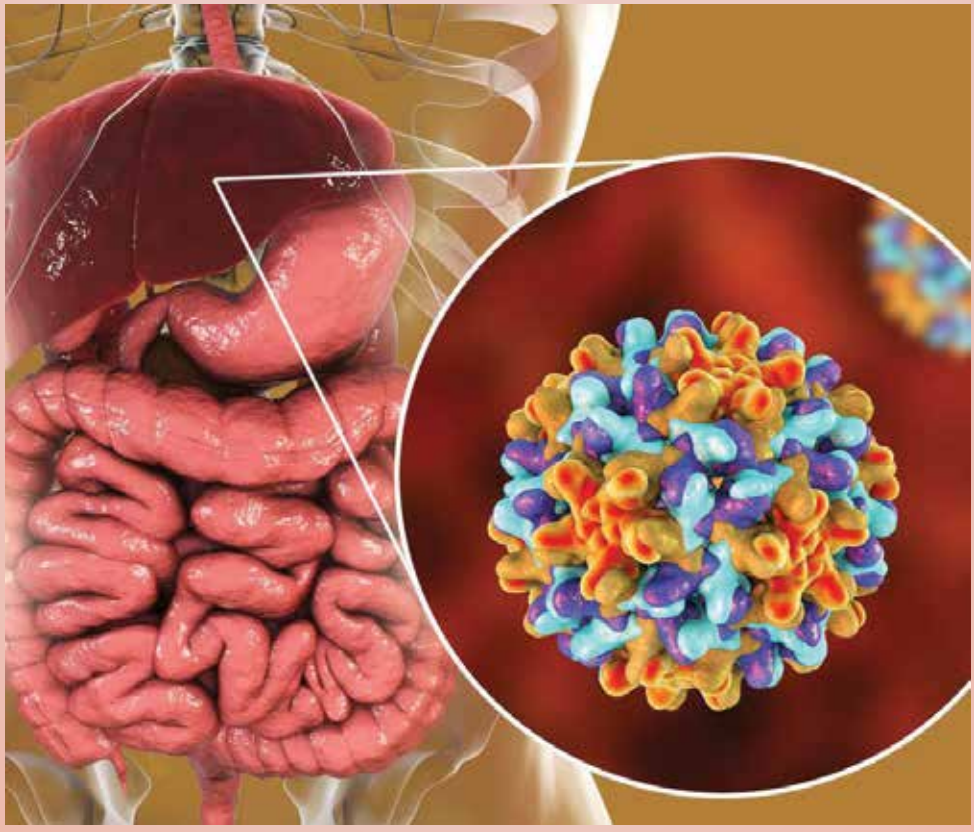
Hepatitis D (HDC)
Can only be obtained when a person already has Hepatitis B

Hepatitis E (HEC)

Spreads through contaminated food or water and is commonly experienced by frequent travellers

Know the hepatitis's Symptoms

- Fatigue
- Loss of appetite
- Abdominal Pain
- Diarrhea
- Vomiting
- Joint Pain
- Jaundice



BRANCH AND DEPOT CONTACTS

Head Office Gaborone Laboratory

Plot 12583, Nyerere Drive, Middlestar, Gaborone
Tel: 395 0007 Fax: 395 7980
Mon-Fri: 08:00AM - 05:00PM
Sat: 07:00AM - 03:00PM Sun: 08:00AM - 01:00PM

DEPOTS AROUND GABORONE

Independence Depot:
Plot 258/259/260, Molefi Close,
Extension 5, Gaborone,
Tel: 373 2973
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:00PM

Gaborone Airport
SSKIA, Gaborone
Tel: 395 0007
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 03:00PM
Sun: 08:00AM - 01:00PM

Broadhurst Depot:
Plot 13128/02,
Legae Centre, Broadhurst,
Gaborone
Tel:3732975
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:30PM

Fairgrounds Depot:
Medswana House
Fairgrounds
Gaborone, Tel: 373 2970
Mon-Fri: 08:00AM - 05:00PM
Sat: Closed

Extension 2 Depot:
Plot 838, Pabalelo Way,
Extension 2,
Gaborone.
Tel: 373 2978
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:30PM

Broadhurst Industrial Depot:
Plot 4754,
Dr. Kadiyala Surgery,
,Gaborone
Tel: 373 2979
Mon-Fri: 08:00AM - 08:00PM
Sat: 08:30AM - 12:30PM

Extension 10 Depot
Plot 2819, Thebe Circle
Extension 10,
Gaborone.
Tel: 373 2980
Mon-Fri: 08:30AM - 05:30PM
Sat: Closed

Karong Clinic Depot:
Plot 334, Marina Park,
Extension 5,
Gaborone.
Tel: 373 2971
Mon-Fri: 08:00AM - 05:00PM
Sat: Closed

CBD Depot:
Plot 54373, Matante Mews, Inside
Zeta Clinic
Gaborone, Tel: 373 2981
Mon-Fri: 08:00AM - 08:00PM
Sat: 08:30AM - 12:30PM

Village Branch Depot:
Plot 4921,
Village Medical Centre,
Gaborone. Tel: 373 2977
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:30PM

Game City Depot:
Unit 12 A, Game City Mall,
Gaborone,
Tel: 373 2982
Mon-Fri: 08:00AM - 07:00PM
Sat & Sun: 08:00AM - 03:00PM

Molapo Crossing Depot:
Unit 107,
Molopo Crossing Mall,
Gaborone,
Tel:373 2983
Mon-Fri: 08:00AM - 05:00PM
Sat: 09:00AM - 01:00PM

Bodiba Mall Depot:
Plot 13446, Unit 8A,
Bodiba Mall Mogoditshane,
Gaborone, Tel: 373 2972
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:00PM

Gwest Depot:
Salex house,
Gwest Mall,
Gaborone
Tel: 373 2984
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Phakalane Depot:
Plot 42794, Unit 2,
Phakalane Medical Centre,
Gaborone
Tel: 373 2987
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 12:30PM

Setlhoa Depot:
Unit 11, Setlhoa Retail Park,
Block 10,
Gaborone.
Tel: 3732969
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

TurnRight Mall
Plot 62, Shop 15,
Inside AO Clinic, Mogoditshane.
Gaborone
Tel: 373 2974
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Airport Junction Depot:
Plot 70665,Unit-24&24A,
Inside MRI Clinic,
Gaborone, Tel: 373 2988
Mon-Fri: 09:00AM - 07:00PM
Sat: 09:00AM - 03:00PM

BRANCHES AROUND BOTSWANA

Maun Airport
MIA,
Maun,
Tel: 6860330
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Kasane Airport
KIA,
Kasane,
Tel: 3732959
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Shakawe Depot:
Inside Nguma Lodge,
Shakawe
Tel: 395 0007
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Palapye Depot:
Unit -4,
Palapye Junction Mall
Palapye
Tel: 4900066
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Ramotswa Depot:
Plot 16&17
Lesetlhana Ward
Cell: 7569 8913
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Selebi Phikwe Laboratory
Inside BCL Mine Hospital
Selebi Phikwe
Tel: 260 0599
Fax: 260 1633
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

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

Maun Laboratory:
Plot 726, Old Mall Maun
Tel: 686 0330,
Fax: 686 0296
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

Palapye Laboratory:
Unit 1B, Lotsane Complex,
Palapye.
Tel:490 0066, Fax: 490 0181
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Kanye Depot
Plot 262, Desai Shopping Complex,
Sebonego ward,
Kanye
Tel:544 1739
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Lobatse Depot:
Plot 238, Letsholathebe Road,
Lobatse.
Tel: 530 0162
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Serowe Depot:
Plot 100, Jet Hardware Complex,
Opp Shell filling station,
Serowe.
Tel:76771340
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Molepolele Depot:
Plot 7088, Unit 4 & 5,
Inside A O Clinic,
Molepolele
Cell: 77 84 87 41
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Mahalapye Depot:
Unit-6, Plot 4729,
Kimberly Fashions Mall,
Mahalapye, Cell:77 84 98 13
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Francistown Depot:
Spring Health Care,
Nzano Shopping Centre,
Francistown. Tel: 373 2964
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Kasane Depot:
Plot No 720, President Avenue
Kasane
Cell: 76 7713 41
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Letlhakane Depot:
Unit 1, Tawana Ward,
Rapha Complex,
Letlhakane
Cell: 75 6989 14
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

Ghanzi Depot:
Plot 675, Kgosi Sebele Street,
Next to Delta Pharmacy,
Ghanzi,
Tel: 373 2966
Mon-Fri: 08:00AM - 05:00PM

Mochudi Depot:
Unit 176, Raserura Road,
Inside Botsogo Medical Centre,
Mochudi
Cell: 75 6611 25
Mon-Fri: 08:00AM - 06:00PM
Sat: 08:00AM - 02:00PM

Acacia Mall Depot:
Plot 75123, Unit 14A,
Phakalane.
Inside Dr. Gure's Clinic,
Tel: 373 2989
Mon-Fri: 09:00AM - 07:00PM
Sat: 09:00AM - 03:00PM

Mogoditshane Depot:
Plot No 1296,
Unit 1,
Mogoditshane
Gaborone
Tel: 373 2986
Mon-Fri: 08:00AM - 05:00PM

Railpark Mall
Plot 471, Unit G37A
Inside A O Clinic, Railpark Mall
Gaborone, Tel: 3732985
Mon-Fri: 08:00AM - 05:00PM
Sat: 08:00AM - 01:00PM

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