

# DIAGNOSTICS

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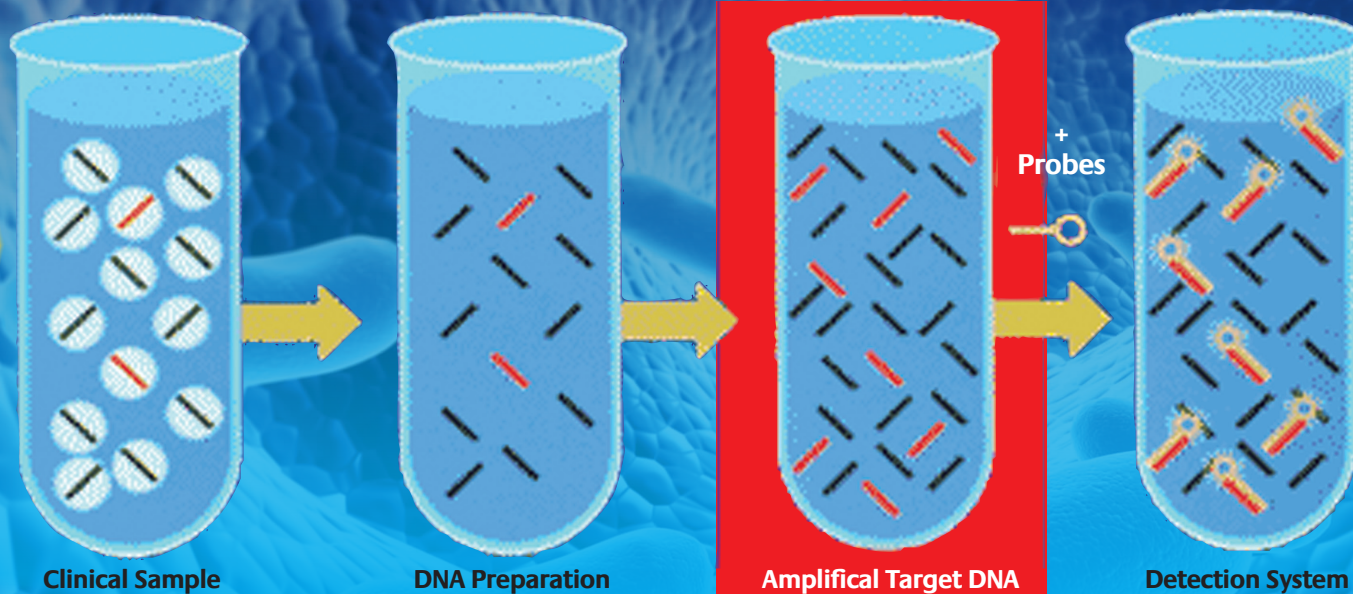
Issue No: 18

Second Quarter 2018

## PCR Testing

**FOR RESPIRATORY INFECTIONS  
COMING SOON AT DIAGNOFIRM  
MEDICAL LABORATORIES**

PRINCIPLE OF PCR



**THE RISING  
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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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# EATING HEALTHY FOOD

**W**eight control is a common reason that you might consider eating healthily. Although following a balanced diet can help you lose weight or maintain a healthy weight, this is only one benefit. Those who follow a healthy, well-balanced diet reduce their risk of chronic diseases, such as diabetes, heart disease and cancer. Aim to consume a diet rich in fruits, vegetables, whole grains and unsaturated fats.

## Weight Loss or Maintenance

Use fruit, vegetables, lean protein and whole grains to replace high-fat, high-calorie foods. Staying within your required calorie range is vital for achieving and maintaining a healthy weight. The fiber in whole grains, fruits and vegetables help fill you up faster and keep you full longer than foods that are loaded with sugar. The longer you are satiated, the less likely you are to exceed your ideal calorie range.

## Blood Sugar

Sugary foods, such as white bread, fruit juice, soda and ice cream, cause a spike in blood sugar. While your body can handle occasional influxes of glucose, over time this can lead to insulin resistance, which can go on to become type 2

slow release of sugar into the bloodstream, which helps regulate blood sugar.

## Decreased Risk of Heart Disease

Regularly consuming high-fat foods can increase your cholesterol and triglyceride levels, which can cause plaque to buildup in your arteries. Over time, this can lead to heart attack, stroke or heart disease. Eating a moderate amount of healthful fats such as those found in olive oil, avocados, fish, nuts and seeds helps protect your heart.

## Decreased Cancer Risk

Fruits and vegetables are loaded with antioxidants, which are substances that seek and neutralize potentially damaging cells called free radicals. Free radicals contain an uneven amount of electrons, making them highly unstable. As they seek out and steal electrons from healthy cells, they can cause damage. Antioxidants neutralize free radicals by donating one of their electrons, turning the free radical into a stable molecule.



diabetes. Complex carbohydrates, such as whole grain bread, oatmeal and brown rice, cause a

## Why Is Eating Healthy Important?

A nutritious, well-balanced diet – along with physical activity and refraining from smoking – is the foundation of good health. Healthy eating includes consuming high-quality proteins, carbohydrates, heart-healthy fats, vitamins, minerals and water in the foods you take in while minimizing processed foods, saturated fats and alcohol. Eating in this manner helps you maintain your body's everyday functions, promotes optimal body weight and can assist in disease prevention.

## Overall Health

The nutrients in the foods you eat support the activities of day-to-day living, protect your cells from environmental damage and repair any cellular damage that might occur. Protein rebuilds injured tissue and promotes a healthy immune system. Both carbohydrates and fats fuel your body, while vitamins and minerals function throughout your body in support of your body's processes. Vitamins A, C and E, for example, act as antioxidants to protect your cells against toxins, and B vitamins help you extract energy from the foods you eat. Calcium and phosphorus keep your bones strong, while sodium and potassium help to



## Fresh /Dry Farm Produce: grains, pulses, pumpkin seeds, sunflower seeds, peanuts and More.

transmit nerve signals. Without a healthy diet, you might compromise any of these essential functions.

## Weight Control

In addition to the quality of the foods you consume, the quantity matters when considering good eating habits. Taking in the same number of calories as you burn ensures your weight remains steady over time. Consuming more than you burn, on the other hand, results in weight gain as your body converts extra calories to fat tissue. When you accumulate fat tissue, you increase your risk of developing one or more health problems, including heart disease, hypertension, respiratory issues, diabetes and cancer. A healthy meal plan without excess calories helps you not only feel better but can prolong your life.

## Disease Prevention

Obesity is not the only nutrition-related cause of disease onset and progression. Too much or too little of certain nutrients can also contribute to health issues. For instance, a lack of calcium in your

diet can predispose you to developing osteoporosis, or weakening of your bones, while too much saturated fat can cause cardiovascular disease, and too few fruits and vegetables in your nutrition plan is associated with an increased incidence of cancer. Consuming foods from a wide variety of sources helps ensure your body has the nutrients it needs to avoid these health problems.

## Considerations

If you are not used to eating a healthy diet that promotes your well-being, making gradual changes can help you improve the way you eat in the long run. You can substitute water for high-calorie, sugary drinks, for example, and switch from full-fat to low-fat dairy products. Selecting lean meats instead of fatty cuts and whole-wheat grains instead of refined grains can lower your intake of unhealthy fats and increase your dietary fiber intake. Fresh fruits and vegetables contain less sodium than canned, and snacking on fresh, crunchy produce like carrots, apples and cucumber slices is healthier than the fats and salt in chips.

# DO YOU GET DIABETES FROM EATING TOO MUCH SUGAR?

**T**here is a widespread belief that sugar is the sole cause of diabetes. After all, the disease is characterised by high levels of sugar in the blood.

Diabetes was first identified through the sweet smell of urine, and it later became apparent that sweet, sugary urine signified a high level of blood sugar. Over time, diabetes treatment has swung from eating primarily sugar (to replace what is lost), to avoiding sweetness (to limit high sugar levels).

Today, the debate on amounts and thresholds of sugar and its role in diabetes seems as fierce as ever.

**Type 1** diabetes is an autoimmune disease, where genetics and environmental factors interact. Some research suggests that sugar intake may play a role in the development of type 1 diabetes, but the research isn't conclusive.

For **Type 2** diabetes, a diet high in sugar

could, in principle, influence or accelerate the progression of the disease depending on the pattern of consumption. But to suggest that dietary sugar might cause or contribute to type 2 diabetes needs strong scientific evidence that demonstrates that either sugar increases body weight and body fatness (necessary for type 2 diabetes), or that sugar has some kind of unique effect that leads to 2 diabetes, irrespective of weight or body fatness.

What we mean when we talk about sugar What most people understand to be sugar is sucrose: a mix of glucose and fructose. A common misunderstanding is that blood glucose is derived solely from dietary sugar. Almost all of the sugar in the body, including the blood, is in the form of glucose – one of many sugars belonging to the family of carbohydrates.

Sugars typically form a small part of the diet, not all of them are equally effective at increasing blood glucose levels, and other carbohydrates, as well as fats and protein, influence glucose levels, too.

Animal studies show that high sugar diets lead to rapid weight gain and impair the body's ability to effectively regulate blood

glucose. But these effects are mainly due to the fructose component of sucrose and not glucose.

In people, diets high in sugar have also been shown to increase weight as well as risk factors for cardiovascular disease. But these effects only seem to occur when calories are not being controlled; simply exchanging extra sugar with calories from another source won't prevent these negative effects. Also, observational studies have failed to show a harmful association between dietary sugar and type 2 diabetes.

Type 2 diabetes has arisen through rising body weights. Fatter people eat more of many things – not only sugar – and extra calories from any nutrient will lead to weight gain. Most sugary processed foods, such as cakes and chocolate, contain large amounts of fat which contribute heavily to the calorie content.

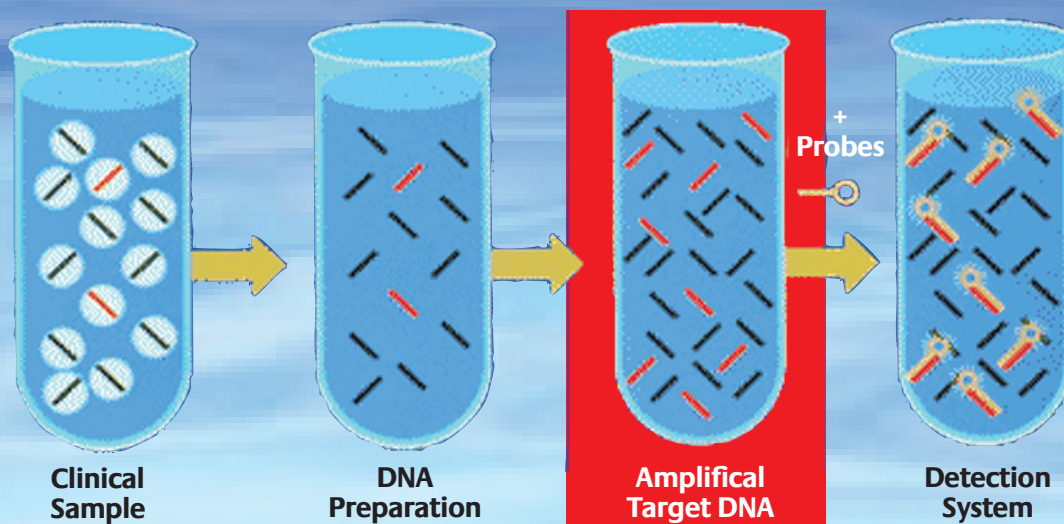
Nothing special about sugar Recently, the debate has turned to sugar-sweetened drinks, such as fizzy drinks. Sugars in drinks are less satiating than sugars in solid foods, and this may drive our appetite to eat more. Sugary drinks have been linked to type 2 diabetes, independent of body fatness. But so have artificially sweetened low calorie drinks. Fruit juices, though, have not been linked to type 2 diabetes despite having similar sugar contents to fizzy drinks.

There is nothing special about sugar that sets it apart from other foods, and sugar does not cause type 2 diabetes on its own. Generally, people eating lots of sugar tend to have poorer diets and healthier lifestyles. These, as well as other factors including urban growth patterns, the built environment, the food environment, stressful jobs, poor sleep and food pricing probably contribute more to the rising incidence of type 2 diabetes than dietary sugar.

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



## PRINCIPLE OF PCR



# PCR TESTING FOR RESPIRATORY INFECTIONS COMING SOON AT DIAGNOFIRM

**D**iaznofirm Medical Laboratories strives to bring the best services to Botswana. As a first in the country Diaznofirm will be offering PCR testing for 21 organisms that cause

upper respiratory infections. The organisms covered include viruses and bacteria. The new system is compatible with different types of samples including blood, swabs and sputum.

Table showing the different organisms for which PCR testing will be offered

| Viruses                         | Bacteria               |
|---------------------------------|------------------------|
| Influenza A                     | Mycoplasma pneumoniae  |
| Influenza A subtype H1N1 2009   | Legionella pneumophila |
| Influenza A subtype H1          | Bordetella pertussis   |
| Influenza A subtype H3          |                        |
| Influenza                       |                        |
| Coronavirus 229E                |                        |
| Coronavirus HKU1                |                        |
| Coronavirus NL63                |                        |
| Coronavirus OC43                |                        |
| Parainfluenza virus 1           |                        |
| Parainfluenza virus 2           |                        |
| Parainfluenza virus 3           |                        |
| Parainfluenza virus 4           |                        |
| Respiratory syncytial virus A/B |                        |
| Human metapneumovirus A/B       |                        |
| Adenovirus                      |                        |
| Bocavirus                       |                        |
| Rhinovirus/Enterovirus          |                        |

Diaznofirm also continuously strives to give patients and doctors timely results. The results of PCR testing for the above organisms will be available within 4 hours from the time the sample reaches Diaznofirm testing labs.



# DIAGNOFIRM (PTY) LTD

# Preventing Relapse

## Is it really possible to suffer from high blood pressure and not know it?

One of the fears many people have when going into rehab is fear of relapse. In fact, the risk of relapse is sometimes enough to keep a person from getting help in the first place, or to keep

family members from trying to get their loved one into treatment. No one wants to fail, and especially if someone has relapsed in the past, they might have already given up hope of succeeding. But even though relapse rates are often high for drug and alcohol abuse, there

are things patients can do to improve their odds.

## Sufficient Treatment

Some people are in too much of a hurry from the beginning to complete rehab. They want to spend as little time as possible in rehab and are anxious to get back to their lives. But being hasty will often have negative effects in the long run when it

comes to treatment. A person needs to go through the entire process of rehab before getting back out and into the world; without the needed length of time, a person doesn't develop the skills, tools, and attitude needed to stay sober for long.

## Make Life Changes

There is a reason why a person

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## PREVENTING SUBSTANCE ABUSE

**While it's practically impossible to prevent anyone and everyone from using drugs, there are things we can all do to avoid drug and/or alcohol abuse. By sharing this knowledge with those closest to you, you yourself may be able to prevent them from doing drugs, too. Here are the ways to help prevent drug abuse:**

### ● EFFECTIVELY DEAL WITH PEER PRESSURE

The biggest reason teens start using drugs is because their friends utilize peer pressure. No one likes to be left out, and teens (and yes, some adults, too) find themselves doing things they normally wouldn't do, just to fit in. In these cases, you need to either find a better group of friends that won't pressure you into doing harmful things, or you need to find a good way to say no. Teens should prepare a good excuse or plan ahead of time, to keep from giving into tempting situations.

### ● DEAL WITH LIFE PRESSURE

People today are overworked and overwhelmed, and often feel like a good break or a reward is deserved. In the end, drugs only make life more stressful — and many of us all too often fail to recognize this in the moment. To prevent using drugs as a reward, find other ways to handle stress and unwind. Take up exercising, read a good book, volunteer with the needy, create something. Anything positive and relaxing helps take the mind off using drugs to relieve stress.

### ● SEEK HELP FOR MENTAL ILLNESS

Mental illness and substance abuse often go hand-in-hand. Those with a mental illness may turn to drugs as a way to ease the pain. Those suffering from some form of mental illness, such as anxiety, depression or post-traumatic stress disorder should seek the help of a trained professional for treatment before it leads to substance abuse.

### ● EXAMINE THE RISK FACTORS

If you're aware of the biological, environmental and physical risk factors you possess, you're more likely to overcome them. A history of substance abuse in the family, living in a social setting that glorifies drug abuse and/or family life that models drug abuse can be risk factors.

### ● KEEP A WELL-BALANCED LIFE

People take up drugs when something in their life is not working, or when they're unhappy

about their lives or where their lives are going. Look at life's big picture, and have priorities in order.

## THE CONNECTION BETWEEN EMOTIONAL TRAUMA & DRUG ABUSE

We often blame emotional trauma during childhood for negative occurrences later in life, like difficulty holding down a job, making friends or committing to marriage - and rightfully so. While there may be a tendency to excuse negative behavior as a result of emotional trauma of long ago, there is reason to take it into account when treating any mental disorder.

### THERE'S A HIGHER RISK FOR MENTAL HEALTH DISORDERS AND SUBSTANCE ABUSE

Abuse or neglect among children resulted in higher rates of substance abuse, depression, anxiety and suicide. Childhood neglect or sexual, physical or emotional abuse is common among people undergoing treatment for alcoholism and may be a factor in the development of alcohol use disorders.

### THE SCARY EFFECTS OF TRAUMA

Trauma is defined as a stress that causes physical or emotional harm from which you cannot remove yourself. But trauma is hard to quantify, and a traumatic situation impacts each person differently. It's not so much what a therapist, family members,

or society deems traumatic that matters, but how the victim feels and mentally reacts. Trauma can occur when a person witnesses something violent or scary, when he or she is abused or neglected, or when a situation and the feelings that arise makes one feel afraid or helpless.

A person who has experienced emotional trauma may feel the need to self-medicate with drugs or alcohol to take away the mental anguish. Other people may turn to substance abuse as a way to control something in their life, to reduce anxiety or to diminish feelings of anger or guilt. Most people who experience emotional trauma suffer from depression, anxiety and other mental disorders.

### INTERVENING WITH TRAUMA VICTIMS

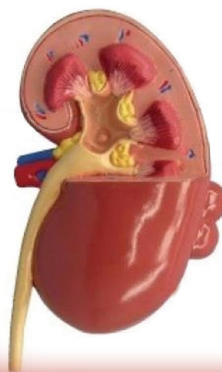
Never underestimate the effects of emotional trauma on someone's life. What we can do, however, is find ways to help victims of trauma. We can remove a person, particularly a child, from an abusive or neglectful environment.

We can provide early intervention to victims of trauma, so they can work through their emotions in a healthy way. While it's impossible to prevent any and all types of emotional scarring from happening, we can work to learn various coping strategies that help those who suffer deal with their feelings during and afterwards, so they avoid negative behaviors like drug or alcohol abuse or addiction.

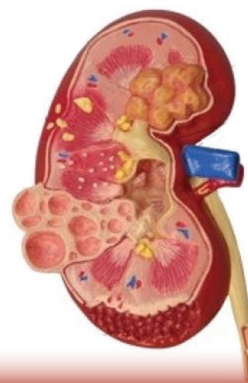
# KIDNEY FAILURE

*Your kidneys are a pair of organs located toward your lower back. One kidney is on each side of your spine. They filter your blood and remove toxins from your body. Your kidneys send toxins to your bladder. Your body later removes toxins during urination.*

NORMAL KIDNEY



DISEASED KIDNEY



**K**idney failure occurs when your kidneys lose the ability to filter waste from your blood sufficiently. Many factors can interfere with your kidney health and function, such as:

- toxic exposure to environmental pollutants or certain medications
- certain acute and chronic diseases
- severe dehydration
- kidney trauma

Your body becomes overloaded with toxins if your kidneys can't do their regular job. This can lead to kidney failure and even be life-threatening if it's left untreated.

## What are the symptoms of kidney failure?

Many different symptoms can occur during kidney failure. Usually someone with kidney failure will have a few symptoms of the disease, though sometimes none are present. Possible symptoms include:

- a reduced amount of urine
- swelling of your legs, ankles, and feet from retention of fluids caused by the failure of your kidneys to eliminate water waste
- unexplained shortness of breath
- excessive drowsiness or fatigue
- persistent nausea
- confusion
- pain or pressure in your chest
- seizures
- coma

## What causes kidney failure

People who are most at risk for kidney failure usually have one or more of the following causes:

### Loss of blood flow to the kidneys

A sudden loss of blood flow to your kidneys can prompt kidney failure. Some diseases and conditions that cause loss of blood flow to the kidneys include:

- a heart attack
- heart disease
- scarring of the liver or liver failure
- dehydration
- a severe burn
- an allergic reaction
- a severe infection, such as sepsis

High blood pressure and anti-inflammatory medications can also limit blood flow.

### Urine elimination problems

When your body can't eliminate urine, toxins build up and overload the kidneys. Some cancers

can block the urine passageways. These include prostate (most common type in men), colon, cervical, and bladder cancers.

Other conditions can interfere with urination and possibly lead to kidney failure, including:

- kidney stones
- an enlarged prostate
- blood clots within your urinary tract
- damage to the nerves that control your bladder

### Other causes

Some diseases and conditions may lead to kidney failure, including:

- a blood clot in or around your kidneys
- infection
- an overload of toxins from heavy metals
- drugs and alcohol
- vasculitis, an inflammation of blood vessels
- lupus, an autoimmune disease that can cause inflammation of many body organs
- glomerulonephritis, an inflammation of the small blood vessels of the kidneys
- hemolytic uremic syndrome, which involves the breakdown of red blood cells following a bacterial infection, usually of the intestines
- multiple myeloma, a cancer of the plasma cells in your bone marrow
- scleroderma, an autoimmune disease that affects your skin
- thrombotic thrombocytopenic purpura, a disorder that causes blood clots in small vessels
- chemotherapy drugs, medications that treat cancer and some autoimmune diseases
- dyes used in some imaging tests
- certain antibiotics
- uncontrolled diabetes

### Five types of kidney failure

There are five different types of kidney failure:

#### Acute prerenal kidney failure

Insufficient blood flow to the kidneys can cause acute prerenal kidney failure. The kidneys can't filter toxins from the blood without enough blood flow. This type of kidney failure can usually be cured once you and your doctor determine the cause of the decreased blood flow.

#### Acute intrinsic kidney failure

Acute intrinsic kidney failure can be caused by direct trauma to the kidneys, such as physical impact or an accident. Causes also include toxin overload and ischemia, which is a lack of oxygen to the kidneys. The following may cause

ischemia:

- severe bleeding
- shock
- renal blood vessel obstruction
- glomerulonephritis

### Chronic prerenal kidney failure

When there isn't enough blood flowing to the kidneys for an extended period of time, the kidneys begin to shrink and lose the ability to function.

### Chronic intrinsic kidney failure

This happens when there is long-term damage to the kidneys due to intrinsic kidney disease. Intrinsic kidney disease is caused by a direct trauma to the kidneys, such as severe bleeding or a lack of oxygen.

### Chronic post-renal kidney failure

A long-term blockage of the urinary tract prevents urination. This causes pressure and eventual kidney damage.

### How is kidney failure diagnosed?

There are several tests your doctor can use to diagnose kidney failure. These include: Urinalysis

Your doctor may take a urine sample to test for any abnormalities, including abnormal protein or sugar that spills into the urine. Your doctor may also perform a urinary sediment examination. This measures the amount of red and white blood cells, looks for high levels of bacteria, and searches for high numbers of cellular casts.

### Urine volume measurements

Measuring urine output is one of the simplest tests to help diagnose kidney failure. For example, low urinary output may suggest that kidney disease is due to a urinary blockage, which can be caused by multiple illnesses or injuries.

### Blood samples

Your doctor may order blood tests to measure substances that are filtered by your kidneys, such as blood urea nitrogen (BUN) and creatinine (Cr). A rapid rise in these levels may indicate acute kidney failure.

### Imaging

Tests such as ultrasounds, MRIs, and CT scans provide images of the kidneys themselves, along with the urinary tract. This allows your doctor to look for blockages or abnormalities in your kidneys.

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# PROTECT YOUR BABY WITH IMMUNIZATION

**Immunization is one of the best ways parents can protect their infants from 14 serious childhood diseases before age 2. Vaccinate your child is recommended immunization schedule for safe, proven disease protection.**

**D**iseases that vaccine prevent can be very serious—even deadly—especially for infants and young children. Vaccines reduce your child's risk of infection by working with their body's natural defenses to help them safely develop immunity to disease. Immunizations have helped improve the health of children in the United States. Most parents today have never seen first-hand the devastating consequences that vaccine-preventable diseases have on a family or community. So it is important to protect your child with vaccines.

## Protect Your Child from Serious Diseases

One example of the seriousness of vaccine-preventable diseases is the increase in whooping cough (pertussis) cases and outbreaks reported over the last few decades.

Whooping cough can be deadly, especially for young babies who are too young to get their own vaccines. Whooping cough deaths among babies could be prevented if all babies received the first dose on time at 2 months old, when they are old enough to get vaccinated.

Measles cases and outbreaks still occur. Thanks to an effective vaccine, measles isn't as common, but it still a common disease in many parts of the world. Measles is brought into the residents and visitors who get infected when they are in other countries. Measles can spread easily when it reaches a community in the where groups of people are unvaccinated. The disease can be



serious and can cause pneumonia, encephalitis (swelling of the brain), and even death. Young children are at highest risk for serious complications from measles. Learn more about measles.

Vaccinating your baby according to the recommended immunization schedule gives him the best protection against 14 serious childhood illnesses—like measles and whooping cough—before he is 2 years old. The recommended schedule is designed to protect infants and children early in life, when they are most vulnerable and before they are exposed to potentially life-threatening diseases.

The recommended immunization schedule for babies includes vaccination protection against all of the following diseases:

## The Diseases Vaccines Prevent

- Haemophilus influenzae type b (Hib)
- Diphtheria
- Hepatitis A
- Hepatitis B
- Influenza
- Measles
- Mumps
- Pertussis (whooping cough)
- Pneumococcal disease
- Polio
- Rubella (German measles)
- Tetanus (lockjaw)
- Rotavirus
- Varicella (chickenpox)

## Vaccinate On Time, Every Time

Even though there are outbreaks of some vaccine-preventable diseases, the spread of disease usually slows or stops because most people are vaccinated or protected through immunity against the disease. If we stopped vaccinating, even the few cases we have, it could very quickly become tens or hundreds of thousands of cases.

Fortunately, most parents choose to vaccinate their children and immunization rates are at or near record high levels. In fact, less than 1 percent of children do not receive any vaccines. However, some children have not received all of their vaccines, so they are not fully protected. It's important that children receive all doses of the vaccines according to the recommended immunization schedule. Not receiving all doses of a vaccine leaves a child vulnerable to catching serious diseases.

That's why it's important to make sure that your child is up to date on his immunizations. Call your pediatrician to find out if your child

is due for any vaccinations.

## Paying for Vaccination

Most health insurance plans cover the cost of vaccinations, but you should check with your insurance provider before going to the doctor. If you don't have health insurance, or your insurance policy doesn't cover all recommended childhood vaccines,\* your child may be eligible for vaccines through the Vaccines for Children (VFC) program.

The VFC Program helps families of eligible children who might not otherwise have access to recommended childhood vaccines. This federal program provides vaccines for eligible children at no cost for the vaccine itself, although you may have to pay an administration fee. These fees help providers cover the costs of giving the vaccines, including storing the vaccines and paying staff members to give vaccines to patients.

A child that meets one or more of the above eligibility requirements is eligible to receive VFC vaccine from a provider enrolled in the VFC program. VFC vaccines cannot be denied to an eligible child if the family can't afford to pay the administration fee.

\*Children under 19 years old may also be eligible for the VFC program if they are "underinsured" – they may have insurance, but their insurance doesn't cover any vaccines or it doesn't cover certain recommended vaccines for children 18 years and younger.

Source: [www.cdc.gov](http://www.cdc.gov)



# WHY DO YOU NEED TO SEE A DIETITIAN?

*There are many uncertainties as to what is a Dietitian, and what they really do? Is there a similarity with the Nutritionists?*

**D**ietitians are the only qualified health professionals that assess, diagnose and treat dietary and nutritional problems at an individual and wider public health level.

Dietitians work with individuals who are sick and those that are healthy. They use up to date scientific evidence based Nutrition Information and research on food, health and disease which is translated into practical guidance to enable people to make appropriate lifestyle and food choices.

Dietitians are governed by an ethical code to ensure that they always work to the highest standard. They work in hospitals, Private Practice, Education, Food Service Industry, Research, sports, Media, public Relations, Publishing, Government and Non-Governmental Organisations, Other care pathways they work in include mental health, learning disabilities, community, acute settings and public health.

They often work as integral members of multi-disciplinary teams to treat complex clinical conditions such as diabetes,

food allergy and intolerance, IBS syndrome, eating disorders, chronic fatigue, malnutrition, kidney failure and bowel disorders.

They provide advice to caterers to ensure the nutritional care of all clients in hospitals, and other care settings, they also plan and implement public health programmes to promote health and prevent nutrition related diseases. A key role of a dietitian is to train and educate other health and social care workers.

Dietitians interpret the science of nutrition to improve health and treat diseases and conditions by educating and giving practical advice to clients, patients, carers and colleagues. They advise and help to maintain nutritional status when individuals want to trial dietary interventions such as exclusion diets, nutritional supplementation or dietary interventions.

Finding and accessing the services of a dietitian can be achieved in several ways, but why choose one in the first place? There are many reasons why people choose to visit a dietitian. You may request, or indeed your GP may make

a referral to address a specific medical/health need or condition.

Once you see a Dietitian on a one-on-one basis for any reason that is mentioned above, you undergo a full Assessment, which entails the following;

**Anthropometric Assessment-** Body weight which is made up of muscle, fat, water

The Dietitian will outline for you the amount of weight you have to gain or lose. They will also assess your waist circumference, as abdominal obesity is one of the risk factors to Lifestyle conditions

**Biochemical Assessment-** depending on the condition that you present with, the blood results will be assessed i.e Full blood Count, Cholesterol, Blood Sugar, Blood Pressure to determine the kind of nutrition advise to provide Clinical Assessment entails physical presentation of the individual i.e malnutrition will present with either enlarged stomach, thin limbs in the case of marasmus, or edema in the feet and hand in the case of kwashiorkor, brittle nails, pale hands in the case of iron deficiency anaemia

Diet Assessment entail Diet History of what the individual's eating pattern looks like. It can be a 24 hour recall in which they outline what they ate in the previous day, followed by Food frequency Questionnaire in which they indicate the frequency of eating the different food items.

After the assessments then Nutrition Education and Counselling will follow, depending on the stages of change the individual is at, appropriate guidance will be provided

Then a customised meal plan will be handed out and a date of review to monitor the lifestyle changes will be set

The Dietitian Review entails the monitoring of assessment done previously, challenges in the nutritional prescription will be outlined and further advice will be given Dietitians on Private Practice are covered by all Medical Aids Schemes, and one needs a referral from the Doctor to be covered.

Make use of your Dietitians, as they are found all over the Country.

*Reference:  
British Dietitian Association*

# THE RISING CARDIOVASCULAR DISEASE

## FROM PAGE 07

(2014) and Paolett et al (2015) to mention but a few, have demonstrated consistency of 97 – 98% in achieving the NCEP ATP III target with Rosuvastatin leading the pack at 84% whereas pravastatin being the least effective at 48%. These results are consistently proven true even in the newer MERCURY 1 and STELLAR clinical Trials.

Clearly because statins have a well-documented large safety margin. This view is supported by position statements from the Journal of American College of cardiology, the American and the European Heart Associations.

Hepatic transaminase elevations do however occur but are reversible and dose dependent whereas, several studies have shown that the incidences of severe myositis is less than 0.1% with all statins.

## CHOLESTEROL ABSORPTION INHIBITOR

Ezetimibe is an example of a cholesterol absorption inhibitor that targets uptake at the jejunal enterocyte brush border. Recent IMPROVE-IT trial suggests the addition of ezetimibe to statin therapy in stable patients who had had an acute coronary syndrome and who had LDL cholesterol levels within guideline recommendations further lowered the risk of cardiovascular events.

## NIACIN

This class of therapy is considered the oldest lipid lowering approach achieving only about 10 – 25% reduction in LDL – C. The degree of efficacy for this class is further limited by low patient tolerance. Moreover, niacin or nicotinic acid therapies are absolutely contraindicated in patients with hepatic and peptic ulcer disease co-morbidities and should be used with extreme

caution in patients with diabetes, gout or hyperuricemia.

Niacin can, however, significantly raise HDL –C levels as much as 30%. In addressing the above research bold statement, this class should perhaps be relegated to the bottom of the therapeutic options ladder in favour of trusted and exciting emerging novel Clinical options.

## FIBRATES

Available for clinical use fibric acid derivatives currently include; the older agents (Gemfibrozil, clofibrate) as well as the third generation fibrates – Fenofibrate.

Current evidence from randomized Trials clearly recommend that fibrates should not be considered as primary drug therapy for patients with elevated LDL-C much less to achieve the NCEP ATP III target. They nonetheless, are useful for reducing triglycerides and to some extent can elevate HDL – C.

In light of available large body of clinical evidence, Fibrates should altogether not be used as monotherapy in the clinical quest for better therapies with regard to the above stated research question.

## CETP INHIBITOR

Increased cholesterol ester transfer protein (CETP) activity is a major determinant of low HDL-cholesterol. CETP inhibition with anacetrapib, evacetrapib and dalcetrapib produces plasma HDL increases we are well aware of anti-atherogenic properties of HDL, such as cholesterol removal from arterial walls, stimulation of endothelial nitric oxide production or protection against oxidation and inflammation. Up till now clinical trials have failed to show significant reduction in CV events with use of CETP inhibitors but with new agents on the horizon there is hope that this could prove to be valuable assets in lipid modification.

## PCSK9 INHIBITORS

PCSK 9 inhibition is a novel way of looking at lipid modification as it focuses on clearance of LDL-C rather than curbing production. PCSK 9 receptors are located on hepatocytes and help clear LDL-c molecules, Reduction of PCSK9 receptors lead to increase in LDL. According to NICE guidelines evolocumab can be used in patients with high CV risk and persistently raised LDL of above 4.0 mmol/ litre.

## COMBINATION THERAPY

A large body of clinical evidence has demonstrated that this approach is logical only in clinical settings where monotherapy is unsuccessful in reducing LDL- C to the target level in line with NCEP ATP III recommendations. Combination therapies may, additionally, be useful in familial hypercholesterolemia, in mixed dyslipidaemias and familial hyperlipidaemias. Several combinations across drug classes may be tailored to individual patient situations.

That said, the obvious advantages when indicated include; additive effects for reducing LDL- C, additional benefits for reducing very high TGA levels, complementary benefits on mixed dyslipidaemias, reductions in elevated Lipoprotein allows for lower dosages with the drugs in use thus minimizing adverse effects. The documented significant concerns with regard to combination therapies constitute elevated hepatic transaminases, myositis, muscle weakness rhabdomyolysis, issues of low tolerance and indeed drug cost implications.

## CONCLUSION

With this brief overview it is clear that we have exciting times ahead, although CV risk and events remain high but with increasing awareness, availability of medication and new emerging treatment modalities as

well as consistent life style changes, there is hope of a better outlook on the horizon.

It is essential that we tackle the issue in a multi-faceted manner which aims at reducing LDL- C, increasing HDL, tackle modifiable risk factors including lifestyle modification.

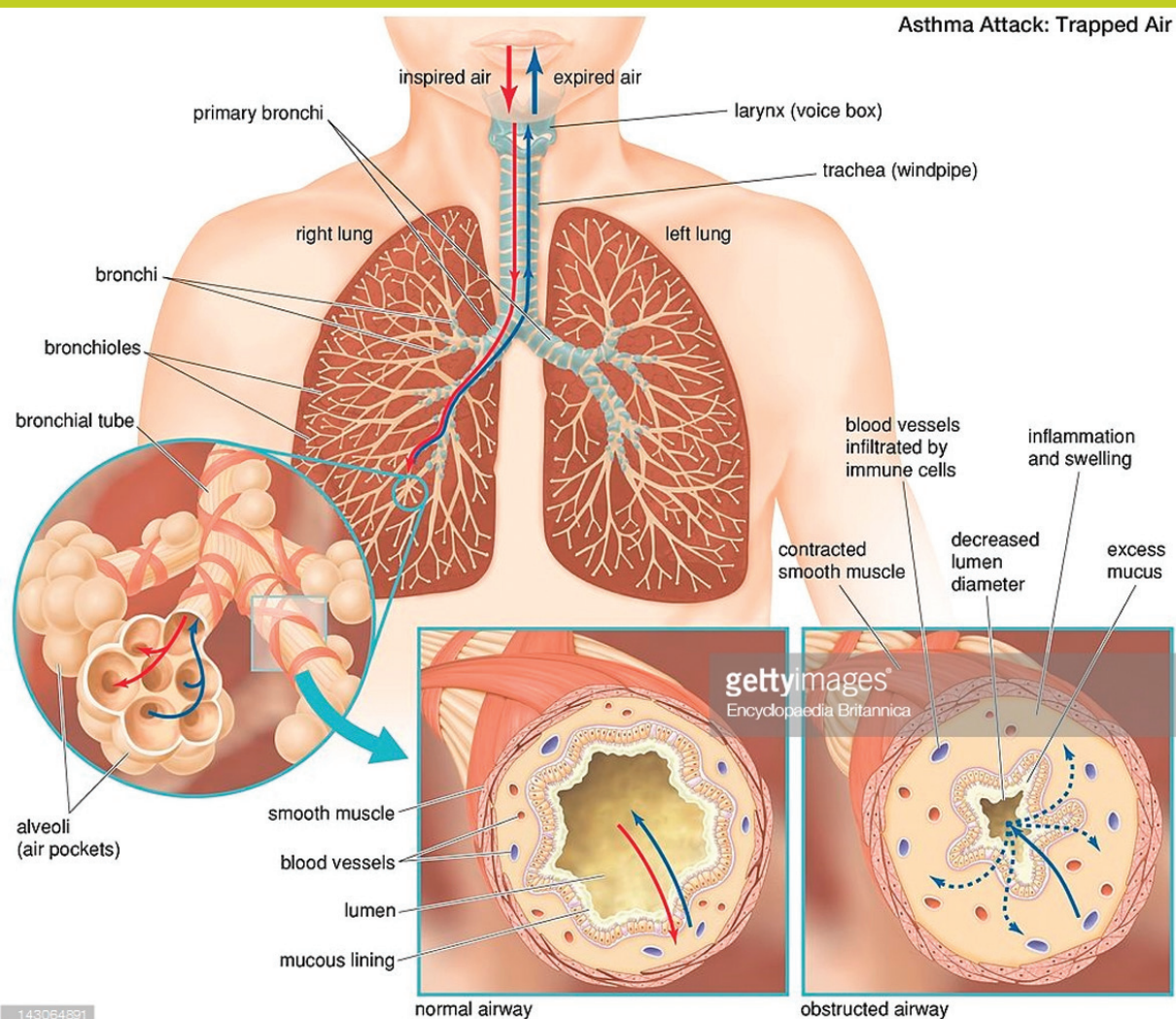
However, the challenge will remain of patient concordance to medications, management of adverse effects and use of guidelines and recommended medication at optimal dosage especially in primary care as well as the transcending importance of consistent global life style modification behaviors in the population which at the moment appears to be a major challenge.

If we aspire to reduce CV events it is essential that preventive cardiology should take center stage for all primary care physicians, with early identification of at risk individuals, modification of risk factors and adherence to aggressive primary and secondary prevention guidelines.

Looking at the number of patients and burden of illness in the UK population, for instance, with increasingly at risk population as well as the prevailing practice here in the UK and globally, it will remain a challenge to transform any health system from reactive to proactive, and of course that has to take into account austerity measures and political ramifications. It can be concluded that this aspect of Medical practice shall remain a big hurdle in the foreseeable future in achieving the idealistic goal of eradication of recurrent Cardiovascular events in a ten year follow up period for instance. That said, Health Systems globally need concerted efforts with a non exclusive approach to tackle this important emerging problem of increased cardiovascular disease morbidity and mortality picture.

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# ASTHMA ATTACK

## WHAT IS AN ASTHMA ATTACK?

**An asthma attack is a sudden worsening of asthma symptoms caused by the tightening of muscles around your airways (bronchospasm). During the asthma attack, the lining of the airways also becomes swollen or inflamed and thicker mucus – more than normal – is produced. All of these factors – bronchospasm, inflammation, and mucus production – cause symptoms of an asthma attack such as difficulty breathing, wheezing, coughing, shortness of breath, and difficulty performing normal daily activities. Other symptoms of an asthma attack may include:**

- Severe wheezing when breathing both in and out
- Coughing that won't stop
- Very rapid breathing
- Chest tightness or pressure
- Tightened neck and chest muscles, called retractions
- Difficulty talking
- Feelings of anxiety or panic
- Pale, sweaty face
- Blue lips or fingernails
- Or worsening symptoms despite use of your medications.

Some people with asthma may go for extended periods without having an asthma attack or other symptoms, interrupted by periodic worsening of their symptoms, due to exposure to asthma triggers or perhaps from overdoing it as in exercise-induced asthma.

Mild asthma attacks are generally more common. Usually, the airways open up within a few minutes

to a few hours after treatment. Severe asthma attacks are less common but last longer and require immediate medical help. It is important to recognize and treat even mild symptoms of an asthma attack to help you prevent severe episodes and keep asthma under control.

**What Happens if an Asthma Attack Goes Untreated?**  
Without immediate asthma

medicine and asthma treatment, your breathing may become more labored, and wheezing may get louder. If you use a peak flow meter during an asthma attack, your reading will probably be less than your personal best.

As your lungs continue to tighten during the asthma attack, you may be unable to use the peak flow meter at all. Gradually, your lungs

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# TESTING FOR TB INFECTION

*There are two types of tests for TB infection: the TB skin test and the TB blood test. A person's health care provider should choose which TB test to use. Factors in selecting which test to use include the reason for testing, test availability, and cost. Generally, it is not recommended to test a person with both a TB skin test and a TB blood test.*

## TYPES OF TB TESTS

**The TB skin test** is also called the Mantoux tuberculin skin test (TST).

A TB skin test requires two visits with a health care provider. On the first visit the test is placed; on the second visit the health care provider reads the test.

The TB skin test is performed by injecting a small amount of fluid (called tuberculin) into the skin on the lower part of the arm.

A person given the tuberculin skin test must return within 48 to 72 hours to have a trained health care worker look for a reaction on the arm. The result depends on the size of the raised, hard area or swelling.

### **Positive skin test:**

This means the person's body was infected with TB bacteria. Additional tests are needed to determine if the person has latent TB infection or TB disease.

### **Negative skin test:**

This means the person's body did not react to the test, and that latent TB infection or TB disease is not likely.

There is no problem in repeating a TB skin test. If repeated, the additional test should be placed in a different location on the body (e.g., other arm). The TB skin test is the preferred TB test for children under the age of five.



**TB blood tests** are also called interferon-gamma release assays or IGRAs. Two TB blood tests are approved by the U.S. Food and Drug Administration (FDA) and are available in the United States: the QuantiFERON®-TB Gold In-Tube test (QFT-GIT) and the T-SPOT®.TB test (T-Spot).

A health care provider will draw a patient's blood and send it to a laboratory for analysis and results.

### **Positive TB blood test:**

This means that the person has been infected with TB bacteria. Additional tests are needed to

determine if the person has latent TB infection or TB disease.

### **Negative TB blood test:**

This means that the person's blood did not react to the test and that latent TB infection or TB disease is not likely. TB blood tests are the preferred TB test for:

- People who have received the TB vaccine bacille Calmette-Guérin (BCG).

- People who have a difficult time returning for a second appointment to look for a reaction to the TST.



# THE RISING CARDIOVASCULAR DISEASE BURDEN GLOBALLY

*"Can aggressive lipid lowering with a combination of established and newer novel pharmacological therapies alone probably eradicate recurrent cardiovascular events in patients who have sustained a myocardial infarction, over the next 10 years?"*

**INNOCENT N. MUNGANDI, MD. KHAN MOHAMMED, MD (University of South Wales, Cardiff. United Kingdom. Sept 2017)**

## INTRODUCTION

According to British heart foundation statistics of 2017 Cardiovascular disease causes 26% of all deaths in the UK; that's nearly 160,000 deaths each year – an average of 435 people each day or one death every three minutes. Around 42,000 people under the age of 75 in the UK die from CVD each year.

Currently there are around 7 million people living with cardiovascular disease in the UK. Eradication of cardiovascular (CV) events in 10 years is a very bold statement to make and to understand the possibility of achieving this we need to analyse where we stand at the moment, what treatment modalities are available and what have been the barriers in achieving reduction in CV events post MI.

World Health Organisation's PREMISE program is designed to particularly focus on this issue and quotes

results from surveys like ASPIRE and EUROASPIRE[1] highlighting treatment gaps rather than lack of efficacy of current available therapies as cause of failure in reduction of recurrent CV events.

## HOW BIG IS THE PROBLEM?

In 2014, cardiovascular disease (CVD) was the second main cause of death in the UK. The Global Burden of Disease (GBD) study has shown that the burden of CVD is declining in the UK.

Suffice to say, we have seen a steady decline in the incidence of CV events over the years especially in countries with high per capita income[2] and principally as a consequence of improving initial survival rates attributable to high standards in initial care invariably means that we building up a more aging population with higher prevalence of CV disease[3]. More research data on this aspect is needed for third World Countries.

Survivors of AMI are at high risk of a recurrent myocardial infarction (MI), as well as other manifestations of cardiovascular (CV) disease such as stroke.

## FACTORS LEADING TO RECURRENT CV EVENTS

We have to take into account that apart from unmodifiable factors such as ethnicity, gender and hereditary dyslipidaemias, modifications and control of illnesses like Diabetes, Renal disease and Hypertension to name but a few, other modifiable risk factors like sedentary life styles, diet and exercise have a major role to play when it comes to reduction in overall Cardiovascular events

There is no disputing the fact that lipid modification helps reduce plaque burden but when talking about recurrent CV events and taking into account the pathogenesis of plaque rupture we have to consider factors like high sheer stress[6], coronary inflammation amongst

others which leads us to consider therapies like anti-inflammatories for plaque stabilisation hence lipid therapy alone is not going to be able to eradicate all the factors.

So first let us take a look at current available therapeutic agents.

## STATINS

A wealth of available evidence supports the argument that hydroxymethylglutaryl Coenzyme A (HMG – CoA) reductase inhibitors, by and large, form the clinically recommended cornerstone of monotherapy in preventive treatment with regard to achieving the goals of the above research question.[9]

Currently available statins are; Atorvastatin, Lovastatin, Pravastatin, fluvastatin, simvastatin and the newer Rosuvastatin.

Evans et al (2003), among other several randomized clinical trials notably studies by Davidson et al

**TO PAGE 14**

## KIDNEY FAILURE

### FROM PAGE 07

#### Kidney tissue sample

Tissue samples are examined for abnormal deposits, scarring, or infectious organisms. Your doctor will use a kidney biopsy to collect the tissue sample. A biopsy is a simple procedure that's usually performed while you're awake. You'll have a local anesthetic to eliminate any discomfort. The sample is collected with a biopsy needle inserted through your skin and down into the kidney. X-ray or ultrasound equipment is used to locate the kidneys and assist the doctor in guiding the needle.

#### Treatment for kidney failure

There are several treatments for kidney failure. The type of treatment you need will depend on the reason for your kidney failure. Your doctor can help you determine the best treatment option, which may include:

#### Dialysis

Dialysis filters and purifies the blood using a machine. The machine performs the function of the kidneys. Depending on the type of dialysis, you may be connected to a large machine or a portable catheter bag. You may need to follow a low-potassium, low-salt diet along with dialysis.

Dialysis doesn't cure kidney failure, but it will extend your life if you go to regularly scheduled treatments.

#### Kidney transplant

Another treatment option is a kidney transplant. There's usually a long wait to receive a donor kidney that's compatible with your body, though if you have a living donor the process may go more quickly.

The advantages of a transplant are that the new kidney can work perfectly, and dialysis is no longer required. The disadvantage is that you must take immunosuppressive drugs

after the surgery. These drugs have their own side effects, some of which are serious. Also, transplant surgery is not always successful.

#### Preventing kidney failure

There are steps you can take to reduce your risk of kidney failure.

Follow directions when taking over-the-counter medications. Taking doses that are too high (even of common drugs such as aspirin) can create high toxin levels in a short amount of time. This can overload your kidneys.

Whenever possible, you should limit your exposure to chemicals, such as household cleaners, tobacco, pesticides, and other toxic products.

Many kidney or urinary tract conditions lead to kidney failure when they're not managed properly. Follow your doctor's advice, always take prescribed medicine as directed, and maintain a healthy lifestyle.

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

# ASTHMA ATTACK

## FROM PAGE 11

may tighten so much during the asthma attack that there is not enough air movement to produce wheezing. This is sometimes called the “silent chest,” and it is a dangerous sign. You need to be taken to a hospital immediately with a severe asthma attack. Call 911 for help. Unfortunately, some people interpret the disappearance of wheezing during the asthma attack as a sign of improvement and fail to get prompt emergency care.

If you do not receive adequate treatment for an asthma attack, you may eventually be unable to speak and can develop a bluish coloring around your lips. This color change, known as “cyanosis,” means you have less and less oxygen in your blood. Without immediate aggressive treatment in an emergency room or intensive care unit, you may lose consciousness and eventually die.

### How Do I Recognize the Early Signs of an Asthma Attack?

Early warning signs are changes that happen just before or at the very beginning of an asthma attack. These changes start before the well-known symptoms of asthma and are the earliest signs that your asthma is worsening.

In general, these early asthma attack symptoms are not severe enough to stop you from going

about your daily activities. But by recognizing these signs, you can stop an asthma attack or prevent one from getting worse.

### Early warning signs of an asthma attack may include:

- Frequent cough, especially at night
- Reduced peak flow meter readings
- Losing your breath easily or shortness of breath
- Feeling very tired or weak when exercising
- Wheezing or coughing during or after exercise (exercise-induced asthma)
- Feeling tired, easily upset, grouchy, or moody
- Decreases or changes in lung function as measured on a peak flow meter
- Signs of a cold or allergies (sneezing, runny nose, cough, nasal congestion, sore throat, and headache)
- Trouble sleeping with nighttime asthma

The severity of an asthma attack can escalate rapidly, so it's important to treat these symptoms immediately once you recognize them.

### What Happens if an Asthma Attack Goes Untreated?

Without immediate asthma medicine and asthma treatment, your breathing may become more labored, and wheezing may get louder. If you use a peak flow meter

during an asthma attack, your reading will probably be less than your personal best.

As your lungs continue to tighten during the asthma attack, you may be unable to use the peak flow meter at all. Gradually, your lungs may tighten so much during the asthma attack that there is not enough air movement to produce wheezing. This is sometimes called the “silent chest,” and it is a dangerous sign. You need to be taken to a hospital immediately with a severe asthma attack. Call 911 for help. Unfortunately, some people interpret the disappearance of wheezing during the asthma attack as a sign of improvement and fail to get prompt emergency care.

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The severity of an asthma attack can escalate rapidly, so it's important to treat these symptoms immediately once you recognize them.

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

## Preventing Relapse

### FROM PAGE 06

gets involved with drugs or alcohol in the first place. If these triggers, stresses, or negative influences aren't corrected, it will be very difficult for a person to avoid going back to the substance abuse. It usually takes a change in friends, reduction of stress, and development of coping skills to keep a newly sober individual clean.

### Long-term Care

Not only do patients need to

stay in therapy for a long enough period of time, but after-care is often helpful and even necessary.

This kind of treatment consists of once a week or occasional outpatient therapy or counseling.

The purpose of this kind of care is to keep the patient focused on recovery. Patients enrolled in long-term recovery benefit greatly from keeping in touch with counselors and the resources they provide.

### Support Groups

In the same way long-term care is beneficial, support groups help prevent relapse. There are support groups that specialize in nearly every kind of substance abuse and social situation. There are support groups for recovering heroin addicts, for teens, for Christians, and even for nurses. As much as we hate to admit it, we can't recover on our own.

Support groups are very important to preventing relapse. Support groups provide encouragement, companionship, and a sense of belonging. It is

important to know that others are experiencing the same thoughts and feelings.

To know that someone else is making it through the struggle gives power to others. Support groups allow people to talk about their feelings and doubts, and together work to overcome them.

Relapse is a scary thing, but sobriety is so important that it is worth the effort. By getting the right care and sticking to a treatment plan, patients stand the best chance at avoiding relapse.



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# DIAGNOSTICS

## The winter

In winter, to face the cold, we eat dried vegetables (lentils, peas, beans), soup of vegetables (potatoes, leeks, turnips, pumpkins),



black pudding but also the cheese fondues, the racelettes, the sauerkrauts and the games.

