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A COMPLETE BLOOD COUNT: Why a Blood Test is Important

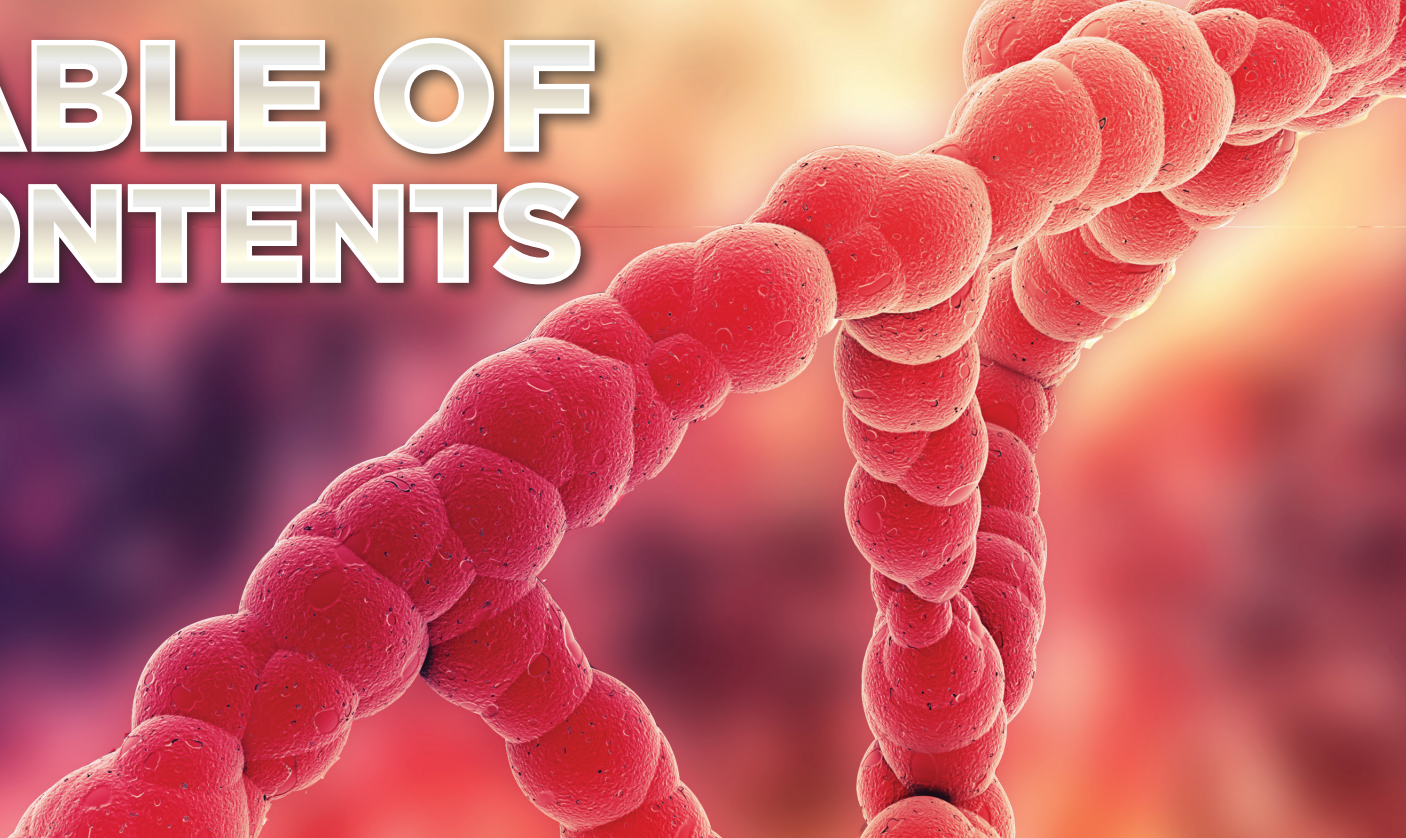
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Dear Reader,

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. This June 2016 issue we focus on Hepatitis and the liver.

We take a look 15 Hygiene Habits That You Shouldn't Miss in Your Daily Routine.

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Therefore, some information in this publication may have change by the time you read it.

A COMPLETE BLOOD COUNT: WHY A BLOOD TEST IS IMPORTANT



One of the medical community's most effective means to understand what is happening in your body is to conduct a **blood test**. In effect, the test is a snapshot of your current health, and the count of white and red blood cells, along with platelets gives doctors strong indicators as to the type of ailment you are suffering from.

Below is a quick guide to what those numbers mean.

When a physician orders a **lab test** during a routine physical exam, it will typically include a blood test, specifically a Full blood count (FBC). A full blood count is helpful to the physician for determining the levels of different cells in the blood. The purpose of this test is to

examine the white blood cells (WBC), the red blood cells (RBC) and the platelets. When a Full blood count is ordered, the blood will either be drawn at the doctor's office, hospital or a lab. The blood is then sent to a lab for testing.

White Blood Count

Should the results the FBC show a high white blood count (WBC), it may mean there is an infection somewhere or in some cases, it could indicate the presence of a malignancy or STD. When someone is taking antibiotics for the treatment of an infection, a FBC will sometimes be ordered to determine if the infection is responding the antibiotics. Whereas, a low WBC, may indicate a bone marrow problem or individuals undergoing chemotherapy may have a reduced WBC due to a side effect of the chemotherapy.

Red Blood Count

When the red blood count (RBC) is high it could indicate a number of different situations such as a lack of oxygen in the blood or a problem with the bone marrow. When the RBC is low it could be an indication the individual is anemic. A high platelet count could be the indication of a severe inflammation whereas a low platelet count could explain a prolonged hemorrhage.

WBC Value

A FBC result will show the normal values of the white blood count, which is between

4300 and 10,800 cells per cubic mm. When value is higher than 10,800, it is likely to an infection or it could be the indication of leukemia or cancer.

However, the physician, in most situations, will do a number of other lab tests to determine the reasons for the high WBC before making a conclusive decision. A WBC lower than 4300 could indicate an autoimmune disease, problems with bone marrow, or a reaction to certain drugs. The physician will also take into account the other symptoms reported.

RBC Value

A normal RBC level falls between 4.2 million cells per millimeter to 5.9 million cells per millimeter. If the levels are below 4.2 million it could be an indication of anemia or above 5.9 million could be the result of dehydration or burns. Platelet levels are between 150,000 and 400,000 cells per millimeter.

The platelets are responsible for blood clotting. If the platelet level falls below 150,000, it could present a problem with the amount of time it takes to stop bleeding. These are the basic levels reported by a lab on the results; they are not an indication of every individual falling into the same category. A physician will review the lab tests, blood tests and all symptoms reported before making a general determination.

The 10 Most Important Blood Tests



"What can I do to improve my health and longevity?" Our response is that we basically "have no idea."

The reason we ostensibly appear so ignorant is that unless we know what your blood looks like under a microscope, there is no way for us to identify what steps you should take to protect your health and enhance your well-being.

Annual blood testing is the most important step aging adults can take to prevent life-threatening disease. With blood test results in hand, you can catch critical changes in your body before they manifest as heart disease,

cancer, diabetes, or worse. Having the proper blood tests can empower you to enact a science-based disease-prevention program that could add decades of healthy life. Sadly, most annual medical check-ups involve the physician ordering only routine blood tests, if blood tests are ordered at all.

Far too often, this blood work does not even test for important markers of disease risk. The consequences of failing to analyze blood for proven markers of disease risk are needless disability and death. Blood tests have benefits that go far beyond disease prevention.

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For example, by monitoring levels of sex hormones, you can take decisive steps to enhance your quality of life, perhaps by correcting a depressive mental state, erectile dysfunction, abdominal obesity, or by improving your memory and energy levels. In this article, we discuss the 10 most important blood tests that people over the age of 40 should have each year. Armed with the results of these tests, aging adults can work together with their physicians to avert serious health problems and achieve optimal health.



1. Chemistry Panel and Full Blood Count

The Chemistry Panel and Full Blood Count (FBC) is the best place to begin your disease-prevention program. This low-cost panel will give you and your physician a quick snapshot of your overall health.

This test provides a broad range of diagnostic information to assess your vascular, liver, kidney, and blood cell status.

The Full Blood Count measures the number, variety, percentage, concentration, and quality of platelets, red blood cells, and white blood cells, and thus is useful in screening for infections, anemias, and other hematological abnormalities.

The Chemistry Panel provides information on the status of your cardiovascular system by testing for total cholesterol, HDL (high-density lipoprotein), LDL (low-density lipoprotein), triglycerides, and the total cholesterol/HDL ratio.

The Chemistry Panel also measures blood

glucose, which is critically important for detecting early-stage metabolic syndrome, diabetes, and coronary artery disease. In light of the rapidly growing epidemic of diabetes and other related metabolic syndromes, monitoring your fasting glucose levels is as important as knowing your cholesterol. Also included in the Chemistry Panel is an assessment of critical minerals such as calcium, potassium, and iron.

2. Fibrinogen

An important contributor to blood clotting, fibrinogen levels increase in response to tissue inflammation. Since the development of atherosclerosis and heart disease are essentially inflammatory processes, increased fibrinogen levels can help predict the risk of heart disease and stroke.

High fibrinogen levels not only are associated with an increased risk of heart attack, but also are seen in other inflammatory disorders such as rheumatoid arthritis and glomerulonephritis (inflammation of the kidney).

Researchers identified increased levels of fibrinogen in the blood as an independent risk factor for mortality in patients with peripheral arterial disease. When left untreated, peripheral arterial disease increases the risk of heart attack, stroke, and death.

This 2005 study followed 139 men and women with peripheral arterial disease for an average of six years. Death from all causes increased with elevated fibrinogen levels: 80% of patients with a fibrinogen level above 3.4g/L survived for less than three years. Researchers concluded that increased fibrinogen was an independent risk factor for mortality in this patient population. Researchers reported an association between increased levels of fibrinogen and risk for venous thrombosis (blood clots).

A recent study from Greece found an association between higher fibrinogen levels and the presence of multiple coronary lesions in patients who had suffered an acute myocardial infarction.

A combination of lifestyle and behavioral changes—such as quitting smoking, losing weight, and becoming more physically active—may help to lower fibrinogen levels to the optimal range. Nutritional interventions may also help to optimize fibrinogen levels. You and your physician may wish to discuss the use of fish oil, niacin, and folic acid, along with vitamins A and C.



3. Hemoglobin A1C

This test is used in diabetics for monitoring purposes only. One of the best ways to assess your glucose status if you are diabetic is testing for hemoglobin A1C (HbA1c). This test measures a person's blood sugar control over the last two to three months and is an independent predictor of heart disease risk in persons with or without diabetes. Maintaining healthy hemoglobin A1C levels may also help patients with diabetes to prevent some of the complications of the disease.

Type I diabetes patients who monitored their hemoglobin A1C (HbA1c) levels were able to achieve tight glucose control, thereby significantly lowering their risk of a cardiovascular disease event. Long-term elevation of blood sugar, a hallmark of diabetes, is associated with an increased risk of heart disease and stroke.

Testing HbA1c levels every three to six months to monitor blood sugar levels in insulin-treated patients, in patients who are changing therapy, and in patients with elevated blood glucose levels. Since HbA1c is not subject to the same fluctuations that normally occur with daily glucose monitoring, it represents a more accurate picture of blood sugar control.

In a recent study, 1,340 type I diabetic patients were followed for a total of 17 years. Patients were randomly assigned to either intensive or conventional diabetic (blood glucose) control. In the group receiving intensive treatment, hemoglobin A1C levels were significantly lower and the risk of nonfatal myocardial infarction, stroke, or death from cardiovascular disease decreased by 57%.

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The decrease in HbA1c values was “significantly associated with most of the positive effects of intensive treatment on the risk of cardiovascular disease.”

Nutritional therapies may help to optimize hemoglobin A1C levels. You and your physician may wish to discuss the use of chromium, cinnamon, and coffee berry extracts.

4. DHEA

Dehydroepiandrosterone (DHEA), a hormone produced by the adrenal glands, is a precursor to the sex hormones estrogen and testosterone. Blood levels of DHEA peak in one's twenties and then decline dramatically with age, decreasing to 20-30% of peak youthful levels between the ages of 70 and 80. DHEA is frequently referred to as an “anti-aging” hormone.

DHEA levels were significantly lower in men with symptoms associated with aging, including erectile dysfunction. Healthy levels of DHEA may support immune function, bone density, mood, libido, and healthy body composition.

Elevated levels of DHEA may indicate congenital adrenal hyperplasia, a group of disorders that result from the impaired ability of the adrenal glands to produce glucocorticoids.

Supplementation with DHEA increases immunological function, improves bone mineral density, increases sexual libido in women, reduces abdominal fat, protects the brain following nerve injury, and helps prevent diabetes, cancer, and heart disease.

Emerging research suggests that DHEA may have antidepressant effects. In HIV-infected men and women, supplementation with DHEA was superior to placebo in treating non-major depression (with a response rate of 62% vs. 33%, retrospectively). In another study from the National Institute of Mental Health, investigators found that DHEA significantly improved midlife-onset major and minor depression in men and women aged 45 to 65 years old. DHEA administration decreased self-administration of cocaine in rats, suggesting a potential for DHEA in reducing cravings and supporting recovery from addiction.

Scientists demonstrated that DHEA levels were significantly lower in elderly persons predisposed to chronic wound conditions, such as venous ulcers, and that administration of DHEA accelerated wound healing in aging mice. This led the research team to suggest that DHEA supplementation may be a safe, effective strategy to improve wound healing in the elderly.

Natural therapies may help to optimize DHEA levels. You may wish to discuss with your doctor the use of pregnenolone or DHEA. Those with estrogen-related cancers such as breast or prostate cancer should not use DHEA.

5. Prostate-Specific Antigen (PSA) (Men Only)

Prostate-specific antigen (PSA) is a protein manufactured by the prostate gland in men. Elevated levels may suggest an enlarged prostate, prostate inflammation, or prostate cancer. PSA levels may also be used to monitor the efficacy of therapeutic regimens for prostate conditions.

Elevated levels of PSA may not necessarily signal prostate cancer, and prostate cancer may not always be accompanied by expression of PSA. Levels can be elevated in the presence of a urinary tract infection or an inflamed prostate. A PSA level over 2.5 ng/mL, or a PSA doubling time (the time required for PSA value to double) of less than 12 years, may be a cause for concern.

Annual PSA testing for men beginning at age 50. Men who are at high risk should begin PSA testing at age 40-45. PSA levels increase with age, even in the absence of prostate abnormalities.

More than 15% of men with PSA values between 2.6 and 4.0 ng/mL who are 40 years or older have prostate cancer, according to a prostate cancer screening study published in 2005 in the *Journal of Urology*. 25% of patients with normal digital rectal exams and total PSA levels of 4.0-10.0 ng/mL have prostate cancer.

In a later study published in the *New England Journal of Medicine*, investigators recommended that “lowering the threshold for biopsy from 4.1 to 2.6 ng per milliliter in men younger than 60 years would double the cancer-detection rate from 18 percent to 36 percent.”

It should be noted that levels below the currently recognized cutoff of 4.1 ng/mL may not distinguish between prostate cancer and benign prostate disease. 22% of patients with PSA levels between 2.0 and 4.0 ng/mL, and most of those cancers biopsied were significant, leading researchers to conclude that an “important number of cancers could be detected in the PSA range of 2.0 to 4.0 ng/mL.”

In another study, investigators in Spain detected significant cancers in some patients with a PSA range between 1.0 and 2.99 ng/mL. Although the risk of developing cancer for those in the low PSA range is small, the authors said, it is still relevant.

A healthy Mediterranean-type diet may offer protection against prostate cancer and other diseases associated with aging. Natural therapies may also help support prostate health. You and your physician may wish to discuss the use of saw palmetto, beta-sitosterol, pygeum, and nettle root extracts.

6. Homocysteine

The amino acid homocysteine is formed in the body during the metabolism of methionine. High homocysteine levels have been associated with increased risk of heart attack, bone fracture, and poor cognitive function. Incremental increases in the level of homocysteine correlate with an increased risk for coronary artery disease.

Data from the Physicians' Health Study, which tracked 14,916 healthy male physicians with no previous history of heart disease, showed that highly elevated homocysteine levels were associated with a more than threefold increase in the risk of heart attack over a five-year period.

Homocysteine has also become recognized as an independent risk factor for bone fractures. In a recent study of 1,267 men and women with an average age of 76, investigators in the Netherlands concluded that high homocysteine levels and low vitamin B12 concentrations were significantly associated with an increased risk for bone fracture. Elevated homocysteine levels are seen to be an important and independent risk factor for osteoporotic fractures, including hip fractures. Elevated homocysteine levels have recently been linked to other disorders. In three recent studies, investigators found an association between elevated homocysteine levels and age-related macular degeneration.

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A study from the Netherlands has shown that among normal individuals aged 30-80, elevated homocysteine concentrations are associated with prolonged lower cognitive performance.

Natural therapies may help to optimize homocysteine levels. You may wish to discuss with your doctor the use of vitamin B12, vitamin B6, folic acid, and trimethylglycine.

7. C-Reactive Protein

Increasingly, medical science is discovering that inflammation within the body can lead to a range of life-threatening degenerative diseases such as coronary heart disease, diabetes, macular degeneration, and cognitive decline. By measuring your body's level of inflammation through regular C-reactive protein testing, you can devise a strategy of diet, exercise, and supplementation to halt many of these conditions.

C-reactive protein (CRP) is a sensitive marker of systemic inflammation that has emerged as a powerful predictor of coronary heart disease and other diseases of the cardiovascular system.

The highly sensitive cardiac CRP test measures C-reactive protein in the blood at very early stages of vascular disease, allowing for appropriate intervention with diet, supplements, or anti-inflammatory therapy. The cardiac CRP test detects much smaller levels of inflammation than the basic CRP test, so is therefore able to identify at-risk patients earlier, even among apparently healthy persons.

A review of epidemiological data found that high-sensitivity cardiac CRP was able to predict risk of incident myocardial infarction, stroke, peripheral arterial disease, and sudden cardiac death among healthy individuals with no history of cardiovascular disease, as well as predict recurrent events and death in patients with acute or stable coronary syndromes. This inflammatory marker provided prognostic information that was independent of other measures of risk such as cholesterol level, metabolic syndrome, and high blood pressure. Investigators concluded that greater levels of cardiac CRP are associated with higher cardiovascular risk.

"In older men and women, elevated C-reactive protein was associated with increased 10-year risk of coronary heart disease, regardless of the presence or absence of cardiac risk factors. A single CRP measurement provided information beyond conventional risk assessment, especially in [men and women at intermediate levels of risk]."

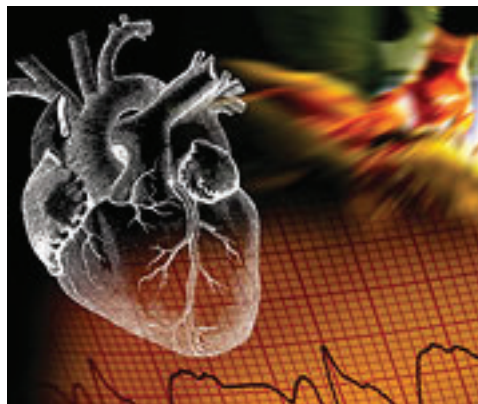
Increased levels of C-reactive protein have previously been strongly linked with a greater risk of developing type II diabetes. In a prospective study of 32,826 healthy women, elevated CRP levels were a strong independent predictor of type II diabetes. According to investigators, these data support the role of inflammation in the pathogenesis of type II diabetes.

C-reactive protein is also an independent risk factor for the progression of age-related macular degeneration, according to recent research published in the Archives of American Ophthalmology.

This follows a study by the same authors, in which elevated CRP levels were shown to be an independent risk factor for age-related macular degeneration, implicating "the role of inflammation in the pathogenesis of [age-related macular degeneration]."

Elevated levels of CRP have also been associated with the loss of cognitive ability in seemingly healthy people.

Furthermore, elevated CRP levels have been strongly associated with major depression in men. High-sensitivity CRP testing likewise reveals systemic inflammation that is associated with disease activity in patients with rheumatoid arthritis. Natural therapies may help to optimize high-sensitivity CRP levels. You may wish to discuss with your doctor the use of fish oil, L-carnitine, and soluble fiber before meals.



8. Thyroid Stimulating Hormone (TSH)

Secreted by the pituitary gland, thyroid stimulating hormone (TSH) controls thyroid

hormone secretion in the thyroid. When blood levels fall below normal, this indicates hyperthyroidism (increased thyroid activity, also called thyrotoxicosis), and when values are above normal, this suggests hypothyroidism (low thyroid activity). Overt hyper- or hypothyroidism is generally easy to diagnose, but subclinical disease can be more elusive.

Because the symptoms of thyroid imbalance may be nonspecific or absent and may progress slowly, and since many doctors do not routinely screen for thyroid function, people with mild hyper- or hypothyroidism can go undiagnosed for some time. Undiagnosed mild disease can progress to clinical disease states.

This is a dangerous scenario, since people with hypothyroidism and elevated serum cholesterol and LDL have an increased risk of atherosclerosis.

Mild hypothyroidism (low thyroid gland function) may be associated with reversible hypercholesterolemia (high blood cholesterol) and cognitive dysfunction, as well as such nonspecific symptoms as fatigue, depression, cold intolerance, dry skin, constipation, and weight gain. Mild hyperthyroidism is often associated with atrial fibrillation (a disturbance of heart rhythm), reduced bone mineral density, and nonspecific symptoms such as fatigue, weight loss, heat intolerance, nervousness, insomnia, muscle weakness, shortness of breath, and heart palpitations.

One study found that TSH levels greater than 2.0 mU/L increase the 20-year risk of developing hypothyroidism,⁴² while another study found that TSH levels greater than 4.0 mU/L increase the risk of heart attack in elderly women. Recently, published data showed that sub-clinical hypothyroidism was associated with an increased risk of congestive heart failure among older adults with TSH levels of 7.0 mU/L or greater.

In healthy postmenopausal women, TSH levels at the low end of the normal range (0.5-1.1 mU/L) are associated with low bone mineral density and a 2.2-fold greater risk of osteoporosis, according to a study published in 2006 in the journal *Clinical Endocrinology*. Measuring TSH is the best test for assessing thyroid function. Screening for TSH levels beginning at age 35, and every five years thereafter.⁴⁶ If results are abnormal, assessing TSH in conjunction with levels of triiodothyronine (T3) and thyroxine (T4) blood levels may help assist definitive diagnosis.

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Natural therapies may help to support thyroid health and optimize TSH levels. You may wish to discuss with your doctor the use of L-tyrosine, iodine, and selenium.

9. Testosterone (Free)

Testosterone is produced in the testes in men, in the ovaries in women, and in the adrenal glands of both men and women. Men and women alike can be dramatically affected by the decline in testosterone levels that occurs with aging. In the serum of both men and women, less than 2% of testosterone typically is found in the free (uncomplexed) state. Unlike bound testosterone, the free form of the hormone can circulate in the brain and affect nerve cells.

Testosterone plays different roles in men and women, including the regulation of fertility, libido, and muscle mass. In men, free testosterone levels may be used to evaluate whether sufficient bioactive testosterone is available to protect against abdominal obesity, mental depression, osteoporosis, and heart disease. In women, low levels of testosterone have been associated with decreased libido and well-being, while high levels of free testosterone may indicate hirsutism (a condition of excessive hair growth on the face and chest) or polycystic ovarian syndrome. Increased testosterone in women may also indicate low estrogen levels.

Men: In men, testosterone levels normally decline with age, dropping to approximately 65% of young adult levels by age 75. This drop in testosterone is partially responsible for the significant physiological changes seen in aging men. In fact, low levels of testosterone are associated with numerous adverse health conditions, including diminished libido, metabolic syndrome, erectile dysfunction, loss of muscle tone, increased abdominal fat, low bone density, depression, Alzheimer's disease, type II diabetes, and atherosclerosis. New research shows that low testosterone levels are a risk factor for ischemic heart disease in men. A relationship between decreased testosterone levels and increased severity of thoracic aortic atherosclerosis in men.

Women: Following menopause, levels of testosterone in women decrease, along with a concomitant decline in libido, mood, and general well-being. Although women

produce only small quantities of testosterone, evidence indicates that this important hormone helps women maintain sexual function, as well as muscle strength and mass. Investigators reporting in the *Journal of Clinical Endocrinology and Metabolism* found that when obese women were given low doses of a synthetic testosterone analogue, they lost more body fat and subcutaneous abdominal fat, and gained more muscle mass, than women given placebo. The testosterone-supplemented women also experienced a slight increase in resting metabolic rate. Optimal testosterone levels may support healthy mood, libido, body composition, and cardiovascular wellness. You may wish to discuss with your doctor the use of supplements such as DHEA and pregnenolone. Speak to your physician to determine whether prescription testosterone may also be helpful for you.

10. Estradiol

Like testosterone, both men and women need estrogen for numerous physiological functions. Estradiol is the primary circulating form of estrogen in men and women, and is an indicator of hypothalamic and pituitary function.

Men produce estradiol in much smaller amounts than do women; most estradiol is produced from testosterone and adrenal steroid hormones, and a fraction is produced directly by the testes. In women, estradiol is produced in the ovaries, adrenal glands, and peripheral tissues. Levels of estradiol vary throughout the menstrual cycle, and drop to low but constant levels after menopause.

In women, blood estradiol levels help to evaluate menopausal status and sexual maturity. Increased levels in women may indicate an increased risk for breast or endometrial cancer. Estradiol plays a role in supporting healthy bone density in men and women.

Low levels are associated with an increased risk of osteoporosis and bone fracture in men and women as well. Elevated levels of estradiol in men may accompany gynecomastia (breast enlargement), diminished sex drive, and difficulty with urination.

Women: Diminished levels of estradiol correlate with low levels of bone mineral density, which is a strong risk factor for osteoporosis. Optimizing estradiol levels in early menopausal women has been

associated with relief from hot flashes, irritability, and insomnia. Lower estradiol levels in women are associated with higher levels of markers of cardiovascular disease risk.

Men: In older men, low levels of estradiol have been linked with an increased risk of vertebral fractures; conversely, estradiol levels are found to be positively associated with bone mineral density, suggesting an association between low serum levels and the development of osteoporosis. A recent study from France found a correlation between low estradiol and skeletal frailty.

Significant positive correlations were found between estradiol levels and levels of total cholesterol, according to results from a recently published study of 111 men with stable coronary artery disease. Estradiol has a possible role in “promoting the development of atherogenic lipid milieu in men with coronary artery disease.” Optimal estradiol levels may support healthy bone density, cardiovascular health, and well-being. You may wish to discuss with your doctor the use of supplements such as DHEA, pregnenolone, soy, black cohosh, and pomegranate. Speak to your physician to determine whether prescription therapies such as bioidentical estrogens may also be helpful for you.

SUMMARY

Yearly blood testing is a simple yet powerful strategy to help you proactively take charge of your current and future health. A well-chosen complement of blood tests can thoroughly assess your overall state of health, as well as detect the silent warning signals that precede the development of serious diseases such as diabetes and heart disease.

Many diseases and disorders are treatable when caught early, but can severely impair the quality and length of your life if left unattended. Identifying these hidden risk factors will enable you to implement powerful strategies such as proper nutrition, weight loss, exercise, supplements, and medications in order to prevent progression to full-blown, life-threatening diseases. Blood testing can also detect biochemical changes that threaten well-being and quality of life, such as declining levels of sex hormones. Armed with information on important health biomarkers, you and your physician can plan and execute a strategy to help you achieve and maintain vibrant health.

What is a Mental Health Treatment Plan? Why is it Important?

A mental health treatment plan is a tool used by doctors, counselors/therapists, and clients to shape the focus of **mental health therapy**. A mental health care plan helps therapists and clients make positive change happen through purpose, focus, and direction.

At a basic level, mental health treatment plans help people manage mental health problems and develop opportunities for change and growth. Simultaneously, they help ensure safety through proper care and treatment; indeed, all aspects of a treatment plan must be sound and part of a **mental health counselor's** high quality, effective practice. And if you are engaging in **mental health counseling** as a patient, you should have one in place. The beauty of a mental health treatment plan is that it helps people separate who they are from the problems they're experiencing and become unstuck, able to move forward positively. A mental health therapist is like a tour guide, the client is the adventurer, and the treatment plan is a colorful map to the client's happy and healthy place.

Who Needs A Mental Health Treatment Plan?

Mental health treatment plans are for everyone experiencing mental health challenges and difficulties with life as well as for people who have been diagnosed with mental illness. Treatment plans are for anyone and any issue. A partial list of who and what treatment plans are for includes:

- People living with a **serious mental illness**
- People experience distress in one or more areas of life (work, school, relationships, etc.)
- Children
- Adults
- Elderly
- Individuals
- Couples
- Families
- People with developmental disabilities
- People experiencing sexual or gender identity issues
- People being bullied and/or abused
- Bullies and/or abusers
- Parents
- People in the criminal justice system
- Employers
- Employees
- and more.

Both therapy and accompanying mental health care plans are truly for everyone and every



difficulty. With such a wide range of people and challenges, treatment plans can't be one-size-fits all approaches to healing and wellness.

While mental health treatment plan templates exist to help in the creation of a plan, these ideally are mere guidelines. Mental health treatment plans help doctors and counselors consider the nature of the problem or disorder to this individual client and to consider this client's individual situation, characteristics, and goals.

Because mental health issues are personal (what bipolar disorder is specifically like for one person will look slightly different in another), and because each person is unique, a one-off in the world, so too must be mental health treatment plans. A particular treatment, such as specific **mental health medication** or a particular therapeutic approach, can work well with one person but not at all with the next. Therefore, treatment plans are individualized approaches to therapy.

Creating a Mental Health Treatment Plan

After initial assessment is complete and a diagnosis made, mental health doctors, therapists, and clients collaborate to develop a treatment plan. When doing so, important factors are considered:

- The nature of the disorder
- Client characteristics, including his or her strengths
- The specific treatment approach to be used

The emphasis in creating a treatment plan is on how things will be different at the end of treatment and how clients will remain healthy.

Treatment planning is a process that involves multiple steps:

- Identification of the problem and the most important issues
- Specific definition of the issues
- Development of measureable short- and long-term goals
- Creation of the interventions that will help reach the goals
- Important guiding concepts in a treatment plan involve:
- A picture of what's going on for the client right now
- A vision of what the client wants and possibilities for the future
- The creation of a forward path to help clients achieve what they need and want

Mental health treatment plans are comprehensive and incorporate all facets of a client and his or her treatment. Plans for success address thoughts, feelings, and behaviors. They incorporate specific strategies and types of therapy, including mental health medications. Mental health difficulties are all-encompassing, impacting someone's internal and external worlds; so, too, must a treatment plan.

Mental Health Treatment Plans are Positive

Effective mental health treatment plans, those colorful maps, do what the person wants and needs them to do. Treatment plans empower him or her to take charge of his or her own life, address mental health distress, and move forward toward that happy and healthy place with **strong mental health, emotional health**, and wellbeing.

How Do You Know If You Need Mental Health Therapy?

Aren't sure whether you Need Psychotherapy? Here's How To Tell Whether You Might Benefit From Therapy.

Book Description

How do you choose among hundreds of available therapies-offered by psychiatrists, psychologists, social workers, and counselors-to help you conquer painful feelings, unbearable anxiety, dysfunctional relationships, or out-of-control behavior? What are the sessions like? How will you know if your therapy is working and when it is time to stop? Veteran medical journalist Carl Sherman gives you the tools to make smart decisions about getting professional help.

Chapter 1

Things aren't going well. You leave for work with a sense of dread and come home half-dead with fatigue. You fight incessantly with those you love-or can't find anyone to love. The toll of smoking or excessive drinking is obvious, even to you, but you keep on doing it.

Maybe something happened to knock you off balance. You lost your job a month ago, and now it's hard to get up and get dressed. A friend is terminally ill, and you can't put thoughts of him out of your mind. Since that emergency landing at O'Hare, every business trip gives you nightmares.

Or there's nothing really wrong, nothing you can put a finger on. But one day you realize that you've been struggling through the motions in a miasma of low-level discomfort and dissatisfaction. Whatever you do doesn't seem like the right thing, and none of it gives much pleasure.

What are you going to do? There's no shortage of books to tell you how to heal whatever ails you, no lack of talk-show gurus with wise advice on everything from beating the blues to finding lasting love or the job of your dreams. Maybe you've assembled your own little arsenal of strategies that help when the burdens get heavy and the skies refuse to brighten: taking a long, strenuous walk, a hot bath, a vacation. Volunteering at a soup kitchen. Cultivating your garden.

Friends and family are an age-old source of solace in times of trouble. Human beings are essentially social creatures; we need each other, and a sympathetic ear, an encouraging word can work wonders. It's been shown that simply having a confidant-someone you can trust to listen and care-reduces stress, eases anxiety, and lifts mood.

But sometimes the usual fixes just don't work; you know you've got a problem, and it's not about to go away. And the question comes up, moves up rapidly from the back of your mind (or perhaps it's suggested-diplomatically or otherwise-by a friend or loved one): should you



go for therapy?

What Is Psychotherapy?

We all know what therapy is-until we try to pin it down, and realize how many very different things have come to carry the label. "Therapy" can last six weeks or six years. It may involve two people-you and the therapist-or your whole family, or even a group of strangers. You may talk about today's crisis or last night's dreams, or events you can scarcely remember. You may be encouraged to keep a diary of your thoughts, or to free-associate. To pound pillows or to take pills. What do they all have in common? No matter what particular form therapy takes, the essence is an ongoing relationship; whatever else happens, the closeness and trust between patient and therapist-what is called the "therapeutic alliance"-is a key factor. It even appears to be important when medication is the main treatment. Therapy is a unique type of relationship, and what makes it valuable is what sets it apart from friendships, working partnerships, family connections, and love affairs. Its purpose is well defined: understanding and change. It comes into being, that is, to help you identify and understand dysfunctional ways of thinking, feeling, and acting, and to generate more productive and satisfying ways of thinking, feeling, and acting.

Friends and family members want to help us when we're in distress, and the advice they offer (with or without solicitation) can be useful. But the kind of counsel you'll get from a therapist is different. Rather than being simply instructive ("Here's what you ought to do"), it's likely intended to be a catalyst, to quicken your own ability to work things out.

Perhaps the most essential difference between therapy and other significant relationships is a matter of balance. You and the therapist are collaborating on a single project: helping you deal with your problems and achieve the changes you want. There is no other agenda. This makes it very different from even close,

supportive friendships in which you pour out your troubles and get a sympathetic ear and even useful feedback. Eventually, your friend will get bored, or tired, or simply need to talk herself. The essence of friendship is mutuality: you meet each other's needs. In therapy, your needs are what matter. The word itself, therapy, comes from a Greek word meaning "to serve." You receive the service-of being listened to, understood, helped-not out of friendship, love, or altruism, but for a fee. Crass as it sounds, this is a strength of therapy-there are no strings attached.

Another essential quality of therapy is safety. If it works well, you can be yourself, say what you feel, reveal your fantasies, fears, and aspirations, without repercussions. The therapist's professional role includes receiving your disclosures without moral judgment or rancor. You won't be ridiculed, censured, or resented-not when you speak, not a week or a year later. Can your best friend, spouse, or parent offer this guarantee?

You can say whatever you need to and know it will go no further. Confidentiality is a key component of the therapeutic relationship, as it is in certain religious settings. With the exception of certain well-defined circumstances (to be discussed fully later), the therapist is bound by ethics, and by law, to reveal nothing that transpires during your sessions. The communication, in fact, is privileged, which means that the therapist cannot be required (again, with exceptions) to reveal what you've said, except under court order.

Part of the safety zone in which therapy takes place is its reliability. It generally happens at the same place and at the same time, and follows a predictable format. It isn't contingent on your performance-the therapist won't get up and leave if you fail to keep her entertained or to live up to her expectations. Even intimate relationships can be jeopardized when one of the partners goes through personal changes ("You don't seem like yourself"), but in therapy, change is the whole point.

In addition to everything else, therapy is an educational experience. Some therapists actually describe what happens as a kind of learning, and compare their role to that of a teacher or coach. But even when this isn't explicit, any kind of effective therapy leads you to step back and reconsider what you may have always taken for granted, to try out new ways of looking at yourself, your emotions, and your world.

Who Needs Therapy?

There's little doubt that many people could use

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Mental Health Therapy?

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professional help. Nearly a half-century ago, when epidemiology in this area was somewhat less rigorous than it is today.

Most suffer from some form of depression or anxiety severe enough to cause marked distress or interfere with work or personal life. Significantly, functional impairment due to emotional ills-their problems made it truly difficult to go about their daily lives.

"Just as practically no one gets through life without a physical ailment, very few can without significant psychological ailments, conflicts, and stresses," says Jeffrey Binder, Ph.D., director of doctoral and master's clinical training at the Georgia School of Professional Psychology in Atlanta.

An identifiable crisis, loss (of a job, romantic partner, or close relative), or trauma propels many people into therapy. For others it's the culmination of a lengthy process; the problem is long-standing, and now the time seems right. Symptoms, like anxiety or difficulty concentrating, have become severe enough to interfere with your life. Perhaps your work is suffering.

"The key idea is perception," says Sharon Hymer, Ph.D., a clinical psychologist practicing in New York City. A family conflict may have been simmering for years, or a romantic disappointment may be just the latest act of a long-running drama. But on top of that, there's a feeling of demoralization. "People go to therapy when they perceive themselves in a crisis that they can't resolve by themselves and with the help of friends." (The kindling of hope, experts say, is often the first big benefit of effective therapy.)

Feeling you are out of your depth is a key indicator that it's "time to ask for some help. Think of therapy when you feel trapped, with nowhere to turn, when it seems that things aren't getting better, when worry becomes chronic and never leads to any answers, or when emotional unease spills over and affects the way you eat or sleep, or takes a toll on your job or personal life.

Psychiatrists often treat those at the more seriously ill end of the spectrum. Personality change, extreme highs and lows, excessive



anxiety, anger, hostility, or violent behavior as indications for a prompt consultation. Thoughts (or talk) of suicide are a warning that immediate help is needed.

The mind and body are closely connected, and some signs that therapy may be helpful are physical. Unexplained, often vague symptoms-fatigue, frequent headaches, backaches, or other troublesome pains, frequent digestive upset, even pesky skin conditions-can reflect depression, anxiety, or a burnout level of stress. Such problems may accompany emotional distress or take their place. When a thorough medical work-up finds nothing, consider a psychological explanation.

On the other hand, a life-threatening illness such as cancer or heart attack, or a painful chronic condition like arthritis, often outstrips one's ability to cope. Psychotherapy doesn't take the place of medical care, but it can supplement it: in fact, substantial data suggests that people with serious illness do better physically if they take effective steps to deal with the emotional turmoil it creates. While there's little solid data on just who seeks therapy, mental disorders like anxiety and depression in their various forms, the motivating forces included family or sexual problems, work woes, stress-related symptoms, problems coping with grief, and difficulties with alcohol or drugs.

Many Who Need Psychological Help, Don't Get It

Most significant emotional problems, however, remain untreated. The surgeon general's report noted that only one third of people with a diagnosable condition were getting any sort of help with it, and just over half of these were in treatment

with a specialist such as a psychologist or psychiatrist. You may be in serious distress; you've done what you can to make things better, and it hasn't been enough. Your work, family life, or friendships are somewhat the worse for wear. Yet you hold back. You just can't take the next step toward getting help. Why does this happen so often? For one thing, there's a persistent notion that we should be able to do it on our own, that it's shameful to need help. Some people fear that they'll give up control of their lives by submitting to the influence of someone with a sophisticated knowledge of human nature, or coerced into taking drugs. Or that they'll be "homogenized" by therapy, lose their individuality, become some sort of processed clone. They think that therapy must be a lengthy process that inevitably requires rehashing all of childhood and opening up a Pandora's box of repressed impulses. Or that nothing will really help-their problems are so hopeless that they are beyond therapy. And there's stigma. Although much progress has been made in recent years, a lot of baggage still attaches to mental health problems-the idea that anyone who seeks therapy is "crazy" or "disturbed," somehow damaged or less than whole. Many such attitudes come from images of therapy and therapists promoted in our culture.

The best way past these obstacles is information. Learning, for example, that an explicit goal of good therapy is to help you become more individual and creative, not less so. That many effective kinds of therapy focus on the present and pay little attention to ancient history. That the "nothing will help" feeling is itself a symptom of emotional trouble (specifically, depression), not a realistic appraisal.

Coming to Terms with a Family Member's Mental Illness

Accepting your family member has a mental illness can be difficult. Learn about the process of acceptance and the emotional difficulties of caring for a loved one with a psychological disorder.

For Family Members Caring for Relatives with a Mental Disorder

Introduction

Too often, families coping with a psychiatric disorder in a close relative neglect their own health. They are so emotionally involved that they fail to realize that they are under tremendous strain. This article is based on ideas from families around the world.

When anyone gets sick with any serious disorder they go through the various stages outlined in this article. Disbelief and denial are the first to appear, followed shortly after by blame and anger. When someone becomes ill with a brain disorder like schizophrenia, feelings and emotions are not very much different. What may be different is the long time people take to recognize mental illness and the need to seek treatment.

We hope that the pointers presented here will help families understand that feelings of loss, blame and sorrow are quite normal and that there are ways of overcoming them in time.

Denial

Most people, when faced with the diagnosis of schizophrenia in a loved one, go through a phase of denial. This makes it very difficult for other members of the family to cope. Any efforts they make on the "patient's" behalf may be stymied when another family member won't accept the diagnosis. Removing the defenses of a family member who is protecting himself by denying that a real disorder is at work is difficult and distressing. Arguments may occur to disrupt the household even further.

There is no particular solution to this problem except to provide information about the mental illness, so that the person can see that many of the events happening in his family could be related to the disorder. Time may be the ingredient necessary for acceptance even when knowledge and support are available.

Blame

Sometimes families look around for a scapegoat for their situation. A common one is the doctor/psychiatrist. Sometimes the victim (patient) himself



comes in for some blame. The sooner everyone realizes that the real enemy is the brain disorder itself, the sooner they can begin to cooperate with each other and work towards the person's recovery.

Shame

To come to terms with feelings of shame, it is necessary to assess how you felt about mental illness before it happened to you. If your attitude was of compassion before, then you may have no problem with shame. If you viewed mental illness with fear, extreme embarrassment or even horror, your feelings of shame will be difficult to overcome. Remember that 30 years ago people were ashamed if a relative developed cancer. It was spoken of in whispers because it frightened and horrified people. Today, no one would dream of being ashamed over cancer. Through education, understanding and better medical knowledge, society has come to terms with a devastating disease. In time, this will be true about schizophrenia and other psychological disorders. You may feel that you cannot tell anyone about the mental illness in your family, but making up false excuses, or white lies, for your relative's behavior will only compound the problem. Confide in close friends who will lend positive support. Finding the words is sometimes difficult. For instance, calling schizophrenia "a mental breakdown" or a "thought disorder" is an introduction to further explanation; if you cannot bring yourself to say the word. Explain some of the symptoms. Your friends will want to know, as you did, what schizophrenia means. You may want to join a self-help group where your problems will be treated in confidence, where you can speak freely about your experiences and fears. In many countries, schizophrenia family organiza-

tions provide a help line where you can talk about your situation. You should also request information from this source. There are also chat sites on the internet.

Guilt

Whenever anyone gets any illness, members of the family wonder how the illness developed. The difference with mental illness is that society has, for a long time, erroneously believed that it had to do with family life or events in one's past. Thus people spend endless hours wondering if, in some mysterious way, they could be responsible for the illness. It is doubtful whether families can avoid this soul-searching but it is important that this initial reaction be overcome.

By listening to informed speakers through a self help group (WFSAD can provide literature and put you in touch with a local group), by watching documentary films and listening to radio programs about schizophrenia and by speaking to other families experiencing similar problems, you will realize that you are not to blame. More and more research indicates that schizophrenia is a biological brain disease with an as yet unknown cause. Guilt over being well while one's loved one is ill is a common occurrence, particularly among siblings. It is difficult to enjoy your successes-a first job, attending college, relationships with friends, while your brother or sister has none of these. It is paradoxical that dwelling on these things may reduce your own self-worth. Parents may not appear to value your achievements because they do not want to upset the person who is ill. Support from close friends should enable you to rebuild your sense of self-esteem and your ability to be proud of your own achievements. Parents should not neglect their children who are well.

DIAGNOFIRM CELEBRATES MR ABDUL RAHIM CHAND'S AWARD

Mr M I Chand the Director and CEO of Diagnofirm Medical Laboratories was honoured to receive an award on behalf of his late grandfather Mr Abdul Rahim Chand.

The awards were presented by His Excellency the President Lieutenant General Dr Seretse Khama Ian Khama during the 50th Anniversary of independence celebrations held at the National Stadium in Gaborone.

Mr Abdul Rahim Chand was an active member of the Lobatse Community in the early 1960s and was also elected as a member of the Legislative Council. He was the first chairperson of the Botswana Muslim Association (BMA) at its formation in 1954. In 1958 he ensured BMA donated four wards to the Kanye SDA Hospital. He was also part of the team that lobbied the Muslim community and raised money to start a school that catered for the Indian community in Botswana. The money raised was given to the government and the Lobatse Indian School (known as Crescent School today). He was also instrumental in the erection of the first Mosque in Lobatse in 1967.

Mr A R Chand did not only advocate for the Muslim Community, he also ensured that he represented Bo-

tswana. He contributed to international trade as he imported goods from Northern Rhodesia into Botswana. He looked after the less fortunate especially the elderly in Peleng ward by distributing water from his house to the rest of the ward. He was among the first employers to provide his staff with decent accommodation by building houses for them in Peleng. He also assisted political refugees from South Africa, whom he housed, clothed and offered jobs in his business.

Mr A R Chand's life and his contribution to the development of Botswana is worth celebrating. His grandson (Mr M I Chand) and the team at Diagnofirm Medical Laboratories in Gaborone took out time to celebrate him. Seeds sown by the grandfather have flourished in his grandson as DML has also been active in corporate social responsibilities (CSR) directed by his grandson, our CEO Mr Chand. Similarities between the two can be noted, a case in point being the Borehole Donation at Mathethe, a village with no connection to Diagnofirm or the CEO. However Mr Chand felt compelled to help

when his house worker told him of the villagers' plight of having no water. Other CSR activities include donation of blankets to the needy in winter and responding to the President's housing appeal by building houses for the less fortunate. No matter how small the contribution one makes the effect is felt by a huge part of the population.

As a company we are currently focused on partnering with the University Of Botswana School Of Medicine in the "Great Idea" of training Pathologist locally. This will help the country become self-sufficient in the Pathology sector, saving lives and huge amounts of money for the Ministry of Health.

This once again comes at no cost to the University of Botswana or the Ministry of Health. All these humanitarian efforts are a direct result of the upbringing of our director and CEO in a family that cared for fellow human beings and helping all those around them irrespective of race, colour or religion. Working in this environment has taught us, the staff, the meaning of compassion and has helped us become better human beings. We treasure the feelings we have endured when helping people all over the country, no words can describe how one feels when he/she has made both young and old people happy. It is a totally uplifting feeling and that buzz will live in us for the rest of our lives.



DML Management team



David, Peter and Mr M I Chand



David, Peter and Henry

DIAGNOFIRM CELEBRATES MR ABDUL RAHIM CHAND'S AWARD



Mr M I Chand with some of the DML staff



Nursing dept team



Mr M I Chand, Henry and front office team



Boitumelo, Chatiwila and Sethabile in deep discussion, with Mr MI Chand



Mr M I Chand and the lab team



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PROCALCITONIN TESTING

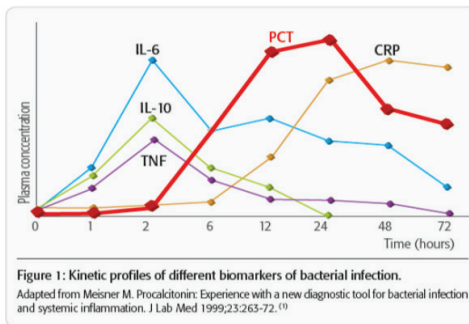
Antibiotic overuse and misuse represents a significant healthcare burden, in terms of treatment costs, but also the increased risk of resistant micro-organisms. This calls for more effective efforts to reduce the unnecessary and prolonged use of antibiotics in self-limiting non-bacterial and resolving bacterial infections. To help achieve this aim, diagnostic tools and biomarkers are urgently needed which allow better assessment of a patient's risk of having an infection, and their response to antibiotic therapy.

One such blood biomarker is procalcitonin (PCT), which is increasingly used in clinical practice for improved patient management. PCT is the precursor peptide or prohormone of the mature hormone calcitonin. PCT is released in multiple tissues in response to bacterial infections via a direct stimulation of cytokines and shows an interesting kinetic profile, making it a better marker for bacterial infection compared to cytokines and CRP.

Cytokines such as interleukin 6 (IL-6) and tumour necrosis factor (TNF) show a fast initial spike upon bacterial infection, however, the levels get back to normal within a few hours. The high variability of these markers has been a major challenge for their use in clinical practice. C-reactive protein (CRP), on the other hand, increases slowly with a peak after 48-72 hours and a slow decrease thereafter. CRP is usually considered a biomarker for inflammation rather than infection.

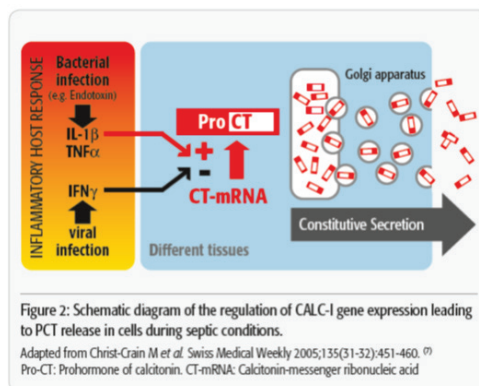
In adults, PCT increases promptly within 4-6 hours upon stimulation and decreases daily by around 50% if the bacterial infection is controlled by the immune system supported by effective antibiotic therapy (Figure 1). These characteristics make PCT an interesting biomarker for monitoring patients with systemic infections and sepsis and for more informed decisions on prescription and duration of antibiotic therapy. As PCT levels do not show a steep decrease in non-responding infections, monitoring its course also has prognostic implications. Its production is induced in response to microbial toxins and to certain bacterial-induced cytokines, particularly IL-1, TNF and IL-6, and is released in the bloodstream where it can be measured (Figure 2).

Figure 1



Conversely, PCT production is attenuated by certain cytokines released in response to a viral infection, particularly interferon- γ (IFN- γ). This selective cellular mechanism makes PCT a useful diagnostic biomarker, which is more specific for bacterial infections compared to other inflammatory markers (i.e. CRP) and helps to distinguish bacterial infections from other inflammatory reactions or viral infections. Traditional culture methods, such as blood cultures, focus on identification and characterization of pathogens. This is important to know which antibiotics should be used and to understand resistance patterns. They do not, however, inform about the host response to the infection, which depends on the virulence of the micro-organism and the severity of infection. PCT, on the other hand, mirrors the patient's response to the infection and therefore indirectly the extent and severity of infection. With new microbiological methods becoming available that rapidly identify micro-organisms with higher sensitivity, PCT may help to increase specificity of these methods by providing information about the severity and "relevance" of microbial culture results in individual patients.

Figure 2



PCT is therefore better considered as a measure of a patient's response to infection and indirectly the extent and severity of infection. It helps to estimate the likelihood of a relevant bacterial infection, as with increasing PCT concentrations, a relevant and serious bacterial infection becomes likely. Conversely, an alternative diagnosis becomes more likely if PCT levels remain low.

In the laboratory, PCT testing is available on a number of platforms including the Biomerieux Vidas systems. At Diagnostifirm the Biomerieux Vidas system is used for testing PCT. Samples in plain tubes (red/yellow tops with no gel), serum-separator tubes (red/yellow tops with gel) and lithium heparin tubes (green tops) are used for testing (Figure 3). EDTA tubes (purple tops) should not be used as EDTA interferes with the testing system.

Figure 3: Blood collection tubes



WORLD BREASTFEEDING WEEK

World Breastfeeding Week is celebrated every 1-7th of Aug to encourage breastfeeding and improve the health of babies around the world.

Breastfeeding is the best way to provide infants with the nutrients they need. WHO recommends exclusive breastfeeding starting within one hour after birth until a baby is 6 months old. Nutritious complementary foods should then be added while continuing to breastfeed for up to 2 years or beyond. This year, WHO is encouraging people to “Support mums to breastfeed anytime, anywhere,” as all of society has a role to play in making our communities more breastfeeding-friendly.



Facts on breastfeeding

Breastfeeding is one of the most effective ways to ensure child health and survival. If every child was breastfed within an hour of birth, given only breast milk for their first six months of life, and continued breastfeeding up to the age of two years, about 800 000 child lives would be saved every year¹.

Globally, less than 40% of infants under six months of age are exclusively breastfed. Adequate breastfeeding counseling and support are essential for mothers and families to initiate and maintain optimal breastfeeding practices. WHO actively promotes breastfeeding as the best source of nourishment for infants and young children. This fact file explores the many benefits of the practice, and how strong support to mothers can increase breastfeeding worldwide.

Promoting proper feeding for infants and young children

The challenge



Initiation of breastfeeding within the first hour of life

Malnutrition is responsible, directly or indirectly for about one third of deaths among children under five. Well above two thirds of these deaths, often associated with inappropriate feeding practices, occur during the first year of life.

Nutrition and nurturing during the first years of life are both crucial for life-long health and well-being. In infancy, no gift is more precious than breastfeeding; yet barely one in three infants is exclusively breastfed during the first six months of life.

The response

The World Health Organization recommends that infants start breastfeeding within one hour of life, are exclusively breastfed for six months, with timely introduction of adequate, safe and properly fed complementary foods while continuing breastfeeding for up to two years of age or beyond.

Promoting sound feeding practices is one of the main programme areas that the Department of Nutrition for Health and Development focuses on. Activities include the production of sound, evidence-based technical information, development of guidelines and counselling courses, provision of guidance for the protection, promotion and support of infant and young child feeding at policy, health service and community levels, production of appropriate indicators and maintenance of a Global Data Bank on Infant and Young Child Feeding.

Breastfeeding is the normal way of providing young infants with the nutrients they need for healthy growth and development. Virtually all mothers can breastfeed, provided they have accurate information, and the support of their family, the health care system and society at large.

Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth. Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond.

Infant and young child feeding

Key facts

- Every infant and child has the right to good nutrition according to the “*Convention on the Rights of the Child*”.
- Undernutrition is associated with 45% of child deaths.
- Globally in 2015, 156 million children under 5 were estimated to be stunted (too short for age), 50 million were estimated to be wasted (too thin for height), and 42 million were overweight or obese.
- About 43% of infants 0–6 months old are exclusively breastfed.
- Few children receive nutritionally adequate and safe complementary foods; in many countries less than a fourth of infants 6–23 months of age meet the criteria of dietary diversity and feeding frequency that are appropriate for their age.
- Over 800 000 children’s lives could be saved every year among children under 5 years, if all children 0–23 months were optimally breastfed. Breastfeeding improves IQ, school attendance, and is associated with higher income in adult life.
- Improving child development and reducing health costs through breastfeeding results in economic gains for individual families as well as at the national level.

A close-up, high-speed photograph of water being poured from a glass pitcher into a clear glass. The water is captured mid-pour, creating a dynamic splash with many small bubbles and ripples. The background is a soft, out-of-focus blue, and the entire scene is framed by a thin dark blue border.

DRINK LOTS OF WATER
EXERCISE
AND STAY
HEALTHY

DIAGNOSTICS