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NEWSLETTER
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From my Keyboard

With the severe water shortage that the country is currently experiencing, water rationing from the city councils is inevitable. The public needs to pay attention to the warnings against the careless use water. Apart from conservation, there is the need to ensure safe drinking water to avoid disease outbreaks. Water-borne diseases constitute the single largest category of health threats in the world. When desperate some people may not be conscious of the dangers implicated in drinking water that has not been treated. Untreated water for drinking purposes may contain microbiological water-borne disease causing organisms that may affect us in a number of ways if ingested.

Water shortages will unavoidably result in poor sanitation, which leads to all sorts of life threatening diseases. It is very important that we conserve the little water we have left because if we don't, disease outbreaks will be some of the major complications coming from water shortages that we will have to deal with. Benjamin Franklin said **' when the well is dry, we learn the value of water'**; please do not let us learn the hard way ■

"WATER IS LIFE"

Munyaradzi Mangwendeza Ed.

Inside this Issue

DML Manager Mr. Desire Mhlabi receives the International Arch of Europe award from BID President Jose E. Prieto in Germany

DIAGNOFIRM MEDICAL LABORATORIES

by Desire B Mhlabi

Recent Events @ Diagnofirm

International Arch of Europe Award – An Oscar of Quality

Diagnofirm Medical Laboratories was recently awarded the International Arch of Europe award (Gold category) in recognition to its commitment to Quality, Leadership, Technology and Innovation. The presentation took place on the 28th of February 2005 at the Inter-continental Frankfurt Hotel in Germany and was presided by Jose E. Prieto (President and CEO of Business Initiative Directions) and was attended by outstanding personalities from the business world, international members of the diplomatic corps in Germany and DML was represented by its Manager Mr. Desire B Mhlabi and Accountant Mr. Senthil Maran.

The award was also accompanied by BID QC 100 TQM (100 points of Total Quality Management) certificate. The award ceremony was attended by business leaders and captains of industry from 70 countries around the globe and was culminated by exchange of business ideas and market information. The awardees for the International Arch of Europe are voted by other companies and clients based on the following criteria

- A quality-driven organization.
- A customer-minded approach and customer satisfaction.
- Job satisfaction.
- Cutting edge technological advancement and renewal.
- Systems efficiency and good communication strategies.
- Good Information and Data analysis.
- Leadership in society and interaction with partners in business.
- Excellent Planning and Decision-making.
- Human Resources.

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Tel: 395 0007 Fax: 395 7980
Cell: 713 02499
Private Bag 283
Gaborone Botswana

Sponsored By: Delta Diagnostics
Plot 838 Pabalelo Way, Extension 2 Gaborone
Tel: 71300780

Tiger Design and Graphics

By Moonya

STRAIGHT TALK

Cleanliness and your health – Typhoid and paratyphoid fevers

Typhoid fever is an infectious feverish disease with severe symptoms in the digestive system in the second phase of the illness. Classic typhoid fever is a serious disease. It can be life threatening, and the disease lasts several weeks and period of recovery takes some time. Typhoid and paratyphoid fevers are common in less-industrialized countries, mainly owing to the problem of unsafe drinking water, inadequate sewage disposal and flooding. Typhoid fever is not a tropical disease and is related to hygiene and sanitary conditions rather than the climate itself. The disease is transmitted from human to human via food or drinking water, and it is therefore mainly hygiene and sanitary conditions that determine its spread. Clean water, hygiene and good sanitation prevent the spread of typhoid and paratyphoid.

Causes

Typhoid and paratyphoid fevers are caused by the bacteria Salmonella typhi and Salmonella paratyphi respectively. Paratyphoid fever is a generally milder disease. Typhoid and paratyphoid germs are passed in the faeces and urine of infected people. People become infected after eating food or drinking beverages that have been handled by a person who is infected or by drinking water that has been contaminated by sewage containing the bacteria. Once the bacteria enter the person's body they multiply and spread from the intestines, into the bloodstream.

Even after recovery from typhoid or paratyphoid, a small number of individuals (called carriers) continue to carry the bacteria. These people can be a source of infection for others. The transmission of typhoid and paratyphoid in less-industrialized countries may be due to contaminated food or water. Fish taken from sewage-contaminated beds is an important route of infection. Where water quality is high, and chlorinated water piped into the house is widely available, transmission is more likely to occur via food contaminated by carriers handling food.

When the bacterium passes down to the intestines, it penetrates through the intestinal lining to the underlying tissue. If the immune system is unable to stop the infection here, the bacterium will multiply and then spread to the bloodstream, after which the first signs of disease are observed in the form of fever. The bacterium penetrates further to the bone marrow, liver and bile ducts, from which bacteria are excreted into the bowel contents.

In the second phase of the disease the bacterium penetrates the immune tissue of the small intestine, and the often-violent small-intestine symptoms begin. Salmonella typhi can only attack humans, so the infection always comes from another human, either an ill person or a healthy carrier of the bacterium. The bacterium can withstand both drying and refrigeration.

Symptoms

The incubation period is 10 to 20 days and depends on, among other things, how large a dose of bacteria has been taken in.

If you have typhoid fever you may have the following symptoms:

- Constant fever up to 40 degrees Celsius
- Diarrhoea
- Constipation
- Stomach pain
- Headache
- Malaise
- Nonproductive cough
- Slow heart rate (bradycardia)
- Vomiting
- Sore throat
- Skin rash
- Inability to think clearly

The symptoms may take 2 weeks or more to go away.

Symptoms can be mild or severe and include rose-coloured spots on the chest area and enlarged spleen and liver. Paratyphoid fever has similar symptoms to typhoid fever but is generally a milder disease. In the mild disease, the bacterium is eliminated very early in the course of the disease and there are perhaps only mild symptoms. It is possible to become a healthy carrier of infection.

There are two phases of classic typhoid fever:

- 1st phase: the patient's temperature rises gradually to 40°C and the general condition becomes very poor with bouts of sweating, no appetite, coughing and headache. Constipation and skin symptoms may be the clearest symptoms. Children often vomit and have diarrhea. The first phase lasts a week and towards the end the patient shows increasing listlessness and clouding of consciousness.
- 2nd phase: in the second to third weeks of the disease, symptoms of intestinal infection are manifested and the fever remains very high and the pulse becomes weak and rapid. In the third week the constipation is replaced by severe pea-soup-like diarrhoea. The faeces may also contain blood. It is not until the fourth or fifth week that the fever drops and the general condition slowly improves.

Complications

Intestinal damage or profuse bleeding from the intestinal lining may occur if typhoid fever is left untreated.

Diagnosis

Laboratory Diagnosis

The clinical picture together with information on travel may be a good pointer for the doctor in moderate to severe cases

The diagnosis of typhoid fever is confirmed by isolation of *Salmonella typhi* bacilli from the blood, stool or urine of a patient with clinical manifestations. Blood culture is surest when done in the first 2 weeks of illness. *S. typhi* may be seen in faeces by the 14th day, and in urine by the 21st day, and may remain there for a long period. In the early stages, there may be a mild leukocytosis, but later a moderate leukopenia and relative lymphocytosis develop.

Specific agglutinins appear in the serum after 7-10 days and can be detected by the Widal reaction, in which agglutination of dead strains of *S. typhi* reacting with the patient's serum shows increasing titers as the disease progresses. The antisomatic O antibody appears first, rises progressively, and later falls and often disappears after a few months. A three- to four-fold rise in antibody titer is considered significant and indicates acute disease. The antiflagellar H antibody appears later but persists longer, for up to 3 years, and is more reliable than the O antibody titer in determining the type of enteric infection. The Widal test has been criticized because it is nonspecific, but it is still useful when positive in high dilution in an individual who has had no previous attack of typhoid and has not been immunized.

Newer methods of serodiagnosis for typhoid, including indirect hemagglutination, indirect fluorescent Vi antibody, and indirect enzyme linked immunosorbent assay (ELISA) for IgM and IgG antibodies to *S. typhi* polysaccharide are all superior to the Widal test in both sensitivity and specificity. The Vi agglutination test has limited use as a screening test for the typhoid carrier state. Phage typing is of help in tracing the source of infection and in its control. The use of monoclonal antibodies against *S. typhi*

Continued to the next page

By Dr. Kopano Mpuang Allmon

FIRST THINGS FIRST: The Definition

Health means different things to all of us. To some it means just being able to wake up that day without the usual cold, headache or backache.....To others it means a fit and beautiful body that fits clothes precisely. To others still it means a sharp intellect. But health means more than a disjointed consideration of what happens to the components of a person, or even the sum total of what descends on the body. Whatever the meaning is to you, ultimately some sense of peace, on whatever level, is insinuated and felt. Health is not the mere absence of disease as people often think it is.

Total health is a dynamic state of being that results from proactive involvement of the concerned with his environment to create a joyous, rejuvenating, focused and creatively productive state of being. It is impossible to be healthy and also sick, lazy, crabby, malicious or even uncentered. Total health is fuel for beauty and a full life. Its attainment is a test of one's dedication to the whole self and a gauge of the esteem of the value of one's self. It requires insight and understanding, acceptance of states of being, a desire for more valuable things and a focused determination for an amalgamation of what it takes to coalesce the parts into that powerful productive whole. "Health is wholeness and balance, an inner resilience that allows you to meet the demands of living without being overwhelmed.....Optimal health should also bring with it a sense of strength and joy, so that you experience it as more than just the absence of disease" Andrew Weil MD. We exist for two reasons, prosperity and health. The latter creates the former.

Total health is art. It is mostly played out on the canvass of our bodies. It originates in our minds, is fuelled by our spirits and is largely influenced by our interaction with our environment. Total health considers and influences the four aspects of man....body, soul, spirit and emotions. It occurs in all of them. It pulls them together and it builds them up, in tandem. Like the Chinese say, a chair must have all four legs to be useful and those legs must be equal.

Total health requires balance and good judgment.

Do you have health? What is your canvass like? Are you productive? Do you sow beauty by your mere presence within yourself and in places? How infectious is your radiance?

Word of warning though.....Let's not think that health is an end point. It is a goal, and one that constantly shifts its position, pulling and urging you onto further and higher terrain even as you focus on it and achieve it. We are ever learning. Ever growing. Ever becoming more and more polished. I agree with Andrew Weil, "Health is a dynamic and temporary state of equilibrium destined to break down as conditions change, but most of the breakdown need not be major (or prolonged –my words). The point is that health is not static; it is normal to lose periodically in order to come back in a better way...."

Tiring? No. How will you ever reach your fullest potential if today's goals are your only destination? Optimal health is like the rest of your life. You gotta keep movin' on to get there.

If not, consider the alterntive. ■

flagellin and DNA probes to detect the organisms in blood offer further promise.

Malaria also needs to be considered as another possible explanation for the symptoms of the disease when the patient has been traveling in a malarial area.

Treatment

Treatment requires admission to hospital and loss of fluid and salt is treated with fluid therapy as appropriate. The bacterium is controlled with antibiotics, and in very rare cases steroid medicines are also included in the treatment.

Prevention

If you travel to an area where the disease is common, use the following steps to protect yourself:

1. Get vaccinated against typhoid fever. Both injectable and oral vaccines are available. Vaccines are not 100% effective, so it is important to take the additional measures listed to prevent typhoid fever.
2. Use careful selection of food and drink.
3. Only use clean water. Buy it bottled or make sure it has been brought to a rolling boil for at least one minute before you drink it.
4. Ask for drinks without ice unless the ice is made from bottled or boiled water.
5. Only eat foods that have been thoroughly cooked.
6. Avoid raw vegetables and fruits that cannot be peeled.
7. When you eat raw fruits or vegetables that can be peeled, wash your hands with soap, and then peel them yourself. Do not eat the peelings.
8. As it is necessary for someone to be exposed to a certain quantity of bacteria before symptoms occur, the storage of foods is also of great significance. They must be kept refrigerated and prepared correctly, as required by general hygiene, so that any bacteria present are not able to multiply significantly
9. The routes of infection depend on hygiene conditions and general kitchen hygiene should be maintained to prevent infection
10. Stool samples are also taken from members of the patient's family to identify any 'healthy' carriers

Public health interventions to prevent typhoid and paratyphoid include:

- Health education about personal hygiene, especially regarding hand-washing after toilet use and before food preparation; provision of a safe water supply;
- Proper sanitation systems;
- Excluding disease carriers from food handling.

NOTE:

1. Even if your symptoms go away without treatment, you may still be carrying the *S. typhi* bacteria, and your illness could return and be passed to other people.
2. If you work at a job where you handle food or care for small children, you should not go back to work until a doctor has determined that you no longer carry any *S.typhi* bacteria.
3. Even if you are vaccinated, you should carefully select your food and drink, especially when visiting areas where typhoid fever is common.

Making Drinking Water Safe

Making Drinking Water Safe: Boil, Chlorinate or Filter.

Straining: If heavy levels of sediment or floating debris are present, strain water through paper towels, paper coffee filters or several layers of clean cloth into a clean container before boiling, chlorinating or filtering.

Boiling Method: Boil water vigorously for 5 to 10 minutes to make it safe from harmful bacterial contamination.

Chlorination Method: Chemically treat the water by adding liquid chlorine household bleach. Use only bleach with a label stating that the only active ingredient is sodium hypochlorite. Add 2 drops of bleach to one quart, 8 drops to a gallon, and 1/2 teaspoon to 5 gallons. Double these amounts if the water is cloudy. Mix thoroughly by stirring or shaking water in container. Let stand for 30 minutes. A slight chlorine odor should be detectable in the water. ■

By David Ndlovu and Carrie Tilbury

DOES AGE AFFECT MALE FERTILITY?

Sperm Production in Older Men

The number of sperm cells that are produced in aging males continues to be the main focus of studies. "In aging men, the reduction in average daily sperm production is thought to be a main cause of infertility," says Dr. Silber. "It has been proven that the beginning of the reduction of sperm cell production can begin as early as age 25 and continues to decrease. The age-related decline in daily sperm production results largely from a block to further produce sperm that can and do mature in the early prophase stage of production. To explain this in a different fashion, there is no difference between older men and younger men in the number of early primary sperm cells per gram of testicular tissue. However, there is a vast difference between older and younger men in the number of late (or mature) sperm cells."

What Age Does to Sperm

Research is exploring many of the whys and hows of decreased sperm production and maturity with age. As a result, many explanations have been uncovered.

"Men experience an age-related decrease in testicular size and in sperm production," says Dr. Silber. "In some men, there is a decline in testosterone production that becomes noticeable after the age of 40. The loss of testosterone can result in a decrease in bone and muscle mass in the aging male, the loss of sex-drive, the decreased ability of the body to produce and mature sperm cells, as well as the inability to obtain or maintain an erection. Both the decrease in testosterone and the decrease in sperm production cause an age-related decrease in fertility. In addition, sperm may also be affected by repeated ejaculation decreasing the secretions of the glands, the decrease of the number of hormones and the weakening of the sexual muscles."

According to both the American Infertility Association and Dr. Silber, some of the most common effects of age on the sperm that is produced include the following:

Decreased Motility – Sperm that has not matured will not have the adequate motility to reach and penetrate the egg. In addition, with age comes a decreased ability to have strong ejaculations, thus, decreasing the distance that the sperm will travel upon ejaculation.

Decreased Strength – Immature sperm will not have the needed strength to travel the distance to the egg, nor the needed strength to penetrate the membrane for fertilization.

Decreased Potency – The force of the ejaculatory squirt in young men is often powerful and can eject the sperm some distance. The force of the squirt, propelled by the powerful contraction of the bulbocavernosus muscles, is much less in older men than in younger men. Thus, in every measurable way male potency is clearly affected by age.

Altered Genetic Make-Up – As men age, sperm cells can accumulate mutations that are passed to offspring. Regardless of age, sperm continues to reproduce through division. If a sperm becomes altered or mutates, any other sperm that is produced by the natural division will also be altered or mutated. Each successive division introduces a slight risk of error in the genetic material of the new sperm, which is passed on to the children.

"Sperm studies in aging men often show kinetic or formation disorders," says Dr. W-B Schill, professor in the Department of Dermatology and Andrology at Justus Liebig University in Giessen, Germany. "Most observed were impaired spermatogoniogenesis (reproduction, dividing and development of the sperm cell) or spermatid (a maturing sperm cell) malformations, paralleled by a highly significant decrease in daily sperm production. This indicates and accompanies a gradual decline of fertility with increasing age. And, although alterations in sperm quality may be apparent, reduced motility and a lower percentage of spermatozoa (a totally mature sperm cell) with normal morphology are most frequent."

What Can You Do?

One of the most common resolutions for this concern or difficulty in fertility is a visit to a certified fertility specialist. "A man's age affects fertility to a much smaller degree and 20 or 30 years later than in a woman," says Dr. Benjamin Younger, M.D., executive director of the American Society for Reproductive Medicine. "Despite a decrease in sperm production that begins after age 25, some men remain fertile into their 60s and 70s. Even those that do experience some decreased fertility due to age can still father a child well into their golden years with the assistance of medical science, a good fertility doctor and a little dedication and determination."

If a man feels that his age may be affecting his chances of impregnating his partner, he may wish to seek medical intervention and have a complete sperm analysis. "A sperm analysis may be just what is needed," says Dr. Younger. "A sperm analysis will allow a fertility specialist to examine not only the number of sperm a man is producing, but also the condition of the sperm, the maturity and mobility, and the genetic composition of the sperm as well."

There is growing interest in the effect of aging on the male fertility potential. As a result, male fertility and sperm studies have gained notoriety and continued interest. "Since an increasing number of couples wish to have children in their late reproductive years, the field of age and sperm development and performance has become forefront on many accounts," says Dr. Silber. "However, when couples choose to wait until the later years, when the reproductive system ceases to operate optimally, they learn firsthand that fertility in men usually persists well into old age. And, just as they age, so do their sperm."

http://preconception.com

Semen Analysis

The semen analysis is the cornerstone of testing for male infertility problems.This provides important information about the quality and quantity of the sperm.

The semen sample is analysed for the following :

- Volume – Low semen volume suggests incomplete collection,short duration of abstinence or obstruction of the seminal vesicles or androgen deficiency.Large volumes are sometimes found in association with varicocele or after long periods of sexual abstinence.
- Appearance – A normal sample has a grey-opalescent appearance,is homogenous and liquefies within 60 minutes at room temperature under the influence of enzymes of prostatic origin.If it does not liquefy within normal time it may suggest functional distubance of the prostate.It may also be clear (in low counts) or it may be brown when red blood cells are present in the ejaculate.
- Sperm count – a haemocytometer is normally used.The total count of spermatozoa per ejaculate reflects spermatogenesis and is related to the duration of sexual abstinence.

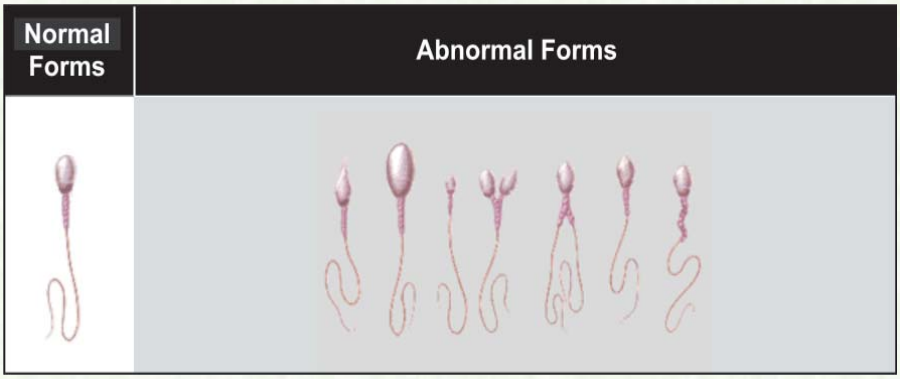
Motility – is graded as follows

a) Rapid progressive motility
b) Slow or sluggish progressive motility
c) Non – progressive motility
d) Immotility

- Morphology – sperm cells represent a unique population in which up to 50% of the cells can have morphological defects in normal fertile individuals.The normal head should be oval in shape.There must be no neck,midpiece or tail defects and no cytoplasmic droplet more than one-third the size of a normal sperm head.
- The following catergories of defects should be scored :

a) Head shape/sizedefects: large, small, tapering,armophous or double heads.
b) Neck and midpiece defects,absent tail.
c) Tail defects : short,multiple,broken or coiled tails.
d) Cytoplasmic droplets : > one third of the area of a normal sperm head.Sperm morphology gives information for the function of the reproductive tract and is a predictor of man's fertility potential.

Morphology-Normal and Abnormal Forms



e) Detection of antisperm antibodies – The presence of anti – sperm antibodies in semen can alter the fertilizing ability of the spermatozoa.

- Biochemical analysis – can also be carried out on semen e.g.citric acid,zinc for the prostate gland,fructose for the seminal vesicles and free L – carnitine for the epididymus.An infection can cause a considerable decrease in the secretory function of these glands.
- Sperm Viability - Vital staining of the spermatozoa allows quantification of the fraction of living cells independently of their motility.Live and dead sperm are distinguished by adding one drop of eosin stain to one drop of semen at room temperature and smearing the mixture on a microscope slide.Dead sperm stain orange – red and live ones are non – stained.
- Forward progression
- Viscosity
- White blood cells
- PH

Why it is done.

- A semen analysis is done to determine whether
- A man has a reproductive problem that is causing infertility
- A vasectomy has been successful
- The reversal of a vasectomy has been successful

Collection instructions.

The sample should be collected after a minimum of 48 hours and no longer than 7 days of sexual abstinence.

A minimum of two semen analysis provided several weeks apart is recommended because sperm counts tend to fluctuate.We never rely solely on one sperm count.

Delivery of the sample to the laboratory should be done within one hour of collection.

Normal Values of Semen Variables

Standard Tests	
■ Volume	2 – 6 ml
■ pH	7.2 - 8.0
■ Sperm count	> 20 x 10 spermatozoa/ml
■ Motility	> 50% or more with forward progression
■ Morphology	> 20 % or more with normal forms
■ White blood cell	< 1 x 10 /ml

Jokes Corner

1 - If it is dry - add moisture; if it is moisten - add dryness. Congratulations, now you are a dermatologist

2 - A man goes to the eye doctor. The receptionist asks him why he is there. The man complains, "I keep seeing spots in front of my eyes."

The receptionist asks, "Have you ever seen a doctor?" and the man replies, "No, just spots."

3 - What's the difference between a general practitioner and a specialist?

One treats what you have, the other thinks you have what he treats.

4 - Neurotics build castles in the sky. Psychotics live in them. Psychiatrists collect the rent.

5 - The difference between a neurotic and a psychotic is that, while a psychotic thinks that 2 + 2 = 5, a neurotic knows the answer is 4, but it worries him.

6 - Doctor: I have some bad news and some very bad news.

Patient: Well, might as well give me the bad news first.

Doctor: The lab called with your test results. They said you have 24 hours to live.

Patient: 24 HOURS! That's terrible!! WHAT could be WORSE? What's the very bad news?

Doctor: I've been trying to reach you since yesterday.

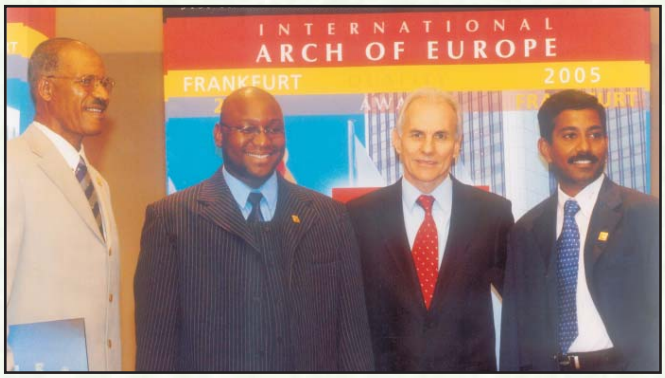
7 - A man speaks frantically into the phone, "My wife is pregnant, and her contractions are only two minutes apart!"

"Is this her first child?" the doctor queries.

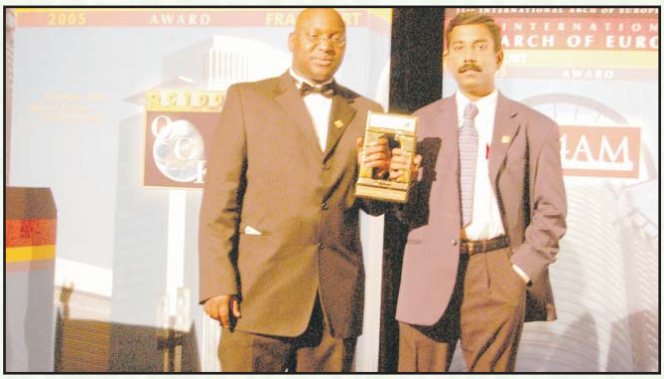
"No, you idiot!" the man shouts. "This is her husband!"

8 - The best contraceptive is a glass of cold water: not before or after, but instead. ■

INTERNATIONAL ARCH OF EUROPE AWARD: AN OSCAR OF QUALITY



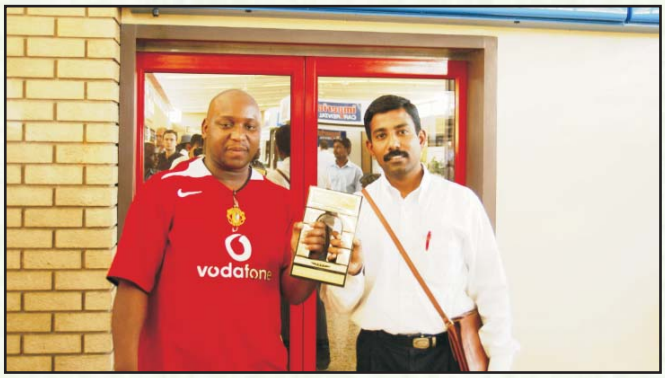
Mr Pedrro Capumba of Angola , Mr Mhlabi, BID President Mr Jose E. Prieto and Mr Maran at the convention reception



DML Manager Desire Mhlabi with accountant Mr Maran display the award at the Intercontinental Hotel Frankfurt

Mr Desire Mhlabi giving an acceptance speech on behalf of Diagnofirm

DML Director Mr. M I Chand bids farewell to Maran and Desire at SSKA



Mr Mhlabi and Mr Maran arrive at SSKA with the ARCH of Europe award

Frankfurt can be cold hey! Mr Mhlabi braces the subzero temperatures in Germany

Mr Chand welcomes the team home and is delighted at winning the award

DML I.T. Manager Arul seen with Mrs W Chand bidding Maran and Desire farewell at SSKA

By Carrie Tilbury

WISE HEALTH STRATEGIES FOR WOMEN OVER FORTY

Deciding on well-health reflects on our own concept of self-worth. It is within our power to change our lifestyle and attitude towards the aging process. The aim of this article is to offer some insight into the preventative steps that we should all be taking, not only to prevent illness, but also to monitor and improve any existing chronic ill health.

Menopause is often the primary focus of women's midlife health. We need to look further than this by including education and preventative measures for many of the serious (often preventable) health problems affecting midlife or older women.

Diseases such as hypertension, diabetes, osteoporosis and cancer are treatable, manageable and preventable and we therefore can make the difference!! The first step to well health is accepting that you yourself have an opportunity and responsibility to prevent and control both chronic and life threatening illnesses through timeous intervention. This can only happen when you consciously book an appointment with your doctor and present yourself for a well health check – yes, a visit to your doctor when you are well!

REPRODUCTIVE HEALTH

Menopause is the biological marker signaling that our childbearing years have come to an end. This "change of life" could herald an exciting change as we start focusing on our own needs and aspirations for the future. It is here that we should include provisions to maintain health and prevent ill health.

The average age for menopause (this refers to the ending of our menstrual cycles or periods) is about 51 yrs but it can occur anytime from mid-40's to late 50's. Three signs clearly associated with menopause are cessation of periods, hot flushes and vaginal changes. We cannot know that we have reached menopause until a year without a period has passed.

Changes in menstrual patterns do occur in the years leading up to menopause. Hormone irregularities are often responsible for irregular bleeds, severe- pre menstrual tension, lighter or heavier menstrual bleeding and missed periods for a month or longer. Women are still fertile during this pre-menopausal stage and should seek medical advice on the best form of birth control. Hopefully, during a women's reproductive life she has already had adequate counseling and medical care, which includes pap smears, breast examinations and checks for hypertension, diabetes and cholesterol levels. This is often not the case and therefore makes a stronger argument for women to negotiate a Well-Health program before ill health and disease set in.

Menopause is a natural event and with it comes physical as well as emotional changes. For some women the transition period is dealt with comfortably but for others the physical and emotional symptoms may need intervention and medical help should be sought in these instances. The onset of menopause might be just the platform you need to start taking care of yourself. Initiate a well-health visit to your doctor and together you can come up with lifestyle changes that will keep you healthy.

PAP SMEARS

Reaching menopause does not signify the end of regular PAP smears! If you have never undergone a PAP smear or perhaps allowed several years to lapse between this examination then now is the best opportunity to reschedule for a PAP screening test. Abnormal cell growth of the cervix, called dysplasia, has no symptoms and is only picked up on a regular PAP smear. Not all cases of cervical dysplasia require treatment and neither does this growth of abnormal tissue always indicate cancer. However, all cases of dysplasia or abnormal cervical cell growth should be treated and/or watched closely with repeated PAP smears and colposcopy if necessary. Understanding the medical classification of PAP smears can be difficult but a simple explanation would describe normal cells at one end of the range and invasive cancer cells on the other end. Cells which are neither normal nor fully identified as cancerous can be found in the middle and it is these cells that need to be monitored closely as they may change from being benign to invasive without you having any symptoms. In some instances a more thorough test is required to fully examine a specific area of the cervix. You may then be required to undergo a colposcopy, which is done in your doctor's rooms and takes a few minutes to do. This is not unlike a PAP smear but may take a little longer. All women should be serious about PAP smears as this offers all of us an opportunity to be screened regularly for changes that may indicate the onset of cancerous tissue of the cervix. Once cancer has established itself in the cervix and left untreated the risk of invasive cancer into the pelvic region is high.

What is Cervical Cancer?

Cancer is a disease in which cells in the body grow out of control. When these abnormal cells are present in the cervix, it is called cervical cancer, or cancer of the cervix.The cervix is the lower, narrower part of the uterus. The uterus is also known as the womb. The upper part of the uterus is where a baby grows when a woman is pregnant. The cervix connects the upper part of the uterus to the vagina (the birth canal).

Important Facts About Cervical Cancer

- Cervical cancer can usually be prevented if women are screened regularly with a test called the Pap test.
- Any woman who has a cervix can get cervical cancer, especially if she or her sexual partner has had sex with several other partners.
- Most often, cervical cancer develops in women aged 40 or older.
- Abnormal cells in the cervix and cervical cancer don't always cause symptoms, especially at first. That's why getting tested for cervical cancer is important, even if there are no symptoms.
- When it is found early and treated, cervical cancer is highly curable.
- Most deaths from cervical cancer could be avoided if women had regular checkups with the Pap test.

Screening Prevents Cervical Cancer and Saves Lives

The Pap test can find abnormal cells in the cervix. These cells may, over time, turn into cancer. This could take several years to happen.

If the results of a Pap test show there are abnormal cells that could become cancerous, a woman can be treated. In most cases, this treatment prevents cervical cancer from developing.

Pap tests can also find cervical cancer early. When it is found early, the chance of being cured is very high. The most important thing you can do to avoid getting cervical cancer is to have regular Pap tests.

What is the Pap Test?

The Pap test, also called the Pap smear, is a cervical cancer-screening test. It is done in a doctor's office or a clinic. This test can find abnormal cells in the cervix that may turn into cancer if they're not treated.

During the test, the doctor or nurse uses a plastic or metal instrument, called a speculum, to widen the vagina. This helps the doctor or nurse examine the vagina and the cervix, and collect a few cells and mucus from the cervix and the area around it. These cells are placed on a slide and sent to a laboratory to be checked for abnormal cells.

The doctor or nurse also performs a pelvic exam, checking the uterus, ovaries and other organs to make sure there are no problems. There are times when a doctor may perform a pelvic exam without giving you a Pap test

Who Should Have a Pap Test?

Doctors recommend that women begin having regular Pap tests and pelvic exams at age 21, or within three years of the first time they have sexual intercourse — whichever happens first. National guidelines recommend that after a woman has a Pap test each year for three years in a row, and test results show there are no problems, she can then get the Pap test once every 2-3 years.

Who Does Not Need to be Tested?

The only women who do not need regular Pap tests are

- Those over age 65 who have had several regular Pap tests with normal results and have been told by their doctors that they don't need to be tested anymore.
- Women who do not have a cervix. This includes women whose cervix was removed as part of an operation to remove the uterus. (The surgery is called a hysterectomy.) However, a small number of women who have had this operation still have a cervix and should continue having regular Pap tests. If you're not sure whether you have a cervix, speak to your doctor about it.

How Do I Prepare for the Pap Test?

To prepare for the Pap test, doctors recommend that for two days before the test you should avoid

- Douching
- Using tampons
- Having sexual intercourse
- Using birth control foams, creams, or jellies or vaginal medications or creams

Doctors also recommend that you try to schedule your Pap test for a time when you are not having your menstrual period.

When Will I Get the Results?

It can take up to three weeks to receive Pap test results. Most results are normal. But if your test shows something may be abnormal, the doctor or clinic will contact you and probably want to do more tests. There are many reasons that Pap test results can be abnormal, and usually it does not mean you have cancer.

The Facts

Breast Cancer

- Except for skin cancer, breast cancer is the most commonly diagnosed cancer among American women.
- It is second to lung cancer as the leading cause of cancer-related deaths among women.
- In 2004, an estimated 215,990 new cases of invasive breast cancer will be diagnosed among women.
- In 2004, an estimated 40,580 women will die of this disease.
- Seventy-five percent of all diagnosed cases of breast cancer are among women aged 50 years or older.

Cervical Cancer

- The incidence of invasive cervical cancer has decreased significantly over the last 40 years, in large part because of screening for, and treatment of, precancerous cervical lesions.
- In 2004, an estimated 10,520 new cases will be diagnosed.
- In 2004, an estimated 3,900 women will die of this disease.
- Routine screening for cervical cancer can prevent most occurrences of this disease.

[1]Source: Cancer Facts and Figures 2003, American Cancer Society, 2003.

BREAST HEALTH

Breast cancer strikes one out of 100 women by age 55. (One in nine over our lifetimes). Early screening and detection offers women the chance of treatment and a full recovery from a disease that can be life threatening or even lead to death. This is a sobering thought which should prompt us to have breast examinations regularly and include this as part of our well-health maintenance program as we reach 40 years and older. Breast examination, whether done by yourself on a regular basis or not, should still be followed up by an annual physical with your doctor. Besides physical breast examinations, further diagnostic tests such as mammograms, x-rays and / or ultra sound should be included in your well health check where possible and if indicated. Early detection and treatment of cancerous breast lumps offers the opportunity to undergo less invasive surgery and minimizes the risk of malignant cells spreading to adjacent tissue and regional lymph glands.

BONE HEALTH

In our young adult lives, bone is replaced at about the same rate as it breaks down, but by our mid 30's, we start to lose bone faster than we replace it. Some women loss bone at an accelerated rate at menopause. Another period of accelerated bone loss occurs in our 70's.

It is never to late to start improving your bone health even if you have not paid attention to this earlier on in your life. Your health care provider can assist you in recommending calcium and vitamin supplement if this is indicated. Walking, weight training and special back-exercise can also be included in your health program to build up bone. Smoking is known to attribute to bone loss and is one of the many reasons to consider giving up the habit.

Osteoporosis is a condition of extreme bone loss leading to fractures. This does not affect all women however we should be aware of early symptoms which may include mild back-ache and muscle spasms lasting for several days then disappearing. Most often the first knowledge a woman has of osteoporosis, or loss of bone density is when she fractures a hip, spine or wrist in a simple fall. By adopting a well health strategy and undertaking to visit your doctor or clinic annually (or more frequently when indicated) you will have the opportunity to address the issue of bone density and get treatment by early screening and detection.

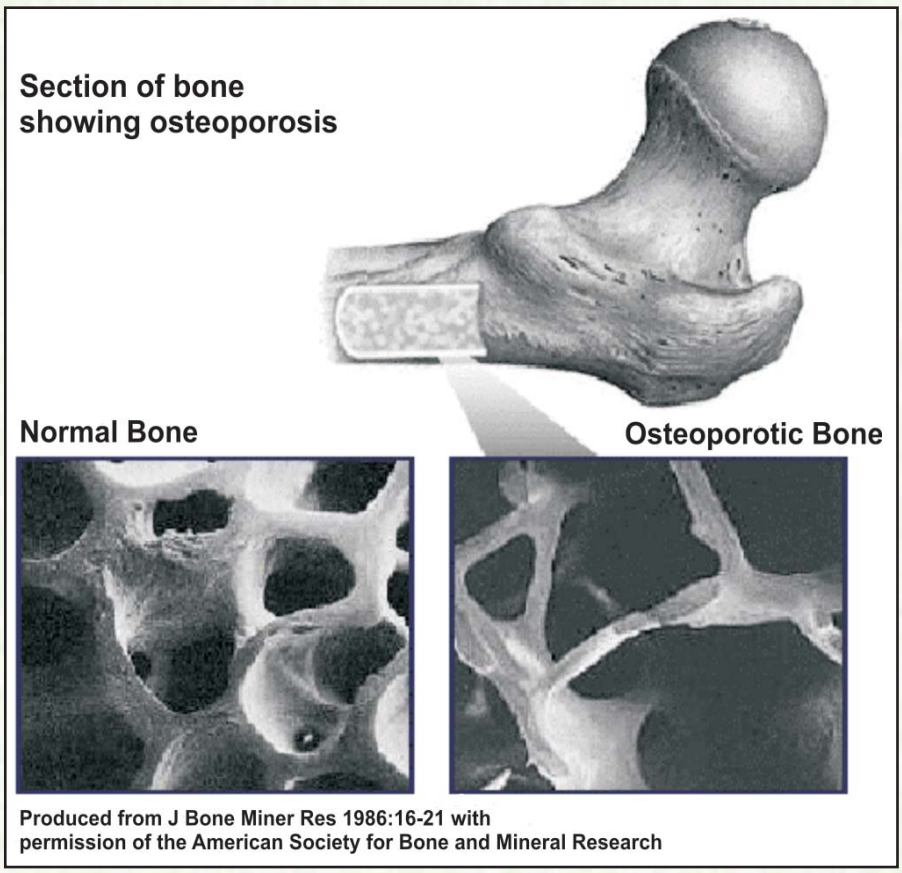
The single most effective way of dealing not only with osteoporosis but natural occurring bone loss is to change the habits that contribute to bone loss. A healthy diet, exercise and smoking cessation program will go a long way in this endeavor. Reducing the risk of falls will reduce the risk of fractures and we should therefore be aware of potential risks in our homes and outdoor environment.

Osteoporosis

Osteoporosis or "porous bone" is a disease of the skeletal system characterized by low bone mass and deterioration of bone tissue. Osteoporosis leads to an increase risk of bone fractures typically in the wrist, hip, and spine.

While men and women of all ages and ethnicities can develop osteoporosis, some of the risk factors for osteoporosis include those who are

- Female
- White/Caucasian



Produced from J Bone Miner Res 1986:16-21 with permission of the American Society for Bone and Mineral Research

- Post menopausal women
- Older adults
- Small in body size
- Eating a diet low in calcium
- Physically inactive

Weight-Bearing Physical Activity

Regular physical activity has been associated with many positive health benefits including strong bones. Like proper calcium consumption, adequate weight-bearing physical activity early in life is important in reaching peak bone mass. Weight-bearing physical activities cause muscles and bones to work against gravity. Some examples of weight bearing physical activities include

- Walking, Jogging, or running
- Tennis or Racquetball
- Field Hockey
- Stair climbing
- Jumping rope
- Basketball
- Dancing
- Hiking
- Soccer

Calcium

Calcium is a mineral needed by the body for healthy bones, teeth, and proper function of the heart, muscles, and nerves. The body cannot produce calcium; therefore, it must be absorbed through food. Good sources of calcium include

- Dairy products—*low fat or nonfat milk, cheese, and yogurt*
- Dark green leafy vegetables - *broccoli*
- Calcium fortified foods—*orange juice, cereal, bread, soy beverages, and tofu products*
- Nuts—*almonds*

Recommended Calcium Intakes

To find out more about the prevalence and risk factors associated with osteoporosis, please visit http://www.nof.org/osteoporosis/stats.htm.*

Ages	Amount mg/day
Birth–6 months	210
6 months–1 year	270
1–3	500
4–8	800
9–13	1300
14–18	1300

PUT PREVENTION INTO PRACTICE:

These guidelines will help you to establish your well health program with your doctor. Obviously if you have an established health problem or are found to have a chronic illness you will need to see your doctor or specialist at a more regular interval.

HEALTH GUIDELINES/TESTS/EXAMINATIONS	
Full physical	Annually over 40
Blood Pressure	Every visit, at least twice yearly
Skin, oral and thyroid exam	<40 yrs –every 3 yrs. Over 40yrs- annual
Pelvic exam and PAP smear	Annual (starting from the time a women is sexually active)
STD Screening	Sexually active
Breast exam	Annual
Mammogram	Annual over 50yrs (or sooner if indicated) Baseline screen at 40yrs
Rectal exam	Low risk: annual >40yrs
Stool exam for blood	Annual >50yrs
Cholesterol /Lipid profile	Every 3-5yrs if no family history or risk factor
Glucose fasting	Every 3-5yrs if low risk
Urinalysis	Every 3-5 yrs
Vision / Glaucoma screen	<65yrs every 4yrs. Over 65yrs annual
Dental Health	Annual
Estrogen/Folate/Calcium	Discuss at annual physical
Nutrition	Evaluate annually

ByKiran Bhagat

Heart Disease in women – are we doing enough?

With the emphasis on HIV/AIDS both in the mind of the public and the practitioner, there is clear data emerging that we are marginalizing another silent epidemic – that of heart disease, especially in women.

Heart disease and stroke are already leading causes of death in women worldwide – and in resource poor countries will be the leading cause of death in women by 2020.

The causes of these conditions are known and are essentially the same in rich and poor countries — and in men and women, with some exceptions.

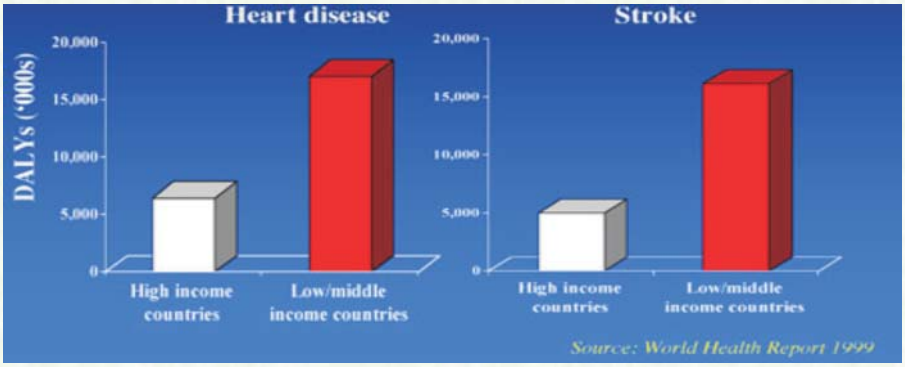
Prevention of heart disease and stroke in women has been neglected, especially in developing countries such as ours.

Cardiovascular Disease in Women

The common view that CVD is a men's health problem has overshadowed the recognition of the significance of CVD for women's health. Of the 27 million deaths worldwide in women each year, almost 10 million result from CVD and, of these, two thirds occur in developing countries. Although not the subject of this conference, rheumatic heart disease is a significant component of CVD in developing countries.

Not only are coronary heart disease and stroke the first and second leading causes of death worldwide, but they will remain so in the next 20 years and beyond. Although ranked fifth and sixth now in terms of disability, estimates suggest that, by 2020, heart disease and stroke will rank second and third. The majority of the burden of disability associated with heart disease and stroke already falls in low and middle income countries, not high income countries where most of the resources are concentrated (Figure 1).

Figure 1. Cardiovascular disease disability in women, by country income.



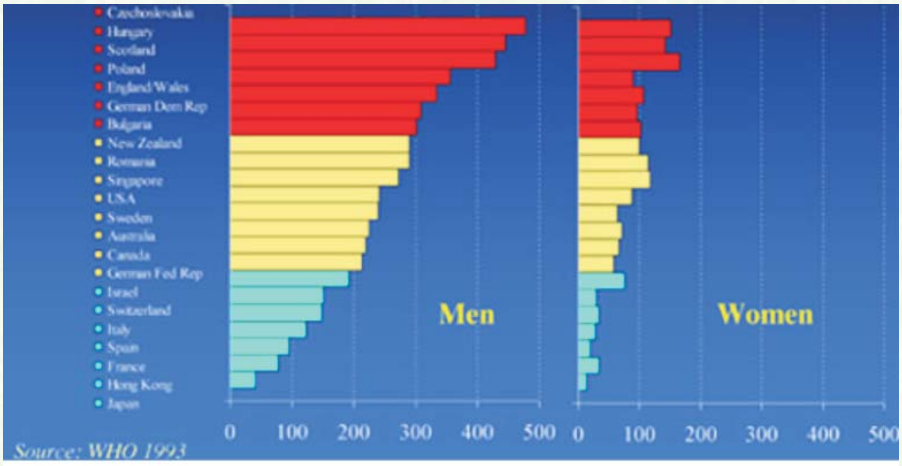
The most useful source of data for comparing differences in health status globally comes from death certificates that are provided by member states to the World Health Organization (WHO) data bank. Although subject to a number of limitations, these data are useful and reliable for measuring trends over time. The most sobering concern is that no information on cause of death is routinely available for two thirds of the world's population.

Wide variations in heart disease and stroke mortality rates occur not only between countries but also between men and women for heart disease and, to a lesser extent, for stroke. In these selected countries, rates are higher in men than in women.

These international differences and trends indicate the preventive potential as these differences are largely due to environmental causes, not genetic causes. The declining death rates may be explained by (1) fewer new events (decline in incidence) due primarily to successful primary prevention or longer survival after an event (improved case fatality) due primarily to better treatment and (2) a lessening of the severity of the disease. Special studies are required to determine the reason for these competing explanations.

Results from a major international collaborative study, the WHO MONICA Project, confirm the gender differences in mortality statistics. The same variation is observed for coronary heart disease (Figure 5) and stroke (Figure 6) event rates.

Figure 5. Heart disease event rates in women ages 35-64 years: WHO MONICA Project.

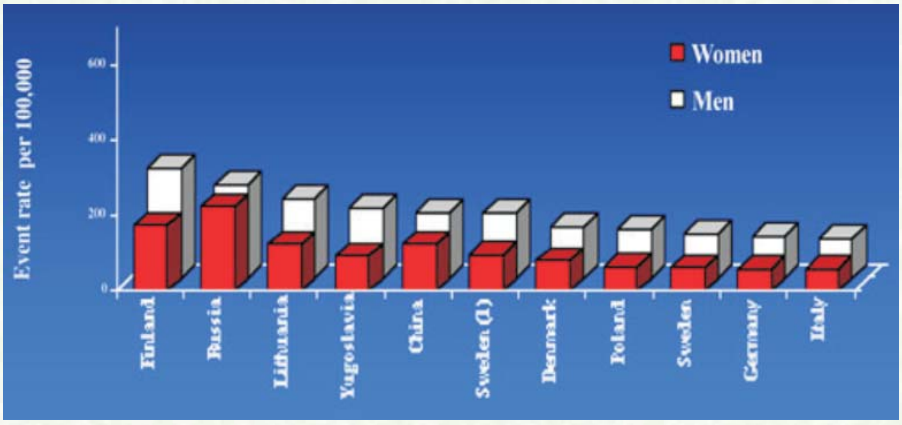


This major international collaborative study, which measured trends over 10 years, suggested that approximately two thirds of the decline in mortality in heart disease and one third of the decline in stroke could be explained by fewer new events. Reduction in event rates was related to both improvements in the major risk factors and improvements in treatment.

Patterns and Trends in Modifiable Risk Factors

Patterns between countries reflect, to a large extent, the profiles of the major risk factors that heart disease and stroke share: (1) smoking, (2) high blood pressure, (3) cholesterol, and (4) body mass index (BMI). Although the prevalence of hypertension in middle age (35-64 years) is similar in men and women, there are wide variations in

Figure 6. Stroke event rates in women ages 35-64 years: WHO MONICA Project.



smoking prevalence between women and men; smoking prevalence remains low for women in many countries. The challenge will be to ensure that in these countries, including Spain, Russia, Finland, Belgium, and Italy, the prevalence does not reach the high levels that currently exist in Denmark, Sweden, the United States, and Israel. Similar statistics are not available for Botswana and indeed the entire SADC region.

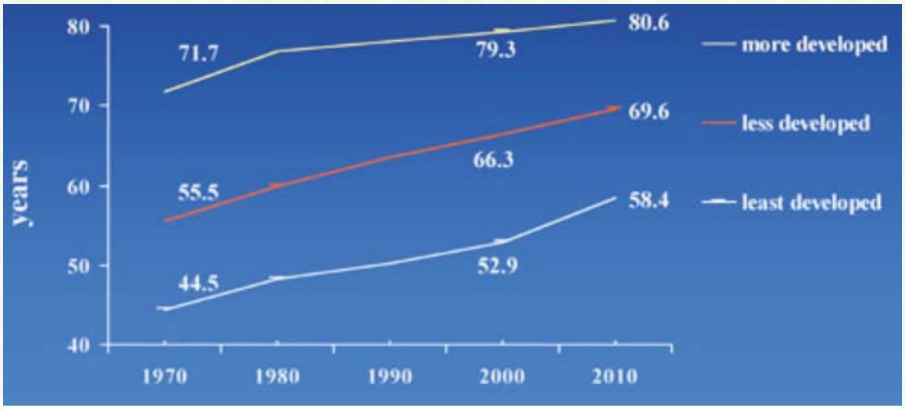
The pattern is changing, however. Data from the MONICA study show 10-year trends in cigarette smoking in women and men ages 35-64 (Figure 8). In men, in most populations, a decline in smoking was noted, the exception being in 4 populations: (1) former Yugoslavia (Novisad), (2) Russia (Novosirbirsk), (3) Canada (Halifax), and (4) China (Beijing), where smoking in middle-aged men increased by 15%. In women, however, a decline was registered in only about half of the populations, and there was a tendency toward an increase in a number of populations. In 5 of these countries — (1) Russia (Novosirbirsk), (2) Germany (Augsberg), (3) Belgium, (4) Spain (Catalonia), and (5) Poland — the increase was as much as 10%.

In summary, the MONICA risk factor trend data show that over 10 years, smoking rates were most often down in men but mixed in women. Other main modifiable risk factors show varying patterns: blood pressure was mostly down in both men and women, total cholesterol also declined slightly in most populations, and BMI is on the increase, more so in men than in women in these populations.

The Aging of Populations

One of the major achievements in the past half-century has been the dramatic improvements in life expectancy; improvements are projected to be even more steep in less developed countries than in developed countries (Figure 9).

Figure 9. Life expectancy at birth (women) by country development from 1970 to 2010.



The decline in fertility combined with a decline in CVD mortality rates is the main reason for improvements in life expectancy and the growth of the older population. The older population in large countries in rapid economic transition, such as Indonesia, India, and China, will increase 3- to 4-fold in the next few decades, compared with a relatively small increase in the United States, Australia, New Zealand, and Europe. Aging alone will tend to increase the burden of CVD unless prevention is taken seriously.

Approaches to Prevention

In most cases, heart disease occurs in people whose lifestyles put them more at risk. The good news is that people can make changes in their lifestyles and personal habits to reduce their risk of getting the disease. Many of the risk factors for heart disease are also risk factors for other diseases, so paying attention to them will also have other health benefits. The difficult news is that exposure to many of these risks is related as much to social, economic, political, and cultural issues as to an individual's choice. Fortunately, the most important and widespread risk factors are all amenable to population-wide approaches to prevention.

There are 2 approaches, one directed at whole populations (high reach) and the other directed at individuals (high risk). Both have their place, although it appears that the latter, a more costly approach, is perhaps less relevant in developing countries such as ours.

A reduction in smoking has already been achieved in many countries through a population strategy based on strong legislation and fiscal and educational programs; in countries without such comprehensive policies, the prevalence of smoking in women will increase. As is well known, there are continued pressures for young women to smoke, and there is a continued tendency for the tobacco industry to increase their marketing in poor and indebted countries, in some cases using trade agreements to facilitate access. One of the activities taken by the Tobacco Free Initiative of the WHO is the creation of a Framework Convention on Tobacco Control, which aims to bring all member states together under a common approach to controlling the global marketing plans of the tobacco industry.

A high-reach (or population-wide) strategy attempts to decrease across the whole community the mean consumption of salt, alcohol, and saturated fat and increase the level of physical activity. These actions, in turn, would reduce the average population levels of blood pressure. A small population-wide reduction in blood pressure in China and East Asian countries would have a large impact in reducing the rise in the numbers of people experiencing stroke and, to a lesser extent, heart attack. Such approaches are highly cost-effective.

The alternative, and arguably the complementary approach to the population strategy, is the high-risk strategy — in which efforts are directed at identifying

women and offering treatment to those who have an above average risk of a CVD event. To be most cost-effective, the high-risk approach needs to be based on a person's baseline (absolute) risk of an event rather than based on age alone or a consideration of the relative risk associated with a single risk factor. Even a woman at average risk would benefit by a reduction in risk, but offering treatment to such women may not be cost-effective.

The absolute risk (or the likelihood that an individual woman will have an event over a defined period) varies markedly according to age as well as the presence or absence of other risk factors. It is noteworthy that, at all age groups and in all risk categories, women have a lower absolute risk than men.

An estimate of the probability of a CVD event within the next 5 or 10 years provides a useful approach both for clinicians who wish to convey useful information to patients and for the development of treatment guidelines. Evidence-based guidelines for treatment of elevated blood pressure and hypercholesterolemia suggest that highest priority for treatment should be given to patients at high absolute risk of 1 CVD event: older patients, men, and those with multiple risk factors and preexisting disease. Because the absolute risk of coronary heart disease in women remains low until the seventh or eighth decade, any reduction in risk cannot yield great absolute benefits. An evidence-based approach also has the advantage of allowing an estimate of the number of women at a given level of risk requiring treatment to prevent a CVD event (Table 1). The number needing treatment according to the 5-year probability of developing a CVD event depends on the pretreatment absolute risk after taking into account all major risk factors.

Table 2: Cardiovascular Disease Risk Reduction Objectives and Strategies for Women

Risk Factor	Population Strategy(whole population)	Population Strategy(directed at women)	High Risk Strategy(directed at individual women)
Hypertension	Intersectoral collaboration with food manufacturers, industry, advertisers, eg, salt reduction in manufactured food; promotion of a heart healthy diet.	Promotion of relevant and realistic physical activity/ movement programs; promotion of low intake of alcohol in older women.	Lifestyle advice; treatment of those at high absolute risk according to established evidence-based guidelines, eg, 10%-15% risk of a CVD event over ensuing 5 years as a starting point for discussion concerning treatment.
Cholesterol	As above; increased physical activity; weight control.	As above; as for total population (modified).	Dietary counseling; treatment of those at high absolute risk according to predetermined guidelines.
Current smoker	Comprehensive policy; tobacco smoke control legislation.	As for total population.	Subsidized smoking cessation programs.
Physically inactive	Information and education; accessible activity programs; discouragement of individualized transport.	Promotion of community-based exercise programs, eg, walking groups.	Counseling by GPs, women's health initiatives.
Obesity	Nutrition and exercise programs.	As for total population (modified).	Dietary counseling, weight reduction, exercise and fitness programs.

Table 1. The Relation Between 5-year Cardiovascular Disease (CVD) Risk and Benefit: CVD Events Prevented per 100 Treated for 5 Years, and Number Needing Treatment for 5 Years (or 1 Year) to Prevent 1 Event

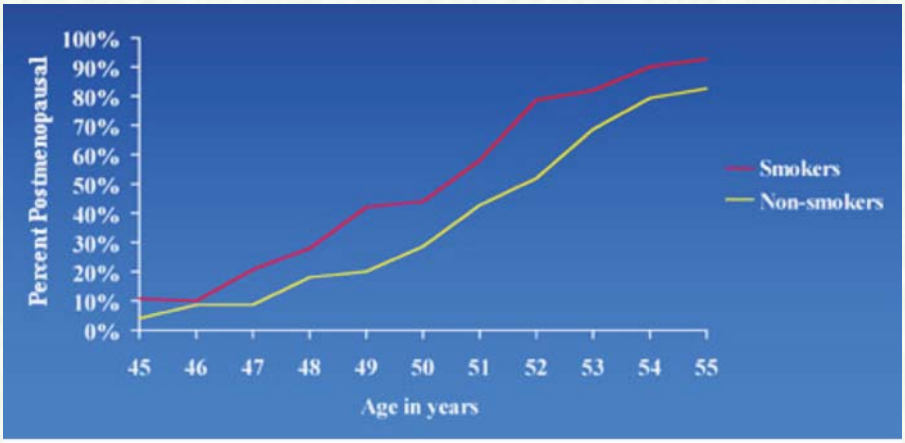
Prognosis:5-year CVDrisk (%)(nonfatal and fatal)	Benefit 1:	Benefit 2:	
	CVD events prevented per 100 treated for 5 years	Number needing treatment for 5 years	Number needing treatment for 1 year
> 20%	> 7 per 100	< 15	< 75
15% - 20%	6 per 100	20	100
5% - 10%	4 per 100	25	125
2.5 per 100	2.5 per 100	40	200
2.5% - 5%	1.25 per 100	80	400
> 2.5%	> 0.8 per 100	> 120	> 600

Hearts and Hormones

Menopause is a universal process that occurs in women who are around 50 years old in both developed and developing countries. In developed countries, most women are in good health at this age. In many developing countries, by the time a woman reaches menopause, her health may already have been undermined, not by her hormonal state but by the aftermath of health problems associated with reproduction and by the social and environmental conditions under which she lives.

It is ironic that the increased attention to the subject of heart disease in women is mainly a consequence of the promotion of hormone replacement treatment to women. Less widely known is the impact of smoking on the onset of menopause. Women who smoke, on average, reach menopause 2 years earlier than nonsmokers (Figure 10).

Figure 10. Impact of smoking on onset of menopause.



Menopause has been promoted in many western countries to such a degree that large proportions of perimenopausal and postmenopausal women use hormone treatment, not just for relieving distressing hormonal symptoms but in the belief it will prevent heart disease. There is a widespread notion that when the decline of estrogen levels occurs at menopause, the risk of heart disease increases, but there is no steep increase in heart disease in women around the time of menopause. Instead, there is a gradual increase in age-specific rates in women starting around age 50, which parallels the increase in men (Figure 11). Only at the oldest age group (85+ years) do the rates in women begin to converge towards those of men.

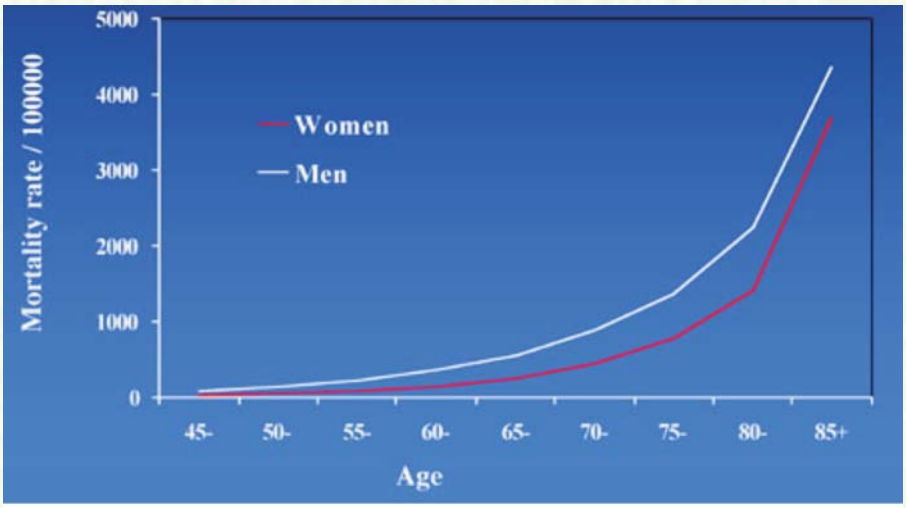
controlled trials are unraveling the benefits and risks associated with hormone use. Preliminary results from the Women's Health Initiative showing no evidence of an early benefit – in fact, showing the opposite – suggest that the widespread treatment of women simply because they have reached menopause is perhaps premature.

The evolving story of women, heart disease, and hormones illustrates the importance of sound epidemiological research in advancing the health of women.

Future Global Challenges

The main driving force of the CVD epidemic is the aging of populations combined with rapid urbanization and

Figure 11. Age-Specific coronary heart disease mortality rates in the United State in 1997



A plethora of observational studies over the past few decades lend weight to the notion that hormone treatment is protective of women's hearts. Fortunately, we have advanced from a reliance on studies biased by the "healthy user" effect – in particular, a more favorable CVD risk profile before use. Now large, randomized,

global changes in nutrition and smoking patterns. Regrettably, from the sparse data that are available, the risk factor profiles of many populations in developing countries is changing in an adverse direction. We need to monitor the coming epidemic of CVD in poorer countries and reassess our responses, placing greater focus on the population approach to prevention. Only this strategy can begin to confront the underlying social, economic, and cultural determinants of the global CVD epidemic.

The poverty of data in developing countries is of great concern. Ongoing surveillance to map the apparent rise in the epidemics of heart disease and stroke in developing countries is urgently required. The renewed focus on non-communicable diseases in poor and disadvantaged populations by the WHO is encouraging. In the meantime, enough is known to make appreciable gains in the prevention and postponement of heart disease and stroke in women and men. Turning this knowledge into gender-specific policy and practice is an ongoing challenge for us in Botswana. ■

Continued from page 1

International Arch of Europe Award – An Oscar of Quality

- Financial outcome.
- Continuing Education and Training.

The Manager of Diagnofirm Mr. Desire Mhlabi received the award on behalf of Diagnofirm and in his acceptance speech explained that Quality service provision and total quality management were at the core of the company's operations as evidenced by the tradition of caring at reception level, data handling and management, internal quality control systems and the company's participation and ability to excel in external quality assurance programmes. He also explained DML's efforts in augmenting the Government's fight against HIV/ AIDS and related social ills. Mr. Mhlabi also paid tribute to DML' Quality department headed by Mr. Moonya Mangwendeza and all the staff members for their determination and efforts in upholding quality service provision. Other notable awardees were Iran Aluminum Co, Fraisy Grant (Russia), Edema Petrochemical (Nigeria), Amlaki FZ LLC (UAE), Intersnack A.S (Czech Republic), Indian Oil Corp (India), RAO UES (Russia), LLP Company Kaztranscom Service (Kazakhstan). Previous recipients of the award include Coca Cola Corse, Korea Electric Power Corp and Research Institute of Space systems among others. ■

By Shamima Chand and Munyaradzi Mangwendeza

Jet Therapy: Pure Air Massage

Massage is one of the oldest and simplest forms of medical care. The Chinese and Indians have been using massage as a form of therapy for the past 5000 years and the Egyptian tomb paintings show people being massaged. However massage lost some of its value and prestige with the unsavory created by 'massage palours'. This image is fast fading as the awareness of the value and therapeutic properties of massage grow. Massage is now used in intensive care units, for children, elderly people, babies in incubators, and patients with AIDS, cancer, heart attacks and strokes. A variety of massage techniques have been incorporated into several other complementary therapies such as aromatherapy, reflexology, Rolfing, Hellerwork and osteotherapy. Massage is reported to impact a broad spectrum of benefits on a wide range of muscular-skeletal injuries and medical conditions. It is widely used to improve drainage and generally improve blood circulation. A key aim of massage in the treatment of soft tissue lesions is to facilitate repair and the return of normal tensile strength of the damaged tissue with the production of a flexible functional scar.

A new form of massage treatment has recently been developed that employs compressed air as a massage modality and gives effects similar to Deep Transverse Friction (DTF). This method is known as Jet Therapy. Compressed air passes through a venturi system containing heater elements, medically approved filters, oil drip-filters and regulators.

This purified air is then channeled through a hose to the specially designed and hand held jets for application on the skin.

Examples of the ventures

The jets are designed to set up an agitation, which provides the circulatory massage without damaging skin tissue. The reasons that Jet Thera-py works so well can be related directly to the following 3 areas:

1. Circulatory increase- Jet therapy increases the blood flow around the body and increases the venous and arterial carrying and load capacity of these blood vessels. This enables a greater supply of oxygen and nutrients to the tissue which results in reduced healing time and healthier tissues.
2. Lymphatic drainage – massage affects change in the rate of lymph flow particularly for the bed ridden. Jet Therapy delivers excellent results in the reduction of swelling and oedema. This results in faster lymph flow and faster removal of toxins.
3. Deeper yet painless massage – the effect of air as a pressure source differs from the inconsistent pressure applied during manual massage. Rather than using forceful compression techniques, the air is expelled at a constant pressure causing an agitation and dispersing movement. This allows the depth of pressure to be constantly greater without damage to the tissues or creating a heightened pain response.

This new type of treatment:

a. Improves poor circulation
b. Speeds up recovery time of most sports injuries
c. De-toxifies the body
d. Reduces cellulite
e. Relieves tired aching muscles
f. Diminishes facial lines

Before being introduced, Professor Maurice Mars from the University of KwaZulu Natal Nelson Mandela School Of Medicine was mandated to medically evaluate Jet Therapy. In his research he found out that:

i. Jet therapy causes an acute increase in skin blood flow within a radius of 5 centimeters
ii. Increased blood blow occurs despite skin cooling
iii. As soon as the treatment stops, the effect disappears and no reflex vasodilation is noted
iv. Jet therapy does not cause changes in blood, electrolyte, CPK and LDH.
v. Jet therapy was also noted to cause less damage to skeletal myofibres than a similar form of localized pressure treatment.

The research's conclusion was that Jet Therapy was a safe form of treatment, which could be used to help patients.

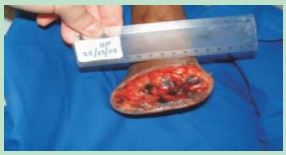
Jet Therapy and Diabetes

Jet therapy brings relief to diabetics suffering from numbness, cold feet, stiffness, tingling, and pins and needles by stimulating and increasing blood circulation in the area. It has been successfully used to save limbs from being amputated. Treatment of the diabetic is from the foot to the knee only. Treatment is painless and requires no surgical or medical intervention as it uses pure air to treat the area. Any cuts or sores are covered and avoided during the treatment and the improved circulation assists the surrounding tissue in healing. Diabetic ulcers and subsequent amputation of limbs is avoided by improved circulation which occurs in 3 ways:

1. Stimulation of blood flow through skin tissue, which is particularly important for people who have lost most of the micro vessels to the disease.
2. Dilates micro vessels for up to 6 days. This means more blood can pass through whatever remains of the blood vessels.
3. Jet Therapy reduces oedema (water retention) and therefore by reducing pressure in the surrounding cells there is less pressure and restriction on the vessels carrying the blood.

Below are 'before' and 'after photos' of diabetic patients with ulcers undergoing Jet Therapy treatment.

Jet therapy and Sports Injuries



Soon after amputation

3 months after amputation

Before **After**

Any sports injury that will benefit from a deep penetrative massage will have positive results from Jet Therapy Treatment. Jet Therapy not only increases blood flow, it provides a cooling effect on the skin equivalent to a therapeutic ice pack without any discomfort on the skin. Typical applications are strained hamstring, illiotibial band friction syndrome, shin splints, strained Achilles tendons, tennis elbow, para tendonitis and haematomas. Treatment is not recommended immediately soon after the injury if there is severe bruising.

On-going clinical trials

Trials are on-going for evaluating the effects of Jet Therapy on diabetic neuropathy as well as cellulite reduction.

By Silas Nunu

BLOOD ELECTROLYTES

In our continued endeavour to not only provide a better service for our patients but to also provide a better informed patient for our services, in this volume of our newsletter we try and demystify and explain the urea and electrolytes test panel. This panel of tests is normally referred to as U&E's. In this article we individually look at the constituent tests of this panel, but it should be mentioned that in the diagnosis and/or management of patients, clinicians will use the test results together and with other clinical data at their disposal. We are therefore obliged to tell you that this information is given to you to help you understand the value of each test, but not to substitute it for professional medical attention when it is required.

The tests for blood **electrolytes** measure certain essential elements and chemical substances that are required for basic body functions. Typically the test measures the levels of sodium, potassium, chloride, and bicarbonate in the body. These electrolytes are electrically charged minerals that are found in body tissues and blood in the form of dissolved salts and the common ones tested are sodium (Na^+), potassium (K^+), chloride (Cl), and CO_2. The main collective function of these electrolytes is to move nutrients into and waste out of the body cells and help maintain and stabilize a healthy water and fluid balance. So it is therefore important for the balance of electrolytes in your body to be maintained, because they affect the amount of water in your body, blood pH, muscle action, and other important processes such as heart and muscle contraction.

Electrolytes are normally requested together with urea and creatinine. Urea is the product of protein breakdown and creatinine is a waste product from creatine found in the muscles. Both these waste products can be used to evaluate kidney function.

The electrolyte panel is used to screen for an electrolyte or pH imbalance and to monitor the effect of treatment on a known imbalance that is affecting bodily organ function, or it just be used as a routine screen in patients with non-specific complaints.

Your diet provides sodium, potassium, and chloride; your kidneys excrete them. Your lungs provide oxygen and regulate CO2. The balance of these chemicals is an indication of the functional well being of several basic body functions, including those performed by the kidneys and heart. Therefore when the electrolytes are imbalanced it may be as a result of the following: diet, the amount of water in the body, the electrolytes excreted in the kidneys or malfunctions of the body's regulatory systems such as the hormone aldosterone which retains sodium and increases loss of potassium and natriuretic hormone, which increases renal losses of sodium.

Preparation for the test

There are specific preparation aspects to this test. It can be performed on fasting or non-fasting states.

Now to look at the electrolytes individually:

Sodium

Sodium, most commonly found in salt, is vital to normal body function. Sodium is an electrolyte present in all body fluids. Sodium is primarily responsible for maintaining osmotic pressure. In other words, it maintains intracellular and extracellular fluid levels in the body. An increased serum sodium is present in states of dehydration as a result of diarrhea or vomiting. It can also be found in diabetes insipidous (a condition characterized by excessive urination) and states of excess dietary salt. Drugs such as lithium and anabolic steroids may increase sodium levels. The symptoms of high sodium levels may include dry mucous membranes, thirst, agitation, restlessness, acting irrationally, and coma or convulsions if levels rise extremely high. Low sodium levels usually are a result of too much water in the body a state known as oedema. If the decline in the sodium is dramatic, the symptoms may be weakness and fatigue, whilst gradual decrease may result in no apparent symptoms. Thus sodium is checked as routine test.

The normal values are: 136-148 mmol/L

Potassium

Potassium is a major component in cardiac (heart) function. Even small changes in Potassium can cause abnormal cardiac (heart beats), affecting cardiac function. Too much potassium in the blood is usually caused by poor kidney function and can cause abnormal and sometimes fatal abnormalities in the heart rhythm. Low potassium levels are usually the result of potassium loss from excessive urination or from vomiting. A potassium level that is too low can result from cirrhosis or malnutrition and can result in abnormal heart rhythms.

Normal values: 3.7-5.5 mmol/L

Chloride

When combined with sodium it is mostly found in nature as "salt."In combination with sodium in the body, chloride maintains fluid levels by regulating osmotic pressure in the blood. Chloride generally increases or decreases in direct relationship to sodium. An elevated chloride usually results from abnormal kidney function. A chloride level below normal usually results from excessive vomiting. This is explained by that large amounts of chloride are produced in the stomach in the form of hydrochloric acid for the purposes of digestion, vomiting will therefore expel hydrochloric acid and chloride. Low chloride levels can also be found during diarrhea.

Normal values: 96-105 mmol/L

Bicarbonate/CO_2

The serum bicarbonate is the major buffer in the body, helping to maintain the proper blood pH. It is majorly affected by kidney and lung function. High serum bicarbonate levels are found in cases of steroid abuse and in people with difficulties in breathing. This is because due to decreased lung ventilation the body will have increased levels of CO2, which is meant to be expelled through the lungs, thus increasing bicarbonate levels. Low levels are found in kidney disease, diarrhoea, poisoning and aspirin overdose.

Normal values: 22-33 mmol/L

Urea

Urea is a waste product resulting from protein metabolism. It is made in the liver and carried via the blood to the kidneys where it is excreted. It is used as a measure of kidney function. So it is thus used to monitor patients with kidney failure or those receiving dialysis therapy. Doctors often request for urea as a routine screening panel of tests or when someone has non-specific complaints. It is requested together with creatinine if kidney problems are suspected or to monitor kidney disease treatment or the effect of certain drug treatment on kidney function.

An elevated urea can indicate kidney dysfunction or poor blood circulation to the kidneys as in congestive heart failure. Elevated urea can also result from severe burns and in prolonged states of dehydration.

Low urea levels are not common and are not usually a cause for concern. They can be seen in severe liver disease or malnutrition but are not used to diagnose or monitor these conditions.

Normal values: 2.8-7.6 mmol/L

Creatinine

Creatinine is a waste product formed when muscle tissue uses energy sources. It is carried to the kidneys via the blood and excreted from the body. It is normally steady in the body, but its mostly affected affected by the state of the kidneys. A combination of blood and urine creatinine levels may be used to calculate a "creatinine clearance." This measures how effectively your kidneys are filtering small molecules like creatinine out of your blood and thus evaluating kidney function. Elevated levels can indicate kidney dysfunction. Creatinine can also increase as a result of other factors that are independent of kidney function such as muscle injury.

Normal values: 60-125 mmol/L

by Tyron Burton

Suicide and suicidal behaviour

Fast Facts

- more people die from suicide than from homicide.
- Suicide rates among the elderly are highest for those who are divorced or widowed.
- For young people 15-24 years old, suicide is the third leading cause of death.
- 80% of people that seek treatment for depression are treated successfully.
- Males are four times more likely to die from suicide than are females, however; females are more likely to attempt suicide than males
- Suicide rates increase with age

Suicidal behaviour encompasses suicide gestures, suicide attempts and completed suicide. Suicide plans and actions that appear unlikely to be fatal are called suicide gestures. Completed suicide is when all the suicidal plans are successful and death is achieved. Suicidal behaviour usually results from interactions of several factors:

1. Mental disorder – primarily depression due to substance abuse.
2. Social factors – disappointment, loss, and lack of social support
3. Personality disorders- impulsiveness and aggression
4. An inaccurate disease or physical illness

Most of the people who commit or attempt suicide are depressed. Depression may be due to a result of marital problems, an end or unhappy love affair, or a recent bereavement. Often one factor, such as a disruption in an important relationship, is seen as the last straw. Depression combined with the physical disability may lead to suicidal attempt. Also a chronic physical inability may lead to suicide. Suicide is often the final act of self-destructive behaviour. Self-destructive behaviour is more common in people who have experienced a traumatic childhood in child abuse, or neglect or the distress of a single parent home. Suicide is also high among battered wives many of whom were also abused as children. Alcohol also increases the risk of suicidal bahaviour by worsening the feelings of depression and by diminishing self-control. 50 % of the people who attempt suicide are intoxicated at the time of attempt. In addition to depression certain mental disorders put people at a higher risk for suicide. For example Schizophrenics are more likely to attempt suicide because they are always depressed. The suicide method they chose is usually bizarre and very violent, and their suicide attempts are usually successful. People with personality disorders are also at risk of attempted suicide, especially those who are emotionally immature, who tolerate frustration poorly and who react to stress recklessly with violence and aggression. Such people may drink excessive alcohol, abuse drugs or commit criminal acts.

METHODS OF COMMITTING SUICIDE

The method a person chooses to commit suicide is usually determined by availability and cultural factors. The method also tells how serious the intention is, since methods like jumping from a skyscraper make survival impossible while others like overdosing on a drug, make rescue possible. Drug overdose is the most common method used in suicide attempts. People tend to overdose barbiturates, aspirin, and liquid poisons. Drug overdose is mainly used more by women than men. Of completed suicides, a gunshot is the method predominantly used by man since women rarely use violent methods of suicide.

PREVENTION

Any suicide threat must be taken seriously because people who attempt suicide are likely to repeat the attempt within a year. Therefore all people who attempt suicide or present suicide gestures must be treated. Suicide attempt usually comes as a complete surprise to relatives and colleagues even though in most cases early warning signs are present. Having depression correctly diagnosed and treated is a very important practical step in preventing suicide. However the risk of suicide actually increases near the start of treatment for depression as the person becomes more active and decisive but still feels depressed.

Good psychiatric and social care after an attempted suicide is the best means of preventing further suicide attempts. Since many people who commit suicide have previous attempts, a psychiatric assessment is carried out soon after a suicidal attempt. The assessment helps the doctor to identify problems that contributed to the act and be to plan an appropriate treatment.

Treatment of attempted suicide

Many people who attempt suicide are usually admitted to the hospital unconscious. When a person is known to have overdosed on a drug or poison, the doctor takes the following steps:

1. removes as much of the drug/poison as possible from person' s body by trying to prevent its absorption and speeding its excretion.
2. The doctor can administer the drug that can reverse the effects of the drug or poison if it is known.

Mostly people are hospitalized for psychiatric assessment and treatment. During psychiatric assessment the person the person may deny having any problems. Fairly often the severe depression that led to suicidal attempt is followed by a short-lived mood elevation so further suicide attempts are rare soon after the initial attempt but the risks of another suicide remain high unless the problems are resolved so counseling is very important as well as making sure that the root cause of attempting suicide is known and is removed so as to prevent anymore suicidal attempts.

IMPACT OF COMPLETED SUICIDE

A competed suicide has a powerful emotional impact on anyone involved. The person's family and friends may feel guilty, shame and remorse at having failed to prevent the suicide. They may also feel anger towards the person. Eventually they realize they couldn't be all knowing or all powerful and that the suicide in most cases couldn't have been prevented.

If you feel depressed or suicidal or know someone who is, know that help is always available. If you need help or advice please contact any of the following organizations:

1- LifeLine Botswana
Physical Address
Extension 12 South Ring Road
Plot No. 3183
Gaborone
Postal Address
PO Box 21283
Bontleng Gaborone
Crisis: (09267) 3911 270/290/544
Office Tel: (09267) 3911290

2- Childline Botswana,
PO Box 202195,
Telephone Number:
+2673900900.
E-mail Address:
childline@botsnet.bw.