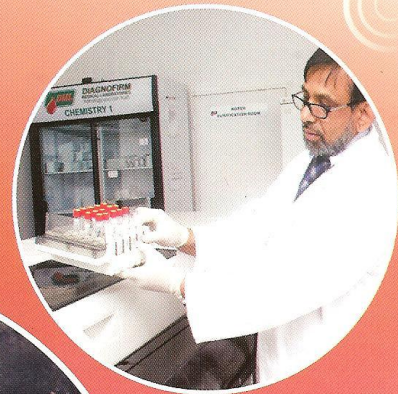
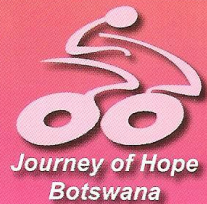


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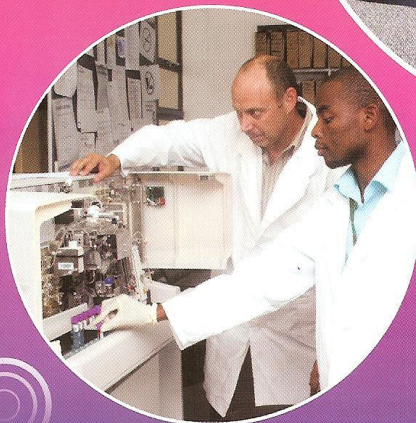
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The Editor's Pen

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Without a shadow of doubt Naeem has done an exceptionally good job with Diagnostics Update.com. I know what it feels like to give birth to a project you love, then hand it over to someone else hoping they will give heart and soul towards its betterment and see it grow from strength to strength. Naeem, wherever you are I hope you will feel consoled to know that I am passionate about any task, I take responsibility for. Thus, I commit and dedicate myself to this project totally. On behalf of Diagnofirm, Diagnostics update.com readers, I'd like to take this opportunity to wish you all the very best, everlasting success with your new ventures, as you journey to greener pastures.

Back to home ground, upon reading Naeem's past Editorials, I now realize that this task is no mean feat. I am suffering from teething pains right now, having started with Diagnofirm a month too late. Naeem had just left, so there was no real handover as such, adding to that my timing was just not right, as my daughter got married on the 21st April and I had just started a life coaching programme for children; Notwithstanding, the often overwhelming and conflicting commitments to family, friends and the community at large. On the brighter side, I sigh: "This is reality! Be grateful for this opportunity and just for being alive." The worst that will happen is that Mr Iqbal Chand will chastise me; hopefully give me a second chance. I may feel inadequate for the day and pray that I make the deadlines every other time, "manage my time better" I write in my self development journal, "don't bite off more than I can chew." Hence, the quote on "Gratitude!" on the right hand side of this page.

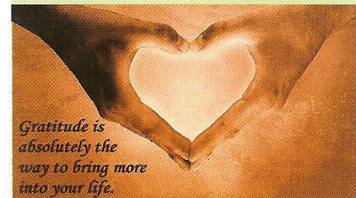
As winter beckons and weaves its cold spell over all of us, we hope you will cuddle up with the latest Newsletter from

Diagnofirm, whilst relishing sumptuously warm soup. We anticipate that you will find the information herein inspiring and useful enough to strive towards longevity. As I sit here typing this piece, the dropping temperatures outside and gloominess reminds me that some people suffer from winter depression and do not understand why. This motivates me to write an article on SAD-Seasonal Affective Disorder in the hope that it would shed light to their unanswered questions and also make us aware of this fact. I am not a winter person, as I am blessed with as many winter ailments as I could grab when God dished them out...lol, conversely, true to my nature, I hope to turn every difficulty into an opportunity and strive towards good health. Therefore, what I do see out of my window (There is a quiet calm as all of nature seems to be at peace), is not necessarily in sync with what my body feels inside. Draw Hearthiside. This is the month to sit by the fire side savouring hot cups of coffee (not very healthy, I admit) whilst I research and write to my hearts delight, remembering that pain is only as important as the attention given to it. "Get back to work!!!" I now discover the difference between Influenza (flu) and a cold; hence I share this with you.

This evening I carve out a quiet interlude, fingers tapping away at my laptop learning so much from all the research on cancer, knowledge and illustrations that can scare the daylights out of one. I feel the fear and do it anyway, so that we may better empower ourselves. Mr Needs article on "Colorectal Cancer gives one food for thought. Whilst Mr Mupunga of Diagnofirm informs us about cancer markers. I certainly hope that everyone will write their own healthy prescription to wellness; that will make others aware that we do have the choice to live a full and healthy life. I trust that those who suffer from terminal illnesses will find the courage to embrace the gentle grace of God and accept that He has a reason for everything and a solution to all problems. May they take heart and find consolation in the fact that medical science and technology are advancing at such a speedy pace, that soon, God willing there will be a cure for cancer. Our articles on cancer are geared towards male and female, to create awareness, that "prevention is better than cure". A warm, happy and healthy hug from us here at Diagnostics Update.com. Have a healthy month ahead! Sincerest regards.

Khurshida Khan

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Gratitude is absolutely the way to bring more into your life.

Gratitude unlocks the fullness of life. It turns what we have into enough, and more. It turns denial into acceptance, chaos to order, confusion to clarity. It can turn a meal into a feast, a house into a home, a stranger into a friend. Gratitude makes sense of our past, brings peace for today, and creates a vision for tomorrow.

Melody Beattie

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Diagnofirm Medical Laboratories
Private Bag 283, Gaborone,
Tel: 395-0007, Fax: 395-7980
www.diagnostics-update.com
Innocent Mupunga
Email: innocent@diagnofirm.co.bw

Advertising Sales & Copyrighting Editor

Chris Needs
Lornal Enterprises (Pty) Ltd
(267) 74157400

Editor:

Khurshida Khan
(267) 71452163
e-mail: khushi1961@hotmail.com

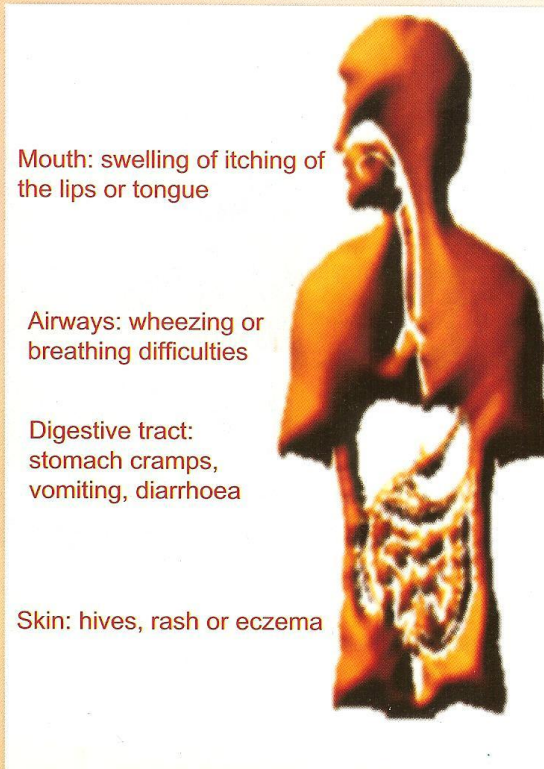
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@



Diagnofirm Medical Laboratories recently introduced the ALCAT Test, a test used for food intolerance. A tremendous amount of health problems have been linked to food intolerance and chronic inflammation (common everyday problems like migraines, aching joints, fatigue, gastrointestinal disorders, eczema, hyperactivity/ADD, asthma and even obesity). Food intolerances or food sensitivities are different from food allergies in that food allergies usually start showing within a relatively short period of time (a few days or less), while food intolerances build up over long periods and are therefore more difficult to identify.

These food sensitivities, also termed delayed adverse reactions to foods, additives and other chemicals are not really

Food Intolerance Testing in Botswana

Mr I Mupunga

classical allergies and the delay of symptom onset and the multitude of possible pathogenic mechanisms involved render the identification of the offending food(s) or substance(s) to be much more complicated. It is estimated that as many as 80-90% of the world population has some form of adverse reaction to one or more foods or additives, manifesting in a broad range of disorders such as; migraine headaches, weight gain, fatigue, hyperactivity/ADD, arthritis, respiratory and skin disorders, recurring ear infections in children, depression and various others.

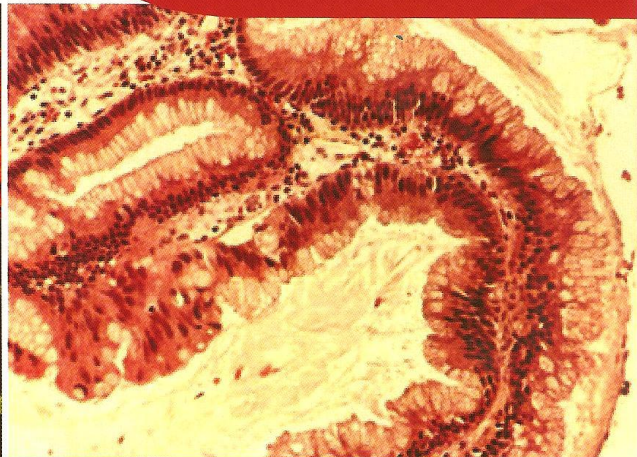
When you come for the ALCAT Test please inform Diagnofirm Medical Laboratories staff if you are on any medication. This will enable staff to make a more accurate interpretation of your laboratory results because some medications can interfere with the ALCAT Test results.

M2-PK stool test

The Schebo M2-PK Quick stool test is a visual immunochromatographic rapid test for detecting M2-PK in stool samples. The test is used for colorectal cancer screening and indicates colorectal cancer, colorectal polyps, acute and chronic inflammatory bowel disease and other diseases of the digestive tract. It does not measure blood in the stool but instead it recognizes the enzyme M2-PK (M2-pyruvate kinase), hence the M2-PK Stool Test is much more sensitive than previous laboratory bowel cancer screening tests. Previously, only non-specific tests for blood in the stool could be used to give an indication of an existing bowel cancer or its precursors. The M2-PK test is not dependent on occult blood in the stool hence it's possible to detect bleeding or non-bleeding bowel cancers, as well as polyps, with high sensitivity and specificity. This also removes the possibility of false positive results from haemorrhoids or other sources of blood in the bowel since the presence of blood in the stool is not at issue with this test.

At least 80% of colonic cancers occur in people above 50 years, but if you have known risk factors (for example a close relative has had the disease or colonic polyps), or you have inflammatory bowel disease then you should already have screening organised through your own doctor, even if you are under 50. All you need is to bring a stool sample to the laboratory and Diagnofirm staff will take care of the rest. Unlike the traditional occult blood tests, the results are not affected by anything you eat, so no dietary restrictions are necessary before bringing the stool sample.





Cancer Cells

A DREADFUL DISEASE

Editor

WHAT IS CANCER?

Millions of people the world over are living with cancer or have died of it.

Cancer commences when cells in a particular portion of the body, grow out of control and swiftly form a malignant tumour or blood forming organs that circulate through tissues and continue to spread, causing metastasis. Cancer is not a single unit; it can start almost in any area, and spread from one area to other parts via the blood stream. When cancerous cells damage DNA and the normal death of the cell does not take place, albeit new cells being created, those cells are detrimental for a person's well being, causing this killer disease.

WHAT ARE THE CAUSES OF CANCER

Medical science cannot fully isolate the precise causes of this disease. Certain perils have been identified, for instance: The environment, not taking care of one's health or inherited genetic disorders, injury in some cases. Tumours can either be benign or cancerous. There are numerous types of cancers. Precautionary measures can be taken such as: Self examination, medical checkups, annual mammograms and ultra sounds that ensure early detection in breast cancer. The earlier the diagnosis, the better the prognosis; is the usual cancer mantra that medical professionals chant. Therefore, ladies taking charge of your health is not an option, it is vital. The risk of developing most types of cancer can be reduced by changes in a person's lifestyle, for example, by quitting smoking, limiting time in the sun, being physically active, and up keeping a fairly good diet and exercise routine.

PREVENTION IS BETTER THAN CURE!

Women especially should be pro-active in having themselves examined regularly. They are predominantly prone to breast, ovarian and cervical cancer. Prostate cancer poses an

immense threat to men especially if there is a family history of it. Miller a specialist in cancer is of the opinion that women should not have babies too late in life and also that oestrogen intake should be minimal. Medical research and science have made amazing progress as regards cancer. Awareness of pre-cancerous signs can be a huge deterrence. Signs to look out for in breast cancer are fluid from the nipple duct that may be bloody or pus-like, one breast looking larger than the other or a lump that does not feel right is usually suspect. Biopsies should however be a last resort if one suspect's cancer, the advice of a doctor is essential as one can go wrong with self-examination. It cannot be emphasised enough that routine medical examinations are essential!

WHAT ARE THE PROCEDURES AND TREATMENT OPTIONS?

Surgical treatment is often considered one of the most common of management with most kinds of cancer. This, however, differs from individual to individual and depends on the proliferation and spread of cancer cells within each individual. Sometimes just the affected organ is removed from the patient's body to avoid it from further dispersal. When an entire organ is removed the cancer spreads and damages the whole organ, whereby the surgeon has no option but to remove it completely to save the patient's life. Chemotherapy then has to be used for treatment with strong anti-cancer drugs. This damages the malignant cells and cuts off their blood supply; subsequently the cancer goes into remission, depending of course on how far the damage has been done. Another way to damage malignant cells is through exposure to an infrared laser beam that diminishes the tumour by destroying cancer cells. People suffering from different kinds of cancer are usually requested to go for radiation therapy drugs and antibiotic.



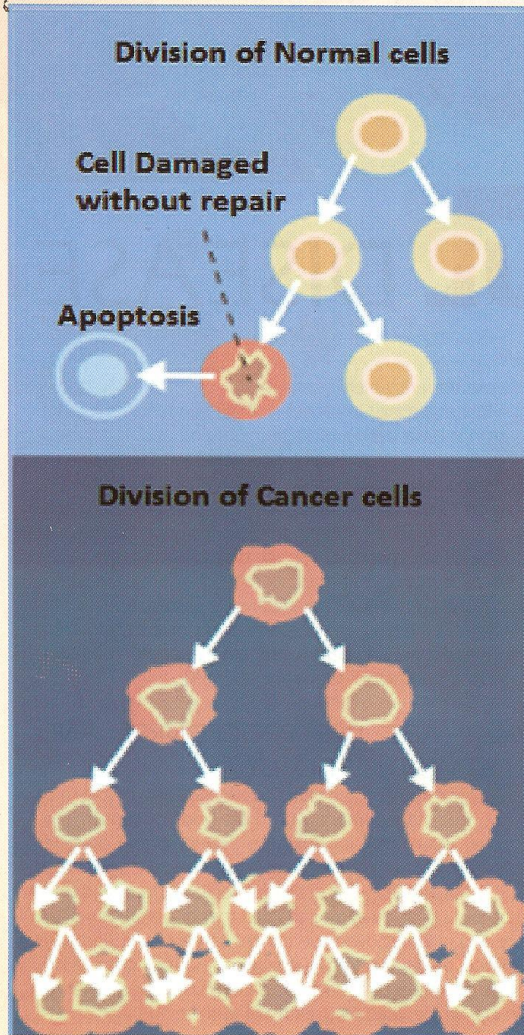
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Stem cells from the Umbilical Cord Blood and Umbilical Cord Tissue

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By Dr. Cherie Daly
(Medical Affairs Consultant, Cryo-Save Group).



Where do we get Stem Cells from?

Stem cells can be divided according to their origin and type of functional cells produced. Embryonic stem cells are mainly used in the laboratory as a research tool to understand cell development and they can transform into most cells of the human body. However, their collection results in the destruction of fertilized human embryos, which raise important ethical, moral and religious issues.

Adult stem cells – are found in the bodies of adults and children and contain numerous stem cells, including the two most commonly researched adult stem cells – namely, hematopoietic (blood) stem cells and mesenchymal stem cells (MSC). The blood stem cells produce all your blood and immune system cells, and are mostly found in bone marrow, cord blood and mobilized peripheral blood. Mesenchymal stem cells, on the other hand, are found in many parts of the body, including bone marrow, cord tissue, muscle, bone, fat, dental pulp and other organs.

The umbilical cord blood and cord tissue derived stem cells, also called “neonatal stem cells” are classified as adult stem cells as they are obtained after birth of the child and thus carry no moral, ethical or religious objection.

Hematopoietic (blood) Stem Cell Transplants

Referred to as traditional stem cell transplants as we know today, are the Stem cell transplants using bone marrow as a source of stem cells for the treatment of blood and blood related disorders. They were first performed in the 1960’s and became an established procedure for treatment of numerous malignant and non-malignant blood disorders. In the 1970’s and early 1980’s pioneers in this field discovered that umbilical cord blood (UCB) contained these same hematopoietic (blood) stem cells similar to those in bone marrow and that these cells could be collected, processed and cryopreserved. The first attempt to transplant UCB stem cells as an alternative to bone marrow stem cells was in 1972, with the first successful recorded and published umbilical cord stem cell transplant performed in France in 1988 for a boy with a blood disorder called Fanconi’s Anemia. The donor was his sister and her umbilical cord blood was collected at birth and used in the transplantation. Today, the patient is healthy and cured of the condition.

This success, followed by further published clinical data using cord blood as a source of stem cells for hematopoietic stem cell transplants, led to the establishment of both private and public cord blood banks and the optimization of umbilical cord blood collection, processing and storage.

The past 23 years of umbilical cord blood transplantation has demonstrated that:

What are Stem Cells?

Stem cells are the basic building blocks of all the cells, tissues and organs in the human body. The role of stem cells is crucial during the development of the human body after fertilization and it continues to be into adulthood. Some of them remain in our body as a “reserve” and play a key role in regeneration in the case of damaged or aged tissue.



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- Cord blood can be obtained with ease and with no risk to mother or child
- Cord blood has no moral, ethical or religious objections like the case with embryonic stem cells.
- Cord blood can be successfully cryopreserved without loss of viability or functionality
- Cord blood, when compared to other sources of stem cells, has a higher probability of being used for a family member due to the immaturity of the immune composition of the cord blood.
- Cord blood stem cells when compared to other adult stem cells like those from bone marrow or blood, are enriched with the most primitive stem cells, can divide and differentiate into different tissues and thus have potential advantages over other sources of adult stem cells.
- Cord blood is effective for treatment of numerous blood diseases, including malignant (cancerous) and non-malignant diseases.

Today over 20 000 unrelated cord blood stem cell transplants (HSCT's) have been performed worldwide utilizing cord blood samples stored and listed on International public registries. Transplant from samples stored in private banks continue to increase, mainly due to the increased clinical trial activity looking at these stem cells usage for treatment of diseases besides the traditional applications. Although cord blood was once viewed as an alternative source of stem cells for stem cells obtained from the bone marrow or mobilized peripheral blood, it has now gained acceptance among transplant physicians and is often considered as a first-line treatment.

The National Marrow Donor Program believes that this trend will continue exponentially and forecast that there will be over 10 000 cord blood transplants per year by 2015.

Regenerative Medicine

Regenerative medicine is seen as the next evolution of medical treatment. This new field shows real promise in developing therapies and treatments for previously untreatable diseases and conditions. It has a central focus on human stem cells but includes numerous areas, such as cell therapy, tissue engineering, growth factors, paracrine effects, transplantation science and others.

The purpose of human stem cells is to repair, replace or regenerate, thus numerous sources of cells have been researched and one of the limitations of regenerative medicine remains the availability of the most suitable source. To date the most suitable source of cells for this revolutionizing field remains an area of intense debate and research. However, autologous (one's own) stem cells have great advantages over allogeneic (donor) cells and is increasingly the focus of re-

generative medicine.

Cord blood stem cells as a source for regenerative medicine

Beyond the accepted and traditional applications for cord blood stem cells in stem cell transplants, cord blood is also emerging as a source for regenerative medicine and cellular therapy. The cord blood is a rich source of progenitors and stem cells, not only HSCs, but also other stem cells that have been implicated in regenerative medicine. Current ongoing clinical trials are actively pursuing this source of stem cells in the treatment of a variety of diseases.

Cerebral Palsy

It is estimated that one in every 500 children suffers from Cerebral Palsy (CP). Cerebral Palsy results from damage to certain parts of the developing brain, chiefly in the area of body movement. As prevention and prediction is often difficult, no one is immune. To date there is no curative treatment and researchers believe that regenerative stem cell therapies may offer a treatment option to regenerate or repair damage to the brain. Initial pre-clinical work showed that umbilical cord blood stem cells could divide down the neural lineage and animal studies showed marked clinical improvement in CP following human cord blood stem cell transplantations. Following on this pre-clinical work, a pioneering pilot study was recently completed by Dr. Joanne Kurtzberg and colleagues at Duke's University transfusing children diagnosed with CP and who had stored their own umbilical cord blood at birth, with these stem cells. Encouraging results from this pilot study of 184 children has led to two FDA approved clinical trials in the United States (Duke's University and Medical College of Georgia) and further studies and clinical trials in Europe and Asia.

The added advantage of this treatment is that the procedure is simple and safe and there is no risk of rejection or complications normally involved with a donor transplant.

Although to date outcomes are only anecdotal, in several cases both parents and healthcare providers have reported remarkable improvements in these children. The results of these ongoing clinical trials are eagerly awaited by the medical community and families.

Traumatic Brain Injury

Traumatic Brain Injury (TBI) is defined as a blow or jolt to the head or penetrating head injury that disrupts the function of the brain. We are all vulnerable to the most common causes like falls, motor vehicle accidents, or assaults. The high cost and the long term consequences of such injuries has led researchers

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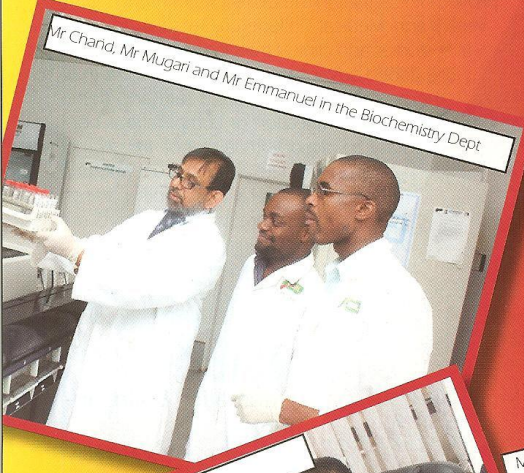


Mr Chand, Mr Bozo, Ms Rhaman and Mr Mugari

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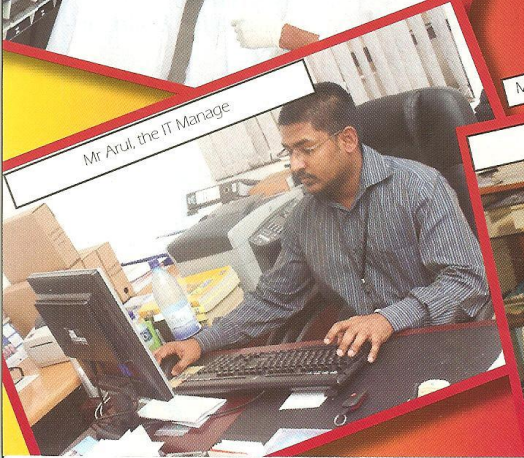
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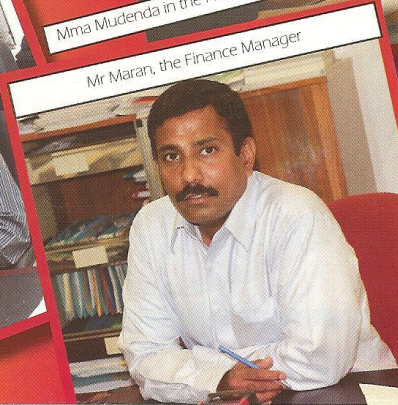
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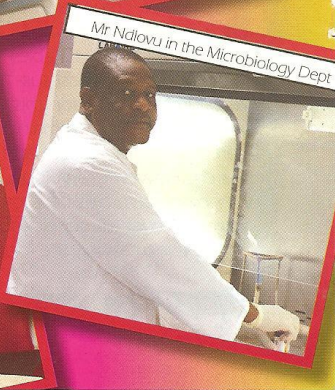
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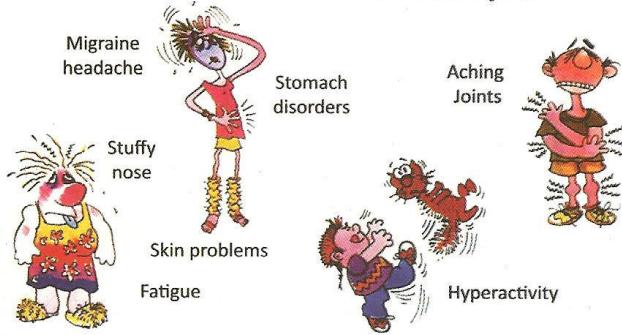
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and physicians to look at the role of stem cells to improve the outcomes of patients suffering from a wide range of functional changes due to these traumatic brain injuries. The University of Texas recently completed a pilot trial showing the safety of infusing autologous bone marrow stem cells in children with TBI and following this safety data, in January 2011 they announced the launch of a new FDA trial studying the effects of infusion of autologous (child's own) cord blood on children aged 18 months to 17 years who have been diagnosed with traumatic brain injury. A follow up of these children will be done up to two years after the infusion.

Other diseases

Besides the above mentioned diseases, other ongoing pre-clinical and clinical studies and trials are exploring this valuable source of stem cells and include hypoxic ischemic encephalopathy, spinal cord injury, stroke, heart disease, hearing loss, diabetes mellitus, burns, wounds, peripheral artery disease and others.

Cord tissue as a source for regenerative medicine or cellular therapy

In addition to hematopoietic (blood) stem cells, the most widely studied stem cells are mesenchymal stem cells (MSCs). The tissue from the umbilical cord of newborn babies is one of the richest sources of young MSCs. The advantage of this

source of MSCs (over other sources like bone marrow and adipose tissue) is that these umbilical cords are usually thrown away following the delivery of a child, thus making collection non-evasive, without risk and less expensive than collecting from other sources. Further, it has been scientifically proven that with age, MSCs decline in number and differentiation potential and thus cord tissue MSCs are the youngest available source.

MSCs are being explored and widely used in numerous clinical trials today (over 150 trials) due to their unique functional characteristics. However to date all these applications of these unique stem cells are still in research and clinical trials, results of which are eagerly awaited.

Summary


What is clear from the ongoing work is that umbilical cord blood is a precious resource of stem cells for treatment of current applications and for possible use in future regenerative medicine and cellular therapy. Public and private cord blood banks should work together to ensure accurate, unbiased, medically and scientifically supported education to all, especially expecting parents and healthcare providers about the benefits of storage of umbilical cord blood.

Together more umbilical cord bloods can be stored, increasing the number of precious samples in the banks.

Eat your veggies!

Unscramble each of the clue words.

Copy the letters in the numbered boxes to the boxes below with the same number.



NESBA

TEBES

CORLIBCO

RELCYE

RONC

GENRE SEABN

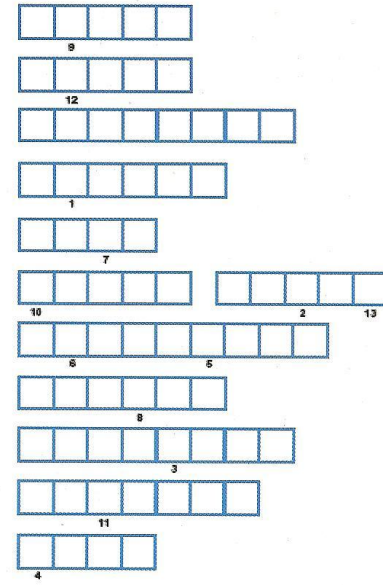
MOHSURMOS

SEVLIO

SAOTOEPT

SACHIPN

MASY



1 2 3

4 5 6 7

8 9 10 10 11 12 13

Cancer Markers

Mr I Mupunga

Cancer markers are substances that can be found in the body when cancer is present. They can be products of the cancer cells or made by the body in response to cancer or other conditions. They can be found in blood, urine, other body fluids, and in tissues. Cancer markers are used in many different ways which include screening and early detection of cancers, diagnosing cancer, determining the prognosis (outlook) of certain cancers, determining if treatment is working, and detecting recurrent cancers. Some cancer markers are seen only in a single type of cancer, while others are seen in many types of cancer.

Screening refers to looking for cancer in people who do not yet show any visible symptoms. Early detection is about finding cancer before it has a chance spread and develop. Cancer detected early is easier to treat successfully.

The two cancer markers most commonly used for screening and early detection are the prostate specific-antigen (PSA) blood test and the Pap smear cytology test. PSA is used to screen men for prostate cancer as they usually have high PSA results when prostate cancer is present. If the PSA result is inconclusive a free PSA test can be done because the ratio of PSA to free PSA can also indicate the presence of cancer. The Pap smear is used for screening cervical cancer and infections in women. All women above the age of 25 are encouraged to get screened and physicians generally recommend PSA screening for men between the ages of 40 and 75.

Cancer diagnosis is usually confirmed through a biopsy or similar type of tissue sampling. This is where small pieces of suspect tissue are taken out of the body and looked at under a microscope. However cancer markers can sometimes be used alone to help in the diagnosis of cancer. For example the alpha feto-protein (AFP) can be used to help diagnose liver cancer. The level of AFP in the blood goes up when there is disease of the liver. When it reaches or exceeds certain high levels doctors can

be sure of liver cancer even without a biopsy. Cancer markers are also used to determine the prognosis, development or spread of certain cancers, since some types of cancers grow and spread faster than others.

Among the most important uses of cancer markers is to monitor patients on cancer treatment because they are relatively easy to perform. If there is a cancer marker for a certain type of cancer, that cancer marker can be used to monitor treatment in place of other procedures like x-ray, CT scan, bone scan, or other tests. If the cancer marker level in the blood goes down it is usually a sign that treatment is working well, however if the level continues going up, then the cancer might not be responding and treatment may need to be changed or other procedures undertaken.

Cancer markers should be checked regularly for signs of the recurrence of cancer, even after successful treatment. Certain cancer markers are useful indicators once cancer treatment is complete and there are no other signs of cancer in the patient. These cancer markers include PSA for prostate cancer, AFP for certain germ cell tumours and liver cancer, cancer antigens CA 125 for ovarian cancer and CA 15-3 for breast cancer, the carcinoembryonic antigen (CEA) for colon and rectal cancers and the human chorionic gonadotropin (hCG), for gestational trophoblastic tumours and certain germ cell cancers.

Below is a list of common cancer markers, the laboratory sample required and the type of cancers associated with those markers:

Cancer Marker	Laboratory sample	Types of Cancer
AFP	Blood	Liver cancer, testicular cancer, some rare types of ovarian cancer
CA 15-3	Blood	Breast cancer,
CA 125	Blood	Ovarian cancer, breast cancer
CA 72-4	Blood	
CA 19-9	Blood	Pancreatic cancer
CEA	Blood	Colorectal cancer, lung cancer
PSA	Blood	Prostate cancer
Squamous cell carcinoma antigen (SCC)	Blood	Cancers of the head and neck, lung, oesophagus, and anal canal
Beta-2 Microglobulin (β 2M)	Blood	B cell leukaemia, Lymphomas, Multiple Myeloma
Human gonadotropin (β HCG)	Blood	Germ cell tumours, Trophoblastic disease
VMA and HVA	Urine	Neural crest tumours, Neuroblastomas, Pheochromocytoma
Calcitonin	Blood	Thyroid cancer, Bronchogenic cancers
Imunoglobulins (IgA, IgD, IgG, IgM)	Blood	Bone marrow cancers (e.g Multiple Myeloma)
Pap smear	Cervical smear	Cervical cancer, HPV infection

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How a Mother Treats Winter Ailments

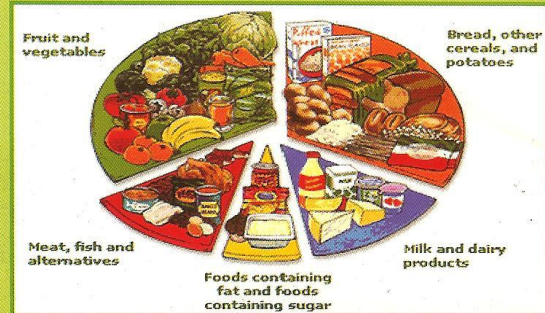
Research: Mr C Needs

Children always seem to get sick during the winter months. Winter ailments can be hard to deal with. Here are five ailments and how to treat them effectively:

- **Dry skin** - many children and adults in Botswana have to deal with dry, itchy, and flaky skin for most of the year because we have a harsh dry climate. But during our winter the relative humidity is always at its worst and we all suffer from dry skin. As a mother I know how to help my children deal with this issue. They must drink extra quantities of water. I make them carry a water bottle with them so that they stay hydrated because they get into the habit of drinking water constantly. I also use a good quality moisturizer on their skin regularly. I increase my children's iron intake. To do this make them eat more beans, red meat, and nuts. You might also want to make sure that your child takes a shower instead of a bath. Ironically the excessive moisture of bathing leads to dry skin.
- **Sore throat** - to treat a sore throat I first start by having my children gargle with salty water, as hot as they can handle. Some people use mouthwashes but warm salt water works much better and is easier on the pocket. I also give the children herbal tea to drink. The children need to stay hydrated but don't give them milk because it produces mucous. You can also use throat lozenges and cough drops sparingly but look out for any adverse reactions to the chemicals. Children under the age of seven should not use cough drops or lozenges because of the choke hazard and chemical intake. Always consult your doctor when your small children under the age of three have a sore throat.
- **Stuffy Nose** - to treat a child with a stuffy nose I prefer to not use any medications but when you must, I prefer decongestants over antihistamines though sometimes the latter are the only solution. I use nasal sprays to help my children with stuffy noses. I also make sure that they blow their noses often and that they sleep with pillows in an upright position. This helps them breathe better when they sleep.
- **Cold** - when the children first show cold symptoms I immediately make them take vitamins. For young children, they have liquid vitamins that you can get from the chemist or the doctor. Make sure the children stay warm; dress them in layers when they have to go out. I use an alcohol-free cold medicine like Panado. I prefer alcohol free medication because they do not cause drowsiness and there are no long-term implications.
- **Cough** - for coughs I start by giving the children herbal tea. I also check to see if they have a fever. When fever is present they have to stay home. I did not give any of the children cough medicine before five years of age. I also run a humidifier in their room to add moisture to the air. I get them to gargle salt water and I give them ice chips to eat. Later you can also give them zinc lozenges to suck so that they feel better.
As a mother, I have faced many winter ailments with my children. I have had to learn what works and what does not work. As a parent, you hate to see your child sick. Hopefully, these tips will help you to quickly cure your child's winter ailments this winter.



A dozen tips for a Healthy life



- 1) Make sure you don't skip breakfast, unless you get out of bed after 12 o'clock, then go straight for lunch.
- 2) Remember every gram of alcohol has 7 calories, so if your aim is to have a flat stomach or lose weight, practice acting drunk or simply cut back on your alcohol intake.
- 3) If exercise were a drug, we would all have a bottle in the kitchen cupboard. It's relatively easy to lose weight. Keeping it off is the hard part, exercise works.
- 4) The best aerobic exercise is the one that you do. The best time to exercise is that time when you do it.
- 5) Performing cardiovascular type activities (i.e. running, cycling, swimming, etc.) five times a week decreases your risk of type II diabetes by 45%.
- 6) If you smoke, why don't you give up? This is not a lecture on all smoking's bad points because you already know that smoking is a great provider of deaths.
- 7) Stress lowers the immune system. Exercise helps counter stress. Get fit to play sport, not play sport to get fit.
- 8) Garlic rich foods may be bad for your breath, but garlic causes your body to release nitric oxide, keeping your arteries more pliable. The benefit is a healthy increase in blood circulation.
- 9) When used for prolonged periods, mobile phones increase your blood pressure. This may be caused by the effect of the radio's electromagnetic fields constricting your blood vessels. My monthly phone bill raises my blood pressure.
- 10) Doing the ironing, washing, and cleaning has been found to improve your longevity. Is this why women generally live longer than men?
- 11) Forget an apple a day keeps the doctor away; try a raw carrot and a banana. Their beta-carotene and potassium can reduce your risk of heart disease by preventing plaque build up inside your artery walls.
- 12) When showering, treat yourself to a head massage. This will help relax you and it may also be good for stimulating hair growth.

WINTER BLUES

Editor

Mpho had no idea what was happening to her as every winter approached. Suddenly she needs to hibernate under thick blankets and does not want to socialise with anyone. Not even with her best friend. She craves uncharacteristic foods, especially carbohydrates that she normally doesn't bother with. This makes her feel nauseous so she doesn't want to get up when it's time to go to work. She drags her feet as she finds it difficult to pull herself together and face the day. The simplest things that normally she enjoys doing make her feel like she is trying to climb Mount Everest.

Concentration becomes a huge feat for her. Her energy levels feel depleted before she attempts to do even the smallest of tasks. She just seems to lose all interest in life. She wants to sleep all the time, becoming increasingly lethargic. She had her maid serve her so much junk to that her weight doubled. This did not do any good as she was already obese, so this further complicated her already depressed state.

Until I discovered SAD I mistakenly assumed this was just the way most people felt in winter; the same way Mpho felt and did not understand what she was experiencing. Her student doctor friend visited her one winter morning and found her suicidal. Mpho had no idea why she was feeling this way. She began to feel ungrateful for her otherwise perfect life. When Mpho related everything to Maria, Maria explained that what she was feeling was nothing to do with laziness. On the contrary, her condition is a real, medically recognised illness: melancholia. The good news was that she could do something about it.

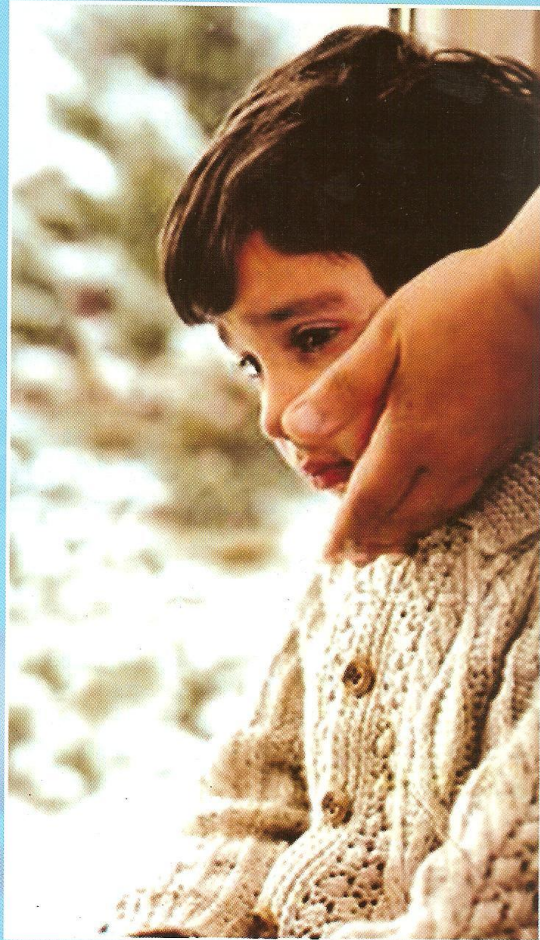
Victims of SAD suffer mood swings, increased sensitivity to pain, feelings of hopelessness and helplessness, menstrual problems and loss of libido. They suffer hypersomnia, drowsiness and find it difficult to wake up. The symptoms of SAD are quite different to that of conventional depression. On the other hand, there are other illnesses that have very similar symptoms to this disease. Although SAD is known as a winter disease, the cold weather is not responsible, rather the lack of sunlight causes the apparent ailments.

SAD does not discriminate between genders, although a greater number of women become victims of it. SAD sufferers generally have a family history of this illness. It normally strikes between the ages of twenty to forty. Children are not immune to it and this depression can carry on until adulthood. The numbers of hours we experience in a day informs us of the time of day or night as well as the time of year. A photoperiod fuels or represses the emission of hormones regulating these cycles. For example: The times we feel sleepy at night and when we are awake during the daylight normally proves how light controls functions of the hormonal system in regulating our sleeping and waking cycles.

The secretion of melatonin often stimulates the need for sleep. Melatonin is produced in a gland near the base of the brain. This is a small, pea sized section of the brain known as the pineal gland, its shape resembling that of a pine cone. When the light fades at the end of the day or it is otherwise dark outside, the pineal gland acts in response to the darkness. SAD or depression is caused by this lack of light. Melatonin travels into the blood stream thereby causing drowsiness and we only pick up again when the melatonin diminishes.

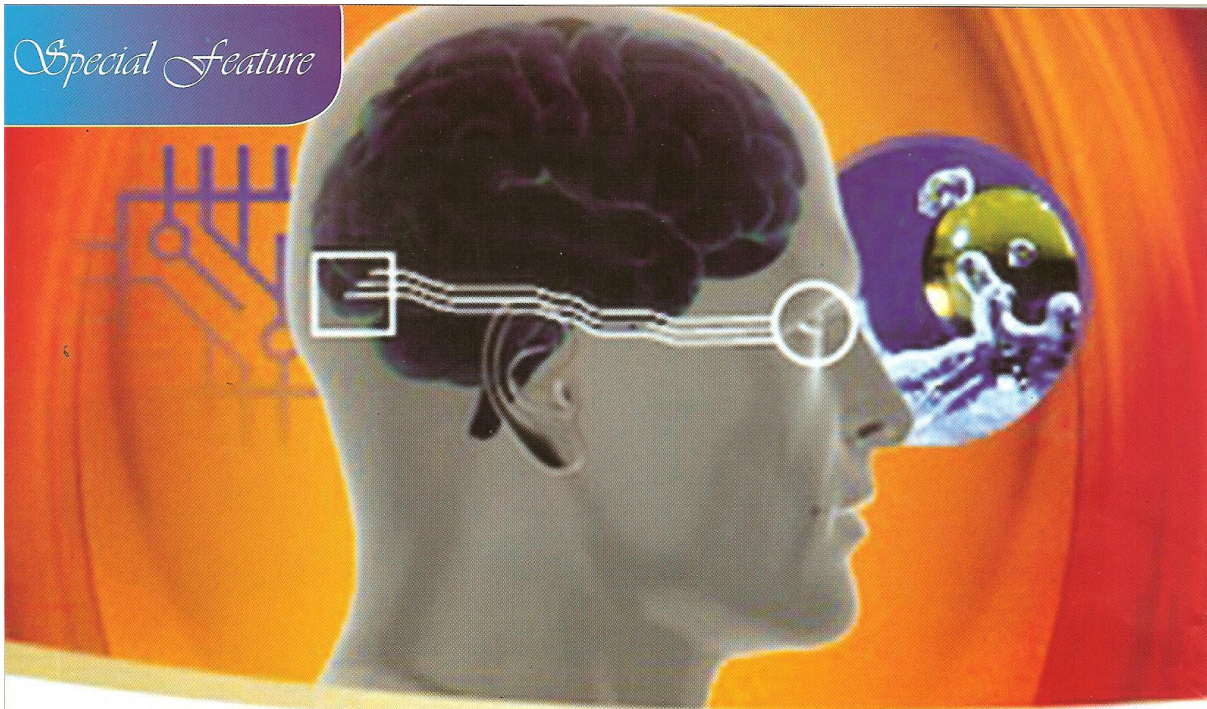
The intensity of light that controls our hormonal mecha-

S – Seasonal
A – Affective
D – Disorder



nisms in command of these bodily reactions is measured in lux. Researchers have discovered that at least 2,500 lux is needed to curb melatonin production in human beings. We are dependent on indicators from the sunlight to maintain our body clocks and to synchronise our activities, so enough daylight is essential for us to synchronise our circadian rhythms. It has been advocated that various ailments which result from hormonal imbalances — mood swings, insomnia or sleepiness at odd times and even some reproductive disorders — may be connected to a disturbance of circadian rhythms and of course a lack of sunlight. SAD is one of the examples. Phototherapy and medication are some of the treatments doctors use to treat SAD, but that's another story...

(Research by Angela Smyth in Consultation with Prof. Chris Thompson).



Bionic eye to help the

blind see

Giving sight to the blind has always been a dream of science — until now. The Monash Vision Group at Australian Monash University is developing a direct-to-brain bionic eye system that allows blind people to see. A patient wears a pair of glasses equipped with a digital camera that acts like a retina and captures low-resolution black-and-white images.

The images are wirelessly sent to a brain chip, which sends signals to electrodes that penetrate into the visual cortex, the part of the brain that controls vision.

"When those electrodes are stimulated they produce sensations of light in the brain in the visual field of the recipient," the group's general manager Dr. Jeanette Pritchard tells ABC Online. "They're known as phosphenes and they're almost like pixels on a TV screen."

Although the images are too grainy to help blind people with reading or driving, Pritchard says this is a huge milestone for helping the blind see. The team will start testing the system later this year on people who lost their sight in traumas. They are not sure yet if and how the bionic eye will work on people who have never seen.

Dr. Pritchard tells ABC Online:

"It's important that, for our first patient, they have had full adult vision so that we know that their brain can process these kinds of signals because it has done so previously," Dr. Pritchard said.

"It will be a lot about how the patient can learn to interpret that information to the optimum level to get the most out of it."

Future looks good for bionic eye prototype [ABC Online]

Source: <http://www.smartplanet.com/blog/smart-takes/bionic-eye-to-help-the-blind-see/25186?tag=nl.e098>

References: <http://www.abc.net.au/news/2012-04-05/scientists-to-test-bionic-eye-prototype/3936204>

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Colorectal cancer

commonly referred to as bowel cancer

By Chris Needs

Colon and rectal cancers are distinct from one another but are normally combined for statistical and other reporting purposes. The incident ratio of colon cancer to rectal cancer in developed countries is approximately three to one (3:1).

Colorectal cancer is the highest cancer killer only after lung cancer even though the incident rate is considerably lower than for lung, breast and prostate cancers.

Colorectal cancer is not as common in less developed regions mainly because the bad eating habits common in so-called first world countries are a big contributing factor to this cancer's prevalence.

Early detection is the main key to survival of all cancers. The chances of surviving colorectal cancer diminish to less than forty percent (40%) if the disease is only diagnosed once the symptoms have become noticeable or severe.

Colorectal cancer is not recognised as a hereditary cancer but is known to be predominantly caused through poor quality life-style: long term eating of certain foods such as high fat, red meat, lack of exercise and other factors.

There are essentially three stages to this disease. In the initial stage the cancer normally starts in the bowel lining. If detected at this early stage the chances of survival are as high as ninety-five percent (95%). The cancerous tissue is surgically removed and, providing there is no relapse (by the patient changing their eating and drinking habits), survival is all-but guaranteed.

If the cancer spreads through the bowel wall then treatment, mostly from surgery but with some chemotherapy, will not be so sure of success. If the cancer is allowed to spread to the rest of the body, notably the liver and the lungs, the prognosis becomes very grim and ninety-five percent (95%) of patients with distant metastases are unlikely to survive longer than five (5) years.

People over the age of fifty that are at a higher risk of contracting the disease should be screened on a regular basis for colorectal cancer. The high risk criteria include having one or more first degree relatives affected by colorectal cancer at the age of forty-five (45) years or less; sedentary life-style; drinking more than one alcoholic drink per day; smoking or a high intake of red meat or fat.

Staging is the term that describes the process of finding out how far a cancer has spread. It is based on the results of physical exams, biopsies, or imaging tests (CT or MRI scan, x-rays, PET scan, etc.), as well as the results of surgery.

There are two levels of staging for colorectal cancer.

The clinical stage is a doctor's best estimate of the extent of the disease, based on the results of a physical exam, biopsy, and any imaging tests the patient has undergone.

After surgery, a doctor can also determine the pathologic stage of colorectal cancer. This is based on the same factors as the clinical stage, plus what is found as a result of the surgery.

The clinical and pathologic stages can be different in each case. The cancer may be found to be at a more advanced stage if, during surgery, the doctor finds cancer in an area that did not show up on any of the clinical tests.

Almost all patients with colorectal cancer have to undergo some level of surgery. Therefore the pathologic stage is most often used when describing the extent of this cancer especially as it is likely to be more accurate than clinical staging because it allows the doctor to get a firsthand impression of the extent of the disease.

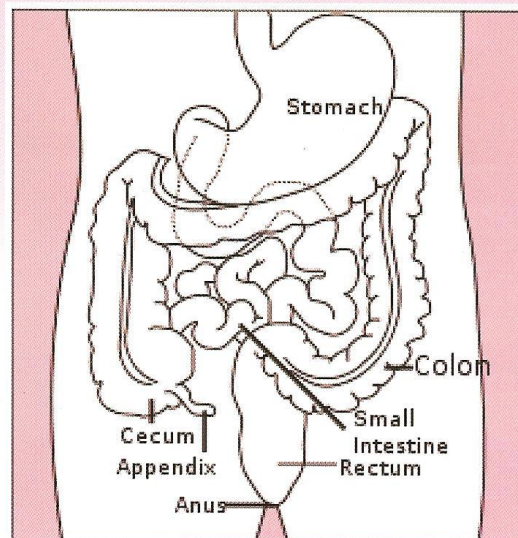


Diagram of the lower gastrointestinal tract

Radiation is not a useful option to be used on colon cancers simply because of the high sensitivity of this part of the body but it can be used sparingly in conjunction with some types of chemotherapy for rectal cancer. When the disease has progressed to such an extent that radiation or chemotherapy are needed then the treatment is mainly palliative and rarely curative.

The good news is that the number of deaths from the disease has decreased as a result of improved tests that allow early detection of the cancer, so that it can be more easily treated. Proper physical activity and better eating and drinking habits can be directly associated with a decreased incidence of colorectal cancer.

Xtra-Ordinary *Life Style*

Magical Me

(Ages 4-9)



Introduction
Is a Unique, well researched, highly stimulating, one of its kind, state of the art Life Coaching Program with

strategies for success, in all spheres of your child's development. Empowering them with positive life skills that'll help them cope with anything that life throws at them and still reach their full potential in a fun, safe and non-intimidating manner.

LIFE SKILLS



In today's challenging times children are left helpless in the face of social ills. Early intervention is vital so as to arm them, not alarm them to act responsibly. Parents are forced to be pro-active. Children who are unable to climb on the band wagon battle. Lying dormant within most of us is an innate magical seed that most people are totally unaware of, such awareness gave birth to successful icons like Einstein, Edison, Bill Gates, Minda Cox/Nick Vujicic who travel the world motivating others, imagine quadraplegics who became artist/writers –they paint/write with their mouths. We hope to plant positive seeds in the minds of children helping them blossom into beautiful flowers, through discipline, nurtured with love, positive attention and guidance. What better models to emulate? Paradoxical as this may sound, all it takes is a positive attitude, great will power, habit forming activities and coaching. We decided to make a difference in the lives of children, who will someday make a huge difference themselves. Commencing at grassroots level; can transform our future leader's lives in ways that can only astound us. These techniques have been researched by neuro-scientists, psychologists, and experts from all

walks of life. It offers life skills and practical tools that liberate children's intrinsic brilliance, letting their natural abilities shine and their morale's soar. We coach children to clear both their emotional impasses and physical challenges, with inspiring exercises, techniques designed for all individuals starting at 4 years old, offering self healing techniques as well. Through life's trials and tribulations, children's instinctive radiance gets covered with layers of unresolved hurt, moments of failure, and emotional shut downs, they learn very real and practical ways to maintain their joie de vivre. Much as we want to protect our children it is not always possible. The answer lies in empowering them in a non threatening manner, with tools that aid in their defence and growth. With this in mind, I sensitively and compassionately compiled notes that conquers fear, re-assures children to meet their challenges. It has helped 2 million children globally. It has award winning educational benefits. Daily children are abused. It trains them on how to respond when feeling threatened by crime, abuse or

being victimized. They become confident and assertive, stand up to aggression, rather than be submissive victims to bullies and molesters. We plant positive seeds in the minds of children, seeds of confidence, watered with self belief and motivation by accelerating their development. Seemingly insurmountable challenge will become insignificant in the face of their new levels of confidence. It is a complete system that unleashes their natural powers and gets them into daily positive habits and actions. What do we do and how does it benefit them: Brain entrainment: When the right and left hemisphere of the brain works in harmony, the brain works optimally. The right side of the brain has to do with intuition; spatial relationships lateral thinking (creativity) and directs the left side of the body. The left side of the brain deals with logical, analytical, linear thinking, and it regulates the right side of the body. The mind absorbs most when it is relaxed. The lesson comprises of mind power combined with psychological and physical exercises, including life

Whatever the mind believes and conceives, it can achieve

skills, cooking, art and craft, speech and drama, role play, ball skills, puppet play..ball skills career games etc..(Increases IQ), brain gym, physical exercises. Kids Yoga-improves health & fitness, a stress buster, strengthens posture, builds confidence, flexibility controls negative emotions; raises self esteem, releases excess energy, keeps bones healthy, helps with gross motor skills, blood circulation. (PQ) **Conscious breathing techniques**—de-toxes cells, loads blood and brain with oxygen thus heals body mind and spirit, it is an antidote for anger, calms, nourishes the brain, energises, lifts moods, promotes positive emotions and is a sleep aid. (EQ) **Meditation: creates attention by releasing tension**-Increases concentration quotient, calms the mind, relaxes the body, and rejuvenates the spirit. Controls thought processes. Teaches discipline, clarity of mind, promotes spiritual growth (not religious), you become aware and an inner alertness expands the mind and generates insight. Insights into character- helps change negative behaviour patterns, corrects bad posture. Helps children sleep peaceful. **Creative visualization: Affirmations:** It has been proven

Amazing Me

(Ages 10-12)



that strong repetitive concentrated positive thoughts bring about positive language, thus positive action and leads to being mindful of words that influence the brain. That in turn manifests, creating a positive force. What you utter with your tongue has an effect on yourself and others. This conscientises them to be mindful of what they say, and how it benefits or serves them. **Strategies for success:** "your attitude is your altitude" – developing a positive mindset, setting calculated goals to a time line. Is the glass half empty or half full? Formulae for successful living. Self confidence, initiative, persistence, creativity, leadership qualities. Overcoming failure, criticism, fear, guilt, taking calculated risks. Positive beliefs, they learn that problems are opportunities in disguise. They work with a vision and a mission. Goal setting, prioritizing, decision making, communication skills, professional and business strategies, by playing out roles as eg: doctors, business men..(Increases Social & success quotient) Raising safe kids in an

unsafe world: Using a non fearful approach to teach children safety in the home, outside the home, at school, public places, stranger danger, saying NO! When your instincts tell you an adults behaviour is not kosher. Not to keep secrets even if you are given a gift-dangers of keeping secrets, walking tall, what to do when lost, home alone safety rules, standing up to bullies, self esteem building, self defence, what to do in times of crime, trouble..(Increases Emotional and resiliency quotient) **Building good character-good manners** Put on your thinking cap, put on your feeling cap, children discuss their feelings; learn how to communicate effectively, good behaviour in public, with adults, respecting others, daily manners and etiquettes **Leadership and Independence:** Taking responsibility for their own lives, acquiring leadership qualities, taking charge of any situation, problem solving skills, learning to be an entrepreneur, teacher, bank manager etc....

For more information call:
Khurshida Khan 71452163
Email: khushi1961@hotmail.com