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This special issue of CX focuses on one of the most terrifying diseases known to the human race – cancer. Cancer is one of the leading causes of death in the Caribbean, indeed globally. Yet, despite the often gloomy focus on the disease, this issue of CX approaches the topic with hope, as many of the articles featured here focus on opportunities for treatment. Some articles address coping mechanisms and medical options for cancer patients as well as ways to prevent cancer.

Of course, CX also serves up its usual mix of articles on other important topics.

Sharmella Roopchand-Martin, guest editor of this special issue, has done an excellent job in bringing the various articles together. Along with our Editorial Board, designer/compositor and contributors, Roopchand-Martin has worked assiduously to produce something truly exceptional. Readers will also notice that Arawak Publications is our publisher for this issue.

As usual we appreciate your feedback on our work. Please write us at caribxplorer@gmail.com with your comments, and visit our website at www.caribxplorer.com cx

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By Sharmella Roopchand-Martin
Guest Editor

I posed the following question to a group of approximately sixty first-year physical therapy students: “Is there anybody in this class who has lost a parent, close family member or friend to cancer?” I was quite taken aback as the hands began to rise and thought they must have misunderstood me so I repeated the question. The students confirmed that they were clear on the question. Almost one in every five students had lost someone they knew very well to cancer. I was quite shocked. My anticipation when I asked the question was that I would be lucky to find a single student who had lost a close family member to cancer. Is it that the occurrence of cancer is increasing or is it that we have developed better technology and are now better able to diagnose the disease? The answer to these questions is not certain, but I would like to believe it is an affirmative mixture of both.

According to the World Health Organization, cancer is a leading cause of death worldwide. In 2007 it accounted for 7.9 million deaths with approximately 72% of all deaths occurring in low and middle income countries. It is estimated that by 2030 there will be 12 million deaths from cancer. Every country in the world has been touched by this disease, but the experiences, challenges and concerns are quite varied. In 2011 I attended the European Organization for the Research and Treatment of Cancer Quality of Life Symposium. I was quite impressed when I saw on the list of presenters patient advocates. This was the first scientific symposium I had ever attended where patients were given a voice. As the cancer survivors launched into their presentations I was quite taken aback by the differences in their reality compared to our situation in the Caribbean region. Their biggest concerns and fight were related to easier access to clinical trials and being more involved in the research process. The last year leading up to this conference I had a lot of interaction with cancer patients on this side of the world, and their primary concern was being able to access any form of treatment. What a difference! Will we ever get to a place where access to treat-

ment is a non-issue and patients can be involved in the process of finding better treatment and a cure?

This issue of *CaribXplorer* focuses on cancer. It is well known that early diagnosis and treatment allow for a more successful outcome in this population. The article titled “Breast Cancer: Making the Diagnosis” highlights very well the step by step process involved from the detection of the lump during a breast examination to a confirmatory diagnosis. There are many cancers, however, where even with early detection the spread is rapid and there is very little curative treatment that can be done. The focus shifts to making the dying process as painless as possible, and palliative care with all its dimensions becomes essential in the management of these patients.

Prostate cancer is one of the most common types of cancer affecting males throughout the world. The incidence of this form of cancer is fairly high in the Caribbean region and the fact that this is the only form of cancer for which there is a dedicated Caribbean website is an indication that it is a sufficiently large problem. According to data on the Prostate Cancer Caribbean website (<http://pccaribbean.wordpress.com/>) approximately 500 males in Jamaica and 350 in Trinidad and Tobago are diagnosed with prostate cancer each year. Given the high incidence of this type of cancer it is important therefore for every male aged 50 and over to visit their doctor for annual screening in order to aid the process of early detection and treatment. Success rates with this type of cancer are fairly good if detected early, but a very common complication of prostate surgery is loss of bladder control. This can prove to be quite an annoyance for those who are affected. However there is hope. The article on regaining bladder control with biofeedback explains very well this non-pharmaceutical approach to managing urinary incontinence. In addition to being known for having a high incidence of prostate cancer, the Caribbean region and in particular Jamaica is known for its prowess in athletics. Is there a possible link

between the two? This is explored by Dr. William Aiken in this issue of *CaribXplorer*. Lifestyle is believed to be a major contributor to many of the common diseases today and diet and exercise have been advocated for both the prevention and management of disease. Cancer is no exception. The concept of anti cancer nutrition and the role of exercise are explored by various contributors.

The battle against cancer is like all other types of battles: it drains the financial, physical and emotional resources of a country and its people. United in research and treatment, we stand a better chance as a region of winning this battle; divided we will continue to see patients suffer. Long waits for medical diagnoses, inaccessibility of treatment services, and an inability to provide the best available treatment that medical technology has to offer will continue to plague us. I look forward to the day when we can boast of having a Caribbean organization for the research and treatment of cancer that will bring together the best minds in the region including those affected with the disease to develop and execute a regional fighting strategy against this disease.



Dr Sharmella Roopchand-Martin is a lecturer at The University of the West Indies Section of Physical Therapy, Mona. Her area of specialty is orthopaedics, neurology and vestibular rehabilitation.

Breast Cancer: Making the Diagnosis

By Gillian Wharfe



Cells in the body normally divide at a steady pace. When cells begin to divide rapidly, they may form a lump. These lumps can be benign (non cancerous) or malignant (cancerous). When this occurs in the breast, it is breast cancer. These cancer cells can spread to organs and tissues other than the breast but regardless of where they go, (lungs, bone, brain or liver) it is still breast cancer.

Risk factors for developing breast cancer include a family history of breast cancer (uncommon), a personal history of breast cancer, never having a child or having the first child over the age of 30 years, early onset of periods or late occurrence of menopause and some types of benign breast disease. Diet (high fat, low fibre), and prolonged use of hormone replacement therapy have also been shown to increase the risk of breast cancer.

The three main methods of detection of breast cancer are mammography, breast self-examination and breast examination by medical personnel. Mammography uses X-rays to allow a picture of the breast to be taken. It requires the flattening of the breast between two plastic plates (on the X-ray machine). This may be painful and uncomfortable but does no harm. A specialist reads these X-rays and may request an ultrasound of the breast to get additional information if an abnormality is detected. The cancer may show up as calcifications or white dots on the film. The woman should not wear deodorant or powder before the procedure as the silica particles may look like calcification on the film. Mammograms should begin at age 40 and be done once per year thereafter.

Breast self-examination should begin at 20 years of age as this allows the woman to become familiar with the consistency and contour of her breasts, thus allowing her to detect any changes that may occur. Examination of the breast by a doctor or nurse may pick up differences between the

breasts which the woman may not notice. If there is a suspicion that a lump is cancerous after a patient has had a mammogram, the doctor will arrange for a biopsy to be done. This is done by cleaning the skin over the lump and giving a local anaesthetic to numb the area. Using a special needle and often with ultrasound guidance, the doctor will then take a core of tissue from the lump. This is a core biopsy. This can help to say whether there is cancer or not and whether it is invasive. That tissue can also be used to determine the benefits of certain types of drugs in the treatment of cancer. If the biopsy is negative and there is a suspicion of cancer, the lump may then be removed. This is an excisional biopsy. Sometimes a lump is not felt but there are suspicious calcifications on mammography. In this case the radiologist can place a needle to identify the area which appears abnormal. The patient is then returned to the surgeon for excision of the tissue surrounding the needle. This is known as hookwire localization.

Planer

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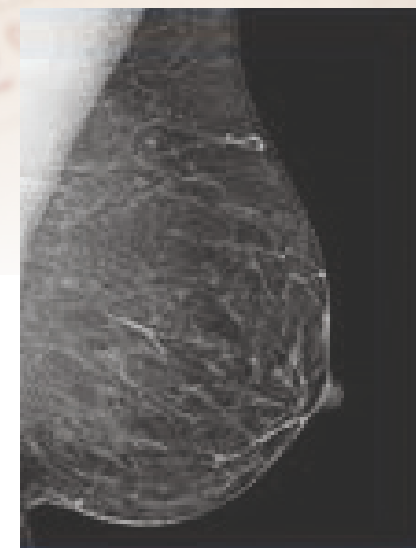
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- mammogram

All removed tissue is sent to a pathologist who can then determine whether the tumor is cancerous, the grade of the tumor and whether it is invasive or not.

After this the patient can then decide with her surgeon on the surgical treatment of the cancer. This may include mastectomy (or removal of the breast) or removal of the lump and draining of the lymph nodes in the armpit. The patient may also undergo a procedure to determine which are the first nodes likely to be involved with cancer. This is done by injecting a dye and a radioactive substance into the affected breast. These substances drain to nodes in the armpit. These nodes are identified by the blue colour or the radioactivity and then removed and examined by the pathologist. If there is no tumor in those nodes, then it is unlikely that any of the lymph nodes in the armpit are involved with cancer. This spares the patient from having many nodes removed resulting in swelling and numbness of the arm. In some cases if the tumor is large, the patient may receive drugs to shrink the tumor before surgery is done.

Once the cancer diagnosis is made, additional tests such as chest X-ray, abdominal ultrasound and bone scan are done to assess whether the cancer has spread outside of the breast. All of these not only diagnose cancer but also help us to make appropriate decisions in the treatment of the cancer. **cx**



Dr Gillian Wharfe is a consultant haematologist/oncologist and is a senior lecturer in the Pathology department at The University of the West Indies, Mona.

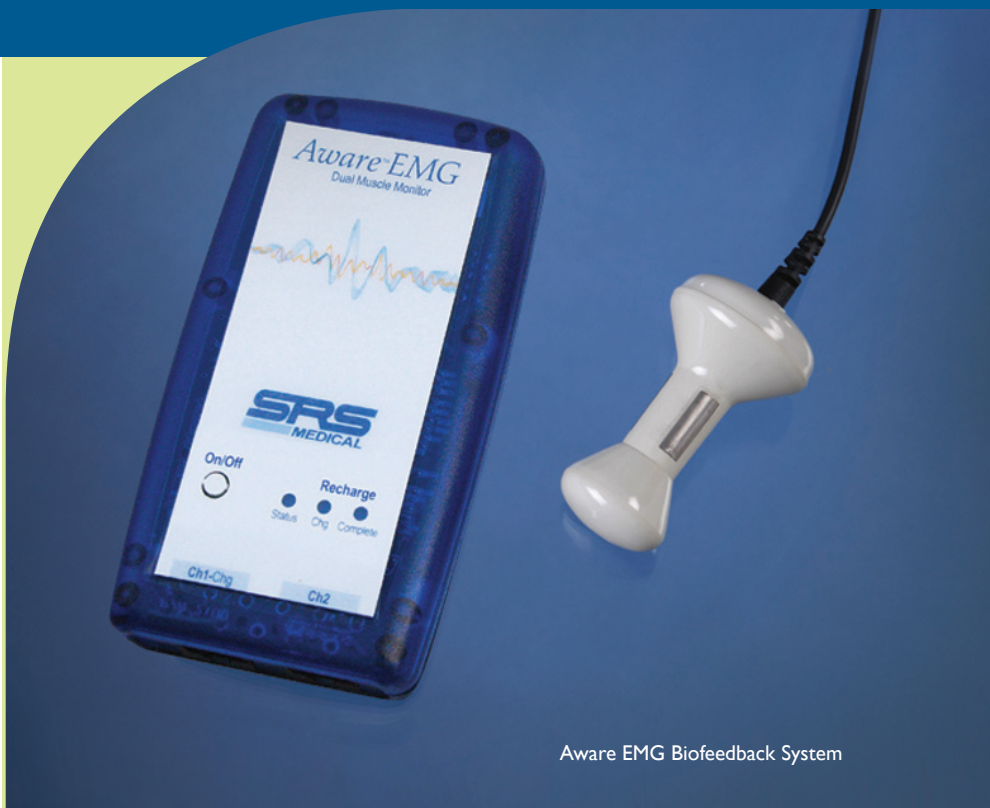
Regaining Urinary Continence and **SEXUAL FUNCTION** with Biofeedback

By Chithrah Cherian

The prostate gland is roughly the size of a walnut and is located at the neck of the bladder, surrounding the urethra. It is part of the male reproductive system and it plays an important role in maintaining bladder control and in the production of semen.

Unfortunately, as men age, several problems can occur with their prostate. These often begin to develop in middle age, with prostate cancer being a common problem in men above 50 years of age. Although many persons may experience no symptoms throughout their lives, prostate cancer may cause pain, difficulty in urinating, problems during sexual intercourse, or erectile dysfunction in others.

For reasons unknown to us prostate cancer has been on the rise at a rate that is of great concern. It is the most commonly diagnosed cancer in men in the USA and Jamaica, and is certainly the second common cause of cancer-related mortality in males. Persons with organ-confined prostate cancer are usually offered the option of undergoing surgery, radiotherapy or watchful waiting. Among the surgical procedures is radical prostatectomy which involves removal of the entire prostate gland, surrounding tissue and seminal vesicles. Depending on tumor characteristics and the patient's sexual function, either nerve-sparing (to preserve erectile function) or non-nerve-sparing radical prostatectomy is commonly performed.

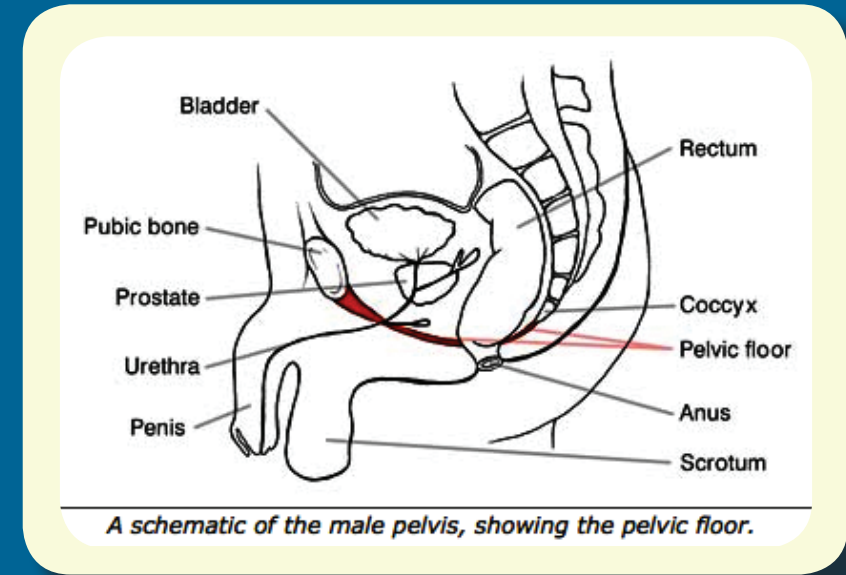


Aware EMG Biofeedback System

Prostate surgery is one of the major causes of urinary incontinence (loss of bladder control) in the male population. Erectile dysfunction is also a frequent, unfortunate symptom following radical prostatectomy. Although the ability to have an orgasm is generally preserved, some may suffer from lack of orgasms and absence of ejaculation. The causes of erectile dysfunction after prostatectomy are commonly due to injuries to the blood vessels and nerves during the surgical procedure. Urinary incontinence following prostate surgery has been

documented as one of the major causes of lowered quality of life for these patients. This can have deep emotional impact and will require intervention for those who have concern about their loss of bladder control and reduced sexual function.

Surface Electromyographic (sEMG) Biofeedback is a treatment approach used by physical therapists to assess and retrain muscles of the pelvic floor that have been damaged during prostate surgery.



The male pelvic floor

The pelvic floor is made up of layers of several muscles that stretch from the pubic bone in the front, to the coccyx (commonly referred to as the tail bone) in the back. It forms the floor of the pelvis and is the main support structure for the organs that are found in this region. Furthermore, it assists in maintaining continence by closing off the bladder and bowel outlets, preventing leakage, and enhances the ability to achieve and maintain an erection.

The biofeedback is an electronic instrument that accurately measures, processes and feeds back information about individuals' neuromuscular activity in the form of an analog or binary, auditory and/or visual output. It has been used in treatments for over six decades and has helped people alter muscle activity, peripheral blood flow, cardiac activity, sweat gland activity, brain electrical activity and blood pressure. sEMG biofeedback is used for musculoskeletal rehabilitation and since it can display measurements of pelvic floor muscle activity, it enables patients to be more aware of their pelvic muscle function, thereby enhancing and motivating their efforts during training.

sEMG biofeedback training is conducted by physical therapists who have completed postgraduate training in this area. During the training a small electrode is inserted into the rectum and patients are asked to

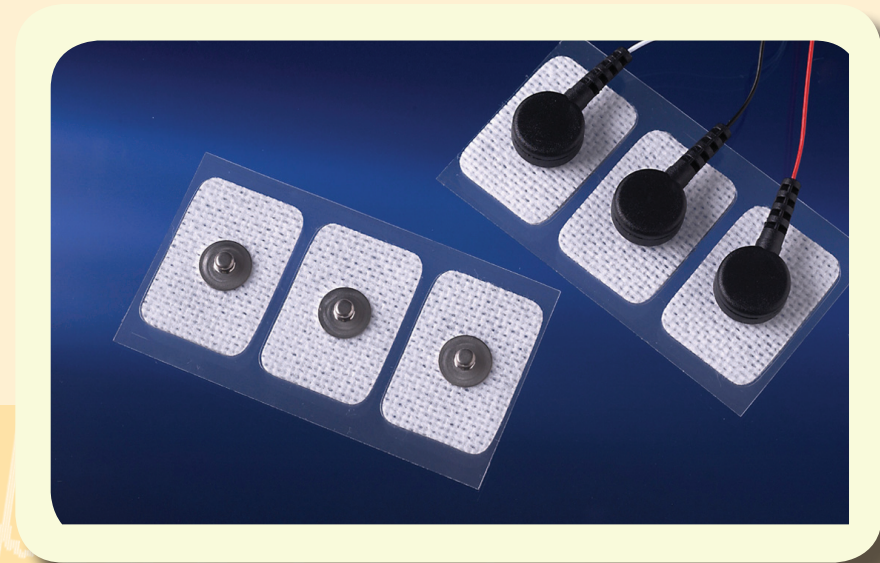


Orion Platinum EMG Biofeedback System

squeeze their pelvic floor muscles around the electrode. Small surface electrodes are also placed over the skin on the right side of the abdomen in order to monitor inappropriate use of the abdominal muscles. The muscle activity is displayed on a computer screen (the activity may or may not be accompanied by musical tones). Based on the pattern of muscle contraction seen on the screen the therapist will identify what specific problems need to be addressed. They will then develop a treatment plan to improve pelvic muscle strength and endurance and essentially assist in improving symptoms of urinary incontinence and erectile dysfunction in individuals who have undergone prostatectomy. Use of this type of feedback system helps patients to quickly learn to isolate the appropriate muscle group and ensure that they are contracting the right muscles during training.

Pelvic floor muscle exercises, commonly known as “Kegel” exercises, may be performed together with biofeedback to restore continence and erectile function. The pelvic floor muscles are regular skeletal muscles and will therefore adapt to strength training in the same way as other skeletal muscles in the body. The aim of the strength training regimen is to improve muscle strength, tone and endurance thereby improving the function of these muscles. This type of training has been shown to improve pelvic floor contraction and hence may improve strength of the external urethral sphincter (the muscular ring at the base of the bladder that controls the storage and release of urine from the bladder). Moreover, contraction of the pelvic floor inhibits the contraction of the muscles of the bladder (known as Detrusor), thereby improving the body’s ability to control the flow of urine and ensure that accidental leakage does not occur. Additionally, pelvic floor muscle training assists in contraction of the small muscles surrounding the penis thereby aiding in achieving an erection.

Several studies done over the past two decades have shown the effectiveness of biofeedback and pelvic floor muscle training on improving symptoms of incontinence and erectile dysfunction. It is even more beneficial for patients who are candidates for surgery to begin this type of training at least three months before surgery. Numerous research studies have shown that patients who receive training before surgery will have earlier recovery or improvement of symptoms of urinary incontinence and erectile dysfunction. **cx**



Surface EMG electrodes



Dr Chithrah Cherian is a senior physical therapist at the Kingston Public Hospital physiotherapy department. She is Board Certified in Biofeedback for Pelvic Muscle Dysfunction, by the Biofeedback Certification International Alliance

What is PALLIATIVE CARE?

By Derrick Aarons

In Jamaica, we live in the midst of sickness and health, and when we fall sick we are sometimes dependent on the provision of health care in various doctors' offices, medical centres and hospitals across our country.

We may have what is termed an 'acute' illness, which is short-term and lasts only a few days to a couple of weeks. However, the illness may be 'chronic' – lasting several months or years and may even be life-long, as in diabetes and 'high blood pressure.' In palliative care we are concerned with illnesses that are called 'terminal' – that is, they result in eventual loss of life. End-stage cancer, end-stage AIDS, and end-stage organ diseases such as severe heart or kidney failure where no organ is available for transplant, are examples of such terminal illnesses.

'Palliative' means reducing or eliminating the symptoms associated with the disease (such as pain, nausea, anxiety, etc.) without actually curing the disease. 'Care' refers

to the type of interest and support given in the health care setting, and has certain specific features. It assumes that human beings are capable of concern for other people's needs and well-being, and that care is important to human survival and development. It also involves meeting important life events such as illness, disability, and death.

In Jamaica, most persons are unaware of the nature and scope of palliative care. Palliative care focuses on care for the dying. Palliative care services may be generally provided in the home, in the hospital, or in specially designed institutions called 'hospices.' It involves the control of physical symptoms, as well as support of the emotional, psychological, spiritual and social aspects of the person's existence. As the terminally ill patient does not exist in a vacuum, palliative care also provides support and respite for the family and loved ones of the terminally ill person. The aim is to help the person to live comfortably until he or she dies, in peace and without pain, and with dignity. His or her family may also be provided with emotional support and bereavement services.

The psychological, emotional and social effects of a severe debilitating disease may be much more disruptive to the sick person and their entire family than the actual ravages of the physical disease. Hence 'total' support that goes beyond physical care is necessary. In the Middle Ages, the term 'hospice' described a place of shelter that existed for respite and comfort. However, over the past 60 years the term 'palliative care' has come into existence and depicts total holistic supportive care for terminally ill persons and their relatives.

Whilst we do not have research statistics for the Jamaican population, based on a British study up to 55% of cancer patients may already have an incurable-disease when they first visit a doctor's office with ailments. For the remaining 45% of patients, attempts to cure the disease occurs (expensive surgery, radiation, and chemotherapy), resulting in 30% obtaining long term cures while the treatment failures (15%) will require palliative care. This means that up to 70% of all cancer patients (the 55% that first presented too late for a cure, plus the 15% treatment failures) may require terminal care.



The diagnosis of any terminal illness often is accompanied by very expensive interventions, and research has shown that the allocation of human and financial resources is highly concentrated on the earlier part of the disease, while less priority has been given to beginning early palliation to bring about a better quality of life. Yet, justice dictates that patients who are dying have access to needed care that is at least equal to that provided in the curative phase attempts of their illness.

Many centuries ago, before the development of modern surgery, radiation services, chemical therapy, and scientific medicine's ability to cure or put diseases into remission, caring for the sick and dying was at the heart of medicine's practice. The concept of palliative care existed then (although it was not called by that name). The continuance of care to the end of life even when cure is not possible was an important component of health care. Nowadays, we are more fixated on the details of diagnosis and treatment than on the greater moral issue of caring. Yet we all have the responsibility to ensure that persons who may be hopelessly ill die with dignity and with as little suffering as possible. This includes decisions about when attempts at radical cure should cease and

palliative care supportive measures begin.

Terminal care has to be individually tailored to the particular needs of each patient and his or her family. All symptoms of the patient (pain, nausea, vomiting, diarrhoea, anxiety, depression) and concerns (existential, spiritual, social, and financial) as well as the challenges for the family caregivers have to be addressed. Care for some persons may require a great deal of support, and 'round-the-clock' nursing care may sometimes be needed. The supportive role of relatives and friends is often very important to any successful care for patients in their home setting. The breaking of bad news, as well as catering to family members and caregivers that may eventually be exhausted and in need of rest and relief are of great importance. Further, whilst care is ideally provided in surroundings that are familiar to the ill patient (usually his or her home), there may be special circumstances where problems may be too difficult to manage at home, and so admission may be necessary to an in-patient facility such as a hospital or hospice.

Due to the comprehensive nature of palliative care, the services may include the expertise of an appropriately trained doctor, nurse, home health aide, spiritual coun-

sellor, social worker, physical and occupational therapist, and volunteers. However, where very limited finances exist, a palliative care doctor (trained to provide physical as well as psychological and spiritual support and psycho-social advice) and a nurse's aide may be adequate for care. Patients at the end of life should always be afforded a good quality of life for their remaining days! **cx**

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ST. GEORGE'S SCHOOL OF VETERINARY MEDICINE BRINGS INTERNATIONAL COLLABORATORS TO GRENADA

The School of Veterinary Medicine at St. George's University in Grenada promotes international collaboration in areas from aquatic medicine to bee-keeping to diseases in poultry, and its research attracts scientists from around the world to its host nation of Grenada. Newly developed programmes follow on the heels of the School's 2011 accreditation by the American Veterinary Medical Association's Council on Education for their Doctor of Veterinary Medicine (DVM) Program.

Last year, the School completed the construction of a 2,200 sq. ft. laboratory for its Aquatic Animal Medicine Program, taking full advantage of its location at the intersection of the Atlantic Ocean and the Caribbean Sea. Here, international collaborators from Canada, Australia, the United Kingdom, Singapore, Peru, and Ecuador join St. George's scientists to work in aquatic animal disease research.

The School also maintains a parasitology research programme, and both students and faculty come from countries such as Morocco, Uganda, Kenya, Turkey, Romania, Peru, Brazil, Guyana, St. Lucia, and the Dominican Republic to participate. Their veterinary science colleagues from Makerere University in Uganda and the Kigali Institute of Science and Technology in Rwanda travel to Grenada to train St. George's veterinary graduate students in animal health, animal product processing, and food safety.

St. George's School of Veterinary Medicine also established the East Caribbean

Bee Research and Extension Center, and works with the University of Florida, and laboratories in Canada, Brazil, Argentina, and Costa Rica to provide research for the sustainable development of the bee-keeping subsector in the Caribbean.

Long Leader in Global Education

St. George's University has defined innovation in global education for more than 35 years, equipping students with the skills and experience they need to be successful in today's shrinking world. The University offers 43 academic programmes in medicine, veterinary medicine, public health, and business, and has contributed over 11,000 physicians, veterinarians, scientists, public health and business professionals to the global workforce since its founding in 1977. St. George's boasts a strong network of affiliations with institutions in the United States, the United Kingdom, Canada, Australia, and Ireland and draws students and faculty from 140 countries to its main campus in Grenada. More than 1,100 students from around the Caribbean region are enrolled at St. George's across its many programme offerings.

43 Dynamic Degree Programmes

St. George's offers advanced, premedical, and preveterinary degrees in its Schools of Medicine and Veterinary Medicine, as well as independent and dual graduate degrees in the sciences, a CEPH-accredited public health programme, and business. Undergraduate degree programmes are available through its School of Arts and Sciences.



Stunning Campus

Over the last decade, more than US\$250 million has been spent to create a beautiful, state-of-the-art campus, rivalling those of the most prestigious universities in the world. The sprawling campus includes over 65 buildings in a vibrant seaside location. The True Blue campus provides all the amenities and technologically advanced facilities of a world-class institution, while offering beautiful scenery and majestic views of the Caribbean Sea.

For more information about St. George's University, visit www.sgu.edu, call +1 (473) 444-4680, or hear testimonials from St. George's students on www.youtube.com/St.GeorgesU. Information is also available through YouTube, Facebook and Twitter at [StGeorgesU](https://www.facebook.com/StGeorgesU).

Sprinting Prowess and Prostate Cancer: Are they related?

By William Aiken



Introduction

This year 2012 will mark 50 years since Jamaica became an independent nation. It is also anticipated that it will be an outstanding year for Jamaica as it prepares to participate in the upcoming summer Olympics in London.

Jamaica's athletic sprinting prowess has become legendary and expectations are high that the 2012 Olympics will be one of the best ever in Jamaica's athletic history. But what accounts for Jamaica's outstanding track record in sprinting and how does a small country such as Jamaica with limited resources produce such awe-inspiring athletic performances?

Apart from its legendary sprinting prowess Jamaica is also characterized by having a high prostate cancer incidence and mortality rate. Prostate cancer is in fact the number one cancer affecting Jamaican men and the leading cause of male cancer related deaths. Indeed, one study performed in 1998 by Johns Hopkins University in collaboration with Jamaican urologists found that Jamaica had the highest prostate cancer incidence in the world at 304/100,000/year. Since that study, Jamaica's cancer registry has documented more conservative rates, the latest being 78.1/100,000/year in 2010. Interestingly, other Caribbean territories such as Guadeloupe and Barbados have since documented much higher rates such as 168/100,000/year, and the Caribbean region is recognized as having the highest prostate cancer mortality rate in the world at 26.3/100,000/year. Of course, sprinting talent is not unique to Jamaica but is distributed throughout the Caribbean. Could these two seemingly un-

related phenomena be related in any way whatsoever? Could there be underlying causal factors that are common to both phenomena?

There in fact exist overwhelming similarities between the geographic and demographic distributions of athletic sprinting prowess and prostate cancer. Both phenomena are clustered among African Americans and Afro-Caribbean peoples. African Americans as an ethnic group have the highest established prostate cancer incidence in the world. The incidence of prostate cancer is 60% greater and the probability of death almost three times higher from prostate cancer among African Americans compared to Caucasian Americans. In most Caribbean islands prostate cancer is not only the most common male cancer but it is also the most common cause of male cancer related deaths. Note, for instance, the high incidence (as referenced above) in Gua-



deloupe, birthplace of Marie-José Percec and Christine Arron. Of course the sprinting accomplishments of African Americans and Afro-Caribbean peoples in general and Jamaicans in particular are legendary. Is the clustering of these two phenomena due to chance, the admixture of European and African ancestry or are there some causative underlying sociocultural or biological factors which are common to both? Could history perhaps have intersected with biology to create reasons for this clustering?

Talent and Tradition are Intertwined

Looking at sprinting prowess in isolation, possible reasons for the skewed distribution (especially in Jamaica's case) include a strong athletic sprinting tradition, excellent coaches and outstanding sports administration – including regular development meets and national schools' championships – which serve to efficiently identify and nurture ath-

letic talent from an early age. Without the requisite talent however, no amount of development meets and championships along with outstanding coaches can compensate to engender the types of stellar performances we have grown accustomed to see – and indeed now almost take for granted. How many of us really believe that if we were able to transplant our tradition, coaches and athletics administration with all its allied support systems to, say, India or even Kenya we would be able to replicate our athletic sprinting success? The fact is tradition and talent are intimately intertwined: we do what we are good at and we establish tradition when we do outstandingly well repeatedly!

Is it in the Eating of Yams?

But where does the outstanding athletic talent come from? And could it be that the same underlying factors which account for

our athletic sprinting talent also account for Jamaica's high incidence and death rates from prostate cancer? University of Technology president Professor Morrison believes that athletic prowess is partly due to the eating of yams, which are high in phytates and other substances thought to boost athletic performance. However, Nigeria, by far the world's largest per capita consumer (and producer) of yams with a population of 150 million people and an athletic sprinting tradition, does not even come close to the sprinting accomplishments of the almost 5,000 Afro-Trinidadians who eat little if any yams, not to mention Jamaicans! Food for thought, but perhaps not yams!

Regarding the Trinidadians, it is interesting commentary that all their outstanding sprinters are of African descent. Again, is this primarily due to sociocultural/ environmental factors or could racial/ethnic differences in innate talent explain this? Could the way society is structured, and the power relationships within it, as well

as the avenues and opportunities for social mobility and economic advancement available to people of African descent who have historically been exploited and marginalized be part of the reason for the differences seen in athletic prowess? The incidence and mortality rates from prostate cancer are three times higher among Afro-Trinidadians than among Indo-Trinidadians, although these two racial groups share more or less the same environment!

Synthesis of Hypothesis

In advancing a hypothesis of a common link between sprinting prowess and prostate cancer, the following have been noted and an attempt made to synthesize them:

- Both these phenomena are dependent on the male hormone, testosterone. Lean muscle mass and muscular strength are necessary for sprinting ability and both are highly dependent on testosterone. There is some evidence that testosterone can influence the ratio of fast to slow twitch muscle fibres – the former being necessary for sprinting ability. The testes, the source of 95% of the testosterone in the male, if removed by castration during young adulthood can prevent prostate cancer from ever developing – and indeed, castration has been used as a means of treating advanced prostate cancer since Huggins and Hodges first discovered this effect in the early 20th century.
- Anabolic steroids taken by athletes enhance athletic sprinting ability. (Remember Ben Johnson and many others?)
- The skewed racial distribution with respect to sprinting prowess and prostate cancer in Trinidad and Tobago already alluded to.
- Testosterone blood concentrations do not differ markedly between different races and populations.
- The testosterone receptor which mediates the effects of testosterone is generally more responsive in people of African descent and this is correlated with the number of cytosine, adenine and guanine (CAG) repeat sequences in one end of the gene that codes for the receptor. The lower the number of CAG repeats, the more responsive the receptor.

- The ratio between the index finger (2nd digit) and the ring finger (4th digit) of the right hand in men (2D:4D ratio) is related to the level of antenatal exposure to testosterone in utero. The lower the ratio the higher the antenatal testosterone exposure. Studies suggest that Jamaicans have among the lowest 2D:4D ratios in the world.

- Persons of African descent are generally known to have a narrower and deeper bony pelvis compared to Caucasians (a fact every pelvic surgeon who operates on different races is aware of) resulting in the typical 'cock bottom', and this is believed to be due to the differential influence of testosterone in Blacks compared to Whites.

- Prostate cancer incidence and mortality in men of African descent in the Americas is higher than in men in urban West African centres.

Hypothesis Linking Sprinting Prowess and Prostate Cancer

Briefly, the hypothesis is that persons of African descent in the Americas (New World), who are descendants of African slaves who survived the Middle Passage, experienced a population shift in favour of greater testosterone responsiveness compared to Africans living in Africa, and this was created by the inhumane conditions under which the slaves were transported. The specific conditions (slaves packed tightly in the hull of the slave ship in stifling, hot, humid conditions with little convection of air, and in body fluids such as urine, faeces, vomit and menstrual effluent) created a tremendous selection pressure in which many slaves succumbed. Some ship logs indicate that as many as 90% of the slaves perished during the average 3 month long journey! Those who survived did so not because of luck or chance but because they had specific attributes which allowed them to withstand the adverse effects of the inhumane conditions.

It is hypothesized that the slaves who survived had greater lean muscle mass and therefore higher skin surface area to body volume ratios and were consequently able to dissipate heat more efficiently and keep

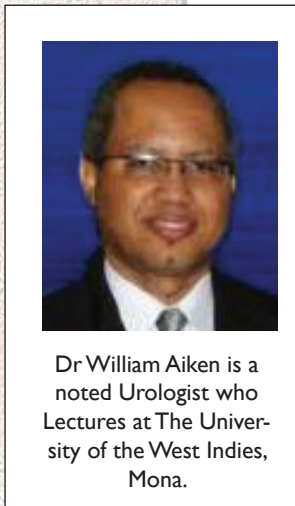
relatively cool in the hull of the slave ship; those with greater haemoglobin concentrations were able to enjoy better oxygen carrying capacity and therefore greater tissue oxygen delivery in the stifling conditions; those with thicker, harder skin and greater sebum production were able to resist the macerating effect of lying in urine, faeces, vomit and blood for hours without getting skin infections and sores; those with thicker and more robust bones resisted bone fractures which, should they have occurred, would have meant being tossed overboard; and finally, those with the mental toughness, vitality and aggressive will to survive would have experienced a survival advantage.

These attributes are all expressions of testosterone's influence on the human mind and body. Among the slaves surviving the journey there would be a much higher proportion exhibiting these features than among those who originally began the transatlantic voyage because of the severe selection pressure. Those without these attributes would have more easily succumbed and died. Multiply this scenario many times over for a total period of 4 centuries and voila! – a shift in the population distribution of testosterone responsiveness in favour of greater responsiveness when comparing descendants of African slaves in the New World to West Africans in Africa. This would partly explain why relatively small countries like Jamaica and Trinidad have done better than Nigeria – the seventh largest country in the world and by far the world's largest consumer of yams – when it comes to sprinting prowess. It would also explain the much higher incidence and mortality from prostate cancer in the Americas compared to urban West Africa.


The observation that Australia (as a country) currently has the highest documented prostate cancer incidence in the world fits nicely into this hypothesis. Australia, by virtue of being originally a prison colony for British prisoners historically would have been constituted by persons on the more aggressive end of the population spectrum. The Australians would have experienced a population shift in favour of testosterone responsiveness when compared to the British population of origin. Moreover, the long and perilous, though not as inhumane, journey from Britain to

Australia would have created some selection pressure for only the very fittest to survive. I predict, partly based on the above hypothesis, that if Australia were to develop a tradition of sprinting they would do well at it compared to their European Caucasian counterparts!

Sprinting prowess and prostate cancer are phenomena which both have multiple causative factors. This article has served to offer a hypothesis which accounts for the very similar skewed racial and geographic distribution of these two seemingly unrelated phenomena. Perhaps the population shift in testosterone responsiveness explained above may be interacting with dietary (yams, maybe!) and other environmental/sociocultural factors such as excellent coaching to produce the current picture. **cx**



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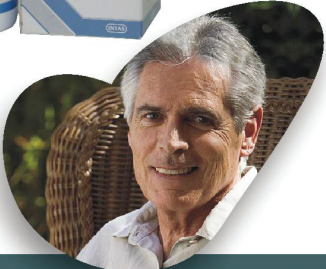


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Having Regulatory Approvals

ANTI CANCER NUTRITION

By Chuka Ikelionwu



From the beginning of time, from the days of old, our ancestors have always appreciated the fact that there is a perfect balance in all things: light and darkness, water and fire, good and bad.

Today it is common knowledge that many natural occurring entities play more than a fair role in the onset and development of cancer as a disease. As this disease continues to gain reputation across the land, as cancer continues to gain recognition worldwide as probably humanity's greatest health care challenge, it is perhaps comforting to recall this law of balance that has helped nurture our understanding of science to this day. If there are cancer causing foods and substances, then there must be

anti cancer foods. Thankfully such foods exist. They exist like the disease itself, in bountiful supply, in all forms and global in distribution.

Studies have shown that culminations of multiple factors are necessary for cancer cell development and growth. Some of these factors include racial and geographic distribution, heredity, advanced age (for most tumors), environmental ex-



They can destroy normal human cells by cell membrane damage. This is also hypothesized to be their mode of action in their implication as aging agents (and partly explains the role of aging as a facilitating factor in cancer development). The direct mutagenic effect of these reactive oxygen molecules on nuclear and mitochondrial deoxyribonucleic acid (DNA) is the key to their activities as cancer causing agents. Their ability to facilitate expansion of tumor tissue is likely due to their effect on DNA and especially their mutagenic effect on regulatory genes resulting in unregulated cellular proliferation. These normal regulatory genes (or proto-oncogenes) become oncogenic when their gene arrange-

ment is changed and heralds the production of mutant cells from an aggregate of oncoproteins formed. The result is usually an exaggerated production of normal cells (tumors).



Tumor suppressor genes naturally serve as the body's defense against tumor development; they simply arrest the development of abnormal cells during the cell development cycle. When reactive oxygen species destroy or inactivate tumor suppressor genes, uncontrolled cellular proliferation results. Today we know that important genes like the p53 gene promote the death of mutated cells, and that c-myc promotes cellular proliferation. These are a few of many genes that have been mapped out and studied over the years for their role in cell development and malignancies. A mutation resulting in over expression of c-myc and down regulation of p53 illustrates two sequences that could initiate cancer development should they occur simultaneously.

posure and acquired risk factors (as seen in some viral infections and some other disease processes). These factors serve as a connection between a normal cell and the mutation and monoclonal expansions of mutated cells.

High concentrations of reactive oxygen species (ROS) facilitate the initiation of sequences that result in tumor progression. Reactive oxygen species occur naturally as a byproduct of normal cellular activity.



Protection against the enemy

Antioxidants occur in nature in the foods we eat. Many of these foods we have taken for granted for many years. As the cancer battle wages on, and as the cure for most cancers continues to elude man, scientists have in the past and present continued to look at these foods. One of the oldest questions to have come up in scientific arguments is how and why cancer has suddenly increased in recent years. Was it simply a case of poorly developed scientific knowledge and therefore under diagnosis of an already existing dis-

order or has this disorder become more prominent as a result of changes in human habit and activity? Why is cancer what it is today? Most believe that human changes have heralded this recent development, and still many believe that an example of such changes includes alterations in our diet - simply put, what we eat, and the way we eat.

Scientists have consistently investigated the roles of various food substances in cancer prevention and treatment. These foods have as their weapon large concentrations of antioxidants. By reducing and

preventing free radical damage to cell membranes and maintaining the integrity of cell DNA proteins these foods are able to keep cancer at bay.

We have always known that fruits and vegetables were not just good for us but had ways of boosting our immune system. Since most fruits are rich in vitamins, they are able to fight and prevent cancers through the antioxidant actions of vitamins - in particular vitamin E which has the greatest antioxidant ability of all the vitamins. Other foods contain even more antioxidant chemicals. The following list though by no means exhaustive briefly explores the anti oxidant nature of these foods.

BERRIES

Blueberries, blackberries and strawberries contain anthocyanins. These antioxidants are found in varying concentrations in these natural occurring fruits. Anthocyanins are also responsible for the beautiful and varied diversity in colour of this food group.

TOMATOES

The antioxidant lycopene and its high concentration in tomatoes have given tomato sauce and pasta life saver status in cancer prevention and treatment.

GARLIC

Research has shown the effectiveness of garlic in the prevention of gastrointestinal malignancies especially in the prevention of cancers of the esophagus, stomach and colon.

TUMERIC

This natural occurring herb/ seasoning has shown great promise in recent times as a valuable tool for cancer prevention and progression. Studies by the American Cancer Society support the effective role of turmeric in cancer prevention. In particular, evidence suggests that the ac-

tive ingredient here is curcumin. Curcumin prevents the initiation of cancer growth and also has the ability to decrease the size of tumor cells.

GREEN TEA

Studies continue to support the popular notion that herbal teas have health benefits. Catechins in addition to preventing DNA damage have also been found to shrink tumors and decrease the rate of tumor cell growth. Catechins are found in high concentrations in green and black tea. Naturally, there is a higher concentration of catechins in green tea than exists in black tea.



WHOLE GRAIN FOODS

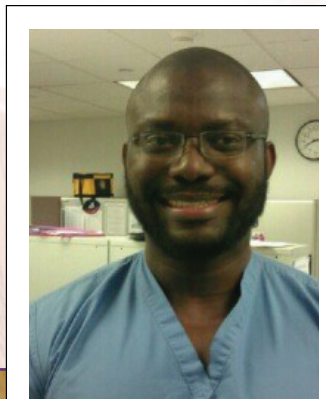
The American Institute for Cancer Research has extensively studied the role of whole grain foods in cancer prevention. The role of these foods in cancer prevention is multiple. While the antioxidants contained in this class of food directly prevent cancer growth, the fiber from this class of nutrients helps reduce serum low density lipoprotein (LDL) concentration. The complexity of whole grains also ensures slow release into the blood stream. This is an advantage to persons with diabetes as this facilitates and helps regulate blood sugar levels. Diabetes mellitus in itself is considered to be an important acquired factor that helps facilitate tumor progression. So, it is safe to say that this group of food offers a two-way approach against the war on cancer.

Research is continuous in this field of study. We are learning more about these foods and their therapeutic properties every day. Recent studies from the American Institute of Cancer Research also seem to suggest that an excessive amount of anti-



oxidants may be detrimental in the fight against cancer.

Whatever the case, the importance of these food groups in the fight against this global problem cannot be overemphasized. Studies are currently ongoing to determine what levels of antioxidants are required to keep the "enemy" away from us. **CX**



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FIGHTING the BATTLE with EXERCISE

By Gail Nelson and Sharmella Roopchand-Martin

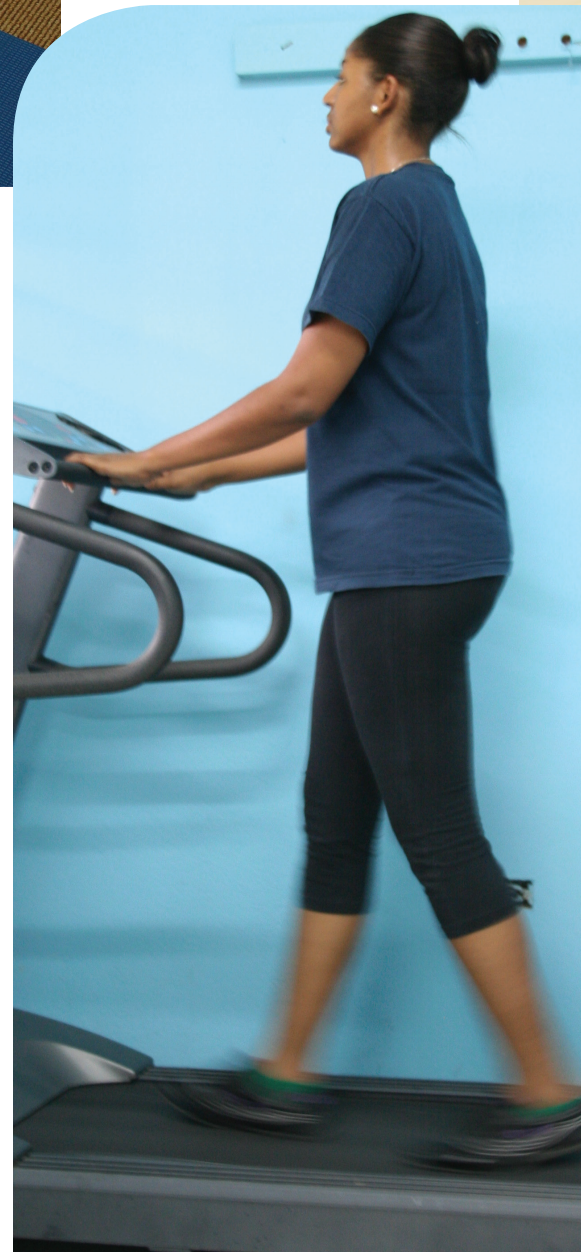
Physical activity and exercise are thought to play an important role in cancer control across the entire cancer experience; however, most of the research in this area has examined exercise and cancer risk reduction, rather than management.

Yet, very little is known about the role of exercise in preventing a recurrence or reducing mortality in those with cancer. According to data from the American Cancer Society, the survival rates have markedly increased for cancers of the prostate, breast, colon, rectum, and for leukemia over the past three decades. With new treatment techniques and increased utilization of screening, there is hope for even greater improvements in the near future. Advancements in detection and treatments of cancer will mean a continued increase in survival rates. Therefore, every effort should be made to become knowledgeable about methods to increase function and quality of life in this population. Participation in exercise has emerged as an effective method to maintain a healthy lifestyle after diagnosis with cancer. This is especially so for breast and colon cancer survivors.

Although the specific means by which exercise works to reduce cancer recurrence and mortality is not known for all cancers, for breast cancer it is thought that exercise regulates certain factors which are closely associated with cancer. These include:

- sex hormones
- the chemicals which help to regulate the amount of sex hormones circulating in the body
- insulin resistance
- body mass index
- body composition

In most persons physical inactivity will lead to an increase in body fat, which in turn results in reduced uptake of glucose by the muscles during activity and increased circulating insulin. The increase in the amount of insulin in circulation is associated with low levels of a chemical (sex-hormone-binding globulin) which regulates the amount of sex hormones present in the body at any given time. Low levels of this chemical are known to promote the growth of breast cancer cells. Exercise training is known to decrease body fat and decrease the amount of insulin in circulation.



Exercise may also play a role in reducing some of the adverse effects of cancer treatments. The most common treatment modalities are: surgery, radiation therapy, chemotherapy and hormone therapy. Adverse effects from these treatments include: decreased range of motion, loss of function, pain, reduced skin elasticity, fatigue, poor coordination, muscle

loss and weakness, weight gain, and osteoporosis. All of these may be partially or completely alleviated by participation in regular exercise.

Many cancer survivors dealing with the effects of the cancer and its treatment may be hesitant to begin an exercise pro-

gramme. It is a common perception that exercise will only further stress an already compromised body. However, there are established guidelines which may be followed for safe participation in exercise. The recommended levels of exercise as given by the American College of Sports Medicine are outlined in the table below.

	Recommendation	Things to keep in mind:
Mode	Any method of exercise which involves using the lower limb and trunk muscles, for example, cycling and walking	The mode may need to be modified based on the type of cancer, the stage of the disease and the type of treatment. You may need to discuss this with your physician and/or physical therapist.
Intensity	50% - 70% of heart rate reserve	Begin to exercise at 50% or your heart rate reserve and as you become fitter, you may gradually increase the percent to a maximum of 70%.
	11 - 14 on the Rating of Perceived Exertion scale	This scale, developed by Gunnar Borg, measures your perception of how hard you are working during exercise. A rating between 11 and 14 corresponds to a perception of light to hard work.
Duration	20 - 60 minutes	Interval training may be used if continuous work is stressful. This is training in which the person alternates periods of exercise and rest for the duration of the session, e.g. 5 minutes of exercise followed by 2 minutes of rest and so on until the time allotted for the session has elapsed.
Frequency	May be done daily using lighter intensities and shorter duration	In order to benefit from exercise you should train at least three days per week.

For the cancer survivor just beginning, it may not be feasible to start at the levels indicated if you are extremely deconditioned. In this case, exercise should be commenced under the supervision of appropriately qualified personnel. This person will conduct a detailed assessment and develop a programme that is best suited to you.

Beginning an exercise programme can be like jumping the first hurdle of a race. Once you have cleared that hurdle, staying in the race presents other challenges. This is even more so for the cancer patient who has to endure adverse side effects of the disease and treatment. These may become barriers to participation in exercise. Other barriers include:

- very poor fitness status prior to the cancer
- perceived difficulties in making exercise a routine part of life
- social isolation experienced by some cancer patients

The barriers will differ for each individual; therefore, each person must identify the specific factor which hinders his/her participation in exercise. In order to 'stay in the race', strategies must be developed to overcome these hurdles.

There are some strategies which, if adopted early, are known to increase your chances of maintaining exercise as part of your daily routine. These include:

- joining a group-based exercise programme
- ensuring that your exercise sessions are individually tailored and supervised by qualified personnel who understand your specific physical limitations
- gradually progressing your exercise programme so that it always remains stimulating
- focusing on the personal benefits to be obtained from becoming fitter



As the survival rates of cancer continue to improve, exercise will no doubt continue to be an important weapon in the fight against cancer. Most of the research to date has looked at the impact of exercise on breast cancer patients. Much more research is required, however, to determine the best exercise protocols for reducing recurrence and mortality in the different types of cancer. **cx**

Calculating your Heart Rate Reserve (HRR)

The heart rate reserve (HRR) is calculated by subtracting the resting heart rate (RHR) from the maximal heart rate (HRmax). The resting heart rate is determined by the number of heart beats per minute while you are at rest. To check this sit comfortably in a chair and place the tip of your index and middle finger over your wrist as shown in the picture above. You will be able to feel the blood vessel pulsing at this point. Do not press too hard. Once you can feel this count the number of pulses in one minute. This will be your resting heart rate. To calculate your maximal heart rate subtract your age from 220. The maximal heart rate may also be determined from an exercise test which can be done by a qualified professional. Now that you have these values you can put them into the following formula to calculate the heart rate at which you should be exercising.

Target exercise heart rate = 50% (HRmax - RHR) + RHR



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MANAGING JAMAICA'S CONCH INDUSTRY

By Karl Aiken

A large mature Queen conch shell (note large flared lip on shell). This species is the source of a carefully managed small industrial fishery based on Pedro Bank to the south of Kingston. It is one of the quiet success stories of the Jamaican fishing industry (Aiken photo, taken August 2011)

What is relatively small, slimy, has a snail's shell, lives in the sea, and earns millions of dollars for Jamaica each year? Well, if you guessed the queen conch, the unassuming shellfish, then you are correct.

Queen conch (*Strombus gigas*) stocks have provided, since 1990, the basis of a small but highly profitable industrial fishery located on a large oceanic bank we know as Pedro Bank just to the south-west of the island of Jamaica. This fishery is the most profitable of all national fishery activity, and Jamaica was top producer of queen conch in the Caribbean region between 1993 and 2000 and is still a major producer and exporter. But many persons do not know how this fishery works and why it is so successful.

How did it start and who is doing it?

Conch fishing in Jamaica up to 1990 was a small-scale activity using free-diving at scattered locations around the island's coastal reefs. In that year, a sizeable stock was discovered on Pedro Bank, a large (8,040 km²) oceanic bank 160 km south-west of Kingston. Almost immediately, an industrial fishery developed based on the deployment of scuba and hookah-equipped (small surface compressor with a breathing tube) divers who operated from decked 25-m long "mother" vessels. Most of these vessels were leased from owners of surplus vessels, mainly in the Dominican Republic. At first the fishery was completely unregulated, and large quantities were taken by at least 15 local companies operating vessels. This raised concern about the large number of companies fishing conch versus sustainability. The industrial fishers requested, and obtained, a series of meetings and workshops in 1992 and 1993 to discuss the status and management of conch. This request, incidentally, was the first ever by fishers for scientists to assist them in trying to resolve their problems. Measures to ensure that the conch fishery would continue to provide sustainable levels of catches since 1995 have resulted in one of



Fresh unprocessed queen conch showing only intestines removed. During commercial processing all dark flesh is stripped along with eyestalks and tentacles to a stage called "65% cleaned conch" which is then exported (photo by Aikeh)

the few successful fishery operations in Jamaica where industrial fishers willingly cooperate with marine biologists and fishery managers. Generally, conch catches have been kept within the guidelines produced by the fishery managers and advisory experts for many years — though not without occasional hiccups as we will see.

How do we manage conch fishing?

The Fisheries Division of the then Ministry of Agriculture, along with the CARICOM Fisheries Resources Assessment & Management Programme (CFRAMP) now called Caribbean Regional Fisheries Mechanism (CRFM), decided that the widely accepted and FAO recommended "precautionary principle of fishery management" should apply. Based on densities of conch on other fishing grounds around the Caribbean, a series of basic management methods were requested and introduced in early 1993. These measures were centred mainly on manipulation of fishing effort, and sought to reduce effort by limiting entry to the fishery. The first industry sponsored diver assessment showed that the Pedro Bank stock was larger than previously assumed and that there was a relatively large number of stoned (older than 5 years) conch. This latter observation indicated an unfished stock. Subsequent diver assessments were made at Pedro Bank in

1997, 2002, and 2007. All showed variations from the very first survey, but they also showed that the stock was still relatively large. These early findings, however, do not hold true today as we will see.

From the very start of large-scale conch fishing in 1990, the initial excessively high number of industrial fishers was reduced over a short period with full agreement of the producers acting on the advice of the scientists who carefully studied the conch. Most importantly, a fishing season was arranged which avoided the period when the adults would be spawning and when harvesting would result in the collapse of the fishery. This conch fishing season was usually between January and June. Thus, there is a Closed Season each year between July and December when there is a ban on conch fishing and export. A national conch quota, carefully estimated by technical experts, imposed an upper limit on conch catches in order to ensure sustained harvesting each year in the future.

Significantly, the first of several assessments of conch done by scientists conducting diver surveys on Pedro Bank, were paid for by the industrial fishers themselves, in another unique experience where producers worked hand-in-hand with the technical persons. Such underwater surveys are usually done every two to three years and are the direct basis for the



calculation of the annual quota, as is done in other countries which properly manage their fisheries. Sadly, there has been no diver survey since 2007, but, at the time of writing, the next one was planned for November 2011. One important complicating factor which has forced reduction of the annual quotas is poaching by foreign vessels which take conch and lobster on Pedro Bank.

Another management measure is the limitation of the number of industrial fishing companies which operate in the fishery based on the simple fact that the stock of queen conch is not large enough to sustain a larger number of these specialized large-scale fishers. It is important to note that the queen conch is rated internationally as one species that has suffered badly elsewhere from overfishing and poor management such that the Convention on International Trade in Endangered Species of Flora & Fauna (CITES), to which Jamaica has signed, placed queen conch in 1992 on Appendix 2 of the CITES list of species threatened by extinction. This placement means that trade in conch worldwide is legally monitored by CITES. Importantly, CITES requires that each country conduct proper and regular biological studies on conch to ensure that fishing levels do not annually remove excessive conch numbers such that the future of the species is threatened. The CITES secretariat (based

in Switzerland) also requires among other things, that proper CITES certification documentation must be in place prior to approval of export. Improper paperwork means certain delay of product departure and potential profit loss. Without a shred of doubt, CITES is one of the regulatory elements that that has ensured the success of conch fishing here.

How do producers operate?

What the industrial fishers do covers a number of areas. Firstly, they employ a large number of minimally trained divers who collect the queen conch by hand off the sea floor at a depth of about 20 to 25 metres, leaving the shell on the bottom. The meat is taken at intervals to the surface where it is iced and after around two weeks taken to Kingston where lines of female workers carefully clean and package the conch for export.

The product is taken in refrigerated containers to the container port where it leaves after certification is received from the Veterinary Services Division of the Ministry of Agriculture and Fisheries (MAF). An export permit is required based on the export quota. This fishery is very valuable to industry players as the international market price of queen conch at the end of 2010 was US\$5.00 per kg and 400 tonnes left Jamaica that year. Last

year conch exports alone were valued at least US\$2,000,000 or J\$172 million in gross earnings. Notably, conch producers also pay a small cess, pegged at US\$1.00 per pound of conch exported annually. This cess is used to fund development of the total fishing industry itself, including small research programmes. This cess is the basis of the Government of Jamaica Fisheries Development Fund.

Average overall Jamaican production was approximately 2,000 metric tons per year in the early 1990s and most of this was exported to the USA and to Martinique. Concern about the sustainability of such large harvests led to early discussions with technical experts in 1992 and 1993. Harvests were so large in the 1992 to 1993 season that Jamaica's conch exports flooded regional markets forcing several countries (e.g. the US Virgin Islands) to close their conch fisheries. Harvests thereafter fell due to management agreements between fishers and fishery managers. To the uninformed it may appear that conch production and export figures which have trended downwards over time, must therefore indicate problems. Instead, what it really shows is the gradual reduction of the unsustainably high harvest figures of the early 1990s to the sustainable lower levels of around 400 metric tons each conch season. This is actually good fisheries management in action. Currently



exports go mainly to the European Union via Martinique. Importantly, this lower catch level must not again be forced upwards, as this will guarantee the collapse of the fishery and the entire conch export industry as well as attract the ire of CITES, the main international trade regulatory body. Improper management of the conch industry could result in CITES authorities placing queen conch on Appendix I of the CITES List, which would make it a Critically Endangered (with extinction) species with no trade allowed, effectively killing the conch industry. This is another reason why we must manage conch well.

What are the main problems?

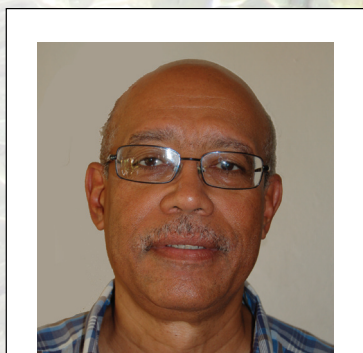
After the first few diver surveys, subsequent assessments have been relatively sporadic due to closure of the season as a result of legal issues in 2000 and to various other logistical issues. There was no fishing in the 1999/2000 season, and the 2000/2001 season had a quota based on previous assessments, of 946 tonnes. Serious poaching took place in the 1999/2000 season and other years thereafter, and this was factored into the quota for the following season as well as for the 2002/2003 season. Nearly 10 years later there are issues with the willingness of the government to sponsor diver surveys. In the view of this writer, this dilemma is a serious threat to successful management of the industry as Pedro Bank diver surveys of remaining conch are the only basis of accurate annual quota figures. In the author's view, funding for surveys must come from the conch cess that producers pay as a direct royalty fee or tax.

Illegal international poaching on Pedro Bank has continued to be a problem for many years. The major poachers originate in Honduras, Central America and make the long but clearly profitable journey to fish from their large mother boats with hordes of young indigenous Amerindians who dive for both conch and lobster. Toward the close of 2010 and in early 2011, there were encounters between the Jamaica Defence Force (JDF) Coast Guard and several poacher vessels, one of them with unfortunate loss of life. This may result in some reduction of poaching. But it is believed that poachers still insist on coming to Pedro Bank knowing that the Coast

Guard is stretched fully in its surveillance role and therefore can only apprehend a fraction of all poachers. This matter needs more urgent attention from the Ministry of Foreign Affairs.

So, what does the future hold for conch?

The Veterinary Services Division of the Ministry of Agriculture & Fisheries has now implemented a new GPS-based electronic vessel position monitoring system which is a major breakthrough for proper conch fishery management. Most players have agreed with this measure. It would be even better if all approved conch industry players agreed to have this equipment installed on all their mother vessels. Control of illegal poachers is another on-going issue, but the JDF Coast Guard deserves support for their recent action against these poacher vessels who take several million dollars of conch and lobster every year from our territorial waters. Continued cooperation with CITES regulations is of paramount importance as survey administration is not a favour granted to the industry, but an international requirement which must be observed. Side-stepping and continual postponement of these scientific studies in the future could possibly bring international repercussions such as "black-listing". Continued cooperation between the industry players, the MAF, NEPA, CITES and the advisory scientists is a key element in sustainable conch fishing far into future. How successfully this all comes together is well worth watching. **cx**



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Farmers' Markets and Food Miles

By David Barker



A few years ago, while shopping one Sunday morning in a Liguanea supermarket, I was amazed to see bottled artesian water on sale from faraway Fiji. The label proudly proclaimed that it was an "eco-friendly" product.



That may (or may not) be true in its place of origin. But how could that possibly be true when consumed on the other side of the globe? Moreover, how could any self-respecting supermarket owner or purchasing manager think that the product (pure unadulterated water) could be so much better than our own bottled spring water to warrant importation from the other side of the world? Omar Davies was shopping in the same supermarket at the time so I pulled him over and I asked him what he thought. "I only drink NWC water," he quipped. "Me too," was the response.

First year human geography students at UWI learn about food miles, and the contrasts between global and local food supply chains. In developed countries, globalization has resulted in food travelling much further to reach consumers than hitherto. The concept of food miles came out of Professor Tim Lang's work at the Food Policy Institute in the UK, and refers to the distance that food travels between the place where it is produced and the place

where it is consumed: from farm to fork; or from plough to plate. The greater the distance a food product travels, the more likely it will have a negative environmental impact. The reason: carbon emissions generated from the modes of transport used, especially road transport and air freight. For example, one study suggested that for every calorie of carrot air freighted from South Africa to Europe, 66 calories are expended on fuel, contributing to greenhouse gas emissions.

There are technical methods for measuring the food odometer and there is much debate about the true environmental costs of food miles. But food miles are really a metaphor to highlight the social, economic and environmental implications of local versus global food supply chains. The large distances that food travels makes global food chains vulnerable to high or fluctuating oil prices. Few people in Jamaica are likely to change their food preferences because they worry about the environ-

mental impact of global food supply chains. But we are heavily dependent on food imports, and that is something to worry about because high fuel costs increase our food import bill. By contrast, regional and local food supply systems tend to be more sustainable.

The debate about food miles and carbon footprints has contributed to the rapid growth of the local food movement in North America and Europe. It reflects green consumerism and an emphasis on localism with respect to food consumption. Restaurants promote locally grown food and civil society groups participate in local food events. You have probably heard the term "foodie". But did you know that there is a new word "locavore" which, according to *New Oxford American Dictionary*, was the word of the year in 2007. It refers to someone who only eats food grown within 100 miles radius of their home.

The rapid international growth of farmers' markets is part of the growing local food movement. In the USA, the number of farmers' markets increased from 2,756 in 1994 to 5,274 in 2009. Farmers' markets allow farmers to sell directly to consumers, so farm produce is generally fresher and cheaper. One study suggested that farmers' markets enabled local farmers to keep 80-90 cents of each dollar spent by the consumer. Organic food is often sold in farmers' markets and the health benefits of locally fresh food are a feature of the



with RADA in order to participate. The markets are income generating because a small fee is charged to sell produce. RADA's sales volume data underscore their success: for example six farmers' markets on March 18, 2011 generated J\$17.3m, seven held on June 29 generated J\$20.9m while the Christmas markets on December 21 generated \$13.9m even though they were held at only four locations.

Like farmers' markets overseas, an interesting feature of Jamaican farmers' markets is the participation of entrepreneurs selling locally processed foods – chutneys, jams, pepper sauces, seasonings, locally made wines and other items made from local plants. The annual Denbigh and Hague Agricultural Shows traditionally provide an opportunity to highlight such products, but farmers' markets provide additional outlets. Such cottage industries often comprise people trying to establish a new business venture and who typically produce in low volumes, so a steady income stream is needed to survive the early stages of the product life cycle.

We have rich social history of produce markets in Jamaica. They were well established and economically important even before emancipation. Today there is strong competition for food sales among supermarkets, especially in Kingston. However, there is a potentially important role for farmers' markets in the promotion and sale of local food. They could be events branded as "farmers' markets and food

discourse of the local food movement. Farmers' markets support sustainable food systems by offering locally grown produce including local crop varieties which may suit the palate better than blander hybrid varieties, and patrons enjoy the chance for social interaction with farmers.

The rapid international growth of farmers' markets is relevant to Jamaica because RADA recently initiated a series of farmers' markets across the island. The idea was to provide an additional sales outlet for a glut of farm produce in 2010. The lower prices proved popular with consumers so they continued through 2011. The system is well organized and farmers need to be registered



fairs" and held on a regular parish-wide basis. In industrialized countries farmers' markets are supported by local government and community groups because they have helped regenerate local community spirit — and these efforts could be replicated here. The fact that farmers need to be registered to participate could help RADA in their efforts to mobilize PMOs and farmers' cooperatives. Farmers' markets could provide a year-round outlet for a well organized farmers group to market its produce directly to the consumer.

Agro-processing is a value-added sector of the food industry which has shown significant growth in the last decade and has considerable export potential. The seedbed for this sector is local, innovative people who are "trying a ting" and need support. An organized parish-wide system of local farmers' markets and food fairs could provide such start-up micro-businesses with a regular sales outlet and help showcase their products.

More generally, Caribbean countries need to reduce their huge food import bill. A policy shift to encourage more localized food systems is a way of achieving this goal. Supporting local farmers, encouraging consumers to buy Jamaican food and promoting Jamaican cuisine are all elements of an approach to food sovereignty. Food sovereignty is the idea that people have a right to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and a right to define their own food and agriculture systems. Farmers' markets can contribute to food sovereignty. And should a local food movement ever gain traction in Jamaica, it may eventually help persuade supermarkets and food importers that we do not really need to import garlic from China, coconut milk from Thailand and bottled water from Fiji. **cx**



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HEART TRUST

Breadnut Valley Engineering Institute



Nestled in the enclave of the Mocho Mountains in the community of Pleasant Valley, Clarendon is the Breadnut Valley Engineering Institute.

It all started in 2004 when JAMALCO, after 35 years of mining operations in Mocho, decided to move out of the environs. The building was the administrative office of the company's Mines Department.

The alumina refinery in Halse Hall was embarking on an expansion project and needed skilled personnel for the project. A partnership was formed between the HEART Trust/NTA and JAMALCO and the space was converted into a training facility in January 2005. The objective of the initiative was to develop the required advanced skills for the JU3 Expansion Project at the alumina refinery in Halse Hall, Clarendon. It targeted 3,000 competent craftsmen and craftswomen to be trained for employment in the expansion programme.



Merphie Samuels, level 3 Welding trainee



A railcar being refurbished



The finished product

JAMALCO has since completed the expansion of their alumina refinery increasing capacity from 1.27 metric tonnes per year to 2.8 metric tonnes per year. This billion dollar investment remains the single largest in the history of the Bauxite / Alumina industry in Jamaica. The project was completed with a 100% Jamaican workforce, except for specialized areas requiring consultants and strategic skill sets that were required for highly technical equipment.

One of the many success stories of Breadnut Valley Institute is Merphie Samuels, a Level 3 Welding trainee at Breadnut Valley who created history in April 2006 when he became the first non-U.S. national to compete in the annual Associated Builders and Contractors Inc. National Craft Championships in Las Vegas. He earned a Silver medal in the welding section of the competition. Merphie, along with four other NCTVET Level 3 certified workers, is now employed to a Canadian firm in Alberta.

In keeping with the Ministry of Education's rationalization of the education sector, the Breadnut Valley Engineering Institute will be upgraded and renamed "**The HEART Caribbean Industrial College**".

The skill offerings of the Institute include Electrical Maintenance, Welding and Fabrication, Instrumentation, Pipefitting, Air Conditioning and Refrigeration, and Electrical Installation Inspection. [cx](#)

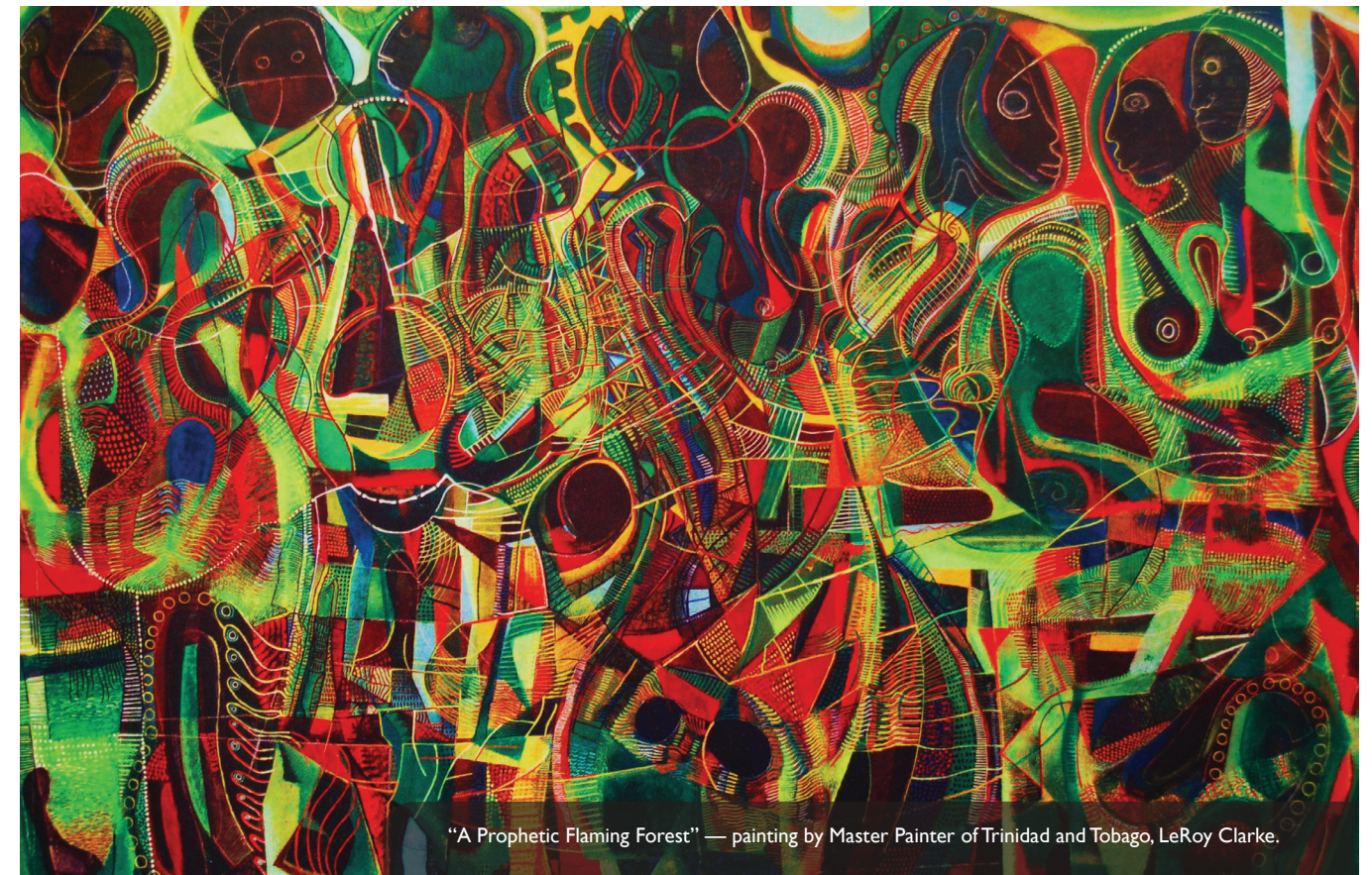


Revival Shepherd in Jamaica, Daddy Rudd, performing performing libation ritual at a tree seal

The Silk Cotton Tree:

Spirituality and Plants in the Caribbean Belief System

By Clinton Hutton



"A Prophetic Flaming Forest" — painting by Master Painter of Trinidad and Tobago, LeRoy Clarke.



Opening pods revealing their silk cotton-like content — the basis for the name of the tree in Jamaica, "Silk Cotton"

A variety of indigenous as well as some imported species of plants have played an important role in the identity and freedom constructing culture of enslaved Africans and their descendants in the Americas.

A most important plant in this regard is the Ceiba tree (*Ceiba pentandra*), or the Silk Cotton tree as it is often called in Jamaica, or the Mapou as it is referred to in Haiti—which can be found throughout the tropical Americas.

For enslaved Africans and their descendants the Silk Cotton tree was sacred and the space around it was reserved for meetings deemed to be of social, political

and spiritual significance. Enslaved Africans and their descendants believed that ancestral spirits (*dopi/jumbi*, etc.) regularly congregated under the Cotton tree. It was thus a sacred meeting place for Africans. This tree was a preferred site for nocturnal meetings and possession rituals (*myaal*) by Africans in concert with their ancestors to cope with slavery and to resist it and to develop a diasporic community rooted in a philosophy of freedom and sovereignty (see Clinton Hutton, "The Creative Ethos of the African Diaspora: Performance Aesthetics and the Fight for Freedom and Identity", *Caribbean Quarterly* 53, nos. 1&2 [March-June 2007]: 127-49).

Moravian pastor J.H. Buchner's 1854 description of a sacred assembly under a Cotton tree in Jamaica, 16 years after the abolition of slavery, tells a story of one of the important identity constructing/free-

dom making rituals of the African diaspora in the Americas:

As soon as the darkness of evening set in, they assembled in crowds in open pastures, most frequently under large cotton trees, which they worshipped, and counted as holy; after sacrificing some fowls, the leader began an *extempore* song, in a wild strain, which was answered in chorus; the dance followed, grew wilder and wilder, until they were in a state of excitement bordering on madness.

Some would perform incredible evolutions while in this state, until, nearly exhausted, they fell senseless to the ground, when every word they uttered was received as a divine revelation (qtd. in Joseph M. Murphy, *Working the Spirit: Ceremonies of the African Diaspora* [Boston: Beacon Press, 1994, p. 118]).



Cotton tree in bloom



Pods on the Cotton tree



Pods or the fruits on the Cotton tree

Prejudice aside, this joint meeting of the living and the ancestral spirits under the holy Silk Cotton tree is a classic example of the community constructing/ freedom making culture and agency in praxis and the belief system of Africa in the Caribbean. Many Africans who rose up against their enslavement and colonial subjection never felt that they were doing it alone but in concert with their ancestors. The assemblies under the Cotton tree were joint meetings of the community of living and ancestral Africans.

The meeting under the huge majestic Cotton tree on the outskirts of Morant Bay, which was addressed by Paul Bogle just before he entered the Bay on October 11, 1865 to realize what would become known as the Morant Bay Rebellion, symbolized this joint endeavour to weave a community for freedom and justice, in the making of the African diaspora. The very genesis of the Haitian Revolution was rooted in similar rituals under the Mapou tree.

And where the Cotton tree was/is absent, other trees were/are consecrated for similar ritual purposes, such as the kindah tree in the Maroon community of Accompong in St Elizabeth, Jamaica. **cx**



Cotton tree baring its trunk

A Family Under Attack

By Courtney-Claire Haynes

can·cer:
 1. a malignant and invasive growth or tumor, especially one originating in epithelium, tending to recur after excision and to metastasize to other sites.
 2. any evil condition that spreads destructively; blight.



Cancer is easily becoming one of the world's most deadly diseases because of its ability to strike the most unexpected ages and people.

In my family, cancer has become a regular word that we cannot seem to escape. In 1993 I was diagnosed with cancer of the liver. I was only 11 months old. With regular check-ups I made a full recovery and continue to be cancer free. The instances with cancer after that have always been diagnosed and treated in some distant grand-relative or cousin. However in 2008 my first maternal aunt was diagnosed with stage 3 cervical cancer. Initially it was nothing to me because I thought "Hey! They've gotten somewhere with cancer treatment technology today". Then I realized just how chemotherapy and radiation treatment really made her feel. The experience of seeing her waking up at 5 am to get to the Kingston Public Hospital for her treatment left me shell-shocked. She would wake up in the morning feeling healthy and okay to face the day, and would come home tired, weak and ready to sleep the rest of her day away. With a family plan we managed to change her diet completely and helped her to cope with the therapy. The whole family played a role in keeping her spirits lifted and continuously reinforced and there was hope of some recovery from it all.

As time progressed it seemed that the treatment was indeed going well as all the tests done indicated that the cancer was shrinking. Further tests done when the time frame



Aunty Marci and me on my 18th birthday

Aunty Marci - 1st Aunt



Mother's siblings at 1st aunt's funeral - Cavel in black & purple floral print



Aunty Cavel, her children and granddaughter

for her therapy ended, showed that even though the cancer had shrunk, the only way to get the surgery done had shrunk as well. The cancer had become inoperable. This was the most devastating news I had ever received in my entire life. Here was the woman who helped raise me, suffering from cancer, something I had recovered from 17 years prior to her diagnosis. It would seem improbable to any outsider that her life would continue, but we refused to give up hope. We searched for new ways to help her through her pain and through whatever doubts she had. In March 2011 another maternal aunt was diagnosed with pancreatic cancer. Between her diagnosis and death times really became difficult. My mother was torn, two of her sisters were suffering from very deadly cancers and the needs of both of them became demanding. We began taking turns to stay with them at our family home each weekend. The more critical their conditions became the more time we spent together as a family. In June 2011, after 3 months of battling her pancreatic cancer, my aunt took her last breath with family members surrounding her. At that moment, I began to believe just maybe cancer had finally beaten my family. However, in January 2012, after 4 years for battling cervical cancer, my aunt passed peacefully at home with her family members surrounding her. The most difficult revelation in my family is that another family member, my 16-year-old cousin has been diagnosed with acute lymphoblastic leukemia.

No matter how much I hoped for a miracle, I had to realize that working with the regimes was necessary. When they began to fail, we stuck together as family. Having a strong family unit is what helps the most, besides the fact that we lean on our faith in God. The determination and drive we had to manage both these situations at once could only be something divine sent. Though our situation has not been a typical "happy ending" cancer story, we managed to gain experience and build an even closer family bond that I believe my aunts would have been very proud of. A wise person once said to me that family should be the most important thing, especially in the face of an illness known to claim lives. The bigger picture must be seen, and differences must be put aside. The ability of someone to recover lies not only in how



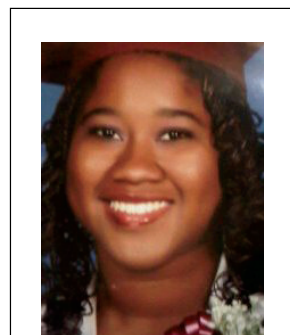
Aunty Cavel and her daughter and niece



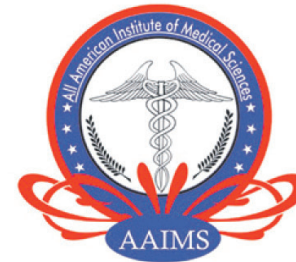
Valedictory Service with Aunty Cavel - Aunty Marci in background

long they have survived the diagnosis, but how comfortable and stable their environment is.

I do not believe cancer is unbeatable but I have had enough experiences to know that cancer is no respecter of age, no respecter of class, no respecter of personalities. Cancer is only as strong as the person suffering from it makes it. We continue to encourage people to get tested to ensure that they do not fall prey to this Giant but rather become an equal adversary and fight as long and hard as they can. If your family is plagued by cancer as mine is stay strong and keep on pushing through it. Cancer is beatable; we've just got to prove it. **cx**



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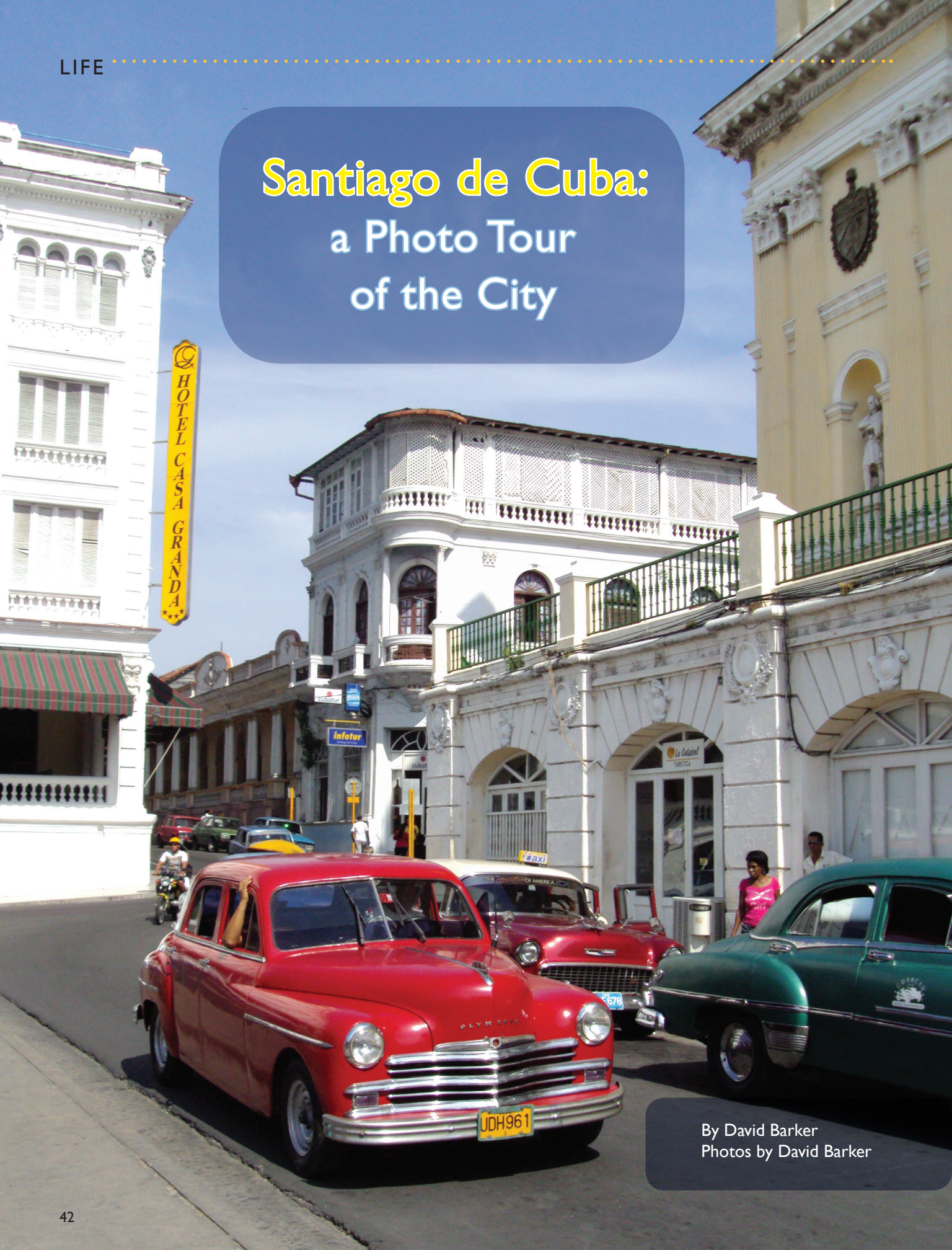
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Santiago de Cuba: a Photo Tour of the City



By David Barker
Photos by David Barker



Santiago de Cuba, with a population of nearly half a million, is Cuba's second largest city. In the 18th and 19th centuries it was a prosperous centre based on the slave trade.

Today it is an important industrial port with an oil refinery and railway sidings that run directly onto the quayside, alongside ship berths. The town has a nascent tourist industry based on a rich cultural heritage in music, literature and the arts. Strong Afro-Hispanic traditions combined with Haitian Afro-French cultural influences from the end of the 18th century have created Cuba's most culturally diverse city. The rich artistic heritage is reflected in a vibrant contemporary music scene and a locally popular July carnival.

Located on the south-east coast, the city has the Sierra Maestra (Cuba's highest mountains) as its scenic backdrop. The region is geologically active and his-

tory records more than a dozen powerful earthquakes with magnitudes estimated at over 6.0. The most severe in 1766 was estimated at 7.6 (more powerful than the 2010 Haitian earthquake). However, tectonic uplift and tilting have conspired to create lovely coastal basins, none more impressive than that of Santiago de Cuba. Visitors arriving by boat enjoy a delightful 3km sail through the narrow bay into the port. Perched above the entrance to the bay on a rocky promontory is the Spanish Fortress of Castillo de San Pedro de la Roca (also called Castillo del Morro). One of Cuba's many World Heritage Sites, the citation designates it as the best extant example of Spanish-American military architecture, based on an Italian Renaissance design. Complete with batteries, bastions, magazines and a system of drawbridges and moats, it was built originally as defence against marauding English and French pirates; the citadel itself took 42 years to complete.

Founded in 1514 and briefly Cuba's capital, the city retains a rich colonial architectural

heritage, with trappings such as gingerbread latticework and wrought iron railings. Before the Revolution, many of Cuba's wealthiest families lived there in low density, leafy residential areas before migrating to Florida. Their once lavish town mansions have been largely preserved and today are mainly public buildings occupied by central and local government offices.

Santiago de Cuba is the island's "Hero city", so called because it was the cradle of the Revolution, which started there when Castro's forces attacked the Moncado Garrison in 1953, and ended there when Batista's army surrendered in 1959. In well laid out public spaces close to modern education and medical facilities, there is an impressive monument to Cuba's heroic past—the 16-metre high equestrian statue, Monumento Maceo, built in the 1990s in the Plaza de la Revolución. General Antonio Maceo, the Bronze Titan, was a 19th century anti-colonial war hero and the national monument includes 23 enormous symbolic machetes representing Cuba's fight against colonial oppression.



Catedral de Nuestra Señora de la Asunción



Monumento Maceo



Ayuntamiento



Castillo del Morro

The best way to appreciate any town is at street level, and a walking tour typically soaks up the historic core, adjacent narrow streets and tranquil relaxation spots. The old central square is the Parque Céspedes, dominated by the Catedral de Nuestra Señora de la Asunción and the Ayuntamiento (town hall) from which Castro's triumphal speech was made in 1959. Nearby is the Plaza del Dolores where local people eat and drink under Poinciana trees. On the street, the absence of cell phones is as palpable as the dearth of large retail establishments. Order and discipline are evident in the ubiquitous crash helmets of motor cyclists and the orderly traffic. The often shabby side streets are but one step away from music and dance. Along the narrow Calle Heredia are bars and small restaurants including the famous Casa de la Trova; step inside for live music and dance and a shy welcome. The city was the ancestral home of Bacardi rum until the Cuban Revolution. However, the tradition of distilling fine Caribbean rums continues at the old Bacardi distillery, under the brand names of Ron Caney and Ron Santiago de Cuba. And no tour of the city is complete without a visit to its small tourist trap, Barra de Ron Caney, to purchase local supplies. **CX**

Sources: Various, including field notes and *Insight Guides: Cuba* (2011)



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The Impact of Cancer on *Quality* of Life

By Sharmella Roopchand-Martin



The side effects of cancer treatment can be quite devastating and even though life is being preserved it comes at quite a cost.

It is not uncommon to hear cancer survivors say that if their cancer ever returns they will refuse treatment. In years gone by the primary focus of cancer treatment was to prevent death. However, in recent years there has been a shift in thinking and most cancer clinical trials today place a heavy emphasis on quality of life and not just the fact that the person is alive.

But what exactly is quality of life? A model proposed by K.C. Calman in 1984 refers to quality of life as being the gap between an individual's hopes, dreams and ambitions and their current existence. The smaller this gap the better the person's quality of life. Life is not static and therefore a person's circumstances will constantly change. There may be points in time that one's current status is closely aligned with their hopes, dreams and ambitions. At this point if they are asked they will say that life is great. At other times when faced with adversity persons will find that they are far removed from where they hoped to be in life and when asked their response would be life is not good. Health related quality of life examines the impact that a particular disease has on the individual's life.

A person's ability to cope with an illness is related to the timing of the disease. If a

person is diagnosed at a point when their quality of life is good they are usually able to cope fairly well; however, if a disease is diagnosed when their overall quality of life is poor they do not cope well. Quality of life can be altered by either lowering a person's expectations or improving their current status. In most cases however, we cannot change someone's hopes, dreams and ambitions, but we can have an impact on their current life experience. Anyone who has ever been in a situation where your boss yelled and shouted at you every day, your teacher constantly embarrassed you in front of your peers or your doctor behaved in a manner that left you too afraid to ask questions will understand the impact that an individual's actions can have on your current life experience. The same holds true for patients with cancer. The manner in which they are approached by health care professionals and the ease with which they can interface with the health care system can make a big difference to their cancer experience.

Most researchers have agreed on some common areas that are representative of quality of life. These include physical, emotional, social, cognitive and spiritual functioning. There are many different questionnaires that can be used to assess health related quality of life of cancer patients. Some are general whilst others are specific to a type of cancer. Most of these instruments, however, will ask a person to rate how the disease has affected them in the last week or month. The individual will have to try and isolate how much of their

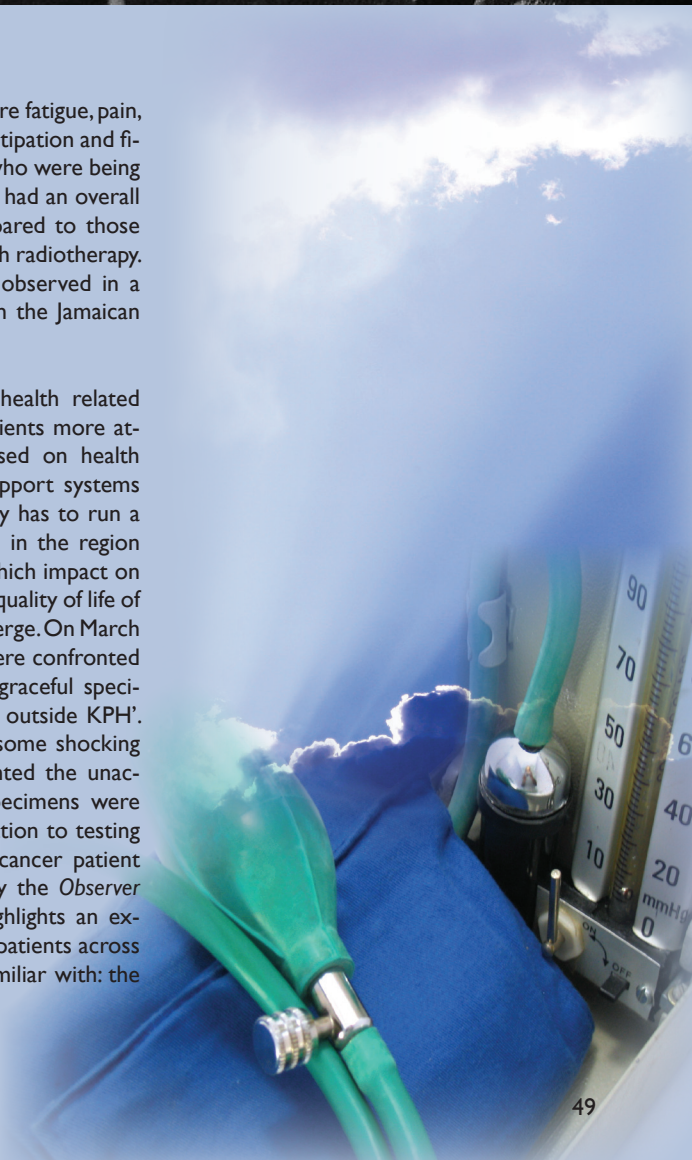


life is affected by the disease as opposed to other factors. For example is it that they have been having pain because of osteoarthritis of the knee or is it because of the breast cancer.

One instrument that is widely used and has been used by researchers at the University of the West Indies Section of Physical Therapy is the EORTC QLQ-C30. This is a general quality of life instrument that was developed by the European Organization for Research and Treatment of Cancer and can be used with any type of cancer. A survey of 485 cancer patients residing in the Republic of Trinidad and Tobago were found to have quality of life scores that were lower than those reported for cancer patients in North America and Europe. They also had more of the adverse symptoms associated with cancer and its treatment compared to the North American and European population. Age, education, financial status and type of treatment were all found to have an impact on quality of life. Older persons were found to have a poorer quality of life than younger individuals; however, younger persons were found to have more financial problems. Persons who were educated at tertiary level had a better global health status than those who had only completed high school. Individuals who had only completed to high school level educa-

tion were found to have more fatigue, pain, insomnia, appetite loss, constipation and financial problems. Persons who were being treated with chemotherapy had an overall poorer quality of life compared to those who were being treated with radiotherapy. Similar findings have been observed in a smaller group of patients in the Jamaican population.

In order to improve the health related quality of life of cancer patients more attention needs to be focused on health care delivery and social support systems for these patients. One only has to run a back search of newspapers in the region and the numerous issues which impact on standard of care and hence quality of life of cancer patients begin to emerge. On March 14, 2011 many Jamaicans were confronted the following headline: 'Disgraceful specimens left in open corridor outside KPH'. This was accompanied by some shocking photographs which highlighted the unacceptable state in which specimens were being stored for transportation to testing laboratories. The story of cancer patient Tanya Duffs as reported by the *Observer* (a Jamaican newspaper) highlights an experience that many cancer patients across the region may be quite familiar with: the





long wait for lab tests and a diagnosis to be made, followed by even longer waits (3 months to one year) to start treatment. During this period life is 'in limbo'.

In July 2011 the *Guardian* (a Trinidadian newspaper) carried a series of articles related to radiation overdose. On July 7, 2011 health minister Dr Faud Kahn in the twin island Republic of Trinidad and Tobago confirmed that 223 cancer patients were exposed to an overdose of radiation therapy between 2008 and 2009 due to a malfunctioning radiation machine at a treatment facility. This raises questions related to regulations and standard of care provided by cancer treatment facilities in the region. Poor standard of care will lead to poor quality outcomes.

The *Jamaica Observer* on February 1, 2012 indicated that 'the Cobalt radiation machine at the Kingston Public Hospital which has been out of operation for the past six months will be up and running come next week'. This followed a previous report on January 16, 2012 which indicated that the waiting list for radiotherapy was 400 and some had been waiting since 2010. For those who were following these occurrences, it was reported that at the

time 50 patients were selected for private radiation treatment which was to be paid for by the government. But what about the other 350 who had been waiting?

In developing countries resources are extremely limited and unfortunately the cost of providing optimal care to cancer patients is quite high. Despite these challenges, however, we must recognize that these patients deserve everything that can be done to maintain a good life status. The Caribbean region needs to unite in the fight against cancer and work as a team in conducting research and developing treatment facilities that will provide optimal care to every Caribbean national regardless of age, gender, race or nationality. **cx**



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