TANZANIA TRAINING CENTRE FOR ORTHOPAEDIC TECHNOLOGISTS
WHO Collaborating Centre for Research and Training in Prosthetics, Orthotics and Orthopaedic Technology

TATCOT

1ST EDITION APRIL 2009

NEWS LETTER

27TH APRIL 2009

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The centre is excellently located under the slopes of Mt Kilimanjaro

NOTE FROM PRINCIPAL TATCOT

I am delighted in that, the Tanzania Training Centre for Orthopaedic Technologists "TATCOT" has achieved its long-time dream of publishing periodic activities of the school and the profession at large in a News-letter which has to-date, i.e. **09th April 2009** been inaugurated by the Editorial Board.

This News-letter will be published quarterly and all staff members, students and other interested individuals are welcomed to join us in this endeavour which has the main objective of disseminating and promoting public awareness on the entire sector of rehabilitation medicine.

The vision of TATCOT is to provide the means for the optimal physical rehabilitation of disabled people and the improvement in their overall wellbeing. The school is therefore devoted in optimising the function, ability and wellbeing of physically disabled people through the relentless pursuit of research, education and training in appropriate orthopaedic technology and the development of prosthetics, orthotics, wheelchairs services and the entire spectrum of assistive devices.

TATCOT has expanded extensively from the time of its inception in **October 1981** in that, it has certificate, diploma and currently entrusted by KCM-College, Tumaini University to supervise and coordinate the academic activities of B Sc Degree Course in Prosthetics and Orthotics. Over the past years, depending on the beginning of the different courses, the centre has qualified a total number of **286** Orthopaedic Technologists; **78** Lower Limb Orthotics/Prosthetics Technologists; **52** Wheelchair Technologists and **27** Prosthetists/ Orthotists respectively.

Mr. Harold G. Shangali
Principal TATCOT

The present projections is to embark in upgrading staff members in order to continue maintaining the acquired quality of education training and service delivery as well as planning to embark on establishing postgraduate courses in different discipline and research related to prosthetics, orthotics, wheelchairs and other assistive devices.

I wish to welcome you all in supporting our strategy of achieving the highest possible level of quality of life for persons with physical disabilities.

Students enjoy conducive learning and living environments within and outside the centre.

Visit Institut Superieur Montaplasir (ISTM), Valance

By: Shangali HG (2009) Prosthetist/Orthotist

A consultation task on Institut Superieur Montaplasir (ISTM), Valance, France was carried on by Mr. H. G. Shangali (TATCOT) and Mr. C. Tardif (ICRC) as from 13th May 2008 up to 17th May 2008. The main objective was to evaluate the training course in prosthetics & orthotics and recommend its status in terms of international categorization to International Society of Prosthetics and Orthotics (ISPO).

The Instritut Superierur Technologique Montaplasir (ISTM) started in 1950 in Valance and it has continued extending its activities in different training and education programs. It is a private institution with a bilateral agreement with the government in the training policy and acquiring subsidy from the government in covering personnel emoluments and recurrent costs. The institute trains different sectors, i.e. paramedical, administration, management, etc at different levels (CAP, BEP, DT, Baccalauréat and BTS). Its also have a centre for professional training offering specific courses for those already working.

The training of technical orthopaedic professionals started in 1996 whereby an enrolment of students undertaking Brevet de Technicien Supérieur (BTS) Prosthetists-Orthotists was done.

BTS Prosthetists-Orthotists Course

The Institute Superieur Montaplasier (ISTM) in Valance, France is offering different Training Programmes. The Training of Orthopaedic Professionals started in 1996.

Clinical Attachment

The students are attached to identified centres within the country of their own like taking into account convenience in terms of accommodation and transport costs.

Clinical Centre-A

Clinical Centre-B

Results

It was recommended that, the centre be accorded the international recognition as having qualified as Category-I training facilities while addressing the pending issues as stipulated in the final report of the consultants.

TATCOT STAFF EXCURSION TO AMBONI CAVE, TANGA

By: Mayo, I (2009) Prosthetist/Orthotist

In February 2009, TATCOT Staff had the opportunity to visit Amboni Cave as one of the long-term custom of the centre to have a joint venture once a year.

Tanzania has a number of attractive geographic features which includes national parks with wild animal reserves, mountains, lakes etc. Tha Amboni Caves are the most attractive Caves in East Africa and they are located 8 km North of Tanga in Tanzania. The Caves were formed about 150 million years ago which covers an area of 234 square km.

TATCOT Staff at Amboni Caves

The Amboni Caves are the most attractive Caves in East Africa, located 8 km north of Tanga in Tanzania.

It is not known when the Caves were exactly discovered but reports indicate that ethnic groups such as the Segeju, Sambaa, Bondei and Digo who lived near the Caves used it for traditional prayers. According to researchers the area was under water some 20 million years ago. There are altogether ten Caves but only one is used for guided tours.

Mrs. C. Lyimo, (TATCOT) Staff followed by ***Mrs. R. Simba,*** (Lawyer) a wife of one of the staff struggling through th Caves. The Cave attracts tourist as well as students for their Geography/History lessons.

The attraction includes rocks in the shapes of sofa, ship, crocodile , elephant, Map of Africa, Statue, Head of a Male Lion, Female and Male genital Structure, Statue of Mother Mary and Spelothems (nature and artificial) Caves formation including stalactites, flowstones, dripstones, rimstones, sodastraws, helictites and columns.

Also there are words written in Quran as translated, "There **is none worthy of worship except God and Muhammad is the messenger of God."**

Ms. B. Banduka on the right and ***Ms. E. Mboye*** on the left are seen to have enjoyed the different roots with amazing configurations. ***Mr. R. Simba*** and his wife on the other hand are proceeding for a brief relaxation after having successfully passed through the Caves.

KILIMANJARO CHRISTIAN MEDICAL CENTRE (KCMC)

By: Shangali H. G. (2009) Prosthetist/Orthotist

In the early 1960's the Government of Tanganyika called upon the Protestant Churches in the country to establish a referral hospital for the Northern Zone, a national health service provision, teaching and research institution.

Under the leadership of the Lutheran Church, the Anglican and Moravian Churches in Tanganyika established the Good Samaritan Foundation (GSF) as a body corporate registered in Tanganyika. The late Bishop Stephano R. Moshi became its first Chairman.

The GSF planned and raised large sums of money from local and overseas partners to build and equip the Kilimanjaro Christian Medical Centre (KCMC). KCMC was opened in **March 1971** and was taken over by the Government at the same time. It was handed back to the GSF in August 1992.

Every year, KCMC community cerebrate a birthday of the Hospital in which every department of the Hospital participate in exhibition to demonstrate to the public what kind of services the individual department does at large. This year it commenced on 3rd March up to 6th March 2009.

The exhibition which was also participated by people from abroad elevated the awareness of service providers at KCMC.

It was also interested to note a high number of people who had no clue about possibilities available for rehabilitating people with physical disabilities.

TATCOT as part of KCMC has always taken the leading role in displaying a variety of assistive devices. There were patients who were demonstrated in respect to assessment, fitting, functional abilities as a result of the different assistive devices donned to their respective body segments.

A good example was a lady who was a bilateral upper limb amputee. The cause of amputation was an attack by local believers wanting body parts of an Albino for other economical gain. The lady was provided with upper limb prostheses and she was able to perform some activities on her own.

There was also a bilateral trans-tibiae amputee who was amputated due to Gangrene who was able to demonstrate his ability of doing difficult tasks i.e. kick a ball and drive a car.

As technical orthopaedic is a rare profession and not well known, not only in Tanzania, but also in many of the Developing Countries participating in such exhibition is a step towards promoting public awareness.

KCMC Day is a unique event which provides opportunities of demonstrating the importance of the profession within the entire field of rehabilitation medicine.

TATCOT booth visited by high KCMC and TUMAINI University authorities. Mr. E. Mosha, TATCOT Tutor explaining the use and function of different orthopaedic appliances to the public.

UPPER LIMB AMPUTEES

By: Shangali H. G. (2009) Prosthetist/Orthotist

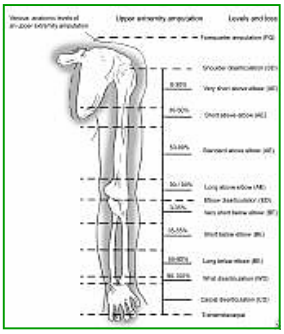
Introduction:

Prosthesis is a device that is designed to replace, as much as possible, the function or appearance of a missing limb or body part. The characteristic of a successful prosthesis is that one which is comfortable to wear, easy to put on and remove, lightweight, durable, and cosmetically pleasing. Furthermore, prosthesis must function well mechanically and require only reasonable maintenance.

Prosthetic Related Factors:

The consideration to be made when choosing a prosthesis includes; amputation level; contour of the residual limb; expected function of the prosthesis; cognitive function of the patient; vocation of the patient (e.g. desk job visa vie manual labour); vocational interests of the patient (i.e. hobbies); cosmetic importance of the prosthesis and financial resources of the patient.

Common Causes of Upper Extremity Amputation



The most common causes for an upper extremity amputation vary extensively depending on the geographical, socio-economic and cultural factors. In developed countries, the causes of amputation could be correlated by age range whereby congenital deformity or tumor is commonly seen in individuals aged 0-15 years, trauma patients aged 15-45 years. However, upper extremity amputations tend to be rare in patients who are older than 60 years, but they may be required secondary to tumor or medical disease, **Martinez, K (2008).**

In developing countries, the leading causes is trauma due to different forms of conflicts, i.e. political; religious, tribal; etc as well as road traffic accidents, labour related, infectious diseases, tumor etc. **Kiefer, L (2006)**.

In Developing Countries, the leading causes of upper limb amputation is trauma due to different forms of conflicts, i.e. political, religious, tribal,etc. as well as traffic accidents, labour related, infectious diseases, tumor etc.

Evolution of Amputating Albinos in Tanzania

Albinism is a genetically inherited disorder which results in a lack of pigmentation in the hair, skin and eyes of those affected. In almost all cases a significant visual impairment is also involved, with most persons with albinism being legally blind. It is a rare genetic condition occurring in both genders regardless of ethnicity.

In North America and Europe it is estimated that 1 in 20,000 people have some form of albinism. In Tanzania however, it is 5 times as common with 1 in 4,000 people being affected**.** In some areas of the country, the believes of people are unimaginable evil which are surely driven by the belief that the body parts of people with albinism possess magical powers capable of bringing riches if used in potions produced by local witchdoctors.

During the last year, official reports indicate that 43 people with albinism have been brutally murdered and their body parts hacked off and sold to witchdoctors.

However, leaders in the albinism community believe the number of deaths to be between 60 and 70. Reports also indicate that albino body parts are being exported outside of Tanzania. I

n one instance, a Tanzanian trader was caught traveling to the Democratic Republic of the Congo with the head of an albino baby in his possession. He told police that a businessman there was going to pay him for the head by its weight.

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UPPER LIMB AMPUTEES (CONTINUES)

By: Shangali H. G. (2009) Prosthetist/Orthotist

The lack of glasses, magnifiers and specialized computer equipment, results in extreme difficulty in completing educational programs, resulting in chronic unemployment. The lack of protective sunscreens, wide brimmed hats and proper clothing resulting in epidemic rates of death due to preventable skin cancer. The lack of melanin in the skin creates high risk for skin cancer. ***Average life expectancy for persons with albinism in Tanzania is 30 years, with only 2% living beyond 40 years.***
In western countries persons with albinism have the same life expectancy as the general population. **Paikin, S (2009).**

Albino-Case-1

In March 2009, the Prosthetics/Orthotics Department of the Kilimanjaro Christian Medical Centre (**KCMC**) which is one of the five referral and consultant centres in Tanzania, assessed and evaluated a bilateral upper limb amputee who is an albino and designed, fabricated and finally carried out static and dynamic alignment of the prostheses.

The patient was a young female, from Lake Victoria region and over 20 years old and mother of a young boy 2 years old. She was a healthy young mother when both of her limbs were crudely chopped off by the use of a panga.

She was brought to a hospital in an emergency situation where the doctors had to reamputate on the right below elbow and on the right above elbow.

The recommendation from the rehabilitation team was to fabricate a right trans-humeral and left trans-radial prosthesis respectively.

The continuum of prostheses ranges from mostly passive or cosmetic types on one end to primarily functional types on the other.

The objective of most upper limb prostheses is to facilitate optimum function and offer cosmesis.

The cosmetic prostheses however, can look extremely natural, but they often are more difficult to keep clean, can be expensive, and usually sacrifice some function for increased cosmetic appearance.

Mr. K. Mtaita, Prosthetist/Orthotist KCMC Workshop performing the first fitting of the body powered prostheses.

In industrialised Countries persons with albinism have the same life expectancy as the general population.

Externally powered prostheses

Prostheses powered by electric motors may provide more proximal function and greater grip strength, along with improved cosmesis, but they can be heavy and expensive.

Patient-controlled batteries and motors are used to operate these prostheses. Currently available designs generally have less sensory feedback and require more maintenance than do body-powered prostheses.

Externally powered prostheses require a control system. The two types of commonly available control systems are myo-electric and switch control.

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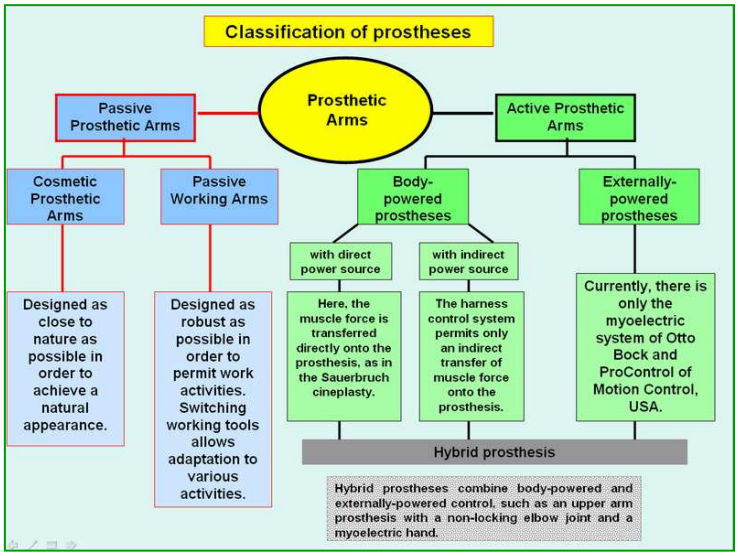
UPPER LIMB AMPUTEES (CONTINUES)

By: Shangali H. G. (2009) Prosthetist/Orthotist

The functional prostheses on the other hand are generally divided into the following 2 categories.



Body-powered prostheses

Body-powered prostheses (cables) usually are of moderate cost and weight.

They are the most durable prostheses and have higher sensory feedback.

However, a body-powered prosthesis is more often less cosmetically pleasing than a myo-electrically controlled type is, and it requires more gross limb movement.

Body-powered prostheses usualy are of moderate cost and weight.

As it was not to be expected that the patient would be able to attain an optimum function as she required extensive training especially with her left prosthesis, the first result was satisfactory as she can already perform some basic tasks.

You can find as well in the web

www.tatcot.org

TATCOT with all its three wings, Mawenzi, Kibo and Meru

TANZANIA TRAINING CENTRE FO ORTHOPAEDIC TECHNOLOGISTS (TATCOT)

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Visitors, Consultants and Collaborators from within and outside Tanzania

TRAINING AND EDUCATION IS THE KEY TO A BETTER SERVICE FOR PEOPLE WITH DISABILITIES

THE MAIN COURSES OFFERED AT TATCOT ARE AS FOLLOWS

1. **Certificate Course in Wheelchair Technology**
2. **Certificate course in Lower Limb Prosthetics Technology**
3. **Certificate course in Lower Limb Orthotics Technology**
4. **E-Learning Certificate Course in Spinal Orthotics**
5. **Diploma Course in Orthopaedic Technology**
6. **B. Sc Degree Course in Prosthetics & Orthotics**
7. **Short-term tailored courses on:**

   Lower Limb Orthotics/Prosthetics

   Upper Limb Orthotics/Prosthetics

   Spinal Orthotics

   Clinical related topics (assessment, evaluation, prescription and design)

   Others, e.g.

   Clinical Rehabilitation Team Approach

   Community Based Rehabilitation

   Research in Prosthetics/Orthotics