

# A new CHARGE

THE PROSTHETICS AND ORTHOTICS DEPARTMENT  
AT TTSH REBUILDS THE LIVES OF ITS PATIENTS —  
BOTH MENTALLY AND PHYSICALLY.

BY **NIRMALA SIVANATHAN**  
IN CONSULTATION WITH **MR TREVOR BINEDELL**  
UNIT HEAD OF THE PROSTHETICS AND  
ORTHOTICS DEPARTMENT // TAN TOCK SENG HOSPITAL



## (BODY RECONSTRUCTION)



**WHEN DESMOND TONG WAS 22 YEARS-OLD**, he got into a road accident that necessitated seven surgeries. His right leg had to be amputated from the knee down. "Adjusting to the idea that I had lost my leg was incredibly painful at first," recalls Desmond, now 35. "I felt helpless and depressed."

But thankfully for Desmond, he was not alone on the road to recovery. "I was blessed to have supportive parents, siblings, relatives and friends," he says. "I was also lucky to have a very good prosthetist at Tan Tock Seng Hospital (TTSH) who helped me to literally get back on my feet."

A former real estate agent, Desmond is now back at TTSH, not as a patient but as a Prosthetist/Orthotist with the Prosthetics and Orthotics (P&O) Department, and helping others get a new lease of life — just as he had been helped 13 years ago.

For the past 11 months, he has made it his life's work to help fellow amputees regain their confidence and return to doing the activities they used to enjoy.

Thanks to advanced aids, amputees are now able to cycle, swim and even play basketball. The world's most famous example of this is probably Oscar Pistorius, a double amputee from South Africa who competed in the men's 400 metres race at the recent 2012 Summer Olympics.

His remarkable feat is possible because manufacturers now offer lighter, more durable prosthetic parts fabricated from materials that are better able to mimic human walking.

The P&O Department at TTSH, which is the largest of its kind in Singapore, has its own workshop where these high-tech components are used to build custom-

made artificial limbs for its patients.

### Support Network

Besides artificial limbs, the P&O Department — established in 1981 — fabricates and fits orthoses, mobility aids,

wheelchairs and custom-made shoes. Orthoses refer to supportive devices or braces that help to control biomechanical alignment, prevent injury, provide support following injury and assist rehabilitation after injury.

The department comprises a team of Prosthetists/Orthotists who construct



## AMPUTEES ARE NOW ABLE TO CYCLE, SWIM AND EVEN PLAY BASKETBALL



### "I M POSSIBLE"

Desmond Tong (left) is testament to the Prosthetics and Orthotics (P&O) Department's excellent work in rebuilding lives.

Of his presence as an amputee at the P&O Department, he says, "I believe that patients see me as a living example of what is possible as an amputee. Through me, they are able to see for themselves that it is possible for people with artificial limbs to run, play sports and do anything just like everybody else."

Desmond currently uses a hydraulic ankle energy return response foot fitting with a carbon fibre socket and a silicon liner. The leg, which is made of light and durable materials such as titanium and carbon fibre, allows him to indulge in sports such as swimming, basketball and badminton.

He is also able to drive with the leg, even though he needed to get approval from the Land and Transport Authority to have the accelerator pedal changed to the left side of the car.

Desmond says his own injury helps him relate to the patients he sees. "As their prosthetist, I am able to better understand the pain and frustrations that they are going through.

"It is never easy being disabled even as a prosthetist," adds Desmond who is married. "Simple tasks like squatting down to take a measurement can be difficult for me due to the constraints of my artificial limb. But as I like to tell my patients, nothing is impossible. In fact, if you take the word 'impossible' and break it up, you get 'I M Possible'."



braces and artificial limbs, as well as podiatrists. The department also works with rehabilitative doctors, medical social workers and physiotherapists to get patients back on their feet again.

“We see a wide range of patients of all ages,” says Mr Trevor Binedell, the Unit Head of the P&O Department. “Amputees account for about half the cases while the other half is made up of orthopaedic cases.” Orthopaedic cases include drop foot caused by stroke, fracture management, cerebral palsy management, flat feet and scoliosis, which is an abnormal curving of the spine.

To join the team of specialised staff, Desmond had to first pursue a four-year honours degree in Prosthetics and Orthotics in the United Kingdom. “I felt a calling to join the department,” he explains. “After my surgery, I felt that I needed to help others go through what I went through — and am still currently going through — as an amputee.”

## Getting Fitted

For amputees such as Desmond, the P&O Department provides custom-made artificial limbs that help them regain mobility and improve their quality of life. These can include artificial limbs for below- and above-knee amputations, hip disarticulations and upper limb amputations as well as “running legs” and “water legs” for swimming.

For a patient, the process begins with a consultation and assessment. “When a patient is referred to us, he or she will be seen by a team of professionals who will assess the patient and his or her needs,” explains Mr Binedell. “The patient will then be casted, or where appropriate, a mould will be taken. Approximately two weeks later, the patient will have a first fitting.”

After fittings are completed, a patient then begins gait training, which is the act of relearning how to walk with an artificial limb. This process involves the P&O Department as well as TTSH’s Department of Physiotherapy. The latter is involved for continued and advanced training. During advanced training, patients use equipment such as wobble boards, treadmills and trampolines to prepare them for activities such as running and cycling — but the process doesn’t end there.

“Our patients don’t ever leave us,” says Mr Binedell. “Their artificial limbs will require servicing for the rest of their lives. Therefore, we usually get to see patients grow up, get married, have kids and even as retirees. We become a part of their lives.” **lv**

## The Road To Inclusivity

**Singaporeans today are more accepting of people with disabilities in the community. This is according to a 2011 study conducted by the Society for the Physically Disabled (SPD) in Singapore to determine public perception towards people with disabilities. The study found that:**

- 13.4 per cent of people feel that the disabled are dependent on others — a significant decrease from 47 per cent in 2009, when a similar survey was conducted.
- 93.1 per cent of those surveyed agreed that more can be done to help people with disabilities on public transportation in Singapore.
- More Singaporeans see people with disabilities as contributing members of society with only 8.8 per cent of respondents saying that people with disabilities are unable to perform as well as the non-disabled at work.
- 80.3 per cent of 61 respondents, who are in a position to hire, are open to employing people with physical disabilities.

**However, there is room for more public education campaigns to change the perception that persons with disabilities are somehow less fortunate**



**or in need of sympathy, says Ms Marissa Lee-Medjeral, Executive Director of the Disabled People’s Association (Singapore). “Although having a disability can make it more difficult for a person to fully participate in society, this does not mean that they should be pitied,” she says. “Instead more should be done to remove barriers they might face in trying to**

**visually- and hearing-impaired.**

**Employment opportunities for people with disabilities have also improved over the last few years, due in part to the efforts of organisations such as Bizlink, the SPD, Movement for the Intellectually Disabled of Singapore, as well as the Autism Resource Centre. These welfare organisations receive**

**HAVING A DISABILITY CAN MAKE IT DIFFICULT FOR A PERSON TO FULLY PARTICIPATE IN SOCIETY, BUT THIS DOES NOT MEAN THAT THEY SHOULD BE PITIED**

**be active members of the community.”**

**Ms Lee-Medjeral says that although Singapore has made accommodation for people who use wheelchairs or mobility aids, there is still more that can be done to improve accessibility for those with other physical disabilities, such as those who are**

**partial funding from the Government to conduct vocational assessments and job placements.**

**“We have actually seen a trend of employers wanting to employ more persons with disabilities. It is supply that cannot meet the demand, rather than the other way round,” adds Ms Lee-Medjeral.**