Removal of an anatomical segment is not pleasant for anyone; perhaps even more so in leprosy patients because of disease stigma. Amputation has an immediate relation to social dependence and handicap. The loss of a once normal part of the body is regarded by both the person and society as a detrimental event. In contrast, children with some upper limb congenital anomalies do not regard this as ‘abnormal’ until later in life when society, sometimes even parents, impose on them the concept that they are ‘different’. Amputation may have a very negative impact on someone’s life as well as carry many symbolic representations, from pity to repulsion, encompassing guilt and resignation, both from the amputee and their social partners. However, amputations are valuable surgical procedures, life-preserving and, strange as it sounds, a choice for certain rehabilitation processes. Amputation has a place in the management of disability in leprosy. Amazingly, it can be the bridge from dependence and depression to full social integration including economical participation. To have these positive results, it should be properly indicated, carefully performed and, most importantly, adequately managed and supported by competent prosthetic services.

Indications for amputation in leprosy are few and very specific. They are mostly restricted to the lower limbs, as in the general population, in whom over 85% of amputations occur in this part of the body. Primary indications for amputation are long-standing consequences of plantar ulcers and severe bone/joint disintegration.

Although infrequent, malignant transformation in plantar ulcers\(^1,2\) is a mandatory indication. It should also be considered in severe bone/joint disorganisation due to neuropathic disintegration associated with plantar ulcers and contractures. The patient should be fully and explicitly involved in the decision for amputation since it is their limb that will be removed. Furthermore, a patient’s participation in the post-surgical fitting period is even more important than the surgeon’s skill in performing the amputation. The indications for amputation vary with the surgeon’s personal preference and the cultural and technological surroundings, the latter in respect of prosthetic services and long-term maintenance of prosthesis.\(^3\) One should remember that fitting a shoe on an insensitive foot is far easier than fitting a prosthesis on an anaesthetic amputated leg\(^4\) and not the reverse as some unmindful
surgeons believe. Patients know which institutions have amputation as an immediate first choice, rather than using the lengthy and demanding conservative treatments. They flee from these hospitals and crowd those who offer a more individual-oriented approach.

Amputation is the oldest surgical technique, dating far back and developing in the middle-ages with Ambroise Paré’s techniques and his advanced prosthetic devices. Improvements in amputations paralleled wars. The Second World War saw a marked advance in surgical techniques and in the modern principles of the post-amputation care of the patient. It is worth highlighting that surgery in leprosy is dependent on advances in the surgical treatment of trauma and other diseases and that leprosy cases in need of amputation can be treated in any general hospital dealing with other trauma or orthopaedic conditions. Surgeons should remember that amputation is not only to remove the limb but, more importantly, to prepare a good stump for the prosthesis. Selection of techniques depends most on the specific clinical condition, expertise of the surgeon and, to some extent, availability of prosthetic services. However, Boyd, Pyrogoff, Syme and below-knee amputations are still the preferred choices for selected situations. It is vital that patients agree to the selected procedure. Anaesthetic limbs usually are regarded as accessory tools; this has been made clear particularly in leprosy cases where the sensory loss is not abrupt as it is in trauma. However, patients can be very conservative in preserving their parts when facing amputation. Toes, especially, are requested to be preserved. In these cases surgeons must consider alternative techniques. A sound example is the selection of a sub-total metatarsectomy instead of a transmetatarsal amputation for treating extensive and unstable scars in the forepart of the sole. This alternative will comply with both demands: the surgeon will do his job properly and the patient will keep his toes for social and emotional purposes. Therefore, in amputation procedures, proper communication and adjustment to medical and patient’s needs is mandatory. Stanley G. Browne long ago wisely warned that surgical skill is unavailing in the absence of patient cooperation.

The provision of good prosthetic services is critical to successful amputation. Materials and techniques have improved tremendously over the last 50 years. Now, cosmetic appearance, ergonomic features, and the mechanical quality of lower limb prostheses are striking and even include special designs to practice specific sports. However, it seems that leprosy patients are out of the reach of these innovative technologies. Three points should be discussed here: cost, properness and availability. The cost of prosthetics, as a whole service, should be taken into consideration and the provision of services should be adapted to the local conditions, provided basic quality, durability and acceptability are maintained. A study from the early 1970’s has removed some of the prejudices about the financial costs of orthopaedic aids, proving that, in financial terms, it is possible to provide good prosthetic services for leprosy patients in developing countries. Sometimes novel, albeit costly material is cheaper in the long run. Furthermore, prostheses for leprosy patients should not become additional stigmatising factors. Proper materials and good design can prevent this added burden. Another important point is that amputations in leprosy lead in most cases, to anaesthetic limbs. This is a unique condition that most general prosthetists are not aware of, nor do they have enough skill to cope with the challenges of providing a prosthesis for an anaesthetic stump. Prosthetic workers in leprosy institutions should have the expertise to correctly adjust the socket, to align the prosthesis avoiding pressure and friction and so preventing ulceration in the stump. These special skills are needed if health managers make prosthetic services available to leprosy patients in the general health services. Indeed, these general prosthetic clinics rarely deal with insensitive stumps and often have no expertise in preparing adequate
sockets. Finally, if controversially, leprosy patients have the right to access good quality prosthetic services. This seems to have been neglected for years. Leprosy has always been considered as a treatable bacterial disease, and not as a treatable bacterial disease with a high potential to generate severe deformities. Budget shortages and the ample scope of control measures have been the common explanation for this, inhibiting the one-patient focused approach of rehabilitation measures, such as prosthetic services. There is an amazing array of adaptative prosthetics that can make amputees fully economically and socially integrated. A properly designed and fitted prosthesis can open a whole new world of activities for these patients, restoring both their place in society as economically active persons, and as family members. Health policy makers should seriously address the accessibility of prosthetic services to leprosy patients. If budgetary constraints do not permit a wide range then at least a basic package of good quality prosthetics should be provided. Funds should also be guaranteed to train prosthetists in the management of the insensitive stumps of leprosy patients, as well as maintaining a continuous supply of materials to prosthetic workshops. If there are too few leprosy patients to maintain special services, let us remember that diabetes is the leading cause of foot and leg amputation. The possibility of merging activities between prosthetic services for diabetics and leprosy patients should be explored. Leprosy patients’ needs for prosthetic aids should no longer be neglected nor their other basic needs – the provision of adequate footwear, which would help prevent the need for later prostheses.

References