

The potential of low cost, limited function prostheses

Modern industrial fabrication, particularly with injection moulded plastics, can create lightweight, low cost components with sufficient function for limited walking, and this might be quite sufficient for today's typical elderly amputee. Some designs may also be made moisture resistant and therefore suitable for use in the shower or on the beach. The lower manufacturing costs of such devices may permit their use in developing economies, where the cost of more complex technology is prohibitive. The Shower Limb, developed by Blatchford, is an example of this trend. The company has also developed a special line of plastic Atlas Prostheses designed specifically for use in tropical climates.

The International Committee of the Red Cross has established an initiative to produce low cost polypropylene plastic prostheses, made by unskilled local workers, for areas where conflict or environmental catastrophes have resulted in large numbers of traumatic amputations (see www.icrc.org). These devices are well accepted clinically, although some problems have been reported with their durability.^{17 18}

Future developments

The future development of prostheses will depend greatly on demand. The market for low cost, limited function devices will continue to expand in an effort to meet the needs of the developing world as well as the funding restrictions that are increasingly common in all economies. At the same time, innovative technologies will continue to be adapted from the aerospace and computer industries and applied to high performance artificial limbs whose function will more and more closely approximate to the missing limb.

Initially, prosthetic innovations are often used sparingly, primarily by amputees with private funding—particularly those who are competitive athletes. As experience is gained, manufacturers discover how to apply the same principles to moderate cost devices intended for less active individuals, and the performance of prostheses in general will gradually improve as a result.

Similarly, some of the newer materials and applications will be used for the benefit of amputees in developing countries, despite differences in the cause of amputation and people's needs. It is really financial constraints that limit the rate of advancement in prosthetic rehabilitation, and one of the greatest challenges for the new millennium will be to find the will and the way to fund widespread application of prosthetic innovations.

Competing interests: JWM has been employed by Otto Bock. Since 1999, he has been an independent consultant in prosthetics and orthotics and therefore may have a consulting relationship with any of the companies mentioned in this article. He has received payment for organising educational programmes, speaking, or consulting from Otto Bock and from Flex-Foot, which was recently acquired by Ossur.

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Additional information on limb prostheses

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Corrections and clarifications

Life expectancy rates show health inequalities

In this news article by Lynn Eaton (1 September, p 471) some of the data accompanying the map of life expectancy rates in Britain were wrong. For the lowest five health authorities we inadvertently listed (and showed on the map) the authorities ranked 10 to 5 in the lowest 10. The lowest five authorities are in fact: for men, Manchester 70.2, Greater Glasgow 70.4, Western Isles 70.9, Argyll and Clyde 71.2, Liverpool 71.7; and for women, Greater Glasgow 76.5, Manchester 76.6, Liverpool 77.0, Lanarkshire 77.3, Argyll and Clyde 77.7. The text in the article was correct.

The public health benefits of mobile phones

Owing to a misunderstanding, we raised the status of Debbie Lawlor, the author of this Filler piece (25 August, p 447), to senior lecturer, whereas she is in fact a lecturer. Thanks to Dr Lawlor for alerting us to this.