# SOME THOUGHTS ON MENTAL EFFECTS OF AMPUTATION

BY

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The occurrence of two great wars in the lifetime of many of us, together with the increasing industrialization and mechanization in this and other countries, has resulted in the loss of limbs by amputation to a greater extent than had ever been experienced before 1914. The moral responsibility for undertaking schemes for the rehabilitation of personnel from the Services was immediately recognized ; later, such schemes were available to the industrially injured, and finally, under the National Health Service, to the whole community.

In the early days these schemes provided for the supply of artificial limbs, while the other aspects of rehabilitation of the amputee were dealt with largely in watertight compartments, there being little co-ordination between the various branches then operating. It is now recognized, and coming to be acted upon, that the success of rehabilitation depends upon closely correlated team-work. While that aspect of the work relating to the physical preparation of the patient now receives full consideration and much has been written upon it, it is questionable whether the same consideration is being given to the mental approach to the patient.

Dr. Allwood-Paredes, Director General of Health, El Salvador, writes in the *Chronicle of the World Health Organization* of July, 1956: " The present trend towards narrow specialization, the exaggerated emphasis on technology, and the overwhelming demands upon his services generally prevent the physician from paying sufficient attention to the patient's psychological needs."

All are now agreed that physical rehabilitation alone cannot make for complete rehabilitation, but very little has been published on the mental side of the subject, with the exception of a few reports from America, and the purpose of this article is to endeavour to relate some of the effects of amputation upon the mind of the patient and to give some indication of the means by which we can attempt to counteract adverse effects.

## Shock

All amputations, whether they be predetermined following a long-standing illness or result from sudden trauma, produce in the sufferer a mental shock. In the former case the patient has time to think and brood over the loss of a limb which has become inevitable, and the thoughts which pass through his mind can well be imagined. What we cannot predict is how he will eventually react to the shock when amputation takes place. In the latter case we can well imagine the feelings of a person who, admitted to hospital following an accident, is taken to the operating theatre, and on return to bed and consciousness realizes that a limb is missing. In the former we can do something to brief the patient and prepare him for the future, but in the latter we cannot.

## Types of Reactions

The impact of amputation upon the mind of the individual varies between patients, and both the short- and long-term effects and reactions thereto will be associated with the personality of the individual. Upon some there will be apparently no adverse effects, but there are always some upon whom the effects are such as to alter the course of their lives and have an adverse influence upon their temperament. It is concerning this latter group that the following remarks are made, it being better to be prepared to anticipate possible adverse effects than to have to deal with them too late.

*Fears.*—The loss of the limb usually first demonstrates itself in the form of depression, despondency, and hopelessness, and with these is found a fear of dependency upon others on account of the anticipated crippledom. Experience in dealing with very large numbers of amputees over the years makes it abundantly clear that this fear of dependency is very real. Next we have the fear, frequently unsubstantiated, that they will be forced to undertake some entirely different form of work, if able to undertake any, for which they have had no training. This leads to fears of economic catastrophe and the inability to maintain a home. Social and domestic apprehensions are by no means rare, and, unfortunately, have been substantiated in some cases in that the fact of amputation has resulted in the break-up of marriages and of engagements, the one or other partner being horrified at the idea of linking their lives to a cripple.

*Defiance.*—There are others, on the other hand, who in the early stages do not appear to have suffered any of the above fears, but rather exhibit a state of defiance and declare with emphasis that the loss of a limb will never " get them down." They are determined to overcome their disability and meet all setbacks with optimism. At the beginning they carry out their declared intentions, but one has come to regard them with suspicion because in a number of instances the defiance has proved to be unstable and, unless carefully followed up, they lose their determination and enthusiasm.

*Acceptance.*—Next we have a group, fortunately a large one, of those who accept and are resigned to the fact of amputation and are searching for some compensatory factor which will tend to balance their loss. These we can help, and they are the easiest of all amputees to deal with.

*Aggression.*—There are some who become aggressive and consider that they have been unfairly treated by society, against which they bear a grudge, and particularly against those who are trying to help them. They develop obsessions, and nothing will convince them that the chance ills and misfortune which may arise are not the direct result of amputation ; the effects of such happenings are transferred to the stump or the artificial limb or both. In this group we find some who develop stump pains which are often untreatable, and, despite every known form of treatment having been tried without lasting success, they complain that nothing is done for them. Complaints against the limb are common in these cases, though no physical reason can be found to justify complaint. In a number of instances it has been proved that the real cause had nothing to do with the limb and had to be sought elsewhere.

*Parents' Reactions.*—Most parents of congenitally malformed children are very good with them, but some are not. Instances are known when the parents have neglected their child and are horrified at the sight of the deformity. Some husbands and wives have blamed one another for their child's deformity, and the domestic warfare which results has militated against the satisfactory rehabilitation of the child.

*Reactions of Relatives of the Elderly Patient.*—These relatives can be divided into three classes: (1) those who do everything possible to help and encourage the amputee to persevere with the limb, and enable him to become independent of outside help—the elderly person is just as anxious to gain independence as those of any other age ; (2) those who, through misplaced sympathy, are always offering help which is not needed, and so undo all the good that has been done in the training schools and force the patient to feel that he is not so competent as he thought ; and (3) those to whom the elderly amputee is a nuisance in the home ; they make no effort to help and encourage, but neglect the patient as much as they can, the result being that the patient, realizing he is regarded as a nuisance, gives up hope, reverts to bed, and wants to get back to a bed in hospital, where he received attention, encouragement, and companionship.

### Later Reactions

During the second world war an investigation was carried out into the mental reactions of several hundred Service men who had lost limbs in action and most of whom had been wearing artificial limbs for about a year. All the reactions previously referred to were observed, but one aspect of the matter became noticeable in that those who had made a Service life their career and were " regulars " suffered the effect of amputation much more than did those who had joined the Services as " hostilities only " men. The former realized that the loss of the limb had put an end to their chosen career in most cases, and they had not accepted that a compensatory career could be found. The latter, on the other hand, more readily accepted the disablement and tended to regard it as a " badge of honour " and evidence that they had served their country. It was interesting to note that these same men, as time went on and they had secured employment, were the most anxious to conceal their disability, and several proudly announced that " even my employer does not know that I have lost a limb." Such cases as these can be regarded as fully rehabilitated from every point of view.

Many civilians served during the war as air-raid wardens, and among them some women wardens suffered the loss of a limb during the bombing. On being supplied with artificial limbs they were determined to return to their posts as wardens, and did so, filled with the urge to continue serving their country. They were most successful arm- and leg-wearers.

When the war ended and there was nothing more they could do to help, a change became noticeable in their attitude to life and limb-wearing which indicated a deterioration of spirit. This change may well have been due to the fact that the end of the war was the first opportunity they had had for several years to think of what the loss of a limb really meant to their future, there being nothing to replace the excitement and enthusiasm which the war years provided. Some became aggressive and difficult to handle, others showed hysterical manifestations, and others just lost hope ; these would now be regarded as instances of unstable defiance.

There are other amputees, quite an appreciable number, who appear to react well and accept the disability in its early stages and sometimes for a considerable time. They enter or re-enter employment and hold down their jobs with satisfaction to themselves and their employers perhaps for years ; then suddenly a change takes place in their outlook and, more often, in their attitude to their artificial limbs, sometimes associated with the onset of stump pain for the first time ; they cease to be apparently contented and rehabilitated persons.

When everything has been done to correct, if need be, any imperfection in the type or fit of the limb—though in these cases there is usually little to be corrected—it will be discovered after long probing that the real cause of the change that has taken place is far removed from the loss of limb, from the stump, or from the artificial limb. More often than not it lies in some domestic upheaval—divorce, desertion, or some social or tragic happening affecting a son or daughter of the patient. Occasionally the cause has been the failure of a business in which the patient had sunk his capital.

Patients are unwilling to talk about such matters, not realizing that they have any bearing upon their prosthetic troubles, and only by the expenditure of much time and a very good doctor–patient relationship can the facts be elicited. Even then the trouble may not be resolved, but the doctor or limb surgeon can put to the patient the right perspective regarding the stump and artificial limb in relation to the trouble.

### Approach to the Patient

Methods of approach will no doubt have already suggested themselves from the foregoing, and there is every reason to believe that many of the fears to which the potential amputee or recently amputated person is liable can be allayed to a great extent by the right approach and action of those who will be dealing with the patient—that is, the rehabilitation team comprising the doctors, surgeons, nurses, physiotherapists, training instructors, welfare officers, and almoners, and the disablement resettlement officers.

To ensure the best results it is necessary that all these persons are conversant with the possible impact of amputation upon the mind of the patients and have a fair knowledge of the potentialities of an amputee when properly fitted and trained in the use of a limb. Without such knowledge they are not in the best position to provide the necessary stimulus and encouragement for the future. Cheerfulness and reasoned optimism are needed, carefully avoiding the holding out of extravagantly optimistic hopes such as telling elderly patients that artificial limbs are so marvellous now that they will be able to walk just as they did before amputation—hopes that turn to depression later on when these cannot be realized. The encouragement should, of course, be related to the level of amputation, the age, and the physical condition.

It is advisable to prepare patients for the fact that after amputation they will feel their feet or hands in a phantom form which will be a somewhat different sensation from that of normal feet or hands—they will become conscious of either a movement of the digits or a cramping sensation, or perhaps a tingling. In a few months they will become accustomed to these strange sensations or ignore them.

If such a warning is not given, the patient is apt to think, when these sensations develop, that something has gone wrong with the stump, and through worrying about it the perfectly normal sensation may progress into one of phantom pain.

### Lower Extremity Amputations

Many amputees ask what they will look like when fitted with a limb, and will they appear normal. They can be assured, if leg amputees, that when sitting and standing they will appear quite normal, but that their gait when walking will depend on the level of amputation and on their co-operation in the training courses, and will vary between normal and, for higher-thigh amputations, a limp which may be no worse than that of a sufferer from a rheumatic hip. The more elderly will walk as if they had an ankylosed knee. A woman, unless she has had a Syme amputation, will not be discernible as an amputee at all when sitting or standing, since all artificial limbs are made to the exact dimensions of the natural limb. Women patients in particular lay great stress on this.

*Employment.*—All of wage-earning age can be found employment or be trained in new work if unable to return to the old. Provided the correct placement has been assessed and effected by those responsible, the loss of one leg does not necessarily imply a sedentary occupation or one of less remuneration or interest.

An investigation into the effect of amputation upon employment in which the records of 4,000 users were scrutinized showed that, of those amputated above the knee, 65% returned to the same or similar work, 13.5% became financially better off, 16.5% obtained less remuneration, and 5% were unemployed or under training at time of check. Among those who obtained less remuneration were undoubtedly some who had not reacted well to the loss, and some perhaps were given work more in accordance with their disability than with their ability. Of those amputated below the knee, 69.65% returned to the same work, 10.35% obtained higher remuneration, 15.25% received less remuneration, and 4.75% were unemployed or under treatment. It does not follow that an amputee, like other persons, necessarily desires to return to the same occupation after a break. Some take the opportunity of making a change. For instance, a lorry driver (below-knee amputation) became an engine driver, whilst an engine driver

became a lorry driver ; a milk-roundsman after amputation became a mechanic at a much higher wage.

*Disablement Resettlement*.—Welfare officers and others concerned with placement will advise on all these points. A leg amputee can in fact undertake any work which does not entail too much rapid or prolonged standing and movement, and many are fully engaged in agriculture and the building trade, for example. Elderly persons who have passed the normal working age often continue at work, and others change to more sedentary occupations. So far as elderly bilateral amputees are concerned, the majority can get about on short peg or rocker legs, and some progress to full-length articulated legs sufficiently well to become independent of assistance and can interest and occupy themselves in the home and garden.

*Domestic*.—Since the majority of leg amputees can be, and are, found employment, there should be no fears regarding the ability to maintain a home. The amputee's near relatives should be told that the loss of one leg should make no real difference to home life other than that in some instances activity may be reduced. In Canada, during and after the last war, an excellent system was in force whereby a representative of the War Amputees of Canada, himself a limbless man, visited the homes of returning Service men who had undergone amputation, and explained matters to the families and demonstrated the capabilities of those without a limb. This did much good because the relatives knew what to expect and how to treat them.

*Social*.—Sporting activities, other than the more strenuous field games and track events, can be resumed. Tennis, badminton, golf, shooting, riding, fishing, are commonly enjoyed by those wearing an artificial leg. When the favoured sport cannot be undertaken there are compensations to be found in taking up other activities. When dealing with elderly patients it is desirable to discuss the case with relatives with whom the patient will live, in order to avoid the risk of conditions arising such as have been mentioned. This is also the case when congenitally malformed children are being dealt with. The parents should be told that they are in no way responsible for the child's malformation. The children themselves should be allowed to develop normally —and they invariably do so develop if allowed—and should play games and mix with normal children. The fact that they tend to damage their artificial limbs should not be allowed to detract from their physical activities.

### Upper Extremity Amputations

Broadly speaking, the loss of an arm creates a greater shock than does that of a leg. In the latter case the patient knows he will get about somehow, even if only on crutches, but the arm amputee often feels that all is lost, and to make the best of things will begin to rely upon the remaining hand and arm for everything. This makes the rehabilitation by an arm prosthesis much more difficult. By the time the stump is ready to be fitted with an arm the patient will have achieved a considerable degree of efficiency with the remaining hand and be proud of it, and the thought of an artificial arm being applied is rather a blow to his pride in achievement. The result is that the stump becomes dependent and inert, the shoulder is raised, and an abnormal appearance is developed.

The mental approach to an arm amputee is therefore somewhat different from that to a leg amputee. The latter, even without stump muscle re-education and other treatment, can be fitted and will walk, though badly, while the arm amputee who regards his stump as useless will make no use of an artificial arm.

The first approach, therefore, is to inculcate in the mind of the patient that the stump is of use. This cannot be achieved if nurses and others in attendance on the patient do everything for him, such as feeding, writing, etc., and so prevent him from acquiring a sense of independence beyond that which he can attain with one hand. In using the stump for every possible purpose he will be exercising the proximal joint and helping forward his physical preparation.

To use the stump a fork, spoon, pencil, or a loop of wire for holding a cigarette can be bandaged on to it ; better still, an adjustable gauntlet of leather or webbing with slots cut or loops sewn on can easily be made and can be used for above- or below-elbow stumps.

It is better that a right-handed person losing a right hand should write with the stump rather than learn to write with the left hand.

It is noticeable that those who have been treated in this manner in the early stages and before a limb is supplied are more willing to accept an arm and make better use of it than do those who have not been so treated.

From this point of view, bilateral arm amputees are quite a different proposition. These patients are always ready and most anxious to try out any method which will render them independent, and they become very efficient in a short time, using the gauntlets. To enable them to turn over the pages of a book, a pencil with a rubber on the end can be fitted into the gauntlet. These cases are the easiest of all arm amputees to rehabilitate, and their approach to their disability appears to be that of " give us the tools and we will do the job " ; it is therefore for us to devise the means to help them.

In the years during and immediately after the first world war artificial arms were not put to the same good use that they are to-day, and in fact many when supplied were rarely used at all. To-day, the fit, design, and function of arms have been greatly improved ; more attention is given to preparation of the patient, and training in the use of the arm is more intense. The prescription of the correct type of prosthesis and appliances, the training, and the provision of encouragement and example have enabled a high proportion of arm amputees to compete in the open labour market on equal terms with their sound fellow men. Patients should be informed of this, and be given the opportunity to see for themselves what a trained arm-wearer can do.

A scrutiny of the records of 1,000 cases showed the effect of arm amputation upon employment ; it was as follows. Of those amputated above the elbow, 48% returned to the same work, 32% obtained more remunerative work, and 20% obtained less remunerative work. Of those amputated below the elbow, 42% returned to the same occupation, 42% obtained more remunerative work, and 16% obtained less remunerative work.

The shock from loss of an arm being perhaps greater from loss of the leg, it is not surprising that the proportion of those who failed to make good is a little greater amongst arm amputees. Personality factors enter into this, and also the fact that arm-training is refused by some who have already been promised work by former employers—work which is often not of the same standard, through either sympathy or lack of understanding of the problem of the disabled.

In their own interest all arm amputees should be impressed with the importance of accepting the offer of arm-training.

*Group Therapy*.—Ever since the supply of artificial limbs to the war-disabled came to be regarded as a national responsibility, and subsequently, when that responsibility applied to all civilians who had lost limbs from any cause, group therapy has been practised, with a twofold advantage. First, in the treating of amputees in groups, whether for physical preparation, limb-fitting, or training, all those having similar disabilities discuss their problems with one another, observe the activities of those in a more advanced stage than themselves, and develop a spirit of competition and cheerfulness that is most beneficial to morale. The morale and functional efficiency of amputees who had been dealt with collectively were observed to be much higher than in amputees who, before the introduction of the National Health Service, obtained their limbs privately. Secondly, members of the staff of limb centres and of hospitals which specialize in the treatment of amputees become experienced in the specific requirements of amputees and in their handling from both the mental and the physical aspect.

Recent amputees should be enabled to visit limb centres and training schools whenever possible; it is good for morale, and when the time comes for them to be fitted with limbs they approach the matter with more enthusiasm and hope.

Films are available which depict the activities of arm- and leg-wearers who have been rehabilitated, and these films have been shown in hospitals and other institutions with beneficial results.

### Summary

Attention is called to the impact of amputation upon the mind of the patient. The manner in which some patients react to the shock and the fears ever present in their minds is remarked upon. The long-term effects of amputation which may come to light after some years are noted. The importance of telling patients all that will happen to them and the reasons therefor, and what their future potentialities will be so far as can be assessed, is emphasized, and some indication of the method of approach best suited to their needs is given.

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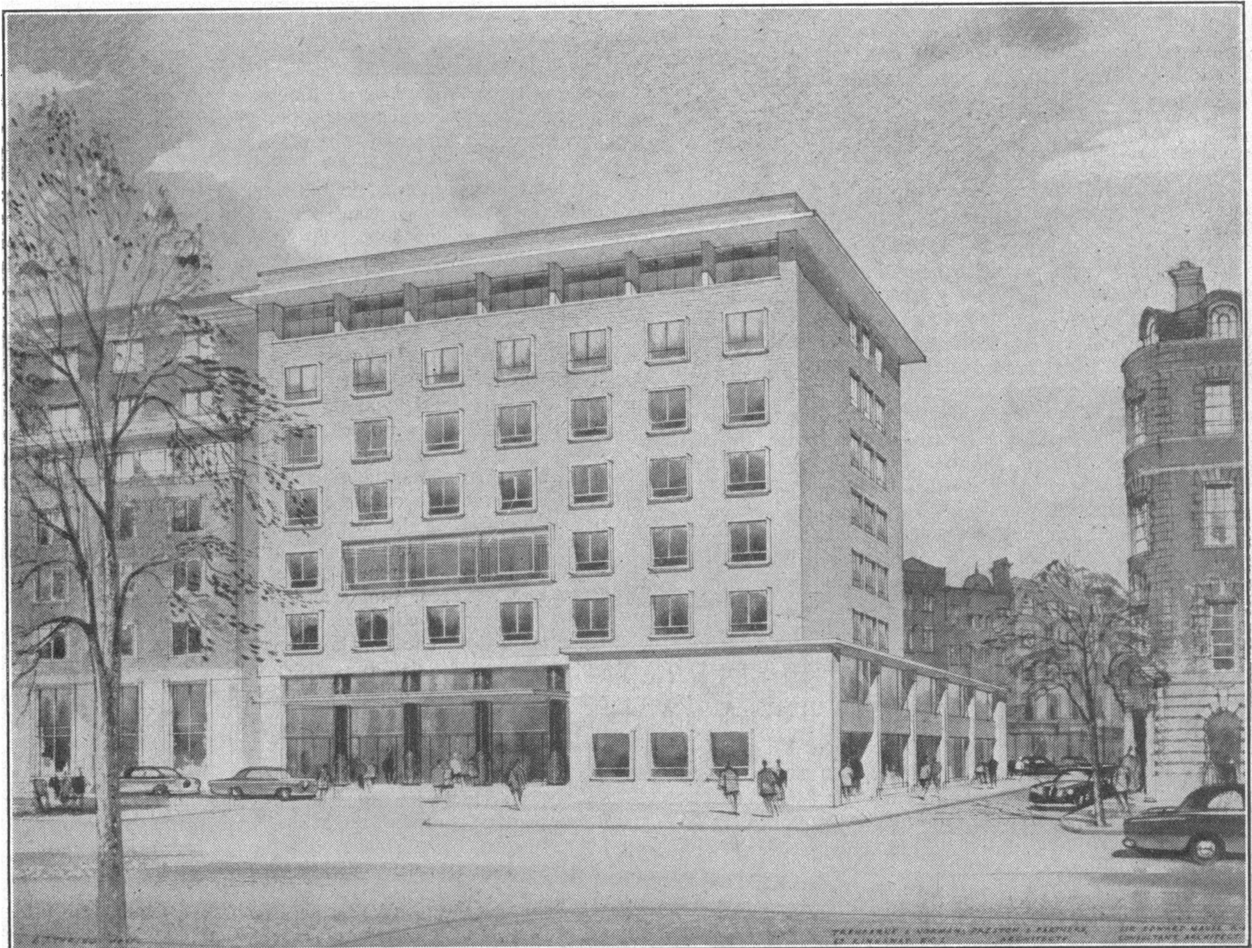
## COLLEGE OF GENERAL PRACTITIONERS

### PROPOSED NEW BUILDING IN LINCOLN'S INN FIELDS

*The following statement has been issued by the College of General Practitioners:*

Permission has been granted by the London County Council for the new headquarters of the College of General Practitioners to be built alongside the Royal College of Surgeons in Lincoln's Inn Fields. This close association of two medical colleges—the youngest and one of the oldest, possibly sharing some of each other's resources and both anxious about the future of general practice—should do boundless good to British medicine at this critical time. The architects are Trehearne & Norman, Preston & Partners; the consulting architect is Sir Edward Maufe, R.A.

The new building—a gift from an anonymous donor—will contain a conference hall, lecture theatre, library, museum, council chamber, committee rooms, and restaurant. An important feature will be the "equipment and premises" demonstration rooms where apparatus used by family doctors throughout the Commonwealth will be displayed, together with models and drawings of different types of premises. Other parts of the building will be allocated to undergraduate and postgraduate education, to the College's journal, and to its research headquarters, which will include a records unit and a statistical department; the latter may be of value, also, to the Imperial Cancer Research Laboratories near by. In addition to books, other publications, and archives, the library will preserve films and sound recordings of interest to general practitioners. Underground garage accommodation will be provided.



The future College of General Practitioners: an artist's impression.