

# Survey of the Diabetic Amputee\*

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This survey includes all lower limb amputees who attended the five artificial limb centres during 1964 and were fitted with a prosthesis for the first time. All patients suffered from diabetes and had their limb amputated on account of diabetic gangrene or chronic ulceration which did not respond to treatment.

The amputees referred to in Tables 1 and 2 were alive at the time of the surgery, a minimum of nine months and a maximum of 22 months after amputation.

TABLE 1  
VASCULAR DISEASE WITH LOWER LIMB AMPUTATED

	Vascular Disease Only (A)	Vascular Disease with Diabetes (B)	All Cases	% Total
Male -----	95 (12)	27 (2)	176 (14)	69.3 (100)
Female ----	40 (2)	29 (1)	87 (3)	79.3 (100)
	135 (14)	56 (3)	263 (17)	72.6 (100)

The figures in parentheses represent the number of double leg amputees included in each total.

TABLE 2  
AGE GROUP AT DATE OF AMPUTATION

*Vascular Disease Only*

	30-39	40-49	50-59	60-69	70-79	80-89	All Age Groups
(A)							
Male -----	2	6	13 (2)	32 (3)	31 (7)	11	95 (12)
Female ----	2	2	1	9	16 (2)	10	40 (2)
	4	8	14 (2)	41 (3)	47 (9)	21	135 (14)

*Vascular Disease with Diabetes*

	30-39	40-49	50-59	60-69	70-79	80-89	All Age Groups
(B)							
Male -----	—	2	2	17 (2)	5	1	27 (2)
Female ----	—	—	4 (1)	12	10	3	29 (1)
	—	2	6 (1)	29 (2)	15	4	56 (3)

The figures in parentheses represent the numbers of double leg amputees included in each total.

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Table 1 shows number of patients who had lower limb or limbs amputated for vascular disease and those with vascular disease associated with diabetes. 69.3% of all male amputees and 79.3% of all female amputees were the result of vascular disease with or without diabetes and 22.1% males and 42% females of those with vascular disease suffered from diabetes.

Table 2 shows sex and age distribution of amputees with vascular disease and vascular disease associated with diabetes; Tables A and B show the majority are 60 years or over. In the case of the vascular group, the greatest number are in the 70-79 age group (34.8%), whereas in the diabetic group more than half are in the 60-69 age group (51.8%).

### Deceased

Three males and four females died within one year following amputation, making a total of 63 primary amputees for 1964. One of the three males who died was a bilateral amputee. 11.1% primary diabetic amputees died within one year.

### Site of Amputation

Table 3 shows the site of amputation by sexes. Only in the case of one male and two females was the myoplastic surgical technique performed. Five males and four females included in Table 3 had to have re-amputation. Details of re-amputation are given in Table 4.

TABLE 3  
SITE OF AMPUTATION

	Male	Female	Total	%
A/K -----	11	10	21	37.5
T/K -----	3	3	6	10.6
B/K -----	13	15	28	50.0
Symes -----	—	1	1	1.9
	27	29	56	100.0

TABLE 4  
RE-AMPUTATIONS

Male		Female	
T/K	to A/K	B/K	to A/K
B/K	to A/K	Symes	to B/K
Symes	to B/K	Pirogoff	to B/K
Chopart	to B/K	Toes	to B/K
Toes	to B/K		

### Delayed Healing

Excluding the nine patients who required reamputation, six males and five females suffered from delayed healing of the stump. Most of these patients presented a problem at the prosthetic fitting stage due to flexion contracture. The patients who had delayed healing were seen at the artificial limb clinics between two and six months following amputation, whereas the 36 patients who had no complications after amputation were fitted with a temporary pylon within one month of amputation.

### **Other Disabilities**

Defective vision was present in seven cases to a marked degree and one patient was totally blind. Two patients had intermittent claudication of the remaining limb, and a further two patients had had lumbar sympathectomy with fair results.

### **Degree of Diabetes**

Seventeen (30.3%) patients were controlled by diet, 19 (33.9%) were controlled by oral hypoglycaemics and 20 (35.8%) were controlled by insulin. The severity of diabetes had no relationship to the site of amputation.

### **Type of Artificial Limb**

The 36 patients who had no complications after amputation and where the stump healed quickly were supplied with a pylon and, with one exception, are now wearing standard artificial limbs.

The 11 patients with delayed healing were fitted with pylons, nine went on to be supplied with standard limbs, one has been submitted permanently to hospital and one is confined to a wheel-chair.

The nine patients who required re-amputation were fitted with pylons, six went on to be fitted with standard limbs, the remaining three no longer wear a prosthesis.

### **Walking Ability**

Fifty patients achieved some degree of independent mobility through the use of a prosthesis, 12 could be classed as good walkers, the remainder required one or two sticks to get about, and the distance varied from being confined to the house to a short distance from their home. Males made better use of their prosthesis than females.

### **Summary**

Sixty-three primary diabetic amputees are included in this survey. Seven (11.1%) died within one year of amputation.

22.1% male amputees and 42% female amputees with vascular disease suffered from diabetes. The majority were 60 years and over.

Five males and four females required re-amputation and 11 patients had delayed healing of the stump. The level of amputation is difficult to decide particularly in the elderly. Whitefield<sup>1</sup> considers the level of amputation should as far as possible be selected to allow the patient to make use of the most suitable available prosthesis. Defective vision was the main additional disability.

The diabetes in 17 patients is controlled by diet, in 19 patients by oral hypoglycaemics and in the remaining 20 by daily insulin.

The walking ability of patients included in this survey compares favourably with the report by Cameron Lennard-Jones, Robinson.<sup>2</sup> This may be due to fitting the patient as early as possible with a temporary pylon to enable the patient to be ambulant as soon as possible after operation.

As in the survey by Wilson,<sup>3</sup> males were more efficient with their prosthesis than females.

### **REFERENCES**

- (1) Whitefield, George, (1964) *Hlth. Bull. (Edin.)*, Vol. 22, p. 4.
- (2) Cameron, Lennard-Jones, Robinson, (1964), *Lancet*, Vol. 2, p. 605.
- (3) Wilson, A. L., (1964) *Hlth. Bull. (Edin.)*, Vol. 22, p. 4.