

## ADDITIONAL NOTES ON REHABILITATION OF THE BILATERAL LOWER EXTREMITY AMPUTEE

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In a previous issue of this *Journal*\*, the end-results of rehabilitation of bilateral amputees was published as a reprint of an article appearing in the *J.A.M.A.*\*\* At this time additional charts are available and the findings in 23 cases seen from January 1, 1957 to November 1, 1958.

In these recent cases, the age at time of referral for rehabilitation ranged between 29 and 76, the greatest number being in the seventh decade of life.

Four cases, ages 29 to 54, had a traumatic etiology. Two had bilateral below-knee stumps; the other two had bilateral mid or low thigh amputations.

The remaining 19 cases all had peripheral vascular disease with or without cardiac involvement. The diagnosis of Buerger's Disease was made in three instances, and diabetes was present in five. Pathologically, arteriosclerosis was present in all except the traumatic cases.

There were 12 bilateral above-knee amputees seen. Non-articulated short legs (pylons) were prescribed for eleven amputees. No prostheses were prescribed for the twelfth case because of cardiac complications, and he died before medical evaluation was completed. Two other patients died after receiving pylons. One (age 57 at time of prescription) became an independent wearer with two canes and returned to office work. He died of a heart attack five months after finishing prosthetic training and three years after his last amputation. Another, age 67, died while receiving prosthetic training, just seven weeks post amputation and in his fourth week of training. He had not progressed beyond the stage of parallel bars and a wheelchair. This death was also cardiac in etiology.

The nine living bilateral above-knee (AK) amputees all became successful wearers of pylons and were independent in home life. One reverted to partial use only; he started rehabilitation seven years after his last amputation.

Six patients had AK-BK amputation, the youngest 54, the oldest 68. All became independent in use of limbs in the home with one or two canes with one exception: an obese lady who because of the distance from the center received only three treatment visits and continued to use a wheelchair. Two men were rated employable and referred to the rehabilitation commission for placement.

The bilateral-BK amputees (5) all became satisfactory wearers of conventional prostheses usually with only one cane for additional aid. One man used crutches, but returned to work as a gas station manager. Two ladies in this group became independent homemakers; of the three men, one awaits placement eventually and two are employed.

Of the nine surviving cases with double thigh amputations, three also were given conventional long legs. One (age 29) used these successfully and continuously being employed in office work. One (age 69) failed to learn to use them and reverted to a wheelchair. The third (age 50) could walk

\*Watkins, Arthur L., and Liao, Sung J. Rehabilitation of Persons With Bilateral Amputation of Lower Extremities. *Orthopedic and Prosthetic Appliance Journal*. Vol. 12, No. 2, pp. 69-72, June 1958.

\*\*Watkins, Arthur L., and Liao, Sung J. Rehabilitation of Persons With Bilateral Amputation of Lower Extremities. *The Journal of the American Medical Association*. Vol. 166, No. 13, pp. 1584-1586, March, 1958.

well with both pylons and long legs, but preferred pylons and refused employment offered him. We have prescribed long legs for two others at their own insistence being successful users of pylons, and paying their own way.

### Discussion

Further evaluation of these cases reveals that in one case the patient's heart condition did not warrant the use of pylons and he died during training. One man learned to use pylons, but died after working for five months. One cannot say that use of artificial limbs was responsible. Another (age 69) learned to use both short and long legs but resided in a nursing home and when on his own reverted to a wheelchair. Another failure was a 68 year old man for whom pylons were prescribed seven years after his last amputation. All the AK-BK and BK-BK cases became successful users of artificial limbs except for one lady who lived out of state and for whom we could not arrange training.

Of the entire group, only four were employed outside of the house, but three women were rehabilitated to independence as homemakers. Four men were considered to be employable, but at the time of writing were not placed.

### Summary

In this group of 23 patients there were four cardiac deaths; two failures in learning to use artificial limbs (one because of inability to arrange for treatment and one who received limbs seven years after amputations), and one reversion to wheelchair after becoming a satisfactory wearer (AK-AK). All others, regardless of level of the amputation, learned to use artificial limbs.

It would appear from these end-results that only the young bilateral (AK-AK) amputee can be expected to wear long legs successfully. Regardless of age the AK-AK amputee can be rehabilitated with pylons provided his heart condition is satisfactory.

## C H A R T S

# REHABILITATION END RESULTS

Results	Rehab. Grade	Number	Percentage
Gainfully Employed	A	10	20%
Homemaking and Spouse Employed	B	5	10%
Employable, but Not Placed	C	6	12%
ADL Independent, but Unemployable	D	14	28%
Rehabilitation	A - D	35	70%
Partial ADL and Unemployable	E	5	10%
Wheelchair-existence	F	7	14%
Died During Rehabilitation	G	3	6%
Failures	E - G	15	30%