



# Impact of Physical Therapy for a Patient with Multiple Limb Amputations Secondary to Legionnaires' Disease

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## INTRODUCTION

Legionnaires' Disease (LD) is caused by exposure to a potentially-fatal pneumonia due to inhalation of water aerosols that contain Legionella bacteria. Approximately 8,000-18,000 individuals are hospitalized with community-acquired LD every year (Silk, 2013). This case report describes physical therapy in an inpatient rehabilitation setting for a male with community acquired Legionella pneumonia.

## METHOD

Consent for participation in a case report and release of health information, medical condition for purpose of publication was obtained from participant.

**Subject:** 55 year old previously healthy male (177cm, 67kg) who works full time as a banker. He lives with his significant other in a multilevel home with a 2<sup>nd</sup> floor bedroom and bathroom. He enjoys golfing and going out to restaurants. He was admitted with community acquired Legionella pneumonia in August 2012. He developed septic shock, respiratory failure, multiple strokes, ischemic liver disease, ischemia/necrosis of bilateral feet and hands, and renal failure. In September 2012, he underwent left transradial and bilateral transtibial amputations due to pressure induced ischemia. Upon admission to inpatient rehabilitation he was total assist for rolling, total assist for transfers with hydraulic lift and with transfer board, and total assist for sitting balance. He had bilateral transtibial casts. Lower extremity (LE) strength hip flexion 3/5 bilaterally, hip abduction/adduction 2+/5 bilaterally.

**Apparatus:** Daily physical therapy documentation recorded progress.

**Procedures:** Physical therapy interventions provided in the inpatient rehabilitation setting included rolling, transition to prone, supine to sit, transfer training with hydraulic lift, transfer training with transfer board, manual wheelchair mobility, power wheelchair mobility, skin protection education, pressure relief education, sitting balance, core and lower extremity strengthening, sit to stand, static standing, gait training, stair negotiation, equipment assessment, and family/caregiver training. Collaboration of patient status with the comprehensive interdisciplinary team consisting of physician, nurse, physical therapist, occupational therapist, speech language pathologist, prosthetist, social worker, psychologist, and dietitian.

**Data Analysis:** Review of documentation during inpatient stay.

## RESULTS

Patient progressed from total assist for all functional mobility to modified independent for bed mobility, transfers, and stand by assist for ambulation with

platform walker with bilateral LE and left UE prosthesis.

	ADMIT 9/22/12	MIDPOINT 10/30/12	DISCHARGE 11/19/2012
10 Meter Walk Test	n/a	0.07 meters/second	0.60 meters/second
Timed Up and Go Test	n/a	n/a	47 seconds
6 Minute Walk Test	n/a	n/a	437 feet
Level of Assistance	Total assist for all mobility	Minimal assist with wheelchair follow	Close Supervision
Assistive Device Utilized	Hydraulic lift	Platform rolling walker, Bilateral LE prosthesis, left upper extremity prosthesis	Platform rolling walker, bilateral LE prosthesis, left upper extremity prosthesis

Table1. Progression of functional mobility and gait during inpatient rehabilitation

## DISCUSSION

Limited published data exists on physical therapy interventions for a patient with multiple amputations secondary to LD. Progression of sitting balance, prone tolerance, scooting on mat to assist with transfers is critical to achieve functional mobility tasks that are needed to be achieved to prepare for gait training with bilateral LE prosthesis and left upper extremity prosthesis.

## CONCLUSION

LD complicated by pressure induced ischemia can result in multiple limb amputations requiring intense physical therapy in an inpatient rehabilitation setting with a comprehensive team approach to improve functional mobility and level of independence.

## CLINICAL APPLICATIONS

Initial use of dependent transfers with progression to lateral transfers and gait training as strength and sitting balance improves increases independence.

## REFERENCES

Silk et al; BMC Infectious Disease 13, 291-299, 2013.

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