

# **Energy Expenditure and Gait Characteristics of a Bilateral Amputee Walking with C-Leg Prostheses Compared with Stubby and Conventional Articulating Prostheses**

Perry J, Burnfield JM, Newsam CJ, Conley P: *Archives of Physical Medicine and Rehabilitation*, 2004; 85:1711-1717.

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## **OBJECTIVE**

To compare energy cost and stride characteristics during walking with 3 different types of prostheses in a person with bilateral knee disarticulations. **DESIGN**

Single-case study. Setting Pathokinesiology laboratory.

## **PARTICIPANT**

A subject with bilateral knee disarticulations and bilateral transradial amputations secondary to meningococemia with purpura fulminans. **INTERVENTIONS**

Not applicable.

## **MAIN OUTCOME MEASURES**

Energy cost, stride characteristics, and motion analysis.

## **RESULTS**

When wearing the C-Leg prostheses, the subject walked the farthest and fastest, with an overall lower rate of oxygen consumption and oxygen cost compared with walking with either of the other prostheses. Gait analysis while the patient was wearing the C-Leg prostheses revealed premature hip extension, absence of knee flexion during loading response, and a rate of swing in the referent range.

## **CONCLUSIONS**

Walking in a C-leg was the most efficient method of ambulation for our subject.

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