


5:14 – 5:19 pm

**What does the Evidence Show?**

Timothy R. Daniels, MD  
Associate Professor  
Foot and Ankle Surgery, Trauma  
Director, Foot and Ankle Program  
University of Toronto  
Toronto, Ontario, Canada

"Motion is life - life is motion" is a motto adopted by the Canadian Orthopaedic Association to promote the activities of its members and to emphasize the importance of motion in the management of joint disease. Hip and knee arthroplasties are two of the most successful operations in the past century. For management of end-stage ankle arthritis, however, arthrodesis continues to be the mainstay of an orthopaedic practice. This is in part due to the early catastrophic failures of the ‘first generation’ ankle arthroplasties and the high patient satisfaction following an ankle arthrodesis. Despite the initial failures of ankle arthroplasties several individuals remained committed to the possibilities of replacing the ankle joint and their persistence has resulted in the introduction of a ‘second and third generation’ ankle implants. Preliminary clinical results are promising, again giving rise to total ankle arthroplasty (TAR) as an option for managing end-stage arthritis. These recent developments have prompted the current debate at many National and International meetings regarding the role of ankle arthroplasty in the management of end stage ankle arthritis.

Unfortunately, the current literature highlights a paucity of comparative, prospective and long-term studies for the various surgical options available to patients with end-stage ankle arthritis. Currently, the most common procedures performed are ankle arthrodesis and arthroplasty. Though the option of ankle arthroplasty is relatively new, no comparative studies are available to help the treating surgeons determine which procedure to choose and what advice to give their patients. Why are comparative studies not being performed before introducing new technology? Is this a fault of the profession, the fault of the current scientific system, the fault of industry, the fault of the pathology or a combination of all of the above? This is a difficult question to answer but one that needs to be asked. Problems with assessing outcomes of arthroplasty are that outcomes of greater than 5 years are required and some questions can only be answered with 15- to 20-year outcomes. Realistically, a study with 5-year outcomes takes 10 years to evolve, and another 2 years to reach publication. Therefore, a 5-year outcome study is often the result of 12 years of work. Not uncommonly, by the time these results are published, the technology has changed substantially making the outcomes obsolete.

In conclusion, after thorough review of the literature, the only expert advice I can offer is that the short-term outcomes of ankle fusion and arthroplasty are equivalent. Does the motion allowed for by an ankle
arthroplasty offer sufficient benefits to the patient to make the risks of a difficult revision worth while? Does it decrease the incidence of symptomatic ipsilateral hindfoot arthritis? Does the improved gait over arthrodesis offer any long-term benefits to the patient? None of these questions can be answered by the current literature. My personal view is that no surgeon should be embarking on a new procedure like ankle arthroplasty without entering the patient into a prospective data bank that will, ultimately, provide answers to these important questions.