INTRODUCTION
Cementless hip replacement has been very successful since the early 1980’s. The stems and sockets for the most part would remain attached to the patient's skeleton, but the plastic or polyethylene socket would wear and require replacement.

Thirteen years ago I started with nine other surgeons an FDA study on metal-on-metal cementless hips. This was extremely successful and none have required replacement. Since then numerous companies in the orthopaedic field have reinvented those early studies and now it is an operation available not only to the young, but the more healthy elderly patients.

HISTORY
Early cemented hips generally had a lifespan of 10 to 15 years, although I now have some over 30 years. Failures resulted in very complex operations and frequently gave a less desirable functional result. The titanium stem with the chrome cobalt ball and socket have now become the most acceptable joint implant for longevity. Laboratory studies have wear up to 25 to 30 years.

INDICATIONS
It is my opinion that anyone healthy under 75 to 80 years of age may have a metal-on-metal hip articulation, as the larger surface of the ball and socket leads to improved function and stability, thusly leading to much lower incidence of dislocation.

Other options include ceramic on ceramic for those that may have a metal sensitivity and large ceramic ball on a new improved polyethylene socket.

CERAMIC BEARINGS
Certainly many patients have had successful functional results with ceramic-on-ceramic articulation, and there have been improvements to avoid cracking and the “squeaking” phenomenon. Ceramic may have an equal longevity to metal, but there is certainly more problem associated with notching or scratching of the surfaces.
METAL-ON-METAL TOTAL HIP
Professor Ring from England had the initial complete metal-on-metal joints, but unfortunately had a problem in attaching them to the bone. The few that did remain are still functioning at nearly 40 years.

Most of the major orthopaedic companies now have metal-on-metal articulations, and laboratory studies do show great longevity. The subject of chrome ions and other particulate matter has always come up for years, but no one has shown this to be detrimental to the human body. Where there is insufficient knowledge about childbearing young women, ceramic on ceramic or ceramic on polyethylene may be a wiser choice.

At this point in our development in metal hips, once the bone has ingrown to the implants the prosthesis may well last the remainder of anyone’s life.

HIP RESURFACING
This procedure has been dubbed a new operation by some, although it started back in the last 70’s. Most surgeons have not returned to this method of anterior approach and resurfacing due to a history of higher complications and revisions.

This surgery involves approaching the hip from slightly in front and placing a cup over a reshaped ball, rather than removing the ball itself. It is a more difficult operation and has pitfalls not only with surgery, but also with long-term follow-up. Recent reports are that the results are improving, and in a very young individual such as 20’s and early 30’s this may be a consideration.

SUMMARY
At the present state of knowledge in our industry of orthopaedics, the metal-on-metal hip with large bearing surface may be the implant of choice. Certainly ceramic on ceramic, ceramic on polyethylene or metal on polyethylene can be used in selective cases. In any case, the younger more active population has a chance at a permanent hip implant. In the older population, up to at least 75 or 80, one can be treated with the same prosthesis for improved stability. Health, bone density, and functional ability all enter into the decision of which hip.

Research is ongoing and there has been discussion of other surfaces, including diamond, but for the moment we have hip replacements that may well represent the permanent solution to all age groups.