

Bearing Surfaces

The field of **total hip** and **total knee replacement** has entered a new era. Advances in technology have produced an array of improvements in outcome for the patients undergoing these specialized procedures.

One of these technological highlights is in the area of bearing surfaces. Traditional **total hip replacements** have employed a metal prosthetic femoral head articulating with a polyethylene, or “plastic” acetabular prosthetic liner. Time has shown that this plastic is indeed the weak link in the system. Over time the plastic is worn away leading to a variety of problems which ultimately cause the failure of the implant and need for revision surgery. The average time course for the demise of such a **total hip** prosthesis is routinely stated to be about 10 to 15 years.

We now have at hand the means to virtually avoid completely this wearing out of the **total hip** prosthesis. This new technology has been termed “hard on hard” bearing surfaces, and employs materials that show virtually no wear when compared with traditional metal on plastic prostheses. These new bearings include the “metal on metal”, “ceramic on ceramic”, and “ceramic on metal” configurations. Wear rates for any of these combinations have been found to be so low that failure due to wear would not be expected for decades if at all.

With wear becoming a diminishing threat to the longevity of total hip replacements we are left to combat loosening as the major remaining source of implant failure. Advances in the treatment of osteoporosis and other mechanisms of bone mineral loss will likely provide inroads to treatment that will further enhance the durability and longevity of total hip replacements.

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