Hip arthroplasty surgeons have various bearing choices to make on behalf of their patients. We make those choices based on our knowledge of pre-clinical wear testing data and the outcome of clinical and radiological follow-up studies. The initial use of conventional polyethylene revealed limitations in its use in younger patients. Modern highly crosslinked polyethylene is a vastly improved bearing surface that means less wear and its consequences. Despite this, registry data still suggests that loosening, lysis and dislocation are problematic causes of implant failure. The functional success of hip replacement surgery, the ageing population and younger patients requesting arthroplasty means we should predict ongoing issues consequent to wear related events even with the newer polyethylenes.

Ceramic-on-ceramic bearings surfaces have a long history of successful clinical use. The benefits of ceramic bearings are its superior wear characteristics, the minimal biological response to the ceramic wear products and the ability of ceramics to be offered in larger head sizes. Its limitations have been reports of fracture and squeaking.

Fourth generation ceramic articulations have reduced the fracture incidence. Squeaking has been reported to occur in 3% to 20% in different series but revision for squeaking is extremely low suggesting it is not a significant clinical problem. Edge loading occurs in most hip articulations and is thought to be the primary mechanism in the squeaking event. Modern methodologies of “functional” implant orientation may reduce the incidence of squeaking.

While wear and its consequences remain significant issues in hip arthroplasty, the future will require a bearing with reduced wear and biologically inert wear products. This bearing exists already. “The future is now”.

References:
- Ceramic On Ceramic Arthroplasty Of The Hip New Materials Confirm Appropriate Use In Young Patients. U. Sentuerk, P. Von Roth, C. Perka. Bone And Joint Journal 98B, 14-17 2016