Introduction

Hip replacement is an elective surgery carried out to relieve pain and disability caused by degenerative joint diseases, such as osteoarthritis and rheumatoid arthritis. It is considered to be a highly cost-effective procedure. The number of hip replacements in Canada is increasing steadily, mainly due to the aging population.

As more of these procedures are performed, a greater awareness of the problems associated with the various prostheses has become apparent. These include problems with wear, fixation and implant breakage. Most problems require further surgery and prosthesis replacement, which increase costs in this area of healthcare, as well as impact patients’ lives. Furthermore, as younger patients are receiving prostheses, the longterm outcomes and the effectiveness of the different types of hip replacements become increasingly important.

Research Questions

The preliminary research questions posed by CCOHTA regarding the relative benefits of various types of hip prostheses were:

1. What are the longterm outcomes associated with the many different types of prostheses and, what are the costs and benefits of the different fixation devices and surgical techniques used in hip replacement?
2. Are the higher costs of the newer models of prostheses justified by improved outcomes?
3. What are the outcomes associated with revisions to total hip replacement surgery?

Assessment Process

Literature searches were run on PubMed and the Cochrane Library databases. Web sites of health technology assessment (HTA) agencies and other evidence-based medical sites were checked for further information. Additional material was identified through regular CCOHTA scanning for emerging technologies.

Summary of Findings

The following table lists the most recent and comprehensive studies relating to the relative benefits of various types of hip prostheses, and a summary of their main findings.
### Relative Benefits of Various Types of Hip Prostheses

**The Canadian Coordinating Office for Health Technology Assessment (CCOHTA)**

is a non-profit organization funded by the federal, provincial and territorial governments. (www.ccohta.ca)

---

<table>
<thead>
<tr>
<th>Type of Report Identified</th>
<th>Title</th>
<th>Reference</th>
<th>Findings</th>
</tr>
</thead>
</table>
- quality of available evidence is generally poor  
- incremental changes in prosthesis design over time, and the potential interaction between surgeon, hospital and prosthesis performance make it even more difficult to interpret existing evidence-based data  
- there is an urgent need for further, well-conducted RCTs and observational studies that include formal economic evaluation |


---

**Conclusion**

The technology has recently been assessed and it was found that there is insufficient evidence in the published literature to reliably assess this technology. Further work by CCOHTA would not contribute further at this point in time.