

# Surgical advances in periacetabular osteotomy for treatment of hip dysplasia in adults

*Anders Troelsen, MD*

---

This PhD dissertation was accepted by the Faculty of Health Sciences of the University of Aarhus, and defended on March 13, 2009.

Official opponents: Richard Wallensten, Sweden, Uldis Kesteris, Sweden, and Bjarne Møller-Madsen.

Tutors: Kjeld Søballe and Brian Elmengaard.

Correspondence: Anders Troelsen, Ortopædkirurgisk Forskningsenhed, Århus Sygehus, Tage-Hansens Gade 2, Bygn. 7B, 8000 Århus C. Denmark.

E-mail: a\_troelsen@hotmail.com

---

Dan Med Bull 2009;56:97

## ABSTRACT

The studies underlying this PhD dissertation were conducted at the Orthopaedic Research Unit, University Hospital of Aarhus. The primary aim of the scientific work was to explore potential benefits of new surgical methods within the field of surgical treatment of hip dysplasia in young adults. The conducted investigations were the first to describe the technique and the results of a new minimally invasive surgical approach for the periacetabular osteotomy which are used for surgical joint preserving treatment of hip dysplasia in young adults. Further, a recently developed measuring device for intraoperative use was tested and validated. The measuring device is used during surgery to secure a good result of the joint preserving periacetabular osteotomy. It was found that the minimally invasive approach was safe and did not compromise a good surgical result. Compared to a previously used approach the blood loss, transfusion requirements and the duration of surgery were reduced. Using the minimally invasive approach there was absence of moderate or severe complications. The recently developed measuring device was found helpful and reliable in assisting the surgeon during surgery to achieve the best possible result of surgery. The explored methods represent considerable surgical advances in the treatment of hip dysplasia in young adults and the conducted studies support their future use.