EVIDENCE for FRCSorth

## CMCJ OA Treatment

J Hand Surgery 1997

**Trapeziectomy alone, with tendon interposition or with ligament reconstruction?: A randomized prospective study**

* *T.R.C. Davis1, O. Brady, N.J. Barton, P.G. Lunn, F.D. Burke*

This randomized prospective study compared the results of trapeziectomy alone, or combined with tendon interposition or ligament reconstruction in 76 women with basal thumb osteoarthritis. At 3 month and 1year follow-up the results of the three procedures were indistinguishable in terms of pain relief, hand function and thumb strength. In the short term at least, tendon interposition and ligament reconstruction do not improve the results of trapeziectomy.

# Carpal Tunnel Release

Atroshi et al.

2006

BMJ

Outcomes of endoscopic comapred with open surgery for carpal tunnel syndrome

# Radial Nerve Palsy with Humeral Fracture

**Radial nerve palsy associated with fractures of the shaft of the humerus**A SYSTEMATIC REVIEW

**The management of radial nerve palsy associated with fractures of the shaft of the humerus has been disputed for several decades. This study has systematically reviewed the published evidence and developed an algorithm to guide management. We searched web- based databases for studies published in the past 40 years and identified further pages through manual searches of the bibliography in papers identified electronically. Of 391 papers identified initially, encompassing a total of 1045 patients with radial nerve palsy, 35 papers met all our criteria for eligibility. Meticulous extraction of the data was carried out according to a preset protocol.**

**The overall prevalence of radial nerve palsy after fracture of the shaft of the humerus in 21 papers was 11.8% (532 palsies in 4517 fractures). Fractures of the middle and middle- distal parts of the shaft had a significantly higher association with radial nerve palsy than those in other parts. Transverse and spiral fractures were more likely to be associated with radial nerve palsy than oblique and comminuted patterns of fracture (p < 0.001). The overall rate of recovery was 88.1% (921 of 1045), with spontaneous recovery reaching 70.7% (411 of 581) in patients treated conservatively. There was no significant difference in the final results when comparing groups which were initially managed expectantly with those explored early, suggesting that the initial expectant treatment did not affect the extent of nerve recovery adversely and would avoid many unnecessary operations. A treatment algorithm for the management of radial nerve palsy associated with fracture of the shaft of the humerus is recommended by the authors.**

# Scaphoid Fracture

McQueen et al; JBJS Br; 2008

Percutaneous vs Closed management of Waist fracture – early return to work 9.2wks and 13.4

J Dias; 2008; Br JBJS

Clinical and radiological outcome – acute scaphoid fracture – 93 months

NO DIFFERENCE

J Bone Joint Surg Am. 2008 Jun;90(6):1244-51. doi: 10.2106/JBJS.G.00775.

**Reverse shoulder arthroplasty for the treatment of rotator cuff deficiency.**

[Cuff D](http://www.ncbi.nlm.nih.gov/pubmed?term=Cuff%20D%5BAuthor%5D&cauthor=true&cauthor_uid=18519317)1, [Pupello D](http://www.ncbi.nlm.nih.gov/pubmed?term=Pupello%20D%5BAuthor%5D&cauthor=true&cauthor_uid=18519317), [Virani N](http://www.ncbi.nlm.nih.gov/pubmed?term=Virani%20N%5BAuthor%5D&cauthor=true&cauthor_uid=18519317), [Levy J](http://www.ncbi.nlm.nih.gov/pubmed?term=Levy%20J%5BAuthor%5D&cauthor=true&cauthor_uid=18519317), [Frankle M](http://www.ncbi.nlm.nih.gov/pubmed?term=Frankle%20M%5BAuthor%5D&cauthor=true&cauthor_uid=18519317).

**Author information**

**Abstract**

**BACKGROUND:**

Early designs of reverse shoulder arthroplasty components for the treatment of glenohumeral arthritis associated with severe rotator cuff deficiency in some cases have been associated with mechanical failure. The purpose of this study was to perform a prospective outcomes study of reverse shoulder arthroplasty performed with use of 5.0-mm peripheral locking screws for baseplate fixation and a lateralized center of rotation for the treatment of a rotator cuff deficiency.

**METHODS:**

From February 2004 to March 2005, 112 patients (114 shoulders) were treated with a reverse shoulder arthroplasty as part of a United States Food and Drug Administration Investigational Device Exemption study. Ninety-four patients (ninety-six shoulders) were available for a minimum follow-up of two years. Of the ninety-six shoulders, thirty-seven had a primary rotator cuff deficiency, thirty-three had a previous rotator cuff operation, twenty-three had a previous arthroplasty, and three had a proximal humeral nonunion. The patients were prospectively followed clinically (the American Shoulder and Elbow Surgeons [ASES] score, the Simple Shoulder Test [SST], and self-reported satisfaction) and radiographically (mechanical failure, loosening, and notching). Patients were videotaped while performing a standard active range-of-motion protocol before and after treatment. These videos were then analyzed in a blinded fashion by three independent observers using a digital goniometer.

**RESULTS:**

At two years, the average total ASES scores had improved from 30 preoperatively to 77.6; the average ASES pain scores, from 15 to 41.6; and the average SST scores, from 1.8 to 6.8 (p < 0.0001 for all). Blinded analysis of range of motion showed that average abduction improved from 61 degrees preoperatively to 109.5 degrees (p < 0.0001); average flexion, from 63.5 degrees to 118 degrees (p < 0.0001); and average external rotation, from 13.4 degrees to 28.2 degrees (p < 0.0001). The patients rated the outcome as excellent in fifty-three shoulders (55%), good in twenty-six (27%), satisfactory in eleven (12%), and unsatisfactory in six (6%). There was no evidence of mechanical failure of the baseplate or scapular notching in any of the patients. Six of the ninety-four patients in this study had a complication.

**CONCLUSIONS:**

Recent advances in reverse shoulder arthroplasty have allowed for improvement in patient outcomes while minimizing early mechanical failure and scapular notching and decreasing the overall complication rate at short-term follow-up.

**Exeter THR**

THE EXETER UNIVERSAL HIP REPLACEMENT FOR THE YOUNG PATIENT – 10 TO 17 YEARS FOLLOW UP.

**.** [**S Lewthwaite**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=S+Lewthwaite&sortspec=date&submit=Submit)**,** [**B Squires**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=B+Squires&sortspec=date&submit=Submit)**,** [**G Gie**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=G+Gie&sortspec=date&submit=Submit)**,** [**J Timperley**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=J+Timperley&sortspec=date&submit=Submit)**,** [**J Howell**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=J+Howell&sortspec=date&submit=Submit)**,** [**M Hubble**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=M+Hubble&sortspec=date&submit=Submit) **and** [**R Ling**](http://www.bjjprocs.boneandjoint.org.uk/search?author1=R+Ling&sortspec=date&submit=Submit)

**+**

Author Affiliations

. Princess Elizabeth Orthopaedic Centre, Royal Devon & Exeter Hospital, Exeter.

**Abstract**

**Introduction** & methods: The aim of this study was to determine the medium term survivorship and function of the Exeter Universal Hip Replacement when used in younger patients, a group that is deemed to place high demands on their arthroplasties. Since 1988, The Exeter Hip Research Unit has prospectively gathered data on all patients who have had total hip replacements at the Princess Elizabeth Orthopaedic Hospital. There were 130 Exeter Universal total hip replacements (THR) in 107 patients who were 50 years or younger at the time of surgery and whose surgery was performed at least 10 years before. Mean age at surgery was 42y (range 17y to 50y.) Six patients who had 7 THRs had died leaving 123 THRs for review. Patients were reviewed at an average of 12.5 years (range 10 – 17 years). No patient was lost to follow up. Results: At review, 12 hips had been revised. Of these, 9 were for aseptic loosening of the acetabular component and one cup was revised for focal lysis and pain. One hip was revised for recurrent dislocation. One femoral component required revision in 1 case of infection. Radiographs showed that a further 11(10%) of the remaining acetabular prostheses were loose but that no femoral components were loose. Survivorship of stem and cup from all causes was 92.7%, at an average of 12.5 years. Survivorship of stem only from all causes was 99% and from aseptic loosening was 100%.

**Conclusion:** The Exeter Universal Stem is shown to perform extremely well in the younger patient. No femoral component became loose and only 9 acetabular components were revised for aseptic loosening

J Bone Joint Surg Br. 2009 Jun;91(6):730-7. doi: 10.1302/0301-620X.91B6.21627.

**The Exeter Universal cemented femoral component at 15 to 17 years: an update on the first 325 hips.**

[Carrington NC](http://www.ncbi.nlm.nih.gov/pubmed?term=Carrington%20NC%5BAuthor%5D&cauthor=true&cauthor_uid=19483224)1, [Sierra RJ](http://www.ncbi.nlm.nih.gov/pubmed?term=Sierra%20RJ%5BAuthor%5D&cauthor=true&cauthor_uid=19483224), [Gie GA](http://www.ncbi.nlm.nih.gov/pubmed?term=Gie%20GA%5BAuthor%5D&cauthor=true&cauthor_uid=19483224), [Hubble MJ](http://www.ncbi.nlm.nih.gov/pubmed?term=Hubble%20MJ%5BAuthor%5D&cauthor=true&cauthor_uid=19483224), [Timperley AJ](http://www.ncbi.nlm.nih.gov/pubmed?term=Timperley%20AJ%5BAuthor%5D&cauthor=true&cauthor_uid=19483224), [Howell JR](http://www.ncbi.nlm.nih.gov/pubmed?term=Howell%20JR%5BAuthor%5D&cauthor=true&cauthor_uid=19483224).

**Author information**

**Abstract**

The first 325 Exeter Universal stems (309 patients) implanted at the originating centre were inserted between March 1988 and February 1990 by a group of surgeons with differing experience. In this report we describe the clinical and radiological results at a mean of 15.7 years (14.7 to 17.3) after operation with no loss to follow-up. There were 97 patients (108 hips) with replacements still in situ and 31 (31 hips) who had undergone a further procedure. With an endpoint of revision for aseptic loosening, the survivorship at 17 years was 100% and 90.4% for the femoral and acetabular component, respectively. The mean Merle D'Aubigné and Postel scores at review were 5.4 (SD 0.97) for pain and 4.5 (SD 1.72) for function. The mean Oxford score was 38.4 (SD 9.8) (0 to 48 worst-to-best scale) and the mean combined Harris pain and function score was 73.2 (SD 16.9). Radiological review showed excellent preservation of bone stock in the proximal femur and no failures of the femoral component.

**Exeter Total Hip System**

Stryker Exeter Hips - more than 400 of them - were first implanted in 1970 at the Princess Elizabeth Orthopaedic Hospital in Exeter, England. Survivorship today is 91.5 percent through 30 years.

**Features** & Benefits

**Highly-polished surface designed to reduce friction**1  Polished surface helps to reduce friction between the cement and the implant reducing potential for third body wear; polished double tapered design helps to create radial compressive loading.

**Collarless neck helps to facilitate adjustments**  Collarless neck helps to allow intraoperative leg length adjustment aided by reference points on both the stem and the rasp.

**Robust choice of size ranges and offsets**  Comprehensive selection of size ranges and offsets provide 19 primary stems; 5 long stems are also available that are commonly used for revision cases with Impaction Grafting and that use Exeter X-change Revision Instrumentation.

**Six offset options for every anatomy**Six offset options (30, 33, 35.5, 37.5, 44 and 50 mm) offer beneficial solutions for almost every anatomy.

**Innovative, hollow PMMA centralizer**  Innovative hollow PMMA centralizer is designed to allow stem to engage distally within the cement mantle, subjecting the cement to compressive loading, and reducing end bearing of the stem directly onto the cement.

The incidence of secondary pathology after anterior cruciate ligament rupture in 5086 patients requiring ligament reconstruction

* [**K. Sri-Ram**](http://www.bjj.boneandjoint.org.uk/search?author1=K.+Sri-Ram&sortspec=date&submit=Submit)**, FRCS(Tr & Orth), Orthopaedic Fellow**1[](http://orthodox.boneandjoint.org.uk/viewprofileinfo.aspx?authorid=1002722)**;** [**L. J. Salmon**](http://www.bjj.boneandjoint.org.uk/search?author1=L.+J.+Salmon&sortspec=date&submit=Submit)**, BAppSci(Physio), PhD, Research Physiotherapist**1[](http://orthodox.boneandjoint.org.uk/viewprofileinfo.aspx?authorid=1003100)**;** [**L. A. Pinczewski**](http://www.bjj.boneandjoint.org.uk/search?author1=L.+A.+Pinczewski&sortspec=date&submit=Submit)**, MBBS, FRACS, Consultant Orthopaedic Surgeon**1[](http://orthodox.boneandjoint.org.uk/viewprofileinfo.aspx?authorid=1004105)**; and** [**J. P. Roe**](http://www.bjj.boneandjoint.org.uk/search?author1=J.+P.+Roe&sortspec=date&submit=Submit)**, MBBS, FRACS, Consultant Orthopaedic Surgeon**1

**+**

Author Affiliations

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**Abstract**

We reviewed 5086 patients with a mean age of 30 years (9 to 69) undergoing primary reconstruction of the anterior cruciate ligament (ACL) in order to determine the incidence of secondary pathology with respect to the time between injury and reconstruction. There was an increasing incidence of medial meniscal tears and chondral damage, but not lateral meniscal tears, with increasing intervals before surgery. The chances of requiring medial meniscal surgery was increased by a factor of two if ACL reconstruction was delayed more than five months, and increased by a factor of six if surgery was delayed by > 12 months. The effect of delaying surgery on medial meniscal injury was also pronounced in the patients aged < 17 years, where a delay of five to 12 months doubled the odds of medial meniscal surgery (odds ratio (OR) 2.0, p = 0.001) and a delay of > 12 months quadrupled the odds (OR 4.3, p = 0.001). Increasing age was associated with a greater odds of chondral damage (OR 4.6, p = 0.001) and medial meniscal injury (OR 2.9, p = 0.001), but not lateral meniscal injury. The gender split (3251 men, 1835 women) revealed that males had a greater incidence of both lateral (34% (n = 1114) *vs* 20% (n = 364), p = 0.001) and medial meniscal tears (28% (n = 924) *vs* 25% (n = 457), p = 0.006), but not chondral damage (35% (n = 1152) *vs* 36% (n = 665), p = 0.565). We conclude that ideally, and particularly in younger patients, ACL reconstruction should not be delayed more than five months from injury.

Cite this article: *Bone Joint J* 2013;95-B:59–64.

J Bone Joint Surg Am. 1993 Feb;75(2):196-201.

**Proximal tibial osteotomy. A critical long-term study of eighty-seven cases.**

[Coventry MB](http://www.ncbi.nlm.nih.gov/pubmed?term=Coventry%20MB%5BAuthor%5D&cauthor=true&cauthor_uid=8423180)1, [Ilstrup DM](http://www.ncbi.nlm.nih.gov/pubmed?term=Ilstrup%20DM%5BAuthor%5D&cauthor=true&cauthor_uid=8423180), [Wallrichs SL](http://www.ncbi.nlm.nih.gov/pubmed?term=Wallrichs%20SL%5BAuthor%5D&cauthor=true&cauthor_uid=8423180).

**Author information**

**Abstract**

Eighty-seven valgus osteotomies of the tibia were performed in seventy-three patients for osteoarthrosis of the medial compartment of the knee; the median follow-up was ten years (range, three to fourteen years). The data were subjected to univariate and multivariate statistical analysis and to survivorship analysis. For these calculations, the end-point of failure was defined as an arthroplasty of the knee, and additional calculations were performed with the end-point defined as the performance of an arthroplasty or moderate or severe pain in patients who had declined an arthroplasty. None of the many risk factors that were evaluated could be found to be associated with the duration of survival, except for relative weight and angular correction. The median loss of correction after the osteotomy was 1 degree. If, at one year after the operation, the valgus angulation was 8 degrees or more, or if the patient's weight was 1.32 times the ideal weight or less, the probability of survival five years thereafter was at least 90 per cent and the probability ten years thereafter was at least 65 per cent. However, when valgus angulation at one year was less than 8 degrees in a patient whose weight was more than 1.32 times the ideal weight, the rate of survival decreased to 38 per cent five years thereafter and to 19 per cent ten years thereafter. There is a considerable risk of failure of a proximal tibial osteotomy if the alignment is not overcorrected to at least 8 degrees of valgus angulation and if the patient is substantially overweight.

J Bone Joint Surg Am. 2002 Oct;84-A(10):1733-44.

**Operative compared with nonoperative treatment of displaced intra-articular calcaneal fractures: a prospective, randomized, controlled multicenter trial.**

[Buckley R](http://www.ncbi.nlm.nih.gov/pubmed?term=Buckley%20R%5BAuthor%5D&cauthor=true&cauthor_uid=12377902)1, [Tough S](http://www.ncbi.nlm.nih.gov/pubmed?term=Tough%20S%5BAuthor%5D&cauthor=true&cauthor_uid=12377902), [McCormack R](http://www.ncbi.nlm.nih.gov/pubmed?term=McCormack%20R%5BAuthor%5D&cauthor=true&cauthor_uid=12377902), [Pate G](http://www.ncbi.nlm.nih.gov/pubmed?term=Pate%20G%5BAuthor%5D&cauthor=true&cauthor_uid=12377902), [Leighton R](http://www.ncbi.nlm.nih.gov/pubmed?term=Leighton%20R%5BAuthor%5D&cauthor=true&cauthor_uid=12377902), [Petrie D](http://www.ncbi.nlm.nih.gov/pubmed?term=Petrie%20D%5BAuthor%5D&cauthor=true&cauthor_uid=12377902), [Galpin R](http://www.ncbi.nlm.nih.gov/pubmed?term=Galpin%20R%5BAuthor%5D&cauthor=true&cauthor_uid=12377902).

**Author information**

**Abstract**

**BACKGROUND:**

Open reduction and internal fixation is the treatment of choice for displaced intra-articular calcaneal fractures at many orthopaedic trauma centers. The purpose of this study was to determine whether open reduction and internal fixation of displaced intra-articular calcaneal fractures results in better general and disease-specific health outcomes at two years after the injury compared with those after nonoperative management.

**METHODS:**

Patients at four trauma centers were randomized to operative or nonoperative care. A standard protocol, involving a lateral approach and rigid internal fixation, was used for operative care. Nonoperative treatment involved no attempt at closed reduction, and the patients were treated only with ice, elevation, and rest. All fractures were classified, and the quality of the reduction was measured. Validated outcome measures included the Short Form-36 (SF-36, a general health survey) and a visual analog scale (a disease-specific scale).

**RESULTS:**

Between April 1991 and December 1997, 512 patients with a calcaneal fracture were treated. Of those patients, 424 with 471 displaced intra-articular calcaneal fractures were enrolled in the study. Three hundred and nine patients (73%) were followed and assessed for a minimum of two years and a maximum of eight years of follow-up. The outcomes after nonoperative treatment were not found to be different from those after operative treatment; the score on the SF-36 was 64.7 and 68.7, respectively (p = 0.13), and the score on the visual analog scale was 64.3 and 68.6, respectively (p = 0.12). However, the patients who were not receiving Workers' Compensation and were managed operatively had significantly higher satisfaction scores (p = 0.001). Women who were managed operatively scored significantly higher on the SF-36 than did women who were managed nonoperatively (p = 0.015). Patients who were not receiving Workers' Compensation and were younger (less than twenty-nine years old), had a moderately lower Böhler angle (0 degrees to 14 degrees ), a comminuted fracture, a light workload, or an anatomic reduction or a step-off of < or =2 mm after surgical reduction (p = 0.04) scored significantly higher on the scoring scales after surgery compared with those who were treated nonoperatively.

**CONCLUSIONS:**

Without stratification of the groups, the functional results after nonoperative care of displaced intra-articular calcaneal fractures were equivalent to those after operative care. However, after unmasking the data by removal of the patients who were receiving Workers' Compensation, the outcomes were significantly better in some groups of surgically treated patients.

Injury. 1998;29 Suppl 3:C3-6.

**Fracture healing in biological plate osteosynthesis.**

[Baumgaertel F](http://www.ncbi.nlm.nih.gov/pubmed?term=Baumgaertel%20F%5BAuthor%5D&cauthor=true&cauthor_uid=10341891)1, [Buhl M](http://www.ncbi.nlm.nih.gov/pubmed?term=Buhl%20M%5BAuthor%5D&cauthor=true&cauthor_uid=10341891), [Rahn BA](http://www.ncbi.nlm.nih.gov/pubmed?term=Rahn%20BA%5BAuthor%5D&cauthor=true&cauthor_uid=10341891).

**Author information**

**Abstract**

In order to gain a better understanding of the healing processes after plate fixation and indirect reduction, Baumgaertel designed a reproducible fracture model for the sheep femur in 1992 so that the differences between anatomical (rigid) and biological (bridging) fixation could be investigated. It was demonstrated that indirect reduction and bridge plating was superior to direct fragment reduction and anatomical fixation in respect to radiology, biomechanics and microangiography. In this study, it was shown that bony bridging of the fracture gap and mineralization of callus occurred faster and more efficiently after indirect than after direct and anatomical reduction. Bone healing was identified as beginning in the 2.-3. week after indirect and only in the sixth week after direct reduction. The increased breaking strength of the indirectly reduced femora at 8 weeks can be attributed to this process. In addition, the consequences of applying the PC-Fix for biological plating were investigated. The values for bone healing were improved by applying a plate with only point contact to the bone, thus conserving the periosteal blood supply.

J Bone Joint Surg Br. 2004 Sep;86(7):1035-40.

**Delayed internal fixation of fractures of the neck of the femur in young adults. A prospective, randomised study comparing closed and open reduction.**

[Upadhyay A](http://www.ncbi.nlm.nih.gov/pubmed?term=Upadhyay%20A%5BAuthor%5D&cauthor=true&cauthor_uid=15446534)1, [Jain P](http://www.ncbi.nlm.nih.gov/pubmed?term=Jain%20P%5BAuthor%5D&cauthor=true&cauthor_uid=15446534), [Mishra P](http://www.ncbi.nlm.nih.gov/pubmed?term=Mishra%20P%5BAuthor%5D&cauthor=true&cauthor_uid=15446534), [Maini L](http://www.ncbi.nlm.nih.gov/pubmed?term=Maini%20L%5BAuthor%5D&cauthor=true&cauthor_uid=15446534), [Gautum VK](http://www.ncbi.nlm.nih.gov/pubmed?term=Gautum%20VK%5BAuthor%5D&cauthor=true&cauthor_uid=15446534), [Dhaon BK](http://www.ncbi.nlm.nih.gov/pubmed?term=Dhaon%20BK%5BAuthor%5D&cauthor=true&cauthor_uid=15446534).

**Author information**

**Abstract**

We have compared the results and complications after closed and open reduction with ternal fixation in young adults with displaced intracapsular fractures (Garden grades III and IV) of the neck of the femur. We also studied the risk factors which influenced nonunion and the development of avascular necrosis (AVN). A total of 102 patients aged between 15 and 50 years was randomised to receive either closed or open reduction. Both groups were compared for age, gender, time to surgery and posterior comminution as well as for union and complications. Using univariate and multivariate analysis the factors influencing nonunion and AVN were assessed. Of the 102 patients, 92 were available for review. There was no significant difference between the groups in terms of union (p = 0.93) and AVN at two years (p = 0.85). Posterior comminution, poor reduction and improper placement of the screws were the major factors contributing to nonunion. The overall incidence of AVN was 16.3% (15 of 92 patients) and it was not influenced by these factors. A delay of more than 48 hours before surgery did not influence the rate of union or the development of AVN when compared with operation within 48 hours of injury.

1. Upadhyay A. et.al.
   * There was no significant difference between the groups in terms of union (p =

0.93) and AVN at two years (p = 0.85).

* + Posterior comminution, poor reduction and improper placement of the screws

were the major factors contributing to nonunion.

* + The overall incidence of AVN was 16.3% (15 of 92 patients) and it was not

influenced by these factors.

* + A delay of more than 48 hours before surgery ***did not influence the rate of union***

***or the development of AVN when compared with operation within 48 hours of injury***

**Internal fixation compared with total hip replacement for displaced femoral neck fractures in the elderly**

A RANDOMISED, CONTROLLED TRIAL  
J. Tidermark, S. Ponzer, O. Svensson, A. Söderqvist, H. Törnkvist

*From Stockholm Söder Hospital and Umeå University Hospital, Sweden*

***The treatment algorithms for displaced fractures of the femoral neck need to be improved if we are to reduce the need for secondary surgery. We have studied 102 patients of mean age 80 years, with an acute displaced fracture of the femoral neck. They were randomly placed into two groups, treated either by internal fixation (IF) with two cannulated screws or total hip replacement (THR). None showed severe cognitive dysfunction, all were able to walk independently, and all lived in their own home. They were reviewed at four, 12 and 24 months after surgery. Outcome measurements included hip complications, revision surgery, hip function according to Charnley and the health-related quality of life (HRQoL) according to EuroQol (EQ-5D).***

***The failure rate after 24 months was higher in the IF group than in the THR group with regard to hip complications (36% and 4%, respectively; p < 0.001), and the number of revision procedures (42% and 4%, p < 0.001). Hip function was significantly better in the THR group at all follow-up reviews regarding pain (p < 0.005), movement (p < 0.05 except at 4 months) and walking (p < 0.05). The reduction in HRQoL (EQ-5D index score) was also significantly lower in the THR group than in the IF group, comparing the pre-fracture situation with that at all follow-up reviews (p < 0.05).***

***The results of our study strongly suggest that THR provides a better outcome than IF for elderly, relatively healthy, lucid patients with a displaced fracture of the femoral neck.***

*J Bone Joint Surg [Br]* 2003;85-B:380-8.  
*Received 10 June 2002; Accepted after revision 28 November 2002*

Total Hip Replacement Versus Open Reduction and Internal Fixation of Displaced Femoral Neck Fractures

A Randomized Long-Term Follow-up Study

Ghazi Khalil Chammout, MD; Sebastian Simon Mukka, MD; Thomas Carlsson, MD; Gustaf Fredrik Neander, MD, PhD; André Wilhelm Helge Stark, MD, PhD; Olof Gustaf Sköldenberg, MD, PhD

*J Bone Joint Surg Am*, 2012 Nov 07;94(21):1921-1928. http://dx.doi.org/10.2106/JBJS.K.01615

* [**Article**](http://jbjs.org/content/94/21/1921)[Figures & Data](http://jbjs.org/content/94/21/1921.figures-only)[Info & Metrics](http://jbjs.org/content/94/21/1921.article-info) [PDF](http://jbjs.org/content/94/21/1921.full-text.pdf+html) [eLetters](http://jbjs.org/content/94/21/1921.eLetters)

**ABSTRACT**

**Background:** Clinical trials with short and intermediate-term follow-up have demonstrated superior results for total hip replacement as compared with internal fixation with regard to hip function and the need for secondary surgery in elderly patients with a displaced intracapsular femoral neck fracture. The aim of the present study was to compare the results of total hip replacement with those of internal fixation over a long-term follow-up period of seventeen years.

**Methods:** We enrolled 100 patients who had sustained a femoral neck fracture in a single-center, randomized controlled trial; all patients had had a healthy hip before the injury. The study group included seventy-nine women and twenty-one men with a mean age of seventy-eight years (range, sixty-five to ninety years). The subjects were randomly assigned to either total hip replacement (the arthroplasty group) (n = 43) or internal fixation (the control group) (n = 57). The primary end point was hip function, evaluated with use of the Harris hip score. Secondary end points included mortality, reoperations, gait speed, and activities of daily life. Follow-up evaluations were performed at three months and at one, two, four, eleven, and seventeen years.

**Results:** The Harris hip score was higher in the total hip arthroplasty group, with a mean difference of 14.7 points (95% confidence interval, 9.2 to 20.1 points; p < 0.001 [analysis of covariance]) during the study period. We found no difference in mortality between the two groups. Four patients (9%) in the total hip replacement group and twenty-two patients (39%) in the internal fixation group had undergone a major reoperation (relative risk, 0.24; 95% confidence interval, 0.09 to 0.64). The overall reoperation rate was 23% (ten of forty-three) in the total hip replacement group and 53% (thirty of fifty-seven) in the internal fixation group (relative risk, 0.44; 95% confidence interval, 0.24 to 0.80). The results related to gait speed and activities of daily living favored the arthroplasty group during the first year.

**Conclusions:** Over a period of seventeen years in a group of healthy, elderly patients with a displaced femoral neck fracture, total hip replacement provided better hip function and significantly fewer reoperations compared with internal fixation without increasing mortality.

**Level of Evidence:** Therapeutic Level I. See Instructions for Authors for a complete description of levels of evidence.

**The timing of reduction and stabilisation of the acute, unstable, slipped upper femoral epiphysis**S. A. Phillips, W. E. G. Griffiths, N. M. P. Clarke

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**We reviewed the management of 100 cases of slipped upper femoral epiphysis treated over a period of 26 years. A total of 14 slips was identified as unstable on admission. These underwent reduction and stabilisation within 24 hours of the onset of severe symptoms. Of the 86 stable slips four progressed to avascular necrosis (AVN), which was not seen in the unstable slips. The literature on slipped upper femoral epiphysis suggests that the acute unstable slip is at higher risk of developing AVN. We recommend reduction and stabilisation of unstable slips within 24 hours of the onset of symptoms in order to reduce the risk of AVN.**

*J Bone Joint Surg [Br]* 2001;83-B:1046-9.  
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Br Med Bull. 2009;90:133-46. doi: 10.1093/bmb/ldp012. Epub 2009 Apr 17.

**Management of unstable slipped upper femoral epiphysis: a meta-analysis.**

[Lowndes S](http://www.ncbi.nlm.nih.gov/pubmed?term=Lowndes%20S%5BAuthor%5D&cauthor=true&cauthor_uid=19376800)1, [Khanna A](http://www.ncbi.nlm.nih.gov/pubmed?term=Khanna%20A%5BAuthor%5D&cauthor=true&cauthor_uid=19376800), [Emery D](http://www.ncbi.nlm.nih.gov/pubmed?term=Emery%20D%5BAuthor%5D&cauthor=true&cauthor_uid=19376800), [Sim J](http://www.ncbi.nlm.nih.gov/pubmed?term=Sim%20J%5BAuthor%5D&cauthor=true&cauthor_uid=19376800), [Maffulli N](http://www.ncbi.nlm.nih.gov/pubmed?term=Maffulli%20N%5BAuthor%5D&cauthor=true&cauthor_uid=19376800).

**Author information**

**Abstract**

**INTRODUCTION:**

The management of unstable slipped upper femoral epiphysis (SUFE) is controversial, with a high risk of developing avascular necrosis (AVN). We meta-analysed two areas of concern: reduction of the slip and the timing of treatment.

**METHODS:**

A search of Medline, CINAHL and Embase identified only retrospectively relevant studies: four regarding the role of reduction and five regarding the timing of treatment. The incidence of AVN was compared between reduced and unreduced SUFEs, and between those treated within 24 h of symptom onset and those treated thereafter.

**AREAS OF AGREEMENT:**

Analysis of the pooled data gave an odds ratio of 2.20 (P = 0.290) in favour of the unreduced group, who had a lower risk of developing AVN. The odds ratio was 0.50 in favour of the group treated within 24 h from symptom onset (P = 0.441). However, though clinically important, these effects were not statistically significant.

**AREAS OF CONTROVERSY:**

The timing of treatment is somewhat inconsistent: two studies favour management more than 24 h after the onset of symptoms, while for three unstable SUFEs are best managed within 24 h.

**GROWING POINTS:**

Despite the non-significant results from the meta-analysis, it can be suggested that, if reduction is to be performed, it should be undertaken cautiously, as it may be associated with increased AVN. The ideal time for management of unstable slip is probably within 24 h of symptom onset.

**AREAS TIMELY FOR DEVELOPING RESEARCH:**

There is a strong need for multicentre, randomized, controlled trials in this area.

J Bone Joint Surg Am. 2004 Oct;86-A(10):2121-34.

**Legg-Calve-Perthes disease. Part II: Prospective multicenter study of the effect of treatment on outcome.**

[Herring JA](http://www.ncbi.nlm.nih.gov/pubmed?term=Herring%20JA%5BAuthor%5D&cauthor=true&cauthor_uid=15466720)1, [Kim HT](http://www.ncbi.nlm.nih.gov/pubmed?term=Kim%20HT%5BAuthor%5D&cauthor=true&cauthor_uid=15466720), [Browne R](http://www.ncbi.nlm.nih.gov/pubmed?term=Browne%20R%5BAuthor%5D&cauthor=true&cauthor_uid=15466720).

**Author information**

**Abstract**

**BACKGROUND:**

The treatment of Legg-Calve-Perthes disease has been based on uncontrolled retrospective studies with relatively small numbers of patients. This large, controlled, prospective, multicenter study was designed to determine the effect of treatment and other risk factors on the outcome in patients with this disorder.

**METHODS:**

We enrolled 438 patients with 451 affected hips in a prospective multicenter study in which each investigator applied the same treatment method to each of his or her patients. The five treatment groups consisted of no treatment, brace treatment, range-of-motion exercises, femoral osteotomy, and innominate osteotomy. All patients were between 6.0 and 12.0 years of age at the onset of the disease, and none had had prior treatment. Three hundred and forty-five hips in 337 patients were available for follow-up at skeletal maturity. All hips were classified with the modified lateral pillar classification and the system of Stulberg et al.

**RESULTS:**

There were no differences in outcome among the hips with no treatment, those treated with bracing, and those treated with range-of-motion therapy. There were also no differences between the hips treated with a femoral varus osteotomy and those treated with an innominate osteotomy. Treatment did not have a significant effect on children who had a chronologic age of 8.0 years or less or a skeletal age of 6.0 years or less at the onset of the disease. In the lateral pillar B group and B/C border group, the outcomes of surgical treatment were significantly better than those of nonoperative treatment in children over the age of 8.0 years at the onset of the disease (p < or = 0.05). Patients who were 8.0 years old or less at the onset of the disease in lateral pillar group B did equally well with nonoperative and operative treatment. Hips in lateral pillar group C had the least favorable outcomes, with no differences between the operative and nonoperative groups. The lateral pillar classification (p < 0.0001) and the age at the onset of the disease (p = 0.0001) were both strong prognostic factors. Female patients did significantly worse than male patients if they were over the age of 8.0 years at the onset of the disease (p = 0.004).

**CONCLUSIONS:**

The lateral pillar classification and age at the time of onset of the disease strongly correlate with outcome in patients with Legg-Calve-Perthes disease. Patients who are over the age of 8.0 years at the time of onset and have a hip in the lateral pillar B group or B/C border group have a better outcome with surgical treatment than they do with nonoperative treatment. Group-B hips in children who are less than 8.0 years of age at the time of onset have very favorable outcomes unrelated to treatment, whereas group-C hips in children of all ages frequently have poor outcomes, which also appear to be unrelated to treatment.

The medium-term results of the cemented Exeter femoral component in patients under 40 years of age

JBJS Br 2008

D.C.J.deKam,  
R. L. W. A. Klarenbeek, J. W. M. Gardeniers, R. P. H. Veth,  
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**We evaluated the outcome of 104 consecutive primary cemented Exeter femoral components in 78 patients (34 men, 44 women) under the age of 40 years who underwent total hip replacement between October 1993 and May 2004. The mean age at operation was 31 years (16 to 39). No hip was lost to follow-up, but three patients (four hips) died. None of the deaths were related to the surgery. At a mean follow-up of 6.2 years (2 to 13), three femoral components had been revised for septic loosening. Using Kaplan-Meier survival analysis, the seven-year survival of the component with revision for any reason as the endpoint was 95.8% (95% confidence interval 86.67 to 98.7). The seven-year survival with aseptic femoral loosening as the endpoint was 100% (95% confidence interval 100).**

**The cemented Exeter femoral component in patients under the age of 40 shows promising medium-term results. As it is available in a wide range of sizes and offsets, we could address all types of anatomical variation in this series without the need for custom- made components.**

Eur Spine J. Dec 2007; 16(12): 2143–2151.

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PMCID: PMC2140120

**Cauda equina syndrome treated by surgical decompression: the influence of timing on surgical outcome**

[Assad Qureshi](http://www.ncbi.nlm.nih.gov/pubmed/?term=Qureshi%20A%5Bauth%5D) and [Philip Sell](http://www.ncbi.nlm.nih.gov/pubmed/?term=Sell%20P%5Bauth%5D)

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This article has been [cited by](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2140120/citedby/) other articles in PMC.

Go to:

**Abstract**

article-meta

A prospective longitudinal inception cohort study of 33 patients undergoing surgery for cauda equina syndrome (CES) due to a herniated lumbar disc. To determine what factors influence spine and urinary outcome measures at 3 months and 1 year in CES specifically with regard to the timing of onset of symptoms and the timing of surgical decompression. CES consists of signs and symptoms caused by compression of lumbar and sacral nerve roots. Controversy exists regarding the relative importance of timing of surgery as a prognostic factor influencing outcome. Post-operative outcome was assessed at 3 months and 1 year using the Oswestry Disability Index (ODI), Visual Analogue Scale (VAS) scores for leg and back pain and an incontinence questionnaire. Statistical analysis was used to determine the association between pre-operative variables and these post-operative outcomes with a specific emphasis on the timing of surgery. Surgery was performed on 12 (36%) patients within 48 h of the onset of symptoms including seven patients (21%) who underwent surgery within 24 h. Follow up was achieved in 27 (82%) and 25 (76%) patients at 3 and 12 months, respectively. There was no statistically significant difference in outcome between three groups of patients with respect to length of time from symptom onset to surgery- <24, 24–48 and >48 h. A significantly better outcome was found in patients who were continent of urine at presentation compared with those who were incontinent. The duration of symptoms prior to surgery does not appear to influence the outcome. This finding has significant implications for the medico-legal sequelae of this condition. The data suggests that the severity of bladder dysfunction at the time of surgery is the dominant factor in recovery of bladder function.

## Open Reduction and Plate Fixation Reduced Nonunion After

## Displaced Midshaft Clavicular Fracture

JBJS Am Robinson et al 2014

RCT from Edinburgh – 200 patients

**In patients with displaced midshaft clavicular fractures, open reduction and plate fix- ation reduced the rate of nonunion and resulted in better functional outcomes than nonoperative treat- ment did.**