Getting Evidence into Clinical Practice:
Musculoskeletal Research Facilitation Group (CAT Group)
Date: June 2022

Specific Question:

1) Does the addition of a hip brace (limiting flexion and adduction of the hip) when used post relocation for primary hip dislocations, prevent recurrent dislocation when compared to usual care (hip precautions and advice) or no intervention in adults who have a hip prosthesis?

2) Does the addition of a hip brace (limiting flexion and adduction of the hip) when used post relocation for recurrent hip dislocations, prevent further dislocations when compared to usual care (hip precautions and advice) or no intervention in adults who have a hip prosthesis?

Clinical bottom line

We have posed two questions to address both primary dislocations and recurrent dislocations.

We failed to find any recent, high quality evidence to influence our practice in the use of a hip brace, limiting range of movement, to provide better outcomes for our patients following prosthetic dislocations.

The little evidence we found was not of high quality and therefore our practice remains unchanged.

No guidance is currently available from the British Hip Society.

Why is this important?

Following a total hip replacement and hemi arthroplasty there is a risk of dislocation; these can occur within the initial stages of recovery or several years post-surgery. The first line of management for these individuals is to undergo a manipulation under anaesthetic (MUA). The Orthopaedic Consultant may then advise range of movement restrictions which can be accompanied by the use of a hip brace. When a brace is requested for the patient's management this can significantly delay mobilisation of the patient whilst they are in hospital and impact quality of life when complying with its use and delay discharge from the hospital.

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Within the West Midlands practice varies widely, therefore this CAT question is of particular interest for both the patient pathway and therapy intervention. During a six month audit, between November 2018 and May 2019, sixteen patients were identified with a total of 24 dislocations; 15 of which had previously dislocated. All 24 underwent a MUA; 18 surgeons were involved in the patient care. Fourteen patients were managed in a cricket pad splint to immobilise the knee joint, 2 patients were placed in an abduction brace and one dislocation was irreducible in the theatre. The 2 patients placed in the hip brace had previous dislocations within one month. There was no apparent correlation with selection of the cricket splints. Mean length of stay was 9 days; increasing to 19 days for the 2 patients in the hip abduction brace.

Search timeframe: 2000-2020

Inclusion Criteria

	Description	Search terms (In the final document this should be a combination of your clinical and librarian search terms)
Population and Setting	Adults with recurrent hip dislocation with either total hip replacements or hemi arthroplasty	HIP DISLOCATIONS# OR "Recurrent hip dislocation*" OR Displacement* or dislocate* or instability* or unstable AND "Total hip replacements" or "hemi arthroplasty" or exp "ARTHROPLASTY REPLACEMENT HIP"/ AND exp "HIP BRACE"/ OR "Hip brace*" or orthoses or orthotic
Intervention or Exposure	Hip brace	
Comparison, if any	No brace	
Outcomes of interest	Re- dislocation	
Types of studies	Randomised Controlled Trials Systematic reviews	

Routine Databases Searched

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Clinical Knowledge Summaries, PEDro, BMJ Updates, Clinical Evidence, TRIP, Database, NICE, HTA, Bandolier, The Cochrane Library, Medline, Cinahl, Embase, PsycInfo, Professional websites. Joanna Briggs Institute, Web of science, Sports discus and Pub med

Date of search- 7th September 2018
Repeated February 2020

Results of the search

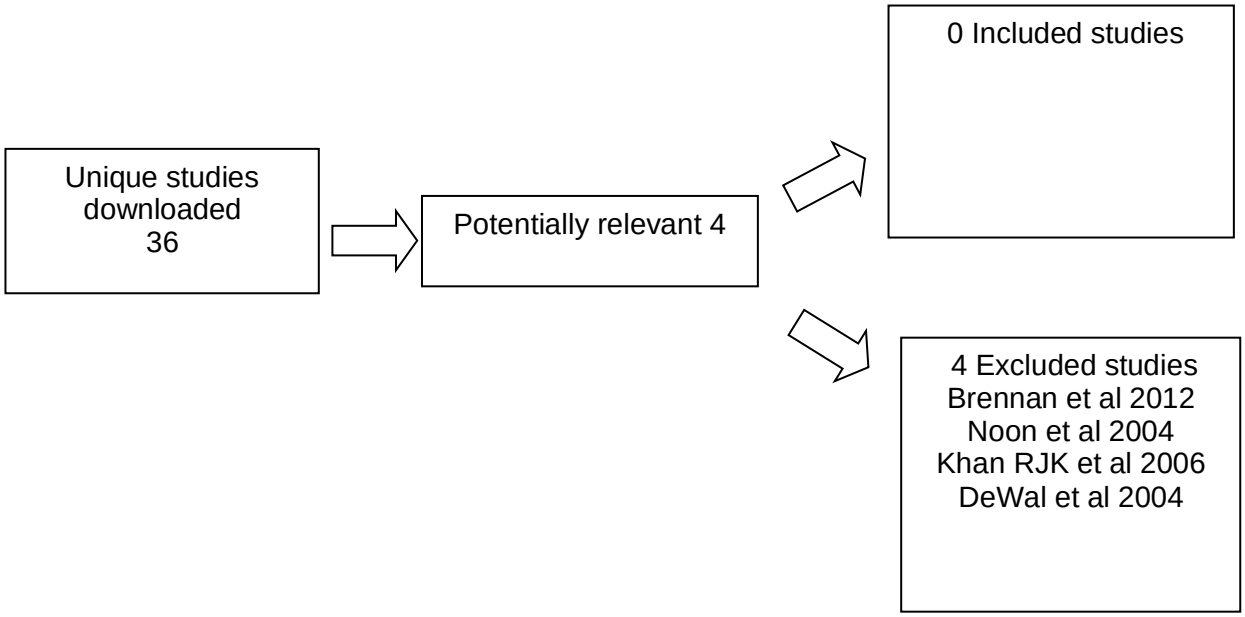

Table 1- Detail of included studies

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First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Brennan S; 2012 Review	Patients with first time dislocations post Primary Hip Arthroplasty (PHA) that were reduced by closed means were evaluated. Cappagh National Orthopaedic Hospital, Dublin. Secondary care teaching hospital, Dublin Ireland.	Review of 6,554 patients from the hip registry data; underwent primary total hip arthroplasty. 67 of these patients suffered dislocation (1%) Review of known risk factors important in predicting dislocation for PHA, including abduction bracing. The procedures were carried out by 18 surgeons between January 1999 and December 2007 The follow up of patients ranged between 2 to 9 years. Patients with revision of THR were excluded.	22 anterior and 45 posterior dislocations were found in the data. Re-dislocation occurred in 37 out of 54 patients who were braced and 9 out of 13 who were not braced. The risk of second dislocation appeared to be dependent on surgical approach: Transtrochanteric – 92% Posterior – 75% Anterior – 45%	Review study not RCT. A power analysis was discussed to require a sample size of 23, 684 patients with dislocation post PHA. This would need a RCT of 4.7million PHA and is proposed as unrealistic.
Noon et al 2004 Evaluation of management of	Patients with dislocated Thompson	January 1997 to March 2002 theatre records	All 23 patients underwent a lateral approach (routine	Randomisation was not attributed at

the dislocated Thompson hemiarthroplasty	hemiarthroplasty Secondary Care, Royal Bolton Hospital, Bolton, UK	searched to find 612 patients underwent Thompson hemiarthroplasty. 23 patients with dislocated Thompson hemiarthroplasty were found.	within hospital) All had cemented prosthesis Various grades of surgeons performed the procedures, more junior under supervision. 20 patients dislocated whilst still as an impatient, 2 at home following falls and one following a seizure. 1 patient underwent a Girdlestone 22 underwent reduction under anaesthetic. Postoperatively other treatments used were: Skin traction Skeletal traction Abduction brace. 15 patients were given hip braces, 9 of these patient re-dislocated; 4 of which whilst wearing the brace 4 patients on skin traction; 3 of which re-dislocated 4 patients on skeletal traction; 3 of which re-dislocated. 13 re-dislocated these were treated with Girdlestone, Total hip replacements or left dislocated. 43 of the 55 reported	any point in the discussion because this was a local review evaluating the service provided by one hospital with small numbers, one type of prosthesis.

			dislocation events occurred spontaneously in bed.	
Khan RJK et al 2006 Cochrane review	Patients dislocating following a Total Hip replacement. Systemic reviews. Cochrane team based in Australia, International	Trials comparing operative and none operative treatments for recurrent dislocation in total Hip Replacement (THR)	There were 2 independent reviewers. 269 studies were found, none of which were RCT or quasi randomisation and none fulfilled the inclusion criteria.	This Systematic review concluded there are no RCT to evaluate treatment options for recurrent dislocation of THR up to 2006. No further RCT's were found in the search; up to February 2020.
DeWal et al 2004 Retrospective review	New York University Hospital for joint Diseases, New York USA. Adults with primary and recurrent dislocations of THR	149 patients between 1993 and 2000 who had manipulation under anaesthetic (MUA) post dislocation of their hip prosthesis were either selected to receive a hip brace or not depending upon	91 primary dislocations: 46 patients were braced. 28 of these patients went on to re dislocate. 45 patients were treated without a brace; 29 of these patients went to re dislocate. 58 recurrent dislocation patients were found; of which	This was a retrospective review of the practice within one centre in New York over a 7 year period. There is a small sample size with no randomisation.

	Good quality evidence to support use….	☐
	Insufficient or poor quality evidence OR substantial harms suggest intervention used with caution after discussion with patient…	☐
	No good quality evidence, do not use until further research is conducted OR Good quality evidence to indicate that harms outweigh the benefits….	√

		the surgeons requirements	42 were braced. 23 of which went onto re dislocate. 16 were treated without a brace; 9 re-dislocated.	

Summary

All four studies described in the table above fail to provide robust evidence in support or against our clinical questions. Three were reviews of services provided within the health settings described, using a theatre list and hip registry databases. The fourth, a Cochrane review in 2006, concluded; there were no RCTs including this group of patients.
Our search in 2020 failed to find any more recent RCT's or Systematic reviews.

Contact with The British Hip Society to establish any current guidelines was made. The reply from Matthew Wilson, Consultant Orthopaedic Surgeon, Exeter Hip Unit, British Hip Society:

'Many thanks for your email. It's a good question and there won't be much evidence either way. There is no guidance from the BHS at this time.'

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Implications for Practice/research

There is no high quality evidence comparing the use of hip braces, to restrict range of movement post manipulation under anaesthetic, following dislocation in both primary and recurrent dislocations versus no application of hip brace.

High quality research is required to help healthcare services establish the best interventions when managing prosthetic hip dislocations to improve patient care. A further audit of practice within the Trust would enable the costing of delays and patient perspective of coping within the brace to understand the wider picture of this form of patient management.

Matthew Wilson's comment from the British Hip Society:
'I'm sure, in the absence of evidence, there is room for an editorial on the subject in a physio journal. I'd be very happy to contribute an orthopaedic surgeon's perspective if that's the route you choose. It will, at least, stimulate discussion.'

What would you tweet? (140 characters)

Quality research is needed to evaluate best treatment options following hip dislocations in patients with hip prostheses. No evidence exists to support or negate the use of hip bracing.

References

Brennan SA et al (2012)Dislocation of primary total hip arthroplasty and the risk of redislocation. Hip International 2012; 22(05): 500 – 504

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Noon AP, Hockings M & Warner JG (2005) Dislocated Thompson hemiarthroplasty – the management of the recurrent dislocator. Injury, International journal of the care of the injured 2005: 36, 618 – 621
DOI: 10.1016/j.injury.2004.10.021

Khan RJK et al (2006) Operative and non-operative treatment options for dislocation of the hip following total hip arthroplasty. Cochrane Database of Systematic Reviews 2006 – Issue 4
DOI: 10.1002/14651858.CD005320.pub2.

DeWal et al (2004) Efficacy of Abduction bracing in the management of total hip arthroplasty dislocation. The Journal of Arthroplasty Vol 19 No 6 2004. 733-738
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