



National Joint Registry

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National Joint Registry

MDSv8 Operations, joint anatomy and primary joint replacement constructs

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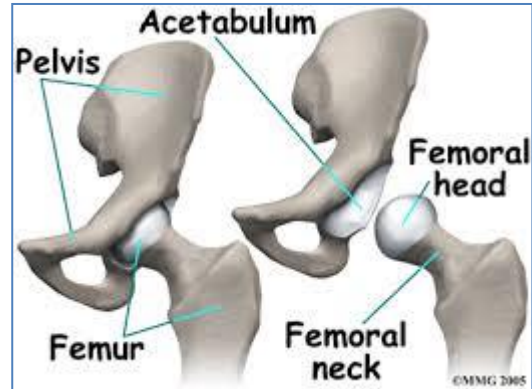
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HIPS

Hip anatomy
















There are two main bones relevant in hip replacement procedures:

- Femur – top of leg (ball)
- Acetabulum – part of the pelvis (socket)






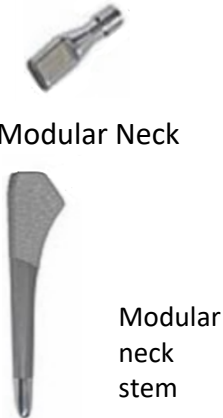
HIP OPERATIONS	
Procedures	Description
Primary total hip replacement	Total joint replacement - i.e. replacement of the femoral head with a stemmed femoral prosthesis and the insertion of an acetabular cup or dual mobility acetabular construct. Procedure may include cement.
Primary total hip resurfacing	Hip resurfacing – resurfacing of the femoral head with surface replacement femoral prosthesis and insertion of a resurfacing cup.
Primary hemiarthroplasty	Replacement of only the femoral head following fracture of the femoral neck. May use unipolar or bipolar implants.
Single stage revision of <ul style="list-style-type: none"> - total hip - hip resurfacing - hip hemiarthroplasty 	The removal of failed or failing implants and/or insertion of prostheses during one procedure. The implantation of a PLAD device should be recorded as a single stage revision irrespective of whether any implants have been replaced. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.
Stage one of two-stage revision of <ul style="list-style-type: none"> - total hip - hip resurfacing - hip hemiarthroplasty 	The removal of implants as the first stage of a two-stage procedure. Normally carried out because of infection.

HIP OPERATIONS	
Procedures	Description
Stage two of two-stage revision of <ul style="list-style-type: none"> - total hip - hip resurfacing - hip hemiarthroplasty 	The implantation of new prostheses as a second procedure, following the removal of original implants in a separate (first) procedure. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.
Excision arthroplasty	Complete removal of implants in the hip following failure of a prosthesis (Girdlestone).

PRIMARY HIP REPLACEMENT CONSTRUCTS											
Primary total hip replacement											
<p>Primary total prosthetic replacement procedures require both the acetabulum and femoral sides of the joint to be replaced.</p> <p>A primary total prosthetic procedure must have 1 of the acetabular options and one of the femoral options. These constructs represent the minimum set required i.e. other components (reconstruction shell, augments etc may also be used)</p> <p>Acetabular components options for total hip replacements</p> <table border="1"> <thead> <tr> <th>Monobloc cup</th> <th>Shell and liner</th> <th>Resurfacing shell</th> <th>Dual Mobility Using DM cup</th> <th>Dual Mobility using shell</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Monobloc cup	Shell and liner	Resurfacing shell	Dual Mobility Using DM cup	Dual Mobility using shell					
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PRIMARY HIP REPLACEMENT CONSTRUCTS

Femoral component options for total hip replacements

Monobloc stem	Modular stem with modular head	Proximal and Distal stem with modular head	Modular stem with modular neck with modular head
	 <p>Femoral Stem</p>	 <p>Proximal Distal</p>	 <p>Modular Neck Modular neck stem</p>

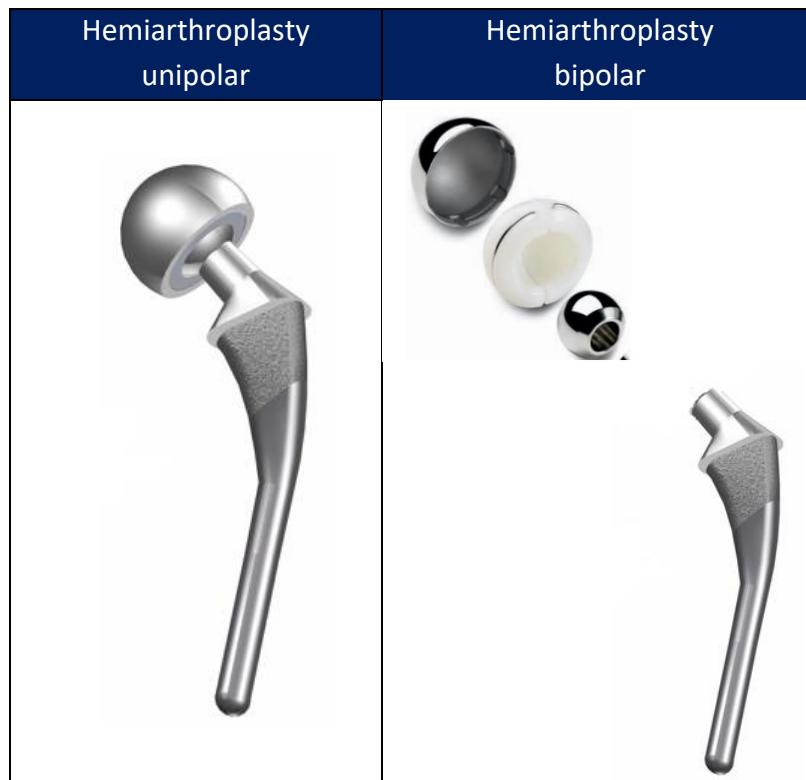
Primary total hip resurfacing

This type of procedure uses a resurfacing shell and a resurfacing head. No femoral stem is used. The patient's femoral head is trimmed and the thin resurfacing head forms a cover over the femoral head.



Hemiarthroplasty

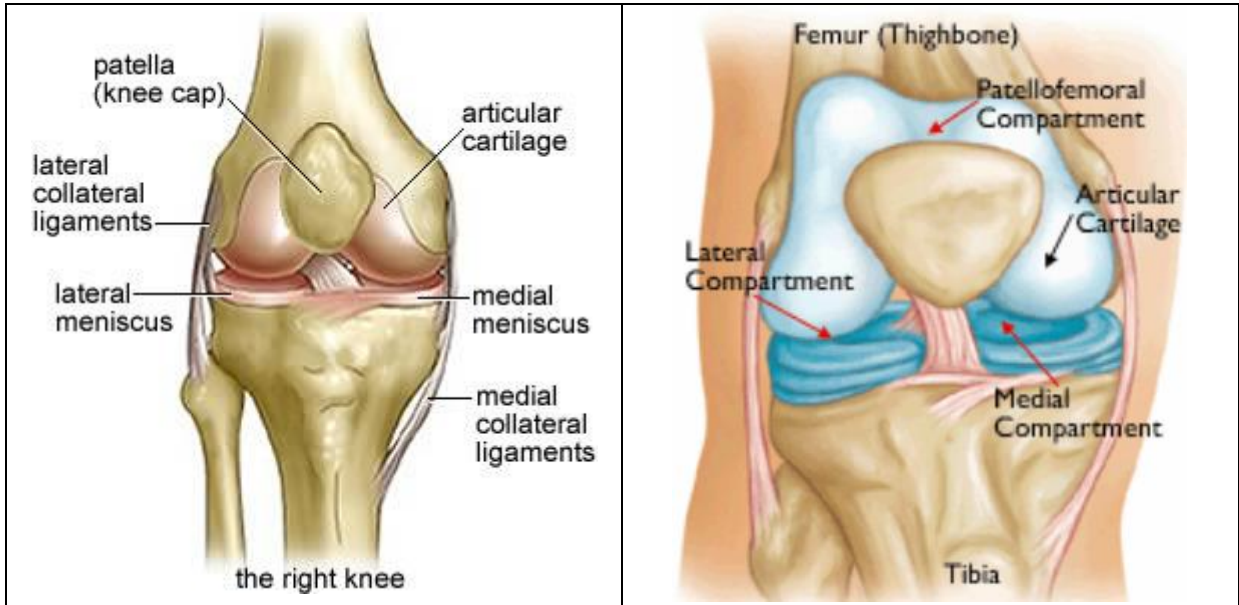
A hemiarthroplasty replaces the femoral side of the joint only. The external surface of the hemiarthroplasty head articulates with the bone of the acetabular. Additional articulating surfaces may be introduced by using a bipolar construct. This procedure is normally performed for fracture of the hip neck.



KNEES

Knee anatomy

The femur (bone above the knee) and the tibia (bone below the knee) form the knee joint. A meniscus separates the two bones.



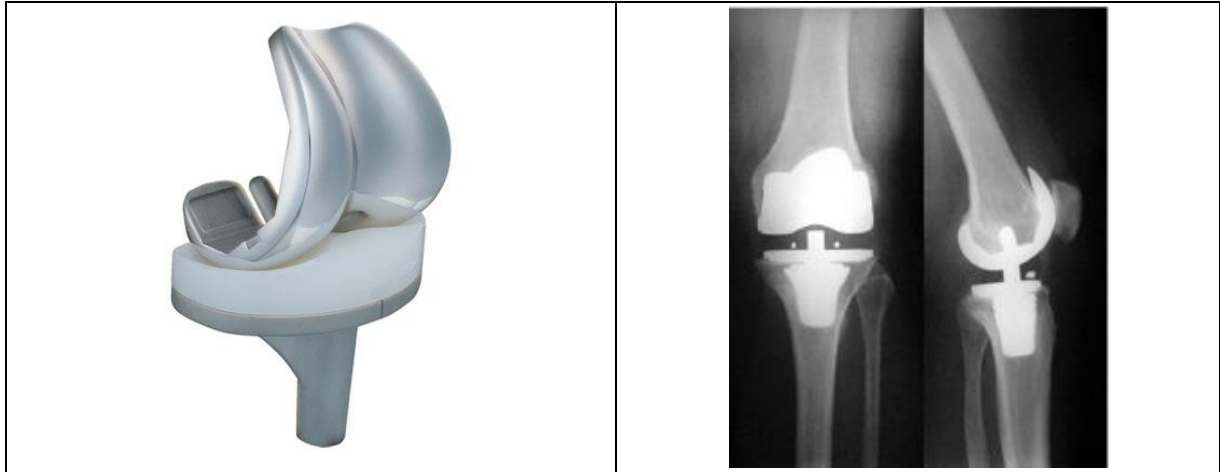
KNEE OPERATIONS	
Procedures	Description
Primary total knee replacement	Total knee arthroplasty - i.e. replacement of both tibial and both femoral condyles with or without resurfacing of the patella. Procedure may include cement.
Primary unicompartmental knee replacement - medial - lateral - patello-femoral	Medial, lateral - replacement of the tibial condyle and the femoral condyle. Patello-femoral replacement – i.e. where the femoral condyles are replaced and the patella is resurfaced.
Focal knee resurfacing	Local replacement of damaged bone using small and cartilage in the knee joint.
Planned incomplete primary procedure	Incomplete total knee replacement where the completion of the procedure is pre-planned.

KNEE OPERATIONS	
Procedures	Description
Single stage revision of <ul style="list-style-type: none"> - total knee - unicompartmental knee - focal resurfacing 	The removal of failed or failing implants and/or insertion of prostheses during one procedure. This includes DAIR with modular exchange. Note: Where no implants are removed and a patella button is implanted this would be recorded as a single stage revision.
Stage one of two stage revision of <ul style="list-style-type: none"> - total knee - unicompartmental knee - focal resurfacing 	Removal of implants as first procedure in a two-procedure revision of any type of knee prosthesis. Normally carried out because of infection.
Stage two of two stage revision of <ul style="list-style-type: none"> - total knee - unicompartmental knee - focal resurfacing 	Second procedure to implant new implants following previous procedure to remove original ones. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.
Stage two of planned incomplete primary procedure	Completion of incomplete primary procedure
Conversion to arthrodesis of <ul style="list-style-type: none"> - total knee - unicompartmental knee - focal resurfacing 	Complete fusion of the knee joint following failure of any type of total joint replacement.
Excision arthroplasty	Complete removal of implants in the knee following failure of a prosthesis.
Amputation following failure of <ul style="list-style-type: none"> - total knee - unicompartmental knee - focal resurfacing 	Self-explanatory.

PRIMARY KNEE REPLACEMENT CONSTRUCTS

Primary total knee replacement

This procedure has both condyles on the femur replaced. It is the articulating surface of the femur – tibia that is replaced. The patella may or may not be replaced.



Primary unicompartamental knee replacement

There are 3 compartments (medial, lateral, patella-femoral) that can be replaced, either individually or in combination

Primary unicompartamental knee replacement - medial, lateral

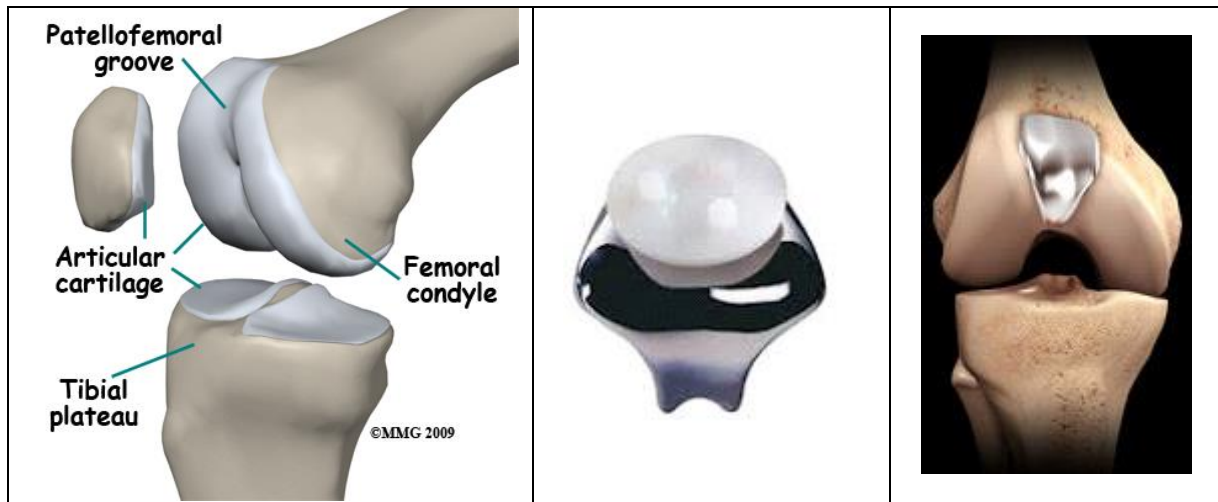
The articulating surface on the femur – tibia is replaced. The lateral is the outer half of the knee and the medial condyle is the inner half of the knee.



PRIMARY KNEE REPLACEMENT CONSTRUCTS

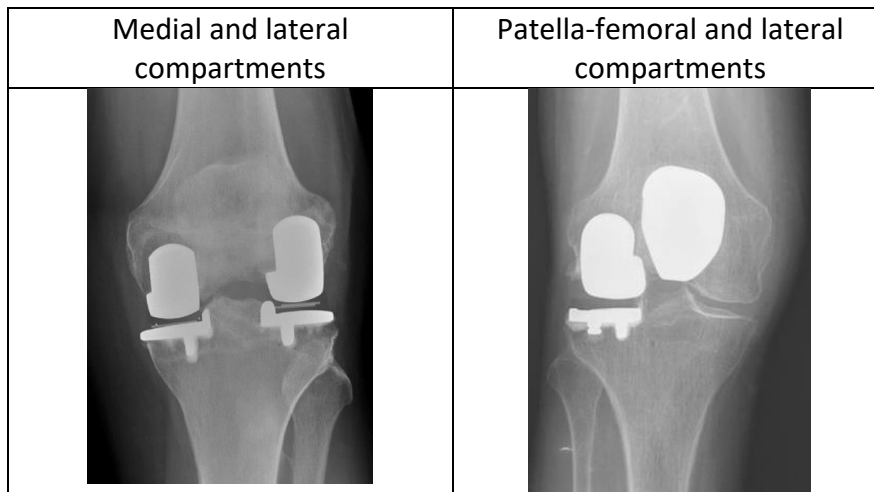
Primary unicompartmental knee replacement – patello-femoral

A patello-femoral replacement is where an implant is used to replace the patello-femoral groove and also the patella. The articulating surface that is replaced is therefore between the femur and the patella.



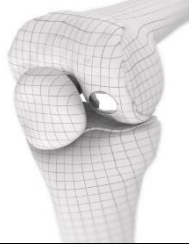
Primary unicompartmental knee replacement - multiple compartments

Below are examples where multiple condyles are replaced.



Focal knee resurfacing-

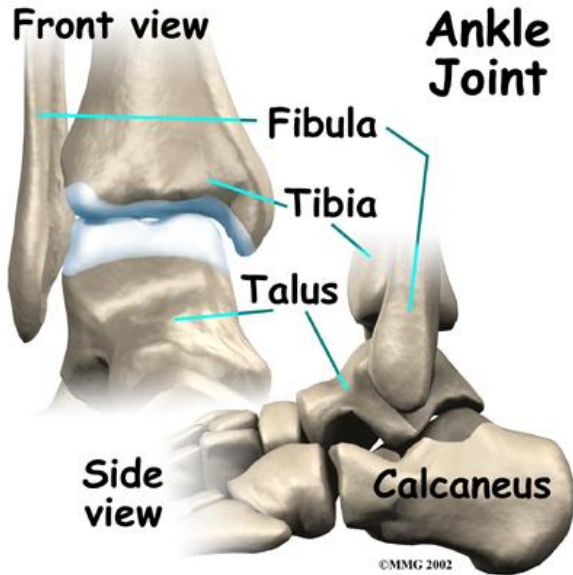
A small area of damaged cartilage and underlying bone is replaced.



ANKLES

Ankle Anatomy

The ankle joint consists of the tibia articulating with the talus.



ANKLE OPERATIONS	
Procedures	Description
Primary total ankle replacement	Total ankle arthroplasty - i.e. replacement using both tibial and talar components. Procedure may include cement.
Single stage revision of - total ankle	The removal of failed or failing implants and/or insertion of prostheses during one procedure. Includes DAIR with modular exchange.
Stage one of two-stage revision of - total ankle	Removal of implants as first procedure in a two-procedure revision of any type of ankle prosthesis. Normally carried out because of infection.
Stage two of two-stage revision of - total ankle	Second procedure to implant new implants following previous procedure to remove original ones. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.

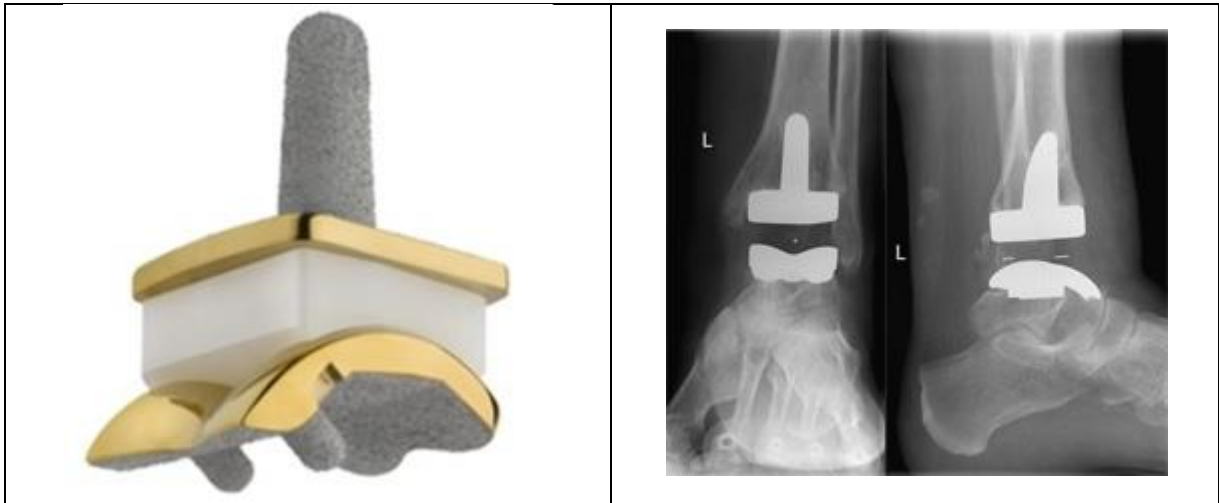
ANKLE OPERATIONS

Procedures	Description
Conversion to arthrodesis of - total ankle	Complete fusion of the ankle joint following failure of a total joint replacement. May also include fusion of the subtalar joint and sometimes more extensive fusion involving the joints of the midfoot.
Amputation following failure of - total ankle	Self-explanatory.

PRIMARY ANKLE REPLACEMENT CONSTRUCTS

Primary total ankle replacement

A total ankle replacement procedure may be cemented, cementless or hybrid and comprises of the tibial and talar articular surfaces being replaced.



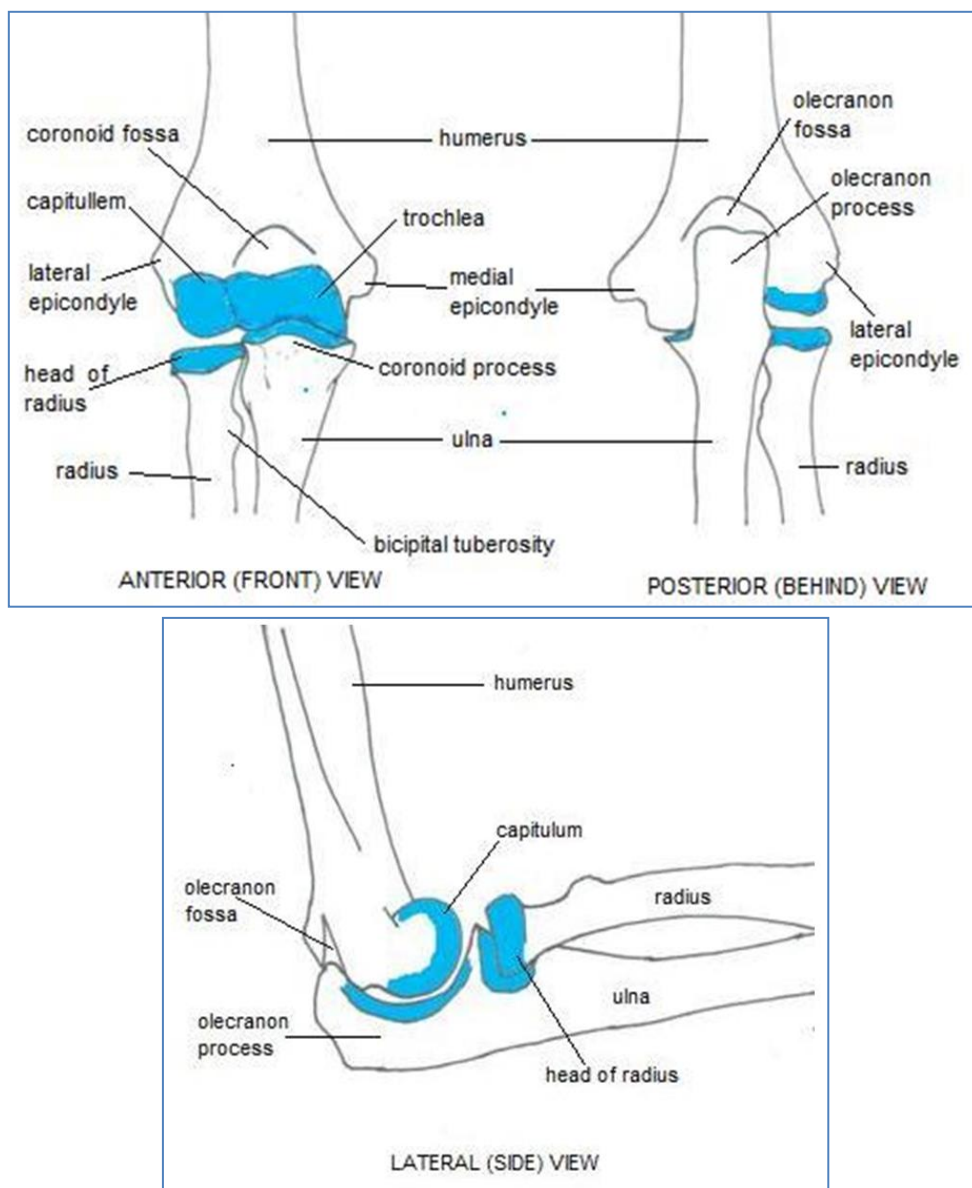
ELBOWS

Elbow Anatomy

Three main bones make up the elbow:



- **Humeral** - upper arm
- **Radius** - outside of forearm
- **Ulna** - inside of forearm

The diagram below shows a right arm – Ulna is on the inside of the joint.



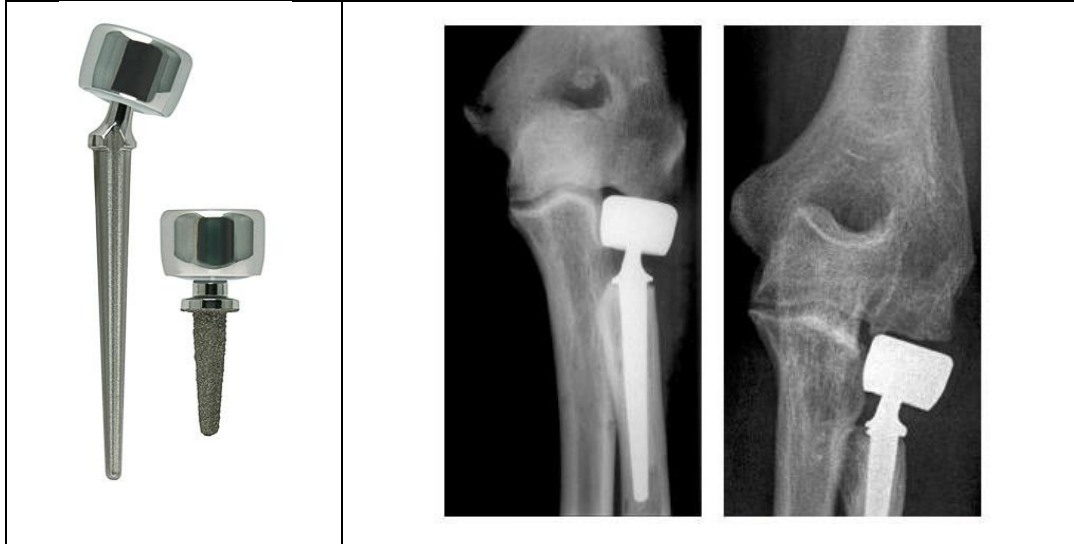
ELBOW OPERATIONS	
Procedures	Description
Primary total prosthetic replacement	Total elbow arthroplasty - i.e. replacement using both humeral and ulnar components. Procedure may include cement. Radial components may or may not be used.
Primary radial head replacement	The radial head is replaced
Radio-capitellar arthroplasty including lateral resurfacing	Radio-capitellar arthroplasty is the replacement of the humeral and radial articulating surface. Lateral resurfacing is the replacement of the humeral capitulum and ulnar articulating surface. Resurfacing components are used.
Distal humeral hemiarthroplasty	Replacement of the whole of the distal humerus (DHH).
Humeral capitellum hemiarthroplasty	Replacement of the humeral capitellum only.
Single stage revision of <ul style="list-style-type: none"> - total elbow replacement - radial head replacement - radio-capitellar including lateral resurfacing - hemiarthroplasty 	The removal of failed or failing implants and/or insertion of prostheses during one procedure. This includes DAIR with modular exchange.
Stage one of two-stage revision of <ul style="list-style-type: none"> - total elbow replacement - radial head replacement - radio-capitellar including lateral resurfacing - hemiarthroplasty 	Removal of implants as first procedure in a two-procedure revision of any type of elbow prosthesis. Normally carried out because of infection.
Stage two of two-stage revision of <ul style="list-style-type: none"> - total elbow replacement - radial head replacement - radio-capitellar including lateral resurfacing - hemiarthroplasty 	Second procedure to implant new implants following previous procedure to remove original ones. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.
Conversion to arthrodesis of <ul style="list-style-type: none"> - total elbow replacement - radial head replacement - radio-capitellar including lateral 	Complete fusion of the elbow joint following failure of a primary replacement.

ELBOW OPERATIONS	
Procedures	Description
resurfacing - hemiarthroplasty	
Partial excision arthroplasty	Partial removal of implants from the elbow following failure of a prosthesis i.e. radial head.
Excision arthroplasty	Complete removal of implants in the elbow following failure of a prosthesis.
Amputation following failure of - total elbow replacement - radial head replacement - radio-capitellar including lateral resurfacing - hemiarthroplasty	Self-explanatory.

PRIMARY ELBOW REPLACEMENT CONSTRUCTS	
Primary total elbow replacement	
<p>Primary total prosthetic replacement includes replacement of the ulnar and humeral interfaces. Replacement of the radial interface is optional.</p>	
<p>Tornier Latitude with radial head being replaced</p> 	<p>Biomet Discovery with no radial head replacement</p> 

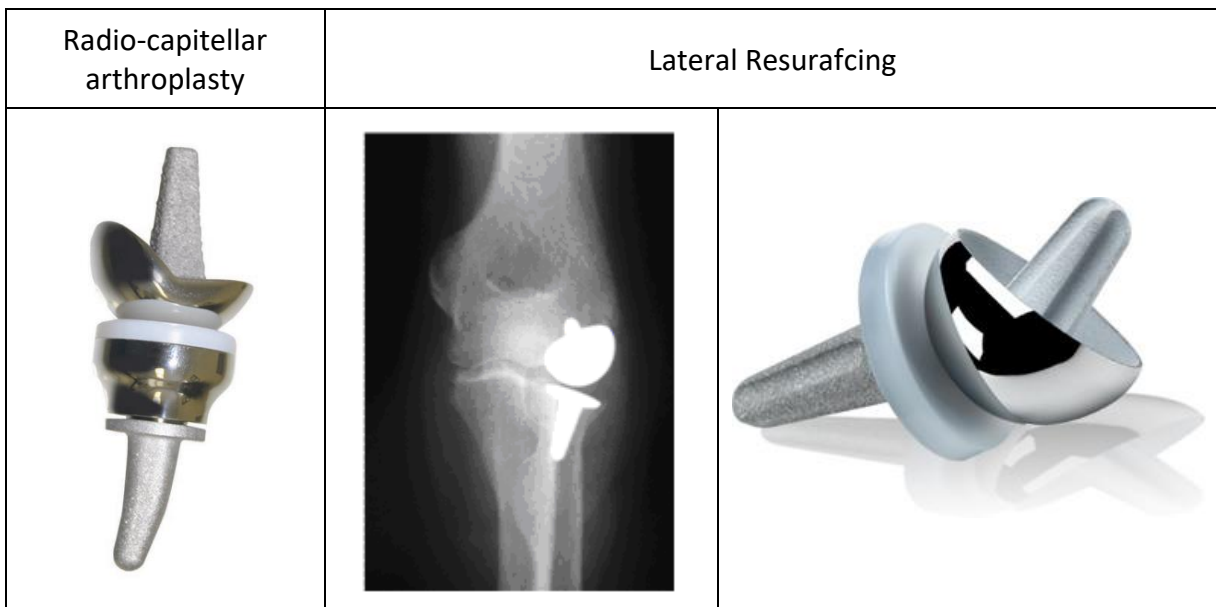
Primary radial head replacement

The radial head is replaced and no other surface.



Radio-capitellar arthroplasty including lateral resurfacing head replacement

In this procedure, the radial and the humeral are replaced.



Distal humeral hemiarthroplasty (DHH)

The humeral articulating surface only is replaced, leaving the ulnar and radius intact.



SHOULDERS

Shoulder anatomy

There are two main bones relevant for shoulder replacement procedures:

- Humeral – top of upper arm
- Glenoid – cup shaped hollow on the top corner of the shoulder blade



SHOULDER OPERATIONS	
Procedures	Description
Primary total shoulder arthroplasty	Total shoulder arthroplasty - i.e. replacement using both humeral and glenoid components (with cement / without cement). This may be a standard or reverse polarity shoulder construction. The humeral implant may be considered 'stemless'.
Primary shoulder hemiarthroplasty	A shoulder hemiarthroplasty is the replacement of the humeral head only either using a humeral resurfacing component or humeral stem and head. The humeral implant may be considered 'stemless'.

SHOULDER OPERATIONS	
Procedures	Description
Primary resurfacing arthroplasty	Shoulder resurfacing. The humeral head is resurfaced and used in conjunction with a glenoid resurfacing component.
Primary resurfacing hemiarthroplasty	Resurfacing of the humeral head.
Interpositional arthroplasty (glenohumeral)	Procedure where an implant is inserted between the glenoid cartilage and the humeral metaphyseal cavity.
Planned incomplete primary procedure	An incomplete set of components are implanted with the intention of completing the construct in a future planned procedure.
Single stage revision of <ul style="list-style-type: none"> - total shoulder replacement - total resurfacing replacement - hemiarthroplasty 	The removal of failed or failing implants and/or insertion of prostheses during one procedure. This includes DAIR with modular exchange.
First stage of two-stage revision of <ul style="list-style-type: none"> - total shoulder replacement - total resurfacing replacement - hemiarthroplasty 	Removal of implants as first procedure in a two-procedure revision of any type of shoulder prosthesis. Normally carried out because of infection.
Stage two of two-stage revision of <ul style="list-style-type: none"> - total shoulder replacement - total resurfacing replacement - hemiarthroplasty 	Second procedure to implant new implants following previous procedure to remove original ones. DAIRS (Debridement and implant retention) where an implant is replaced should also be recorded.
Stage two of planned incomplete primary procedure	Second procedure to implant new implants following previous procedure where implants were implanted and will be retained.
Conversion to arthrodesis of <ul style="list-style-type: none"> - total shoulder replacement - total resurfacing replacement - hemiarthroplasty 	Complete fusion of the shoulder joint following failure of a total joint replacement or hemiarthroplasty.
Excision arthroplasty	Complete removal of implants in the shoulder following failure of a prosthesis.
Amputation following failure of <ul style="list-style-type: none"> - total shoulder replacement - total resurfacing replacement 	Self-explanatory.

SHOULDER OPERATIONS	
Procedures	Description
- hemiarthroplasty	

Procedure	Humeral Stem	Humeral Components	Glenoid Components	Inter-positional
Stemmed conventional total arthroplasty	✓	✓	✓	
Stemless conventional total arthroplasty		✓	✓	
Stemmed reverse total shoulder arthroplasty	✓	✓	✓	
Stemless reverse total shoulder arthroplasty		✓	✓	
Resurfacing total arthroplasty		✓	✓	
Resurfacing hemiarthroplasty		✓		
Stemmed hemiarthroplasty	✓	✓		
Stemless hemiarthroplasty		✓		
Interpositional arthroplasty (Glenohumeral)				✓

PRIMARY SHOULDER REPLACEMENT CONSTRUCTS

Stemmed conventional total arthroplasty

In a stemmed shoulder replacement there are humeral stem, humeral head and glenoid components.



PRIMARY SHOULDER REPLACEMENT CONSTRUCTS

Stemless conventional total arthroplasty

In this procedure, there is no humeral stem. Humeral heads are attached implants that do not extend to the diaphysis.



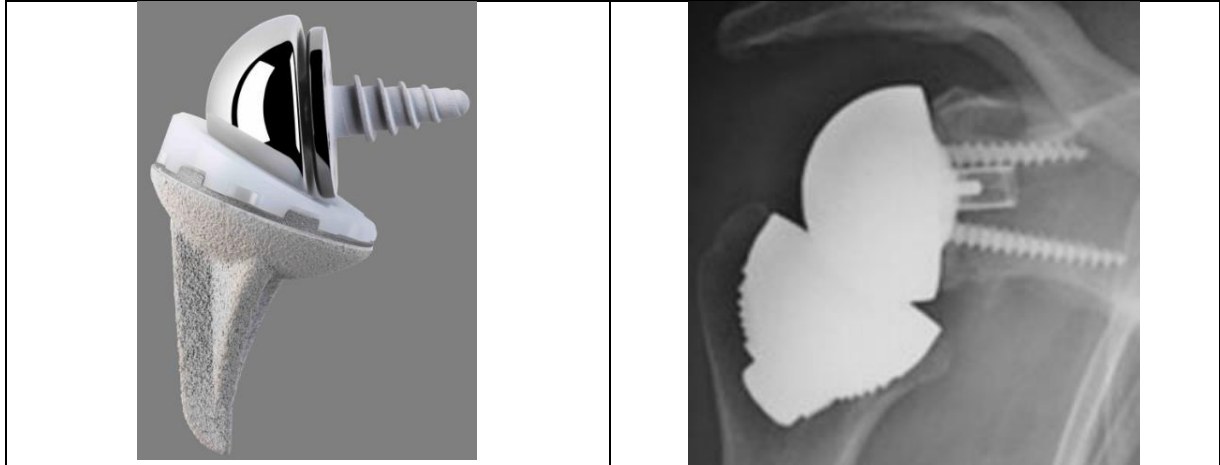
Stemmed total reverse arthroplasty

A reverse shoulder replacement is so called because the 'head' is connected to the glenoid cavity whereas in normal shoulder replacement the 'head' is connected to the humeral stem.



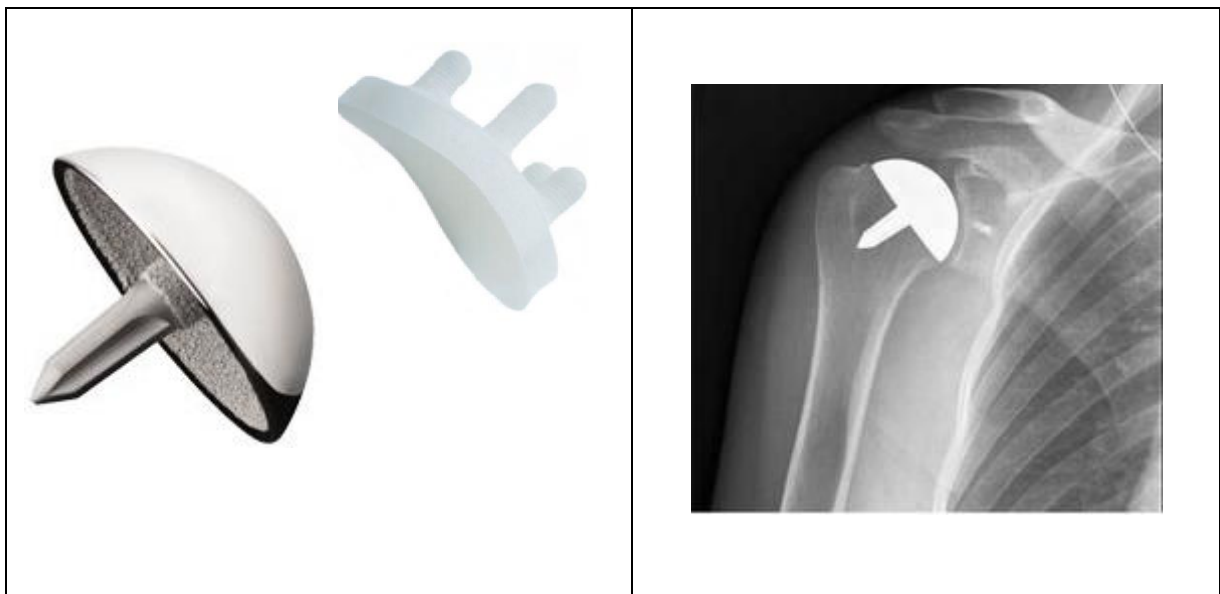
Stemless total reverse arthroplasty

In this procedure, there is no humeral stem. Humeral components are attached implants that do not extend to the diaphysis.



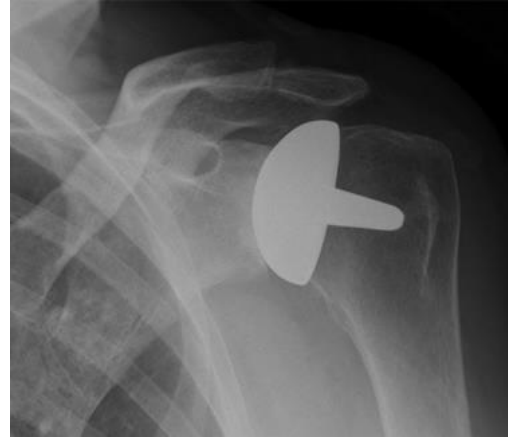
Resurfacing total arthroplasty

A humeral resurfacing head and a glenoid component is used.



Resurfacing hemiarthroplasty

A humeral resurfacing head component is used.



Stemmed hemiarthroplasty

This is where a humeral stem and humeral head is used but NO glenoid component.



Stemless hemiarthroplasty

The humeral head is replaced but no humeral stem nor glenoid implants.



Interpositional hemiarthroplasty

Represents a partial replacement of the glenohumeral joint.



Reoperations other than revision

REOPERATIONS OTHER THAN REVISION	
Procedures	Description
Closed/open reduction of dislocation	Self-explanatory.
Fixation of periprosthetic fracture	Fixation of bone (usually long bone) with plates/screws/cables/nails/external fixator when there is a fracture of a bone where there is an associated implant attached to that fractured bone.
Superficial/deep debridement and implant retention (DAIR)	DAIR without modular exchange.
Washout of haematoma	Self-explanatory.
Joint manipulation under anaesthesia (MUA e.g. stiff knee)	Self-explanatory.
Soft tissue repair/procedure (e.g. ligament/capsule/tendon)	Self-explanatory.
Excision of heterotopic bone	Self-explanatory.
Excision of excess cement	Self-explanatory.

Trauma

Trauma Surgery and the NJR

All total hip, hemiarthroplasty hip, total knee, total ankle, total shoulder, hemiarthroplasty shoulder, total elbow or hemiarthroplasty elbow (radial head) replacements undertaken as a result of traumatic injury are within the scope of the NJR. This is the case whether or not such a procedure is performed immediately after the injury or as a result of the failure of more conservative treatments aimed at restoring normal joint function.