



National Joint Registry

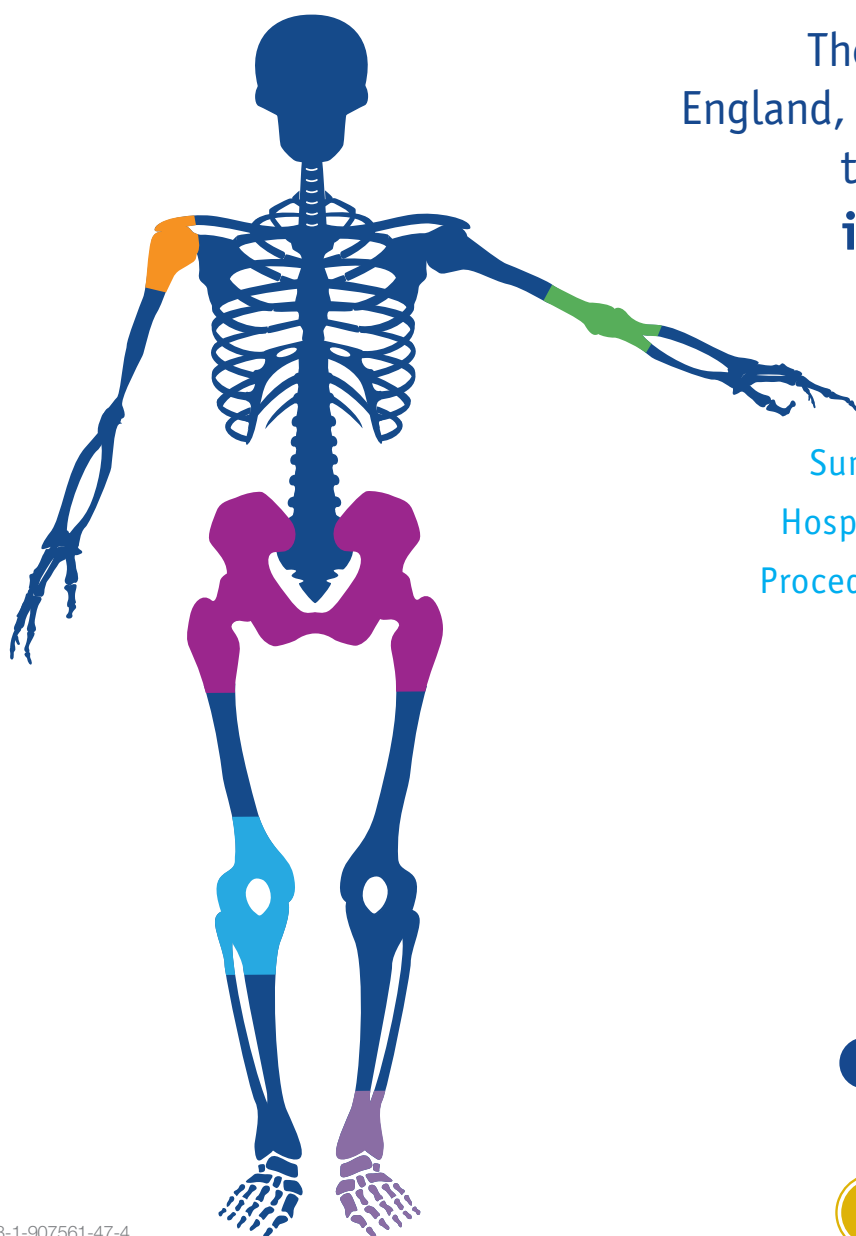
[www.njrcentre.org.uk](http://www.njrcentre.org.uk)

Working for patients, driving forward quality

# PUBLIC AND PATIENT GUIDE

## TO THE NJR'S 14TH ANNUAL REPORT 2017

### Knee replacement edition



The National Joint Registry for  
England, Wales, Northern Ireland and  
the Isle of Man is working to  
**improve your experience  
of joint replacement**

Patient FAQs  
Summary of key facts  
Hospitals and surgeons  
Procedures and implants



/nationaljointregistry



@jointregistry



**HQIP**

Healthcare Quality  
Improvement Partnership

Welcome to this Public and Patient Guide to the NJR’s 14<sup>th</sup> Annual Report

As joint replacement patients, we know how important it is to receive good quality information to help you understand more about your options and the treatment that has been recommended for you. That’s why the NJR continues to produce a patient guide alongside its main report.

Joint replacement is a highly successful operation that can bring relief from pain and improve mobility. In fact, a national survey that looked at patient feedback before and after their operation revealed that the majority of patients were more than satisfied after their operation and 70.8% reported they were much better<sup>1</sup>. However, going through the process can be baffling and many patients do not always understand their options or the detail of their treatment plan. There are also lots of variables that can affect the final outcome for each individual. We know that access to NJR data – including details of more than 2 million operations carried out since 2003 – can be a helpful tool for thought and discussion.

We hope this guide provides information to help you consider questions for your surgeon and healthcare team about the treatment and implant recommended for you. The same is true for friends and family members who might be supporting you at this time. We hope you seek out support, or share

this guide with others in order to get a better sense of how the information and data inside can help you.

Whatever the reason for your knee replacement, there are many others going through the same process, and it may help to know you are not alone. There is additional support out there for you on shared decision making as well as advice on looking after yourself before and after surgery. We have listed some of the organisations that can help at the back of this guide.

The National Joint Registry, now in its 14th year, doesn’t work in isolation – the information in this document is just one source that we hope will help you feel more confident in asking questions about your surgery, your implant and your recovery.

We will produce this guide each year, as the NJR continues to report on the growing number of joint replacement records it holds. Feedback is welcome at any time and you can contact NJR Communications on 020 7997 7370 or email: [njr@njr.org.uk](mailto:njr@njr.org.uk).

We would like to extend thanks as always to our NJR Patient Network, for their helpful thoughts, ideas and comments in ensuring this guide is as useful to patients as it can be.



Sue Musson

Sue Musson  
Post-operative hip replacement patient



Gillian Coward

Gillian Coward  
Post-operative hip replacement patient also living with rheumatoid arthritis

1. PROMs are a series of pre- and post- operative questionnaires that ask patients about their experience and perspective of the quality of care and treatment received in England. These results are taken from 98,507 knee replacement patients who filled in both questionnaires between 2009-2012.

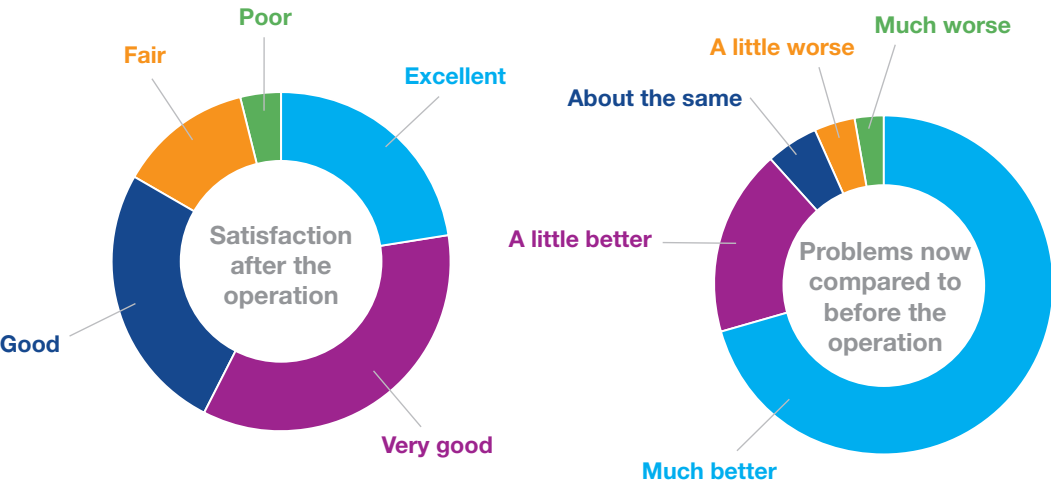
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Reading this guide

Where words are **highlighted in bold**, there is related information to be found in the right and left hand columns on the page:

Additional information to help you digest the content on knee replacements

What knee replacement patients said about their progress after surgery<sup>2</sup>



2. Overall, patients who filled in both questionnaires tended to be healthier before surgery therefore would be less likely to have potential complications after the operation.



**All hospitals should ask patients whether they wish to consent to have their details added to the NJR** and ensure the responses are recorded on the NJR database

## About the NJR

### How does the NJR help patients?

We record information about joint replacement operations in England, Wales, Northern Ireland and the Isle of Man in order to monitor the results of joint replacement surgery and protect patient safety. Using those records, we provide information and evidence to:

- Help surgeons choose the best artificial joints (implants) for patients
- Empower patients by helping them find out more about the implants available to them
- Improve patient safety by showing how well implants, surgeons and hospitals perform and take action where it is needed
- Give hospitals, surgeons and implant manufacturers feedback about their performance to help them improve patient care
- Help surgeons quickly decide whether patients need to return to hospital if implant problems are found

We currently collect information on hip, knee, ankle, elbow and shoulder procedures. However, ankle replacements have only been part of the registry since 2010 and elbow and shoulder replacements have only been collected since 2012.

England and Wales have been covered since 2003 and Northern Ireland joined in February 2013. The Isle of Man joined in July 2015 and as a result, their data has not yet been included in the NJR's Annual Report analysis. Currently, Scotland has its own joint replacement registry.

### What information is collected?

Your hospital will input specific details of your operation into the NJR. This will include the type of implant you received, which surgical technique was used, which side of your body the implant went into as well as your age and gender.

The NJR asks all patients to consent to have their personal details (name, date of birth, address and NHS or national patient number) recorded with their operation details – this allows the NJR to be more effective in its role of monitoring and improving patient care.

### Why does the NJR need my personal details?

Your details allow the NJR to link you to the implant(s) you received during surgery. If for instance, you need an operation in the future to replace a first-time implant, the NJR can measure the time between the operations. Adding together this time from all patients' operations tells us how well different implants, hospitals and surgeons perform.

Also, in the rare event that a problem is found with a particular brand or type of implant, recording your personal details on the NJR can also speed up and support the hospital process of reviewing affected patients.

Please be assured that your personal information is kept confidential at all times and secure protocols are in place to ensure it is kept safe. If you would like more information about this then please see the [NJR patient consent form](#) and NJR patient information leaflet. Alternatively, you can find out more on our website at [www.njrcentre.org.uk](http://www.njrcentre.org.uk).

Giving your consent is voluntary however, 92% of patients agreed to have their details added to the NJR last year.

### Who else do you share the data with?

There are lots of different ways we share and use the data, ensuring that the evidence we collect is used to inform clinical decisions and improve joint replacement surgery. For example, surgeons, hospital management and manufacturers of implants can all use their own unique online system (via a secure log-in) designed to give them access to information that can inform, influence and improve their work.

Security and confidentiality is always paramount and there are multiple safeguards in place to ensure that patient identities are protected.

### Can I access the information recorded about me?

Yes. As a patient, if you gave consent to have your details added to the NJR, you can request to see your records at any time by completing a patient operation request form. This is available to download from [www.njrcentre.org.uk](http://www.njrcentre.org.uk)

### I've heard the data are also used for research?

We are pleased to have an active research policy and make sets of data available for specific research so that more can be learnt about implants, surgery and their results. The release of data for projects are subject to very strict scientific and ethical controls and are only approved where they can prove

that the work will enhance the understanding of joint problems and how they can be best treated.

An example here is the NJR's extended Patient Reported Outcome Measures (PROMs) project (mentioned in the welcome). These are questionnaires sent to patients before and after surgery to collect measurements of pain and physical function.

We are following-up with a group of 50,000 patients at the moment and have recorded information at one and three years and will soon be planning to do this again at five years. This research project was approved because it can help build up a very detailed picture of the factors that are most important in ensuring a successful surgical outcome from the patient's perspective.

**1** Steering Committee, supported by expert sub-committees and the NJR's Patient Network



**5** Joint replacement procedures recorded

**100s** of research papers and scientific posters using NJR data

**1,000s** of colleagues across the NHS and independent orthopaedic sector

**4** UK territories covered, collaborating internationally

**14** Published Annual Reports since 2004

**2,350,000+** records and growing

The NJR's latest and full Annual Report published in 2017 can be found at **a dedicated website** [www.njrreports.org.uk](http://www.njrreports.org.uk) and shows the data submitted to the NJR up to the end of 2015

You can find out more about the NJR and **how it helps patients** at its main website [www.njrcentre.org.uk](http://www.njrcentre.org.uk)



In 2016, osteoarthritis was recorded as the **main indication for surgery in 99% of knee replacement patients**

## About knee replacement

There are many organisations that provide additional general information about joint replacement, including specific guidance before and after surgery as well as online discussion forums. Please see page 19 for their contact details.

### What is a knee replacement?

A knee replacement, often referred to as a knee implant (and sometimes simply as a 'device'), is, in basic terms, an artificial implant that replaces a knee joint that is damaged.

Joint replacements are nearly always carried out because of pain that cannot be controlled by other methods such as painkillers, physiotherapy or other surgery. The most common cause of pain is **osteoarthritis** or inflammatory arthritis.

### What healthcare staff will be involved with my treatment?

Once it has been suggested to you (commonly by your GP) that a knee replacement may be advisable, they may well refer you to a musculoskeletal clinic (MSK) or another GP with a speciality in the area for further assessment.

If you are then referred to hospital you will see an orthopaedic surgeon or a member of his or her team. This may be followed by a pre-surgery assessment clinic(s) where you may be seen by nurse practitioners. Either at this clinic, or on the day of your surgery, you will also see an anaesthetist to discuss options for anaesthesia and pain relief.

These appointments are also the times when you are most likely to receive information about the registry and be asked whether you would like to consent to have your personal details recorded. Your hospital should ask you to consent to your details being entered into NJR, and we recommend that you do. Please ask for the NJR consent form if it is not offered to you.

During your hospital stay, you might also see an occupational therapist or physiotherapist who will advise you on your aftercare and

help you prepare for your recovery after the hospital stay.

Together, these healthcare staff make up what is commonly called your healthcare or clinical team.

### Do I have to have a knee replacement? What are the alternatives to surgery?

The final decision to have an operation or not remains with you the patient. It will be based on the risks and benefits of having a knee replacement or choosing not to (these choices should be made clear to you). It may be that other options are available including, but not limited to, medication, physiotherapy, weight loss or other lifestyle changes.

### Can I choose which hospital and surgeon perform the operation?

In principle, yes — as part of the NHS Choices initiative, you do have the option in England to be referred to a specific hospital or surgical team (options may be more limited elsewhere). Of course each individual case is unique, and the reasons for requesting a specific hospital need to be justified, as do any costs and other implications associated with a request to be treated at a non-local hospital. The NHS is not able to provide a commitment that a specific surgeon will carry out your operation.

### Can I get a second opinion?

The appointments you have prior to the operation (referrals to a musculoskeletal clinic and/or hospital-based assessments) are designed to further discuss and analyse your GP's initial diagnosis.

You could also use services like NJR Surgeon and Hospital Profile at [www.njrurgeonhospitalprofile.org.uk](http://www.njrurgeonhospitalprofile.org.uk) and NHS Choices to find out more about the hospitals and surgeons that provide services in your area. The services currently cover England but may extend to Wales and Northern Ireland in the future.

### What are the risks involved with having a joint replacement procedure?

The overall risk involved in joint replacement is very low. With any surgical procedure there is a small risk of medical complications such as heart attack, stroke and developing blood clots (thrombosis). Infection is rare, typically less than 1%.

Other surgical problems are also rare, but include dislocation, fracture, unequal length, nerve damage, pain and stiffness. Your surgeon will go through all of the risks before you sign a surgery consent form.

With time, some implants wear out or become loose and occasionally break, leading to the need for further replacement (revision) surgery. The latest NJR data now shows that most knee replacement patients have less than a 5% chance of needing revision replacement surgery within 13 years of having the original operation. In many cases, patients' implants last for much longer than 13 years.

### What kind of implant (artificial joint) will be used? Are there options?

There are several types of implant largely described by how they are put together and the materials that they are made out of. As part of your hospital-based assessments, the most suitable device for your individual situation will be established and you will be able to discuss this choice with your surgeon. The most regularly used implants and options are outlined in this guide on page 10. Evidence on the revision rates for different types of implant and for different brands of implant can be found (in part) on page 16 of this guide and in the full NJR Annual Report at [www.njrreports.org.uk](http://www.njrreports.org.uk) starting at page 99.

### How can I find out how many joint replacement procedures my local hospital carries out and the results of those operations?

The NJR has published hospital-level information for hip and knee replacements as part of its full NJR Annual Report. It includes for example, information on the number of procedures reported to the NJR in 2016 as well as the number of consultants

at the hospital and average patient age. This section also includes analysis of hospital data and reports which hospitals were identified as having higher than expected revision or mortality rates.

A summary is included on pages 8-9 of this guide.

### My local hospital seems to have higher than expected rates for procedures such as revisions, should I be concerned?

Your GP and/or your clinical team should also be able to provide information as to the numbers and results of procedures carried out locally. Statistics such as the numbers of revisions carried out should not on their own be taken as a guide to the standards of a hospital.

Additionally, the fact that your local organisation carries out significant numbers of revisions could be due to a number of reasons, for example, it could be a specialist centre in performing such surgery. If you have any doubts or questions though, speak with your GP or your healthcare/clinical team.

### How can I find out how many joint replacement procedures my surgeon carries out?

As part of NHS England's transparency initiative, the NJR now publishes **surgeon performance information** along with information about the **hospitals** where those surgeons work. The information is not contained in the NJR Annual Report but can be found online at [www.njrurgeonhospitalprofile.org.uk](http://www.njrurgeonhospitalprofile.org.uk).

In 2016, more than 2,000 records were available to search for any surgeon who had carried out one or more hip, knee, ankle, elbow or shoulder replacements for the NHS in England. For each surgeon listed, it is possible to access information about their practice including how many procedures they carried out of each type, and information about mortality rates. See page 9 of this guide for more information about this service.

If you would like to ask about your surgeon's experience, but **feel uncomfortable doing so, consider** asking a friend or family member to accompany you to the appointment. Remember you can **note down any questions or concerns** in the 'Notes' section of this guide

### Did you know that many hospitals run 'Joint Replacement Schools' as part of the NHS Enhanced Recovery Programme?

This is a chance to meet patients who have had, or will be having, a joint replacement operation



Why can't I find my surgeon on the website?

Your surgeon's information might not be listed on NJR Surgeon and Hospital Profile website if they have not undertaken NHS-funded joint replacement surgery in England since 2011 as Consultant in charge (a Consultant in charge is responsible for the operation but may not have performed the surgery). Consultant surgeons who only practice in Wales, Northern Ireland or the independent (private) sector are not automatically included.

Remember you can also talk to your surgeon about their experience. If you would like to ask but feel uncomfortable doing so, perhaps consider taking a friend or family member to your appointment



Surgeon Information

Information on more than 2,000 joint replacement surgeons carrying out orthopaedic surgery for the NHS in England is available for public access at [www.njrsurgeonhospitalprofile.org.uk](http://www.njrsurgeonhospitalprofile.org.uk).



Using [www.njrsurgeonhospitalprofile.org.uk](http://www.njrsurgeonhospitalprofile.org.uk)

From the home page, you can explore information about your surgeon using the following search criteria:

- Name
- General Medical Council number
- Hospitals where they work, either by the search bar or via the interactive regional map

The published surgeon profiles cover:

- Hospitals where a Consultant in charge works

The data, published for the fifth time, are collected and presented by the NJR. Since 2014, surgeons carrying out ankle, elbow and shoulder joint replacement surgery were included alongside hip and knee surgeons for the first time.

- Number of primary and revision joint replacement procedures undertaken and overseen by each Consultant in charge over one and three years
- Mortality rates within 90 days of surgery for hip and knee replacements (2003-2016)
- All the surgeons are within the expected range
- New Consultant in charge indicator

Within the profiles, there are also included statistics for the national averages, so you can compare surgeon information against these figures.



Hospital Information

Everything you can find for a surgeon is also supplied at a hospital level. In addition to the list on the left, you can also find:

- Patient-reported improvement scores for hip and knee replacements six months after surgery
- Revisions rates for the lifetime of the NJR (2003-2017) and the most recent five-year period (2012-2017) for hip and knee replacement
- Quality of the information submitted by the hospital – this is important so that the NJR can measure how long implants last and look at other areas of surgical performance

Why is data quality important?

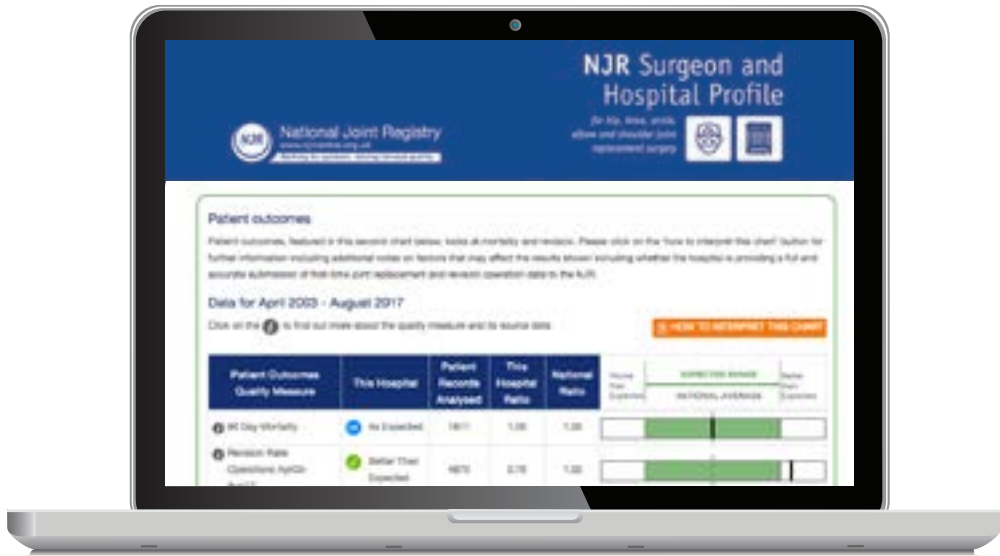
It is important that the NJR presents a full and accurate picture of what is going

on in the hospital at any given time. The data represents that data entered by each hospital into the NJR. Whilst the NJR takes steps to prevent errors, by validation at the point of data entry, it is possible for data entry errors to occur.

What should I do if hospitals report 'worse than expected' results?

If your hospital is showing a 'worse than expected' result, you should ask for more information. Your hospital should be able to explain why and what steps they might have taken to look at the reasons that such a result is showing. Statistics should not, on their own, be taken as a guide to the standards of a hospital and the care you would receive.

However, if you have any doubts or questions, speak with your GP, your surgeon and healthcare team at the hospital.



**Find out more:** This website service is updated annually with refreshed hospital and surgeon information. Share [www.njrsurgeonhospitalprofile.org.uk](http://www.njrsurgeonhospitalprofile.org.uk) with your friends and family.

Which hospitals are reporting worse than expected results for knee revision?

When examined over the life of the registry, a total of 27 hospitals reported higher than expected rates of revision for knee replacement. However, revisions taken only from the last five years of the registry show a drop to 12 hospitals reporting higher than expected rates. These are:

- Ashford Hospital
- BMI The London Independent Hospital (Greater London)
- BMI The Meriden Hospital (West Midlands)
- Broadgreen Hospital
- County Hospital Louth
- Ealing Hospital
- King Edward VII Hospital Sister Agnes (Greater London)
- North East London NHS Treatment Centre (Essex)
- Spire Southampton Hospital (Hampshire)
- St Richard's Hospital
- University College Hospital
- West Cumberland Hospital

# Introduction to knee implants

To help **you** digest the data and analysis included in this section, we have included an explanation of knee replacement below.

Almost all total knee replacements use a metal femoral component which is fixed to and curves around the bottom end of the thigh bone (femur). This moves against a hard-wearing plastic (polyethylene) tray.

This tray is normally attached to a metal tibial component at the top of the shin

bone (tibia) but can be fixed directly to the shin bone. A tibial component will have a stem going into the shin bone to provide additional stability.

Implants can be cemented (fixed with bone cement) or cementless (without bone cement). In a hybrid fixation, the femoral component is fixed with cement and the tibial component is fixed without cement.

## Constrained condylar or hinged/linked:

where the components fitted to the thigh and shin bone are attached with a hinge type mechanism. This is used when a patient's knee is highly unstable and the soft tissue and ligaments would not be able to support other types of replacement for example, in severely damaged knees or where a very elderly patient is undergoing a re-do (revision) replacement. This type of joint will have greater limitations on the range of movement and is not expected to last as long as other types. It requires more invasive surgery to place larger implant stems into the thigh and shin bone and also puts additional stress on the bones.

## Bearing surfaces

When a knee joint is replaced, the ends of the bones are replaced with metal and a plastic tray is placed between them. Two types of bearing joint are analysed by the NJR.

**Fixed:** the plastic tray component fixed to the shin bone is attached firmly to the metal part beneath. The metal femoral component, attached to the thigh bone, rolls on this cushioned surface. This type of bearing may reduce the level of pain experienced following the procedure but in some cases, excessive activity or weight gain can cause a fixed bearing to wear down more quickly.

**Mobile:** the plastic tray is less firmly fixed to the metal part beneath, it is more mobile and requires support from the soft tissues around the joint. This allows it to rotate short distances. It may allow more movement but there is a possibility of dislocation.

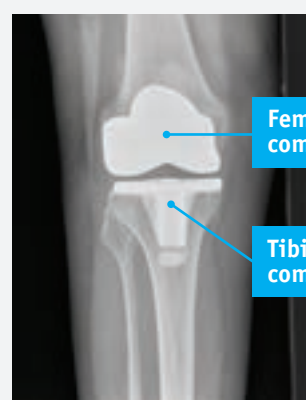
## Implant types

### Bicondylar or total condylar knee replacement:

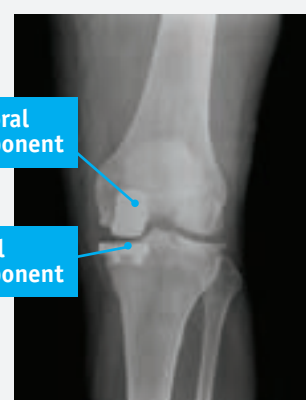
an implant attached to both parts of the shin bone and thigh bone. A knee cap replacement (patella) is often used as well.

**Unicondylar:** an implant attached to only one part of the shin bone and one part of the thigh bone, sometimes described as a partial knee replacement.

**Patellofemoral:** a two-piece knee implant that provides a joint between the knee cap (patella) and thigh bone. The patella component is made of hard-wearing plastic.



Total knee replacement



Unicondylar knee replacement



Patellofemoral replacement

## Implant stability levels

With knee replacement procedures, different implant types offer different implant constraints. This is the level of stability offered by the implant and **the best option for a patient will be determined by their needs in consultation with the surgeon** — instability is a reason for failure of knee implants.

The following types of constraint (stability levels) are analysed by the NJR.

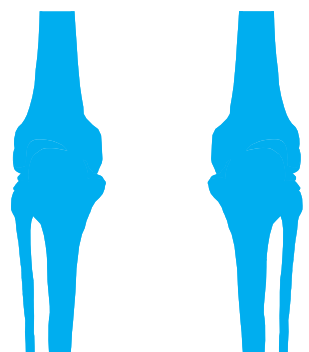
**Unconstrained:** the artificial components making up the knee joint are not linked to each other and have no stability built in. It relies on the patient's soft tissue, ligaments and muscles for stability.

**Posterior-stabilised:** some stability is built in and in these designs, the cushion of the plastic tray component fixed to the shin bone has a raised surface with an internal post that fits into a special bar (called a cam) in the femoral (thigh bone) component. The pieces work together to provide additional stability to the knee as it bends and straightens.



All patients are individuals and many have **unique problems** that require an operation to be **tailored to their specific needs**. If you have any questions about the knee type your surgeon is planning to use in your care, he or she would be happy to **explain the reasons** for choosing a particular implant

## Knees



**108,713**  
replacement  
procedures  
were recorded 2016

**3.8%**  
(104,695 in 2015)

recorded on the NJR since April 2003

**56%**



average  
ages:

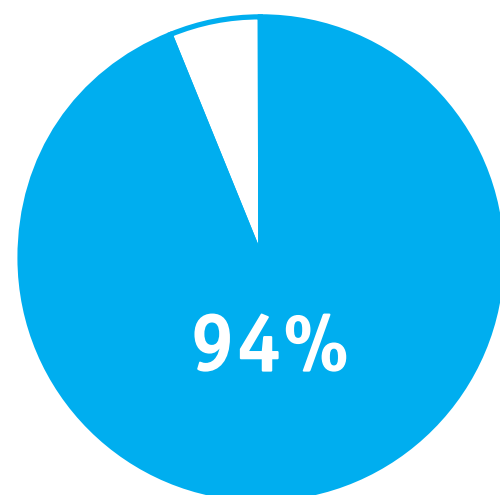
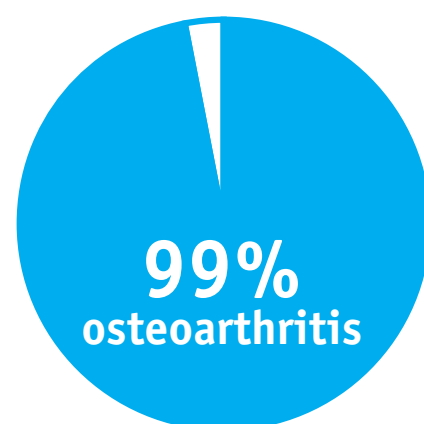
69.2

69.6

Diagnosis



\*



○ primary  
operations  
● revision  
operations

average BMI  
**31.0**  
=  
'obese'

\*

## More facts: knee replacement in 2016

A total of 108,713 knee replacement operations were reported to the NJR in 2016. Of these:

- 102,519 were first-time (or primary) procedures – 3.9% more than in 2015. The average age for men was 69.16 years and the average age for women was 69.57 years. Women were treated in 56% of cases
- 6,194 were re-do (or revision) procedures accounting for 6% of knee replacement operations

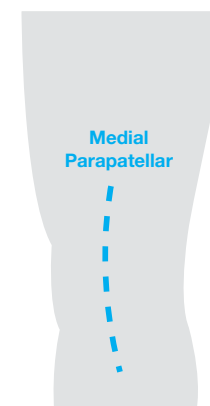
### First-time knee replacement patients in 2016

#### How implants were fixed into place

Of the 102,519 first-time knee replacements that took place in 2016, 85.9% were cemented procedures.

#### Surgical technique

- The most common surgical approach was the medial parapatellar, used in 94% of procedures
- Minimally-invasive surgery (MIS) was used in only 5% of knee primary procedures, however, it was used in 40% of unicompartmental (or partial) knee replacement procedures
- For cemented knee procedures, 42% had the patella replaced at the time of the first procedure whereas only 7% of patellas were replaced during first-time cementless knee procedures
- Compared with previous years, the surgical techniques used in primary knee replacements have remained largely unchanged



#### Treatment to prevent blood clots (known as thromboprophylaxis)

- The most common chemical treatment used was low molecular weight heparin, used in 75% of procedures. This was followed by Factor Xa Inhibitor (anticoagulant drugs) at 23%
- TED (anti-embolism) stockings were the most commonly used mechanical method at 83%
- Compared with previous years, there has been an increase in the prescription of a combined chemical and mechanical treatment, from 49% in 2004 to 97% in 2016.

#### Untoward events

- Untoward intra-operative events (for example, **fractures**) were rare and reported in less than 1% of knee procedures

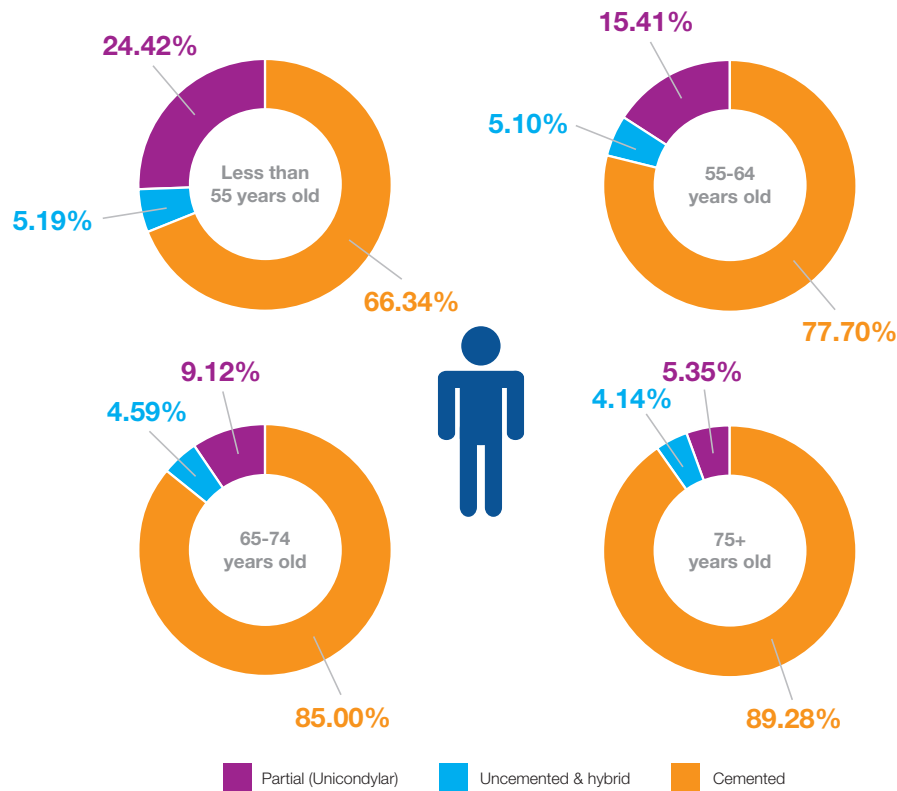
**Find out more:** This information relates to the reports on clinical activity in 2016 across England, Wales and Northern Ireland and can be seen in the online Annual Report information at [www.njrreports.org.uk](http://www.njrreports.org.uk). This includes a number of interactive charts where filters can be applied.

**Surgical problems are rare** but your surgeon will go through all of the risks involved with the procedure at your appointments and **before you sign a surgery consent form**



About first time knee replacements in men 2003-2016

Men: overall implant fixation for each age group<sup>1</sup>



Breakdown of how implants were fixed into place by age group and the type of bearing/constraint used

Cemented by bearing surface

	<55	55-64	65-74	75+
Unconstrained, Fixed	63.3%	67.0%	68.2%	67.3%
Unconstrained, Mobile	6.1%	5.0%	4.0%	3.5%
Posterior Stabilised, Fixed	24.1%	23.3%	23.5%	24.2%
Posterior Stabilised, Mobile	3.3%	2.1%	1.3%	0.9%
Constrained, Condylar	1.1%	0.7%	0.6%	0.6%
Monoblock Polyethylene Tibia	0.6%	0.7%	1.4%	3.1%

Uncemented and Hybrid by bearing surface

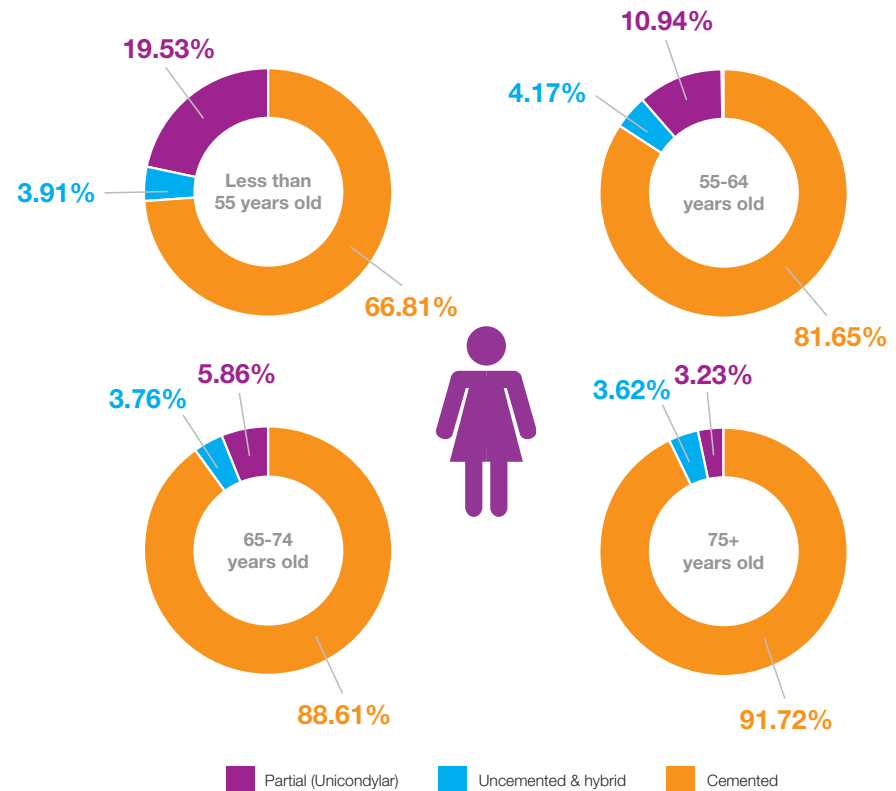
	<55	55-64	65-74	75+
Unconstrained, Fixed %	44.0%	42.7%	44.8%	44.9%
Unconstrained, Mobile %	40.5%	44.4%	46.2%	46.9%
Posterior-stabilised, Fixed %	11.5%	9.5%	6.4%	5.5%

Unicompartmental knee replacement-Unicondylar

	<55	55-64	65-74	75+
Unicondylar, fixed	41.1%	33.4%	33.4%	30.1%
Unicondylar, mobile	57.7%	65.5%	65.5%	69.1%

About first time knee replacements in women 2003-2016

Women: overall implant fixation for each age group<sup>2</sup>



Breakdown of how implants were fixed into place by age group and the type of bearing/constraint used

Cemented by bearing surface

	<55	55-64	65-74	75+
Unconstrained, Fixed	64.2%	66.7%	75.6%	65.1%
Unconstrained, Mobile	5.3%	4.7%	3.0%	3.8%
Posterior Stabilised, Fixed	24.7%	24.1%	18.8%	25.7%
Posterior Stabilised, Mobile	2.6%	1.9%	0.9%	1.0%
Constrained, Condylar	1.1%	0.7%	0.6%	1.0%
Monoblock Polyethylene Tibia	0.6%	0.7%	1.2%	2.3%

Uncemented and Hybrid by bearing surface

	<55	55-64	65-74	75+
Unconstrained, Fixed %	42.0%	42.5%	42.3%	44.7%
Unconstrained, Mobile %	45.3%	48.2%	50.6%	47.7%
Posterior-stabilised, Fixed %	9.9%	7.0%	5.4%	5.7%

Unicompartmental knee replacement-Unicondylar

	<55	55-64	65-74	75+
Unicondylar, fixed	37.2%	32.1%	29.8%	29.5%
Unicondylar, mobile	61.6%	66.9%	69.1%	69.5%

The type of **fixation and stability level** for knee replacement surgery varies very little between men and women. Data from the NJR suggests that among cemented procedures, **an unconstrained, fixed implant is the most common choice across all age groups for both men and women.**

Uncemented and hybrid procedures are more closely divided between unconstrained, fixed and constrained, mobile implant types.

Patients who had a partial knee replacement or patellofemoral replacement tended to be aged between **55 and 64 years old.** This procedure tends to be used in younger patients where the joint is expected to need revision (re-do) surgery within ten years.

1. Results where the constraint or bearing type was 'unknown' were excluded.

2. Results where the constraint or bearing type was 'unknown' were excluded.

## How long knee implants last 2003-2016

Over time, implants will wear and need to be revised, often due to loss of function or pain. These operations are commonly known as revision procedures.

The NJR records operation information and patient details (by consent) so that we can measure the length of time an implant lasts. This is to ensure that any implants that are failing earlier than expected are picked up and the information acted upon.

### Key finding

- Most patients have a revision risk of 5.62% or less at 13 years after their first surgery
- Results were slightly higher for younger patients, especially those under the age of 55

### Reasons why implants were replaced

- Within the first year, the most common reasons were aseptic loosening, infection and instability
- After five years, the most common reasons were implant loosening or pain

### Risk of revision by fixation

Overall, the risk of revision at 13 years for total knee replacement was:

- 4.16% for all cemented implant types
- 5.37% for all uncemented implant types
- 3.56% for all hybrid implant types (at 10 years)

For partial knee replacement (unicondylar) the risk of revision at 13 years was 15.96%. For patello-femoral replacement only, the risk of revision at 10 years after first surgery was 18.18% – the result at 13 years was less certain as the patient numbers in this group were small.

Total knee replacement implants tend to last longer than partial or patello-femoral replacements. However, partial and patello-femoral knee replacements are generally undertaken for different reasons than total knee replacements. They are used in younger patients where the joint is expected to need revision surgery within ten years. As the procedure conserves more bone, it allows greater scope for a better outcome for patients later on in life.

## Risk of revision by fixation and bearing for total knee replacement

There are relatively small differences between the types of bearing, although some fixation/constraint methods do fare better than others.

### Total knee replacements

For cemented fixations, the most favourable revision rates at 13 years were associated with:

- Unconstrained, fixed bearing implants (3.82%) followed by posterior stabilised, fixed replacements (4.69%)
- The rate for unconstrained, mobile was slightly higher at 5.00%

### For uncemented fixations:

Revision rates favoured mobile implant types (4.43% at 13 years). The results for unconstrained, fixed and posterior-stabilised, fixed implant types in this category were less certain at 13 years but at ten years, reported rates of 4.20% and 6.35% retrospectively.

### For hybrid fixations:

The results for all fixations in this group at 13 years are less certain but at ten years revision rates favoured unconstrained, fixed implant types.

It is worth noting that this information has not been adjusted to take into account patient age or gender therefore, there will be some variation in success dependent on these factors. Other factors also have an influence including a patient's individual diagnosis and health. Please **talk to your surgeon** if you have questions about the implant and surgical technique proposed for your surgery.

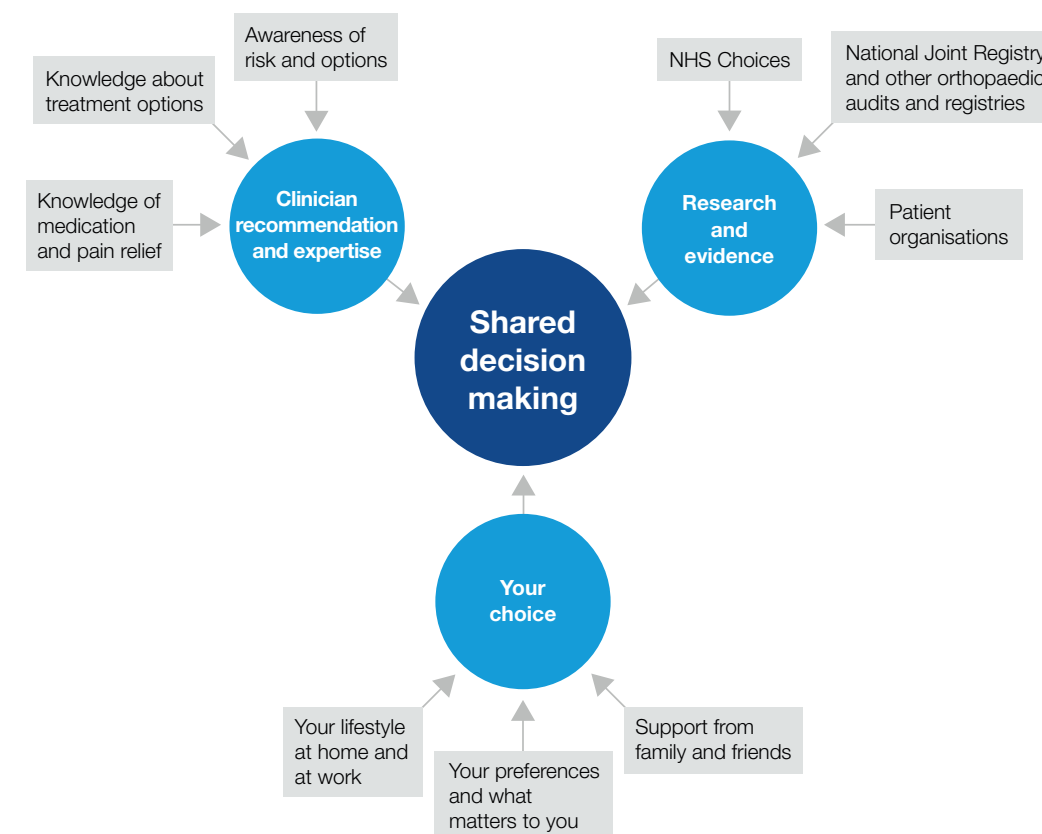
### Mortality after surgery

- Mortality in the first 30 or 90 days after surgery remains very low

**Find out more:** These results are taken from implant survivorship analysis carried out in the NJR's 14th Annual Report. It looked at more than 13 years of data kept on the NJR covering 975,739 knee replacement records however it should be noted analysis by implant type, fixation, age and gender presents smaller groups for each of the results. The information included here corresponds to the information found in the full NJR Annual Report starting at page 99, where further detail can be found including analysis of brands ([www.njrreports.org.uk](http://www.njrreports.org.uk)). This includes notes about the methodology.

Joint replacement is a highly successful operation that can bring relief from pain and improve mobility. However, going through the process can be baffling and many patients do not always understand their options or the

detail of their treatment plan. It is important you feel supported by your surgeon when discussing your available options. Working together with your practitioner is known as **shared decision making**.



**Shared decision making** recognises all the different factors in your life that will lead to better quality decisions, from your surgeon's advice through to the support from your family and friends.

Sources such as this National Joint Registry guide should make you feel confident in asking questions about your surgery, your implant and your recovery. On the reverse are some commonly-asked questions, and some space for you to make notes.

Whatever the reason for your joint replacement, there are many others going through the same process, and it may help to know you are not alone. There is additional support out there for you on shared decision making as well as advice on looking after yourself before and after surgery. See page 19 for a list of useful organisations that can help.

Use the **'Your notes'** section of this guide to **write down the questions or issues** you would like to cover at your next appointment

Please use this page to make notes and questions, either for your surgeon or clinical team at the hospital. Some commonly asked questions are listed below:

<p>Do I need joint replacement surgery?</p> <p>Are there other options available to me? .....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>What surgical technique would be used?</p> <p>What are the pros and cons?.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>If I do, how should I prepare for surgery? .....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>What should I know about my aftercare? .....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>What type of implant are you recommending?</p> <p>What are the pros and cons?.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>What do I need to think about when I return home after my operation? .....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

	<p><b>Age UK</b> www.ageuk.org.uk 0800 169 6565</p>		<p><b>British Association for Surgery of the Knee</b> www.baskonline.com/public/ 020 7406 1763</p>
	<p><b>Alkaptonuria Society</b> www.akusociety.org 01223 322897</p>		<p><b>British Orthopaedic Association</b> www.boa.ac.uk 020 7405 6507</p>
	<p><b>Arthritis Action</b> www.arthritisaction.org.uk 0800 652 3188</p>		<p><b>Healthcare Quality Improvement Partnership</b> www.hqip.org.uk 020 7997 7370</p>
	<p><b>Arthritis Care</b> www.arthritiscare.org.uk 020 7380 6500</p>		<p><b>National Joint Registry</b> www.njrcentre.org.uk 0845 345 9991</p>
	<p><b>Arthritis and Musculoskeletal Alliance</b> www.arma.uk.net 020 7842 0910/11</p>		<p><b>National Rheumatoid Arthritis Society</b> www.nras.org.uk 0800 298 7650</p>
	<p><b>Arthritis Research UK</b> www.arthritisresearchuk.org 0300 790 0400</p>		<p><b>NHS Choices</b> www.nhs.uk www.nhs.uk/mynhs</p>
	<p><b>BoneSmart</b> www.bonesmart.org</p>		

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Our Surgeon and Hospital Profile service? [www.njrsurgeonhospitalprofile.org.uk](http://www.njrsurgeonhospitalprofile.org.uk)

Our online NJR Annual Report information? [www.njrreports.org.uk](http://www.njrreports.org.uk)

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Send an email to [enquiries@njrcentre.org.uk](mailto:enquiries@njrcentre.org.uk)



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