MEDIA PLANET

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TRANSFORMING HEALTHCARE

3 STEPS

BRINGING NEW HOPE

Moving forward: Read the personal stories from those whose lives have been transformed by medical innovation

New developments
The device that can make managing diabetes easier


SHUTTERSTOCK

The power of sight
Improvements in technology make laser surgery faster


SHUTTERSTOCK

PHOTO: PRIVATE

CHALLENGES

From orthopaedic injury to diabetes, there are more solutions than ever to soothe discomfort and enhance quality of life. Creating new, refined methods of treatment — and new ways of thinking — produces better results that are vital for all

Pulsing ahead

Innovation is the lifeblood of good healthcare. From better pain management to easier delivery of medication, and from improved treatment for traumatic orthopaedic injuries to elective laser eye surgery — research and development is essential to optimise patient experience and results.

Experience

1 In laser eye surgery, ever-increasing surgical experience that has brought better understanding of the optics of the eye combines with improved laser tracking systems to make it more effective than ever before. These elements have significantly improved both the safety and satisfaction for patients that have laser refractive surgery.

Much of the incredible recovery made by paratrooper Ben Parkinson, seriously injured in a landmine strike in Afghanistan in 2006, is attributed by him to the extraordinary rehabilitative treatment he has received. This has included physiotherapy and the power of modern prosthetics, which have enabled him to achieve physical prowess that was initially declared impossible. Hurdle by hurdle, Ben has consistently made astounding progress — and continues to do so.

Progress

2 In diabetes care, the rise of insulin pumps promises greater freedom for those who are eligible to use them — while screening for cancer is more advanced than ever before, underlining the importance of prevention and early detection in saving lives, and we focus here on two of the most common cancers in women: breast cancer and cervical cancer.

Orthopaedics has always been one of the fields of medicine with a strong innovative tradition. There are many new techniques and materials that have transformed joint replacement surgery, one of the most exciting of which is Trabecular Metal™.Trabecular Metal ™ implants have a porosity and structure that allows for extensive bone in-growth, which creates a bond between the implant and the bone and eliminates the need for bone cement — in this supplement, surgeon Lawrence O'Hara explains how Trabecular Metal™ allows surgery on patients who previously would have been ineligible.

FACTS

1 England has nine regional NHS Innovation Centres (hubs), aligned to Regional Development Agency and Strategic Health Authority boundaries.

2 The hubs were established in 2004/05 with the intention of championing the cause of healthcare innovation, and to recognise, develop and commercialise innovations created by NHS staff from every field of healthcare within the NHS, and from every level of work; from porters to consultants.

Innovation

3 Innovative thinking can be as influential as new techniques and medications. The Orthocard is a free personalised card from Joint Action, the research fundraising arm of the British Orthopaedic Association, which can be carried by anyone with a joint replacement or orthopaedic implant. It aims to provide both important clinical information about the cardholder and to alert airport security staff to the presence of the cardholder's artificial joint, and in doing so prevent potential delay and inspection that can arise when, in some cases, the materials used to create artificial joints can activate metal-detecting security devices.

Good innovation can improve not just outcome and results, but the entire patient experience. We should encourage deserving initiatives — innovative thinking throughout modern medicine is a very healthy way forward.

WE RECOMMEND

Moving forward
How innovation in prosthetics helped the UK's most severely injured soldier to get back on his feet
PAGE 4

'My NHS team were incredible - they gave me a second chance'

MEDIA PLANET
We make our readers succeed!

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changing the future of diabetes

At Novo Nordisk, we are committed to fighting diabetes and advancing diabetes care for the benefit of the growing numbers of people living with diabetes. We must continue to make progress in the fight against the diabetes pandemic.

However, change will not be achieved by working alone.

It is imperative that we ensure that the person with diabetes is central to their care and is continuously involved in care planning and management decisions. Patients want good care, convenient to their home or work lives and tailored to their needs at that time. They require a clear, well-organised system where if they have an issue they receive prompt, expert advice.

We share the desire to focus on improving outcomes for people with diabetes, providing a higher quality of care and better management of their condition. Only by working together and ensuring that people with diabetes are given a voice, we can look to change the future of diabetes.

At Novo Nordisk, we are Changing Diabetes®
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INSPIRATION

Question: How has paratrooper Ben Parkinson, the UK's most severely injured soldier ever to survive, benefited from advances in prosthetics?
Answer: Ben was not expected to live, let alone walk — today, he is making huge progress every day, with the help of artificial legs

The secrets of my strength and survival

CHANGE

"Soldiers like me are unlike anything that the NHS has had to deal with before. We weren't ill — one minute we were immensely fit and active and the next minute it's all gone," says Lance Bombardier Ben Parkinson, now 26, who was seriously injured in an explosion while deployed in Afghanistan in 2006. "We need prosthetics that do more — that allow us to get back to work and compete."

At Headley Court military rehabilitation centre in Surrey, they have "the best legs available," points out Ben, but it takes "masses and masses of work — up to eight hours a day in physio, for as long as it takes, even years if necessary."

"Unfortunately, I'm different," says Ben. "I had severe head and back injuries. My NHS team were incredible — they gave me a second chance and worked with me until I got to the stage that other lads without multiple injuries usually begin at. Then I needed the daily hours and hours of physio and the chance to use high-spec legs. The NHS were truly magnificent but they couldn't possibly do that and it wouldn't have been fair to expect it of them."

In August 2007, Ben was told that Headley would give his walking their best shot but that the outcome was very uncertain, mainly due to his back and head injuries Diana, Ben's mother, recalls now how they were told that Ben would never progress to knees and longer legs.

And yet, by June this year, the NHS neurological outreach team had got Ben to a position where walking on hi-tech hydraulic legs was a realistic goal. Now, Ben is benefiting from a new system. It was impossible for the NHS to provide the massive input into rehab in line with soldiers at Headley Court which Ben needed instead it was agreed that the Ministry of Defence would fund private prosthetic, and speech and cognition rehab, via Headley Court under the guidance of Doncaster PCT, although Ben kept his NHS neurological physio. "They all work together with Dr Robinson, my chiropractor," says Ben. "They are my team and the sky is the limit.

'We need prosthetics that do more – that allow us to get back to work and compete'

The Lance Bombardier Ben Parkinson was seriously injured in Afghanistan in 2006

"No matter what people have said, I have always known that I would walk and talk: I am a Para and I don't give in. I know how hard my mum and dad have fought for this — I know how rules have been changed to let this happen. This is about more than me now, it's about proving that this is the right way and making sure that others have the same chances.

"I've got a job again, a responsibility. OK, it's not the same job as before, but it's even more important. I've been in the army since I was 16 — there was no way I was just going to sit at home and watch TV."

Since July, Ben has worked with a private speech therapist for four hours a week and a private prosthetist for at least nine hours weekly. His progress, Diane notes, immediately "rocketed". In August, Ben received state-of-the-art prosthetics, giving him a new height of 6ft1" - closer to his original height of 6ft4".

"Sometimes I worry that I'm getting much more help than civilians, but hasn't it always been the way that soldiers injured in war have caused improvements in medicine that others eventually benefit from?

"I'd like to think that everyone in the NHS will get better prosthetics if they need them. As for me, it's onwards and upwards. Shep, my physio and prosthetics specialist, says I may not be able to climb stairs, and my mum thinks I'll always need the wheelchair at times. But my job is to prove them wrong. Don't rule out *Strictly Come Dancing* yet!"

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STEP 1

SUPPORT AND INNOVATE

WALKING TALL
Ben undergoing therapy following his bilateral amputation
PHOTOS: PRIVATE

BEN'S TREATMENT TIMELINE

9/06 Ben caught in landmine strike in Afghanistan. Massive injuries; returned to UK to be with family. Legs amputated, deeply unconscious. Into ICU at Selly Oak.

9/06 Told he would survive but in post-vegetative state — "may possibly sit up one day".

08/07 Finally admitted to Headley Court military rehab facility.

08/08 Given prognosis that walking would be impossible, largely due to the severe curvature of the spine due to untreated fractures. No progress on speech.

04/09 Ben arrives home in Doncaster. No care package or plan. Report from Headley to PCT states that speech should be discontinued due to lack of success and physio should be maintenance only.

06/09 Doncaster neuro outreach team agree to make their own assessment. Ben calls the team his "miracle workers". Speech therapist gets intelligible words from Ben at first session. Physio finds that Ben will be capable of walking.

09/09 Ben begins to work with Dr Aidan Robinson, chiropractor. Progress more rapid than at any time since injury.

10/09 Ben gives his first public speech using voice and lightwriter. Ben gets legs with knees, is up to 5ft8" and walks in gym using frame.

NEWS

A GLIMPSE OF A BRIGHTER FUTURE

Question: Why is LASIK eye surgery safer and more effective than ever before?

Answer: Improved technology and greater surgical experience improves outcomes and protects patients

Although the LASIK procedure itself has not changed in concept, there have been significant advances in both diagnostic and treatment technologies that have improved the outcomes for patients having laser refractive surgery, says Chad Rostron, consultant eye surgeon at the Wellington Hospital in London and Honorary Senior Lecturer in Ophthalmology at St George's NHS, University of London.

Over the past 10 years, excimer lasers have been improved, achieving faster treatment times and increased precision. "Whilst the early generations of laser had repetition rates of around 50 cycles per second, today's machines typically operate at 10 times that speed," he points out. This means that an average treatment which would have taken over a minute to perform in the 1990s can now be completed in 10 or 15 seconds, reducing the chance of losing the patient's co-operation during the procedure."

Such fast treatment times have only become possible with the development of improved laser tracking systems. "Even when fixating a static target, no one's eye is perfectly still, and any small eye movements made can now be tracked and compensated for in real time, whilst the treatment is being carried out," Mr Rostron notes, "This truly achieves a precision of cut that could not be made by the human hand!"

LASIK has also been developed by the better understanding of the optics of the eye through improved diagnostic instrumentation, says Rostron.

Chad Rostron
Consultant eye surgeon at the Wellington Hospital in London

For instance, while the much-vaunted holy grail of routinely eliminating higher order aberrations by laser treatment has not been realised, our better understanding of the effect of laser treatment on the eye's optics has led to the development of 'wavefront optimised' treatment profiles that eliminate the aberrations that would typically have been induced by previous generations of excimer laser Rostron points out.

"The experience that refractive surgeons have built up over the past decade has been important to the effectiveness of laser refractive surgery," says Rostron. This means that patients can be more clearly directed to alternative surgical procedures when necessary. Which means a brighter picture than ever of both improved safety and patient satisfaction for anyone seeking laser refractive surgery.

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STEP 2 KNOW YOUR OPTIONS

SEEING THINGS CLEARLY
For many, laser eye surgery offers a new lease of life
PHOTO: REMZI

Rediscovering the power of good sight

Oonagh Kenneally, 27, a solicitor, had successful Lasik laser eye surgery that transformed her life

EXAMPLE

"I decided to have it because I was so short-sighted — I needed to wear glasses or contact lenses just to function properly. I wore my lenses far too much — I disliked wearing glasses as I found that glasses inhibited activities such as running, swimming, walking in the rain or being in steam rooms. I also disliked wearing glasses in social contexts and would prefer to be partially sighted than to be wearing glasses on a night out. As a result, my eyes were very dry and sore.

"I went to consultations with two companies — one I felt were far too pushy and only interested in 'sales' (they tried to book me in for treatment before I'd even had the consultation to see if I was suitable for the treatment!). I decided that I would not trust that company with something as important as my sight.

"The consultation I had with the second company filled me with confidence about their professionalism. They took the time to talk to me about the company and the treatment and what would happen afterwards, on top of which most of the staff that I dealt with had had their eyes lasered.

"On the day the surgery was quick and a very strange experience — but not painful. The aftercare was superb.

"The difference it has made to my life is massive — it has liberated me. I never again have to think about buying contact lenses, solutions, containers or glasses. I don't have to worry about having enough contact lenses for a holiday or about losing contact lenses in the swimming pool! It's nice just to wake up and see!"

4

THE EYECARE TRUST: TIPS ON LASER EYE SURGERY

1 LASEK is generally used for low to moderate myopia and astigmatism, with best results achieved for myopia less than -6.00 dioptres; LASIK is generally used for myopia up to -10.00D.

2 Patients should preferably be over 21 and have demonstrated less than 0.5D change in refraction over the 2-3 years preceding treatment.

3 Have a full ophthalmic examination first — carried out by an ophthalmic surgeon trained in refractive surgery and the diagnosis of corneal disorders, or a laser-trained optometrist.

4 The Royal College of Ophthalmologists recommends that only surgeons who are fully trained in ocular microsurgical techniques, registered as specialists with the GMC, should undertake LASIK.

SEEING THINGS CLEARLY
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NEWS

Build a better foundation

■ **Question:** How is innovation improving results for orthopaedic patients?
■ **Answer:** From new materials to refined techniques, research and development promises fresh hope for many

SHOULDERING THE PAIN. Musculoskeletal disease, injury and conditions are a leading cause of pain and worklessness. PHOTO: DIEGO CERVO

With causes ranging from sport accidents to ageing, orthopaedic injuries affect a huge range of people – it's estimated that half of us will experience an orthopaedic problem at some point in our lives.

But orthopaedic surgery is a dynamic and exciting field. From new materials to new techniques, the benefits and outcome for patients are improving rapidly with advancement in knowledge and expertise.

For instance, joint replacement surgery has advanced dramatically with the introduction of new materials that are versatile and more compatible than ever before with bone itself.

Trabecular Metal™ implants have the porosity and structure that allows for extensive bone in-growth, which creates a bond between the implant and the bone, and eliminates the need for bone cement. The more porous the implant material, the more space is available for bone to grow in and secure the implant. Whereas other materials used for orthopaedic implants are only 35-50 per cent porous, Trabecular Metal material is 75-85 per cent porous.

"Traditional techniques for reconstruction of extensive pelvic bone loss, such as structural bone graft and reconstruction cages, have had high early failure rates and increased rates of complications. In the past, some patients with such defects may not have been considered candidates for surgery because of the challenges involved.

"Using a material such as Trabecular Metal™ allows us to reconstruct severe bone defects and the results from a number of centres around the world are excellent and very encouraging — I have had similar results and have been very pleased to be able to offer this to local patients," explains Lawrence O'Hara, consultant orthopaedic and trauma surgeon, Royal Bournemouth Hospital and Poole General Hospital.

Lawrence O'Hara
Royal Bournemouth Hospital and Poole General Hospital

"It also allows us to avoid more extensive surgical approaches which potentially increase the risk of infection. The rate of dislocation may also be reduced because the nerves supplying the hip muscles are at less risk from the approach and the hip can usually be reconstructed at its true anatomical centre.

Trabecular Metal™ possesses a similar flexibility to bone — studies have indicated that implant materials that don't flex well can cause bones to recede and lose strength over time. This bone loss has not been observed with Trabecular Metal™ in controlled trials."

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FACTS

■ **Musculoskeletal conditions are the most common cause of chronic disability around the world.**
■ **Hip, knee, shoulder, ankle, wrist and elbow joints can all be replaced with artificial implants, although hip and knee replacements procedures are by far the most common.**
■ **There are more than 60 types of hip implant available. Implants tend to last up to 15 years.**
■ **According to the National Joint Registry, in England and Wales there are approximately 160,000 total hip and knee replacement procedures performed each year.**
■ **Most surgery that involves an implant will require rehabilitation to improve strength and assist recovery.**

Smart thinking

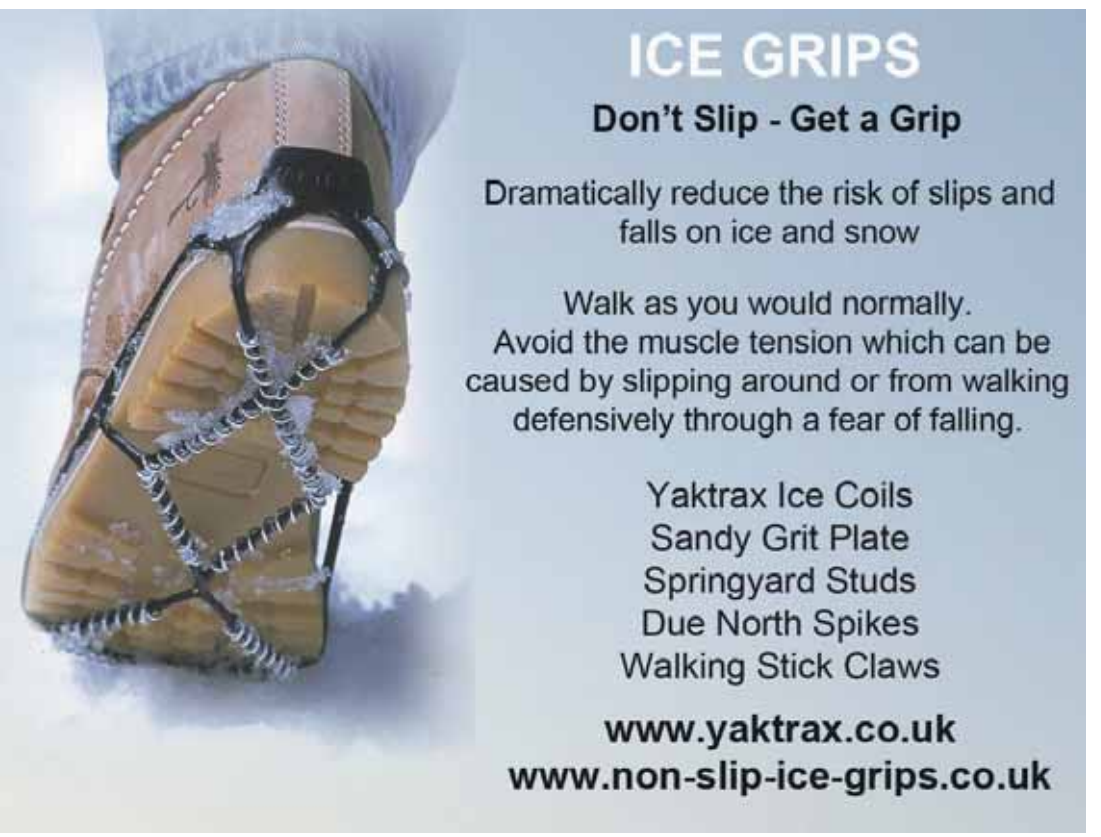
■ **The Orthocard™ is a free, personalised card from Joint Action, the research fundraising arm of the British Orthopaedic Association (BOA), for patients who have received an orthopaedic implant or joint replacement.**

Orthocard™ alerts paramedic services in the case of accidents, aids GPs or dentists regarding antibiotic prophylaxis and informs airport security staff to facilitate passage through security checkpoints. The card also provides important clinical information in an emergency.

British orthopaedic surgeons pioneered hip and knee replacement surgery, improving the quality of life for millions of people. However, the materials used to create artificial joints can activate metal-detecting security devices, including those at airports. This can cause anxiety and delay to the traveller as additional security checks will normally be carried out.

In response to research conducted on patients at UK airports, Joint Action developed the Orthocard™ to provide authenticated confirmation that the cardholder has an artificial joint. Over 5,000 patients now carry the Orthocard™ and have found it has reduced their anxieties about travelling through airport security checks.

You can apply for an Orthocard™ at www.jointaction.org.uk/orthocard



NEWS

STEP 3 MOVE WITH THE TIMES

The power of invention

Question: Innovation within diabetes treatment and management is paramount, but in what ways are some developments more key than others?

Answer: One of the biggest recent innovations in diabetes care is insulin pumps, giving the potential for greater freedom

Insulin pumps are small devices that deliver insulin via a tiny tube under the skin and provide a continuous supply of insulin which can be adjusted based on meals and other activities.

"We run a multi-disciplinary insulin pump clinic — it is particularly useful in people with problems of blood glucose control, especially where there are erratic swings in blood sugar which can lead to hypoglycaemia (low blood sugars)," explains Dr Anthony Barnett, Professor of Medicine at The University of Birmingham and who heads one of the biggest diabetes/endocrine units in the UK at the Heart of England NHS Foundation Trust, Birmingham. "Hypoglycaemia is a regular nuisance for many people and for some, frankly dangerous, as in the more extreme cases it can lead to drowsiness, confusion, erratic behaviour and even coma or death," he says.

Insulin pumps are greatly underused in the UK compared to continental Europe and America, says Dr Brian Karet, a GPSI (GP with special interest) in diabetes, and the Royal College of General Practitioners' Clinical Lead for Diabetes. "Their use is predominantly in people with type 1 diabetes and the main benefits are around reducing the frequency of hypoglycaemic events and improved patient satisfaction," he says. They are more widely used in children and young people and in pregnant women, although, as he points out, pumps do not remove the need for finger-testing. "Reliable closed loop (testing and injecting) pumps are now coming onto the market but it is not known yet how price will affect access," says Dr Karet.

Dr Brian Karet
Royal College of General Practitioners' Clinical Lead for Diabetes

Despite the many new medications for diabetes that have become available in the past 10 years, as well as improved insulins and delivery devices, the key factor involved in the efficacy of delivery of diabetes care is the patient themselves, Dr Karet points out — and there is now evidence that better patient engagement, with the individual having real choice about how their diabetes is managed, is one of the most important factors in their treatment and experience.

How patient experience can be improved is a key question, says Dr Karet — and involves better training of healthcare professionals around care planning and using techniques such as motivational interviewing to better able the person with diabetes to make appropriate choices about their care.

"Knowledge about new techniques and therapies is very important — patients know about them through publications such as *Balance* (from Diabetes UK) and websites, and so should healthcare professionals," points out Dr Karet.

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FACTS

- The UK is facing a huge increase in the number of people with diabetes.
- Since 1996 the number of people diagnosed with diabetes has increased from 1.4 million to 2.6 million.
- By 2025 it is estimated that over four million people will have diabetes.
- Most of these cases will be Type 2 diabetes, because of the ageing population and rapidly rising numbers of overweight and obese people.
- The rate of new diagnosis is around 400 people every day — almost 17 people every hour or three people every ten minutes.
- It is estimated that there are up to half a million more people in the UK who have diabetes but have not been diagnosed.
- Ten per cent of adults with diabetes have Type 1 diabetes; 90 per cent of adults with diabetes have Type 2.

PROFESSIONAL INSIGHT

Advances in technology have dramatically improved the possibilities of prevention and early detection of cervical and breast cancers, two of the most common types of cancer in women. Screening is crucial - but so is new research and a woman's self-awareness of her own health

Seeing the future — and saving lives

Cervical cancer is one of the few cancers we can prevent by intervening before the abnormality becomes a cancer. So it's really more about prevention, but early detection through the screening programme is also key.

Cervical screening can identify pre-cancerous abnormalities and prevent the development of cancer. During the last 20-30 years we have become aware that cervical cancer is linked to the human papilloma virus (HPV) infection — we know that some of the HPV viruses can give rise to abnormalities in the cervix and that some of them more aggressive, so by knowing this we can identify those most at risk.

Preventative measures are, first and foremost, to vaccinate young girls against the two most aggressive strains of the HPV infection, 16 and 18, and secondly to not smoke.

New technologies now allow us to analyse what type of underlying viral infection causes the abnormalities and thus direct our attention to the truly high-risk patients. Analysing the virus alongside the smear results provides a better picture.

Britt Clausson, consultant obstetrician and gynaecologist, The London Clinic and Mayday NHS Hospital, Croydon.

Breast cancer

Breast cancer screening to diagnose breast cancer at the very earliest stage, thus offering women the best possible outcomes from treatment.

Breast screening is not foolproof. Sometimes mammograms, an x-ray of the breast, may not pick up the cancer at the very earliest stages. Also, mammography may lead to pick-ups that require further investigation but which turn out to be benign. But screening overall saves lives — especially as there are effective treatments.

Women should be pro-active in the self-assessment of their own breasts: looking at and feeling the breasts in a routine way and contacting your doctor should you notice any lumps or changes to contour, nipple position or texture - particularly if persistent. The best time to check your breasts is around five days after your period ends. If you have very irregular periods or your periods have stopped, then choose a convenient day, for example the first of each month.

PREVENTION

Gerald Gui
Consultant breast surgeon, The Royal Marsden Hospital

Most breast cancer forms in the post-menopausal years. Risk factors for breast cancer include starting your periods at an early age and beginning the menopause at a late age, having your first child after the age of 30 and a strong family history. Breast-feeding is protective but is also dependent on age at first delivery. Some dietary factors such as alcohol and animal fats have a low association with breast cancer risk. Being overweight when past the menopause is also a risk factor. Regular exercise may also be a protective factor. There are no clear dietary factors that have good evidence in reducing breast cancer risk. Attending regular breast screening allows early detection.

Gerald Gui, consultant breast surgeon at The London Clinic and The Royal Marsden Hospital NHS Foundation Trust

WOMEN'S HEALTH FACTS

- Cervical cancer is the 11th most common cancer in women in the UK and the third most common gynaecological cancer after uterus (womb) and ovary.
- There were around 2,830 new cases of cervical cancer diagnosed in the UK in 2007.
- More than half of all new cases of cervical cancer are diagnosed in women under 50 years — that's around 1,660 cases each year.
- Cervical screening can prevent around 75 per cent of cancer cases in women who attend regularly.
- HPV vaccination in schools was introduced into the national immunisation programme in 2008, for girls aged 12-13.
- Breast cancer is now the most common cancer in the UK.
- In the UK in 2007 almost 45,700 women were diagnosed with breast cancer — that's around 125 women a day. 277 men in the UK were diagnosed with breast cancer in 2007.
- Eight in 10 breast cancers are diagnosed in women aged 50 and over.
- In the UK in 2007/2008, the NHS breast screening programmes detected more than 16,000 cases of breast cancer.
- It's estimated that the NHS breast screening programme saves over 1,000 lives each year.
- Breast cancer survival rates are better the earlier it is diagnosed.

GB Olympic legend Steve Backley makes the right choice

Just prior to his fourth Olympic Games, the javelin thrower, Steve Backley, was alerted to a serious problem with his hip. Yet, just a year later, a Birmingham Hip resurfacing device had turned his life around.

At eight years of age, I fractured the top of my left femur after being hit by a car. I can still remember being told that I may experience problems in my hip joint later in life; probably in my mid-thirties,' says Steve.

'My first memory of everything not being quite right was in the summer of 2001. I'd just thrown 90 metres at Crystal Palace and had the normal aches and pains that come with throwing the javelin. In 2002, early in the athletics season, the problem was worse and I was beginning to be aware of it in training. By 2003, an unusual pain was proving problematic.

'With the Athens Games looming, I wanted to give myself the best opportunity of performing at my fourth Olympics. After a close call in qualifying, I had to find a way of maximizing in the final but my physio, who had travelled with me, gave me some startling feedback.

'He had noticed that my hip was stopping me from driving aggressively up and forward into the throw. With each throw, I'd try to override my inability to launch into it. The result was that the javelin kept coming down way short of what I felt I was capable of. As a result, I came fourth – my worst finish in four consecutive Olympics. To miss a medal by a small margin hurt badly. It was the last time I threw the javelin!

The decision to have hip resurfacing

'After a year of relative rest, and despite doing very little training, it dawned on me that my hip was getting considerably worse. At the first consultation with my orthopaedic surgeon, I was very naïve about what procedures lay ahead of me and was overwhelmed by the variety of orthopaedic implants displayed on the consulting room table!

'A hip resurfacing device called a Birmingham Hip Replacement (BHR) was recommended. By opting for a BHR, significantly less bone would be removed and the metal-on-metal design could last a very long time; both very important factors in my decision-making process. Added to this, if all went well I could expect to return to most sports within a matter of months. I was beginning to feel quite comforted and actually optimistic and began to look forward to having it done!

'I did some online research into the BHR device and found lots of information on the manufacturers, Smith & Nephew, (at www.hipresurfacing.com). It is the market leader and came with some excellent testimonials. The next thing I knew, I was arranging to have it done. I'd made a good decision and felt confident that I was in the best hands with the best device. Now, I just had to let the team do their job.'

Getting back to normal

'Recovery in hospital was exciting because, while I slowly returned to more normal function, I was very aware that I had no pain! The next five or six weeks were spent diligently rehabilitating. In the space of six months, I'd gone from thinking my sporting life was over and that I was old before my time, to being given a second chance.

Birmingham Hip Resurfacing (BHR)

'I now realise that I have an opportunity to enjoy the sports and lifestyle I had before surgery, all over again. In fact, I have a better range of movement than I had for 25 years or so before the BHR. I have equal strength, balance and stability in both my hips. It has been a complete revelation.'

New challenges

'Eighteen months after surgery, I was confronted with a decision that would ultimately completely change my understanding of what having a BHR device meant. I was asked if I'd like to take part in ITV's Dancing on Ice. My answer was quick and simple. At 6ft 5in and well over 100kg, and with a now very precious hip resurfacing that I wanted to look after, the decision had to be 'NO'!

'Before I knew it, I had started basic training! This involved three to four hours a day of doing some simple turns and steps as well as basic positions. I surpassed my expectations yet again, with the help of my BHR hip resurfacing and finished after a full six weeks of competition.

'It's five years since the operation and I enjoy a very active and sporting lifestyle that allows me to play golf, run, go skating, go to the gym, play tennis and football with my children and ultimately, thanks to having a BHR operation performed by a highly skilled surgeon and rehabilitating fully, I can enjoy my life again, absolutely pain-free.'

For more information

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Pioneering UK Surgeons discuss the latest topics in hip resurfacing

Mr. Derek McMinn MD FRCS has been practicing as a Consultant Orthopaedic Surgeon since 1988 with special interest in joint reconstruction surgery. His pioneering of the BIRMINGHAM HIP™ Resurfacing has for many revolutionized the management of hip arthritis in young active patients. In addition to his busy Private Practice, he works part-time in the UK National Health Service at the Royal Orthopedic Hospital, Birmingham.

Mr Ronan Treacy MD FRCS became a consultant at the Royal Orthopaedic Hospital in 1994. With more than 15 years experience with metal-on-metal hip resurfacing devices he has performed over 4500 hip resurfacings - the largest single surgeon experience in the world! Mr. Treacy's international practice and his presence on the global lecture circuit enable him to discuss his vast experience in the treatment of the active patient population with Key opinion leading surgeons the world over.

Derek McMinn MD FRCS & Ronan Treacy MD FRCS

Tell us a little of the history of the BIRMINGHAM HIP Resurfacing (BHR™) device?

RT: It important to note that hip resurfacing has always been an attractive concept, and the theoretical advantages of hip resurfacings are numerous, from minimal bone resection to restoration of normal anatomy; including minimal risk of dislocation, and potentially easy revision to a primary hip replacement.
Primary hip replacement was and still is today a resounding success. The problem we believe still lies with a group of patients who want to maintain a high level of activity. Professor Charnley was only too aware that active patients below the age of 65 did significantly less well with primary hip replacement.

DM: Satisfactory results had been published for primary hip replacement, but these devices were rarely implanted in the active patient population. It seemed to us that all the theoretical advantages of the hip resurfacing concept could be realised using metal-on-metal, where thin metal shells can be used as the articulating parts. I designed the BHR™ following various prototypes between 1991 and 1996. The first BHR implantation took place in July 1997. I was very hands-on with the product, Ronan and I set up a company to manufacture the device, and in 1997 Midland Medical Technologies (MMT) was born.

We've recently been hearing about "pseudotumors" and the failure rate of metal-on-metal resurfacing, what are your thoughts on these findings?

DM: The failure rate of hip resurfacing from our standpoint is very device specific. Differences in the metal, geometry, and fixation seem to result in worse outcomes. Increased wear with all material types sets up a response in the soft tissues, which can damage them. This is not exclusive to metal-on-metal. Around the year 2000, following our early experience with metal-on-metal resurfacing and encouraging results; hip resurfacing was becoming more popular very rapidly. It was never destined to displace Primary hip replacement but certainly bridge the gap affording the previously descried benefits to a notoriously difficult patient group. During this period many orthopaedic companies designed and marketed their own devices. The BHR™ design was criticised in marketing campaigns and during this period many BHR users opted to try these newer devices, or became part of various design teams! Unfortunately for the patients some of these 'improved' designs have not faired well. We have witnessed less than encouraging registry data, device withdrawals, and MHRA advisory notices pertaining to certain device types. This is annoying as the damage that these devices cause is being generalised to all metal-on-metal hip resurfacing; this is simply not the case!

DM: The problem now is that people don't seem to be interested in the 10 year survivorship, the outstanding outcomes, and thousands of highly active BHR recipients. The community is focused on a very small, (in my series less than 1%) number of patients who not dissimilar to many arthroplasty devices exhibit a local tissue reaction of some sort. The phrase "pseudotumors" has been popularised in the clinical literature and linked directly to hip resurfacing. The point when using the term Pseudotumors is the negative connotation which is often taken out of context by many in the clinical and popular press.
RT: The key to all this is if you have a reasonable surgeon who puts the implant in a reasonable position (which none of us can completely guarantee), with a reasonable implant, you'll get a reasonable outcome. The literature and registry data tells us if you have a well trained experienced surgeon using a BIRMINGHAM HIP™ implant, you'll get a good outcome. If you have a reasonable surgeon using a poorly designed implant, you may well get an unexpected outcome. Similarly a poorly implanted device of whatever provenance will struggle to perform consistently within its designer intended parameters!

Is training a contributing factor to failure do you think?

DM: Certainly! Between us, we've trained many hundreds of surgeons from around the world; following the acquisition, Smith & Nephew provided a stringent training course for the core group of American Surgeons which formed part of the FDA approval requirement. This training we believe is key to the understanding and successful implantation of the BHR device. Ronan and I have visited many institutions all over the world and made some great friends during our careers to date, we feel disappointed that what is an excellent device and procedure is currently being confused with poorly designed and implanted products. We hope that even minded surgeons can help prevent the baby being thrown out with the bath water!

So why should we keep to metal-on-metal as a bearing device?

RT. At the present time I see no viable alternative to metal-on-metal for resurfacing and as emphasised, I am very happy with this technology for the majority of my younger active patients. I hear early reports of poorer results with some metal-on-metal THR's compared with resurfacings and am hopeful that surgeons will be sufficiently inquisitive to distinguish between the results of these devices and the BHR.

DM: When I designed the device over 20 years ago there was no other viable material option. Now, 10 yr survivorship in male patients with BHR™ is 98% If we wish to continue to treat young active patients with the same degree of success as we have seen with the BIRMINGHAM HIP™ Resurfacing, it is currently difficult to recommend an alternative bearing material.

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