The Kennedy Institute – what happened after TNF?

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Welcome to the bumper summer edition of *Arthritis Today*. We hope you enjoy the 36-page magazine, which is even more packed with news and features. On page 7 read all about our exciting new primary care research centre at Keele University, which will concentrate on developing better treatment for the millions of people with osteoarthritis by GPs and other primary care health professionals. Following NICE’s guidance on osteoarthritis treatment earlier this year, pain-relieving creams known as topical NSAIDs have emerged as having a real part to play in the management of the condition. Expert Howard Bird explains more about them on page 12. Staying on a GP theme, *Arthritis Today*’s resident doctor Philip Helliwell offers a personal view of the new referral system known as Choose and Book which aims to provide the patient with a greater choice of where they receive their hospital care – but does it work in practice? See page 9. In a new series of articles highlighting *arc*’s basic scientific research we shine the spotlight on the School of Biosciences at Cardiff University on page 20, and on page 28 we look at some of the current clinical research being carried out at *arc*’s Kennedy Institute in West London, which pioneered anti-TNF therapy.

Enjoy your read,
Jane Tadman,
Editor, *Arthritis Today*

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Stem cells offer cartilage repair hope for arthritis sufferers

New research could offer hope that bone stem cells may be harnessed to repair damaged cartilage – one of the main characteristics of osteoarthritis.

Scientists at Cardiff University have successfully identified stem cells within articular cartilage of adults, which have the ability to derive into chondrocytes – the cells that make up the body’s cartilage – in high enough numbers to make treatment a realistic possibility. The team has even been able to identify the cells in people over 75 years of age.

One current treatment for damaged cartilage due to trauma in younger patients is to harvest cartilage cells from neighbouring healthy cartilage and transplant them into the damaged area. Unfortunately, only a limited number of cells can be generated.

The research team, funded by arc and the Swiss AO Foundation, has identified a progenitor, or a partially derived stem cell, in bovine cartilage that can be turned into a chondrocyte in culture. Their breakthrough came in identifying a similar cell in human cartilage that was more like a stem cell with characteristics that could be used to treat cartilage lesions due to trauma but also mark the onset of osteoarthritis.

Lead researcher Professor Charlie Archer from the Cardiff School of Biosciences said: “We have identified a cell, which when grown in the lab can produce enough of a person’s own cartilage so that it could be effectively transplanted. There are limitations in trying to transplant a patient’s existing cartilage cells, but by culturing it from a resident stem cell we believe we can overcome this limitation.

“This research could have real benefits for arthritis sufferers and especially younger active patients with cartilage lesions that can progress to wholesale osteoarthritis.

“We have embarked on the next stage which is to conduct an animal trial which is a necessary pre-requisite to a clinical trial which we hope to start next year if the results are positive.”

arc medical director Professor Alan Silman said: “How to stop or even reverse the wearing away of cartilage that is the hallmark of osteoarthritis, has been a treatment goal which up to now has not proved possible. If we can translate these successes from the laboratory into treating patients, the possibility opens up of making a remarkable impact on this common, painful and disabling condition.”

Cod liver oil could help rheumatoid arthritis patients reduce NSAID usage

Taking cod liver oil daily can help people with rheumatoid arthritis (RA) reduce their usage of non-steroidal anti-inflammatory drugs (NSAIDs), a new study has shown.

Researchers from Dundee University published their findings in the journal *Rheumatology*. The trial involved 97 adult RA patients who were either given cod liver oil or a placebo on a daily basis. After 12 weeks, the RA patients were asked to gradually reduce their use of NSAIDs.

It was found that 39 per cent of those taking the cod liver oil were able to reduce their NSAID use, compared to just ten per cent of those taking a placebo.

The team added that they believed that fatty acids in the fish oil could have anti-inflammatory properties.

Professor Jill Belch explained: “Every change in medication should be discussed with a GP, but I would advise people to give cod liver oil a try for 12 weeks alongside their NSAIDs and then try to cut it down if they can manage it – but if they don’t manage it, that’s fine. If you can get off NSAIDs it will be much safer.”

Breastfeeding could reduce rheumatoid arthritis risks

Breastfeeding could reduce rheumatoid arthritis (RA) risks, a new study has shown.

Researchers from Malmo University Hospital in Sweden published their findings in the *Annals of the Rheumatic Diseases*. The trial involved 136 women with RA and 544 women of a similar age without the disease. It was discovered that those who breastfed for the longest were much less likely to suffer from RA later in life.

In fact, women who breastfed for more than 13 months were around 50 per cent less likely to get RA when compared to those who had never breastfed their children. People who breastfed for less than one year were still 25 per cent less likely to suffer from RA.

The report added that simply having a baby, but not breastfeeding, did not seem to reduce the risk of RA.

Professor Alan Silman, arc medical director, said the new research was extremely interesting, particularly as previous work had shown quite different results.

“Today we have shown that breastfeeding was a risk factor for developing RA in a small group of women soon after giving birth to their first child.

“This is slightly different in that it looks at longer-term risk. One explanation could be that women who breastfeed may lead healthier lifestyles than women who don’t, but we don’t know the mechanisms that would explain this fully, and not enough work has been done in this area.”

New gout treatment approved in Europe

The European Commission has granted marketing authorisation for a new gout treatment – the first in 40 years.

Febuxostat (under the brand name Adenuric) is an oral, once-daily medication that is used for the treatment of elevated levels of uric acid in the body – known as chronic hyperuricaemia – in gout patients.

Professor Michael Doherty from the University of Nottingham commented: “Recent European recommendations emphasise the aim of “cure” by lowering serum urate levels below the saturation point for crystal formation. “For some patients, the existingurate-lowering therapies have limitations in terms of suitability or side-effects.

“The availability of a new effective therapy that allows the therapeutic target to be achieved will improve the physician’s armamentarium and ultimately benefit the population of patients with gout.”

A spokeswoman for arc welcomed the prospect of the new drug. “There are few treatment options for gout, so the arrival of febuxostat could bring relief to many sufferers,” she added.
**News**

**NICE criticised for abatacept rejection**

The decision by the government’s health watchdog to reject abatacept as a treatment for people with rheumatoid arthritis who have failed on anti-TNF therapy has been widely condemned.

An editorial article in the journal *The Lancet* criticised the National Institute for Health and Clinical Excellence over its controversial decision.

The editorial said that NICE had rejected abatacept (brand name Orencia) as a treatment because it exceeded an incremental cost-effectiveness ratio limit imposed on new drugs. It is more expensive than the other drug recently approved by NICE, rituximab.

However, the editorial pointed out that the cost-effectiveness ratio limits for abatacept were only estimates which lacked complete evidence.

They stressed that abatacept was one of “three new drug classes that have shown clinically significant improvement for the treatment of severe refractory rheumatoid arthritis”.

The authors added: “There will be occasions when exceptions to strict cost-effectiveness guidelines must be made on clinical grounds. Abatacept is a strong candidate to be such an exception.

The authors acknowledged that NICE had “followed the letter of its cost-effectiveness law”, but said that it was vital the organisation always remembered that “cost-effectiveness evidence needs to be interpreted with compassion as well as impartial science”.

An arc spokesman said: “Abatacept offered another option for people who fail on anti-TNF therapy, so NICE’s decision was extremely disappointing.”

**New research to investigate effects of cannabis on thinning bones**

Scientists are to recruit 200 heavy cannabis users to investigate whether the drug has a harmful effect on users’ bones.

Researchers at the University of Edinburgh believe their research programme could lead to completely new drugs to treat osteoporosis, which work by preventing bone loss and also promoting bone formation.

Professor Stuart Ralston, who is leading the arc-funded research over five years, said: “This will be an important first step to determine if new cannabinoid receptor-based treatments are likely to be of value in the fight against osteoporosis.”

The cannabis study is part of a £894,000 research programme building on previous work by the Edinburgh team, which showed that chemicals produced naturally in the body, called cannabinoids, have important effects on bone.

Receptors for these substances are present in bone cells and play a crucial role in regulating bone density and bone loss.

It is known that components of cannabis trigger activation of these receptors – but it is unclear whether this is bad for the skeleton or whether it might protect against osteoporosis.

The team will recruit up to 200 heavy cannabis users from general practices in Edinburgh to explore the possible adverse effects of recreational cannabis on bone disease.

“Cannabis is the most widely-used illegal drug in the UK, particularly in the young, but virtually nothing is known about its possible effects on bone health,” explained Professor Ralston, arc Professor of Rheumatology at the Institute of Genetics and Molecular Medicine, based at the University of Edinburgh.

“The aim of our study is to determine if cannabis use negatively impacts on bone density, which is an important risk factor for osteoporosis in later life. The situation is complex because we know that cannabis is often smoked in combination with tobacco and so the study will take this into account. We will also take account of cannabis users’ diet, exercise and alcohol intake, since these are also known to influence bone health.”

The team’s previous research showed that cannabinoid receptors play a critical role in bones becoming thinner after the menopause. They have since found that the receptors are also involved in promoting new bone formation.

“This is an exciting discovery because it opens up the possibility that we can develop new drug treatments for osteoporosis which bind to cannabinoid receptors to prevent bone loss and promote bone formation,” said Professor Ralston.

“The treatments for osteoporosis that are out there now either work by preventing bone loss or by stimulating bone formation, so if we could develop a new treatment that worked in both ways at the same time, this would be a major advance.”

He added: “This will be an important first step to determine if cannabinoid receptor-based treatments are likely to be of value in the fight against osteoporosis.”

**Project to help newly diagnosed lupus patients**

Lupus patients are set to benefit from a new research project aimed at improving the information they receive about their condition at the time of diagnosis.

Clinical nurse specialists based at the Royal National Hospital for Rheumatic Diseases (RNHRD) in Bath, Sue Brown and Nicola Waldron, have been awarded a £27,282 educational project grant over two years from arc.

The project will be carried out in collaboration with other lupus nurse specialists around the country.

Lupus is an auto-immune disease that can affect the skin, joints, kidneys and other internal organs and can range from mild to severe, it is often undiagnosed for years, or misdiagnosed as its symptoms are similar to other types of arthritis and rheumatic disease.

“Patients often spend many years before they are properly diagnosed, and many have symptoms that have a significant impact on their lives,” said Sue. “Coming to terms with a chronic, incurable disease like lupus can be difficult and the unpredictability of the condition leads to a lot of frustration.”

The focus group, along with six other centres with specialist lupus nurses, aims...
National foot care standards launched to counter “serious neglect”

Painful foot problems suffered by people with arthritis are seriously neglected and are subject to huge and unacceptable regional variations, according to a team of foot care experts.

Only a quarter of patients who need foot health care have adequate access to NHS services, and only half of all hospital rheumatology departments in the UK are able to access adequate basic foot care services for their patients.

“People with musculoskeletal problems often have complex needs, and it is easy for foot health problems to be overlooked,” explained Dr Anthony Redmond, arc senior lecturer in musculoskeletal disease at the University of Leeds. But for many people, foot problems mean isolation, inability to work and shop, and increased dependency on social and health services.

“Only a third of people are able to access the foot health services they require and fewer than one in ten hospital rheumatology departments has a formal means of referring patients on for specialist foot care.”

Now the team of experts led by Dr Redmond has produced a set of widely agreed national standards aimed at family and hospital departments has a formal means of referring patients on for specialist foot care.

The standards of care for people with musculoskeletal foot health problems are to be distributed widely to all primary care trusts, GPs, and all those involved in planning, delivering and receiving foot care. Best practice examples are provided throughout to illustrate how they can be put into practice.

Funded by arc, the standards were developed in consultation with a number of professional and service user organisations including the British Society for Rheumatology and the Arthritis and Musculoskeletal Alliance.

The standards document is supported by an implementation package, both of which are available online at www.prcassoc.org.uk/standards-project

“We already know that giving too much information too soon when newly diagnosed with lupus can lead to increased incidence of anxiety and depression,” added Sue.

The results of the project will help nurses tailor educational information that strikes the right balance of being informative and not too frightening.

The idea for the project came from a network of specialist lupus nurses, funded by Lupus UK, who decided the best way to find out what patients wanted would be to run a series of focus groups.

Groups of six to eight patients will now be set up at the RNHRD, and five other hospitals around the UK, where a lupus nurse specialist is in post, where patients can share their views. Possible outcomes would be setting up group information forums, and the introduction of a telephone buddy system.

An arc spokeswoman said: “Although we produce a lupus booklet for patients, we fully understand the importance of giving patients the right information at the right time. We hope this new project will lead to a greater understanding of patients’ needs.”

A series of consensus statements, the standards of care represent the views of patients and professionals alike.

“For the first time, there are now widely agreed statements outlining expectations for the level of foot health standards that should be provided,” added Dr Redmond.

“We believe that implementing them will make a real difference. There can be no justification any more for health care commissioners and providers to continue to treat foot health as the poor relation in service planning.”

The standards for people with musculoskeletal foot health problems are to be distributed widely to all primary care trusts, GPs, and all those involved in planning, delivering and receiving foot care. Best practice examples are provided throughout to illustrate how they can be put into practice.
A major new centre promoting research into primary care has been created at Keele University with funding of £2.5m over five years.

The Arthritis Research Campaign National Primary Care Centre at Keele will have a direct benefit for the thousands of people in the UK who suffer from painful joint and muscle problems.

Although those with the most severe forms of arthritis attend hospital specialists, this is only the tip of a very large iceberg. Around 20 per cent of UK adults consult their family doctor about arthritis or a related musculoskeletal condition every year. Despite this, research into the most appropriate methods of investigation and treatment in primary care, which is carried out by physiotherapists and nurses as well as GPs, has attracted little funding and attention.

Director of the new centre, Professor Peter Croft, said he hoped that it would have a considerable impact on the way people with conditions such as back pain and osteoarthritis are treated, and would increase the status of primary care research.

**Primary care – often the poor partner in the NHS**

“Primary care – where most people with painful joints and muscles are treated – has often been the poor partner in the NHS, lacking the size and focus of the hospital,” said Professor Croft. “Until recently, research in primary care has been very much a second class citizen receiving only a fraction of the funding that hospitals can attract.

“Our new centre will give a strong message that primary care is important and that a major national charity values research in that setting”.

ARC medical director Professor Alan Silman said: “At a time when the government policy is to shift care of patients with arthritis and joint and back problems from hospitals into primary care, it is vital that we look at the best ways of delivering this care to patients. As the leading research body investigating all forms of arthritis in the UK, we believe this investment of £2.5 million over the next five years reflects our commitment to improving the quality of life of patients with these common conditions.”

The changing demographics of society – the population is getting older coupled with the growing problem of obesity – means that more and more people will develop osteoarthritis. “The most important consequence of our obesity epidemic and poor levels of physical activity will be osteoarthritis of the knee, and finding ways for primary care to help patients prevent their symptoms, and offer early effective treatment for this common condition is essential,” he added.

Keele University is unusual among British universities in having placed primary care at the top of its research priorities for many years. Since the 1990s, Keele has also focused much of its research on musculoskeletal conditions. As a consequence ARC has already funded numerous research projects to the tune of several millions of pounds over the years and the research group built up by Professor Croft is world-leading in the field.

Keele’s reputation has been built on a strong partnership with the local health community. The general practices and primary care trusts in Stoke on Trent, North Staffordshire and Cheshire have provided ongoing support, with many local arthritis patients taking part in clinical trials and studies.

The new centre will not only investigate the most effective treatments for people with musculoskeletal conditions but also test new ways of delivering these treatments in everyday clinical practice, so making a real difference to the lives of patients.

One of its top priority areas will be to tackle the problem of ensuring that people with arthritis stick to exercise regimes in order to reduce their pain and maintain their ability to do everyday activities.

**Practical answers to practical problems**

Professor Elaine Hay, who will head these new research programmes at the centre, said: “We know that exercise can help but we also know that patients often don’t know what to do or how to do it and often don’t keep up with it. Our new programme will look at different ways in which individual patients can be helped to identify the best exercise for them, and which they can then keep up. We are very much about providing practical answers to practical questions.”

Other priorities will be to reduce the depression in older osteoarthritis sufferers which is related to the chronic pain, and to treat back pain more effectively.

Research carried out at Keele and largely funded by ARC has shown that simple measures such as exercise and physiotherapy can dramatically improve the symptoms of arthritis. But getting this evidence into the real world and into everyday practice, with the agreement and support of patients and clinicians, has always been difficult. This will be one of the new centre’s biggest challenges.

“The real prize will be if we can shift nationally the way in which common musculoskeletal problems like back pain and osteoarthritis are perceived and prioritised by the government, the health service and the public, and make a real change to how care is delivered,” added Professor Croft.
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Janet, Aberdeen

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Janet, Aberdeen
The good and the bad of the Choose and Book system

Since April this year the NHS has expanded its Choose and Book system to give patients more choice about their care – and when and where they receive it. But how well does it work in practice? Arthritis Today's resident rheumatologist, Dr Philip Helliwell, offers a personal opinion.

As my colleagues will tell you I am the Victor Meldrew of the medical world. I seem to grump about everything, especially if it is new. I have recently started doing a new rheumatology outpatient clinic in a hospital near to Leeds. As it was a newly established clinic there was no waiting list for new patients. Until the waiting time built up I was seeing people from many miles away, sometimes almost 40 miles away. These people had been attracted by the short waiting time and they had known about it through the government’s new system for booking new out-patient appointments – the Choose and Book system.

Several patients saw this as a good opportunity to get an early opinion from a specialist about their arthritis. They also saw it as a chance to get a ‘short cut’ into their local rheumatology service, which it isn’t; they would have to continue making an 80-mile round trip to see me at the clinic.

So, here is my first gripe about Choose and Book. It may work if the GP and patient only want a one-off opinion (or in the case of a surgeon – a simple operation) but if the person is referred with a potentially complex and long term illness such as arthritis it is less satisfactory. People are happy to travel to see a specialist occasionally but not to have all their care at some distant hospital. It doesn’t make sense. One GP colleague pointed out that this system may work well for London where several hospitals are available in a relatively small area but it just doesn’t work out in the provinces.

So how does Choose and Book work? For those of you with internet access you can visit a website where there is information for the public and a frequently answered questions section (www.chooseandbook.nhs.uk). The problem with the website is that it only gives you the positive side to the system. Here is the reality. You go to your GP with a painful knee. After examining you they decide that it is appropriate to refer you to hospital. At this point they have to offer you a choice of four places to go – three NHS and one private. You choose and are given a web address and/or phone number to ring later to make your appointment. You are also given a password which you use when booking the appointment, which you can do the same day if you like. Your doctor has to put your details into the system and include a referral letter and any appropriate blood tests. Of course if they are busy this may not be done immediately or done perfunctorily so that when you book your appointment a full referral letter is not available.

In reality GPs suggest one hospital (which they have always done) and you put that one down as your preferred location – without any element of choice occurring. And if this is the local hospital, the next nearest being 20 miles away, this makes sense. In cities such as London there may be several hospitals within a ten-mile radius so the element of choice may be more appropriate.

However, let’s assume you have chosen a hospital, after careful discussion with your doctor, so what next? You leave the consultation and usually the practice administrative staff will give you the hospital details and a password. If you are computer literate you can book your
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appointment on line. If not you can use a Freephone number. The process of having to arrange your own appointment is particularly challenging for older people and for those whose first language is not English. The website says that when you get through you can ask to converse with someone in your own language but if you can’t speak English how can you get this far? I have heard of practice reception staff doing all the booking and arranging for patients – something they did under the old system!

Talking of the old system, your doctor can still refer you by the previous route – by writing a letter which is posted to the specialist of choice who then puts the patient into an appropriate clinic. This probably still goes on in 20 per cent of cases. However, there are other problems.

A brilliant system with a fatal flaw?
There now exists in primary care a group of specialist GPs who can give a ‘specialist opinion’ about arthritis or a musculoskeletal condition within the primary care sector (sometimes known as GPwSIs). They may work from their own practices or they may work from clinics with other specialist GPs. Some primary care trusts (PCTs – the organisations which manage primary care doctors) even insist that all referrals are made via these clinics, so that only those people who cannot be treated in primary care are referred to the hospital. While GP specialists often provide an excellent service for people with musculoskeletal conditions, the reality is that it can mean that patients have an extra ‘hurdle to jump’ before they can see a hospital specialist. And it doesn’t fit in with the choice agenda introduced by the government, unless of course the GP and patient chose the GP specialist.

I have had patients come in and say what a brilliant system it is but from a practising clinician’s point of view the system has a fatal flaw. The choice only extends to the hospital of choice rather than the consultant of choice. In a world where many consultants have very focused skills it has meant that patients have ended up booking totally inappropriate appointments both wasting their own time and that of the hospital. In the old days a good GP would have chosen the right specialist for the right problem.

From my point of view the following points are the most important:

• Almost 80 per cent of referrals are now made by the Choose and Book system. The quality of the referring letter has fallen – it is now often brief and misses much of the relevant history because the GP is under pressure to get the information into the system.

• Some people are put into inappropriate clinics – for example someone with potential rheumatoid arthritis is put into a clinic specialising in osteoporosis. Also, there is no continuity of care. Someone who had seen Dr X two years ago now appears in Dr Y’s clinic at the same hospital.

• People come from afar expecting to access a short cut into their local rheumatology services and are dismayed when this doesn’t happen.

• There is often no choice offered anyway. According to a recent survey only 40 per cent of people are offered a choice of hospitals by their GP.

• The process of making an appointment is threatening and sometimes impossible.

So, if you can, do visit the website and do discuss this with your GP when next you need an appointment. Your GP is still the best person to give you advice on any hospital referral and can help you choose the most appropriate consultant to manage your condition. If you need support in navigating through Choose and Book the GP practice staff are there to help. I, meanwhile, will continue to grump away at the hospital end in true Victor Meldrew fashion.

Dr Philip Helliwell is a consultant rheumatologist at St Luke’s Hospital in Bradford, and a senior lecturer in rheumatology at the University of Leeds.

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It used to be said, partly in jest, that the nationality of a European could be predicted by knowledge of the way in which they consumed their non-steroidal anti-inflammatory drugs (NSAIDs). Scandinavians, the Dutch and the British invariably swallowed a tablet because that was what their licensing authority recommended. Germanic races were not averse to injection and the French were more keen on suppositories. Mediterranean races, including the Italians and Greeks, favoured rubbing it into the skin, the more fragrant the better. Pharmaceutical companies producing a new drug to be marketed worldwide gave serious consideration to local and national preferences, ever keen to make a profit by satisfying the consumer.

Against that background, several recent studies, and, in turn, the guidelines recently produced by the National Institute for Health and Clinical Excellence (NICE) for the treatment of osteoarthritis, have resuscitated and even encouraged the use of creams rubbed into the skin, known as topical applications, in the UK.

Do they work? Do they have a placebo effect? What drugs can be given by pasting on the skin? What are the advantages, if any, over taking the same amount of drug by mouth?

**The different routes of administration**

Unless a tablet is specifically dissolved in the mouth by placing under the tongue, it will be swallowed into the stomach, from which most of it will be absorbed. If the drug is formulated as a ‘delayed release’ preparation, a drug in a protective covering will sit in the stomach until that covering is dissolved and released more gradually.

If the same amount of the same drug is given by injection, absorption of the full amount is instantaneous, the drug is available to act within minutes rather than hours. Absorption of the same amount of drug from a suppository is similar to absorption from the mouth though slower.

The skin represents the body’s protective barrier. Quite a few drugs are absorbed through the skin but much more slowly and usually less efficiently and reliably than when taken by mouth. However, the evidence for absorption for many painkillers is poor. NSAIDs fare better and most are absorbed to some extent, though absorption is less reliable and slower than by the oral route.

Formulating the active drug with a vehicle that enhances absorption can speed up the process; normally by opening up blood vessels in the skin (rather than closing them down) or by enhancing sweat production.

**Is this not where the drug is needed?**

This is a more complex question. If the evidence is reliable for transcutaneous absorption, especially when the skin is inflamed, the evidence that pasting a drug over the affected joint gives efficacy exactly where it is needed is more controversial.

Expert Howard Bird guides readers through the contentious world of pain-relieving skin creams with a personal view, in the light of recent NICE guidelines on the treatment of osteoarthritis.
Once in the body, the drug will be subject to the flow of the bloodstream and body fluids. Although this may be into an inflamed joint, the mere presence of this inflammation means the drug will also leave the joint quickly. It seems unlikely that once a drug is in the body it has the ability to turn left and then to turn left again to reach the knee joint by the back door.

Surely there is a placebo effect?

This is probably true. Cosmetics have been applied to the skin since prehistoric times. Colour may be important. There is some evidence that the same drug given in a red capsule is more effective than when it is given as a white capsule. Few topical applications are coloured, mainly because this has tended to stain clothing. Fragrance probably counts for even more and very few of the more expensive proprietary NSAIDs are without odour.

For some preparations a ‘placebo’ effect is specifically sought. It has long been known that pain, whether superficial or deep seated, is relieved by any method that itself produced irritation of the skin.

NSAID applications available

Just as with NSAIDs in tablet form, some of the longest established are available as non-proprietary creams that are inexpensive (as well as being of minimal fragrance!). Examples at the time of writing are ketoprofen cream with a recommendation to apply 3 - 4 times a day and piroxicam cream with a similar recommendation even though, when given by tablet formulation, the frequency of dosing with piroxicam is much less than with ketoprofen because piroxicam stays longer in the body.

In addition, ibuprofen and diclofenac are available in (normally) more expensive proprietary formulation, as well as proprietary ketoprofen and piroxicam. A fifth such drug is febuxanthine. Although the majority of formulations are as gels, one preparation is a solution dispensed from a pencil, another a foam and another a gel patch.

NICE guidelines for osteoarthritis

Published in February 2008, these emphasise a wide variety of non-pharmaceutical treatments including rest and physiotherapy that should be tried before resorting to drugs. Oral paracetamol is still given as the drug of first choice but in the list that follows, should paracetamol alone be ineffective, topical NSAIDs are recommended for the knee and hand osteoarthritis before oral NSAIDs and certainly before opioids. Even topical capsaicin gets a prominent mention though rubefacients are not recommended for osteoarthritis on the current evidence base.

Osteoarthritis remains a large and expanding market and it seems likely that this advice will act as a stimulus to the development of even more drugs formulated as topical applications in the near future.

What else will ‘rub it better’?

Old-fashioned liniments, ointments and balms have been used for centuries. Tiger balm once had its advocates and even preparations such as glucosamine have recently been formulated for topical administration as well as tablets for the oral route. Local anaesthetics have their advocates though are often short acting and sometimes cause allergic reactions. Opioids, for example buprenorphine (BuTrans) or fentanyl (Durogesic), both available in patch formulation have been much in vogue on the Continent and have recently been introduced here. Detailed discussion is beyond the scope of this article but suffice to say that none of these have figured prominently in the NICE guidelines.

What about arthritis other than osteoarthritis?

The NICE guidelines are specific for osteoarthritis, a condition often encountered in older people (a group particularly susceptible to drug toxicity) and for whom, arguably, no adequate ‘disease-modifying drugs’ are yet available. The situation is quite different for people with rheumatoid arthritis, for which an increasing number of disease-modifying drugs, many ‘biologic’, are now available. NSAIDs, which merely mask symptoms, play a lesser role in such conditions and would normally only be prescribed as an adjunct to disease modification. Nor would it seem appropriate to treat polymyalgia rheumatica, also a disease of older people, with topical rather than systemic steroids, however effective topical steroids might be in the management of eczema and other skin conditions where their absorption through the skin is rapid.

Howard Bird is Professor of Pharmacological Rheumatology at the University of Leeds.
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COMFORTABLE WIDE BACK
For Professor John Aplin, one of the yoga teachers involved in arc’s back pain trial, yoga proved to be a lifeline after breaking his back in a serious fall while walking in the Peak District 12 years ago. He spoke to Arthritis Today about how yoga was central to his recovery.

Professor Aplin, who is a teacher on arc’s trial to find out if yoga can help people suffering from low back pain, had been qualified as a yoga teacher for just a year when he fell 30 feet off a crag in the Dark Peak while walking with his two young sons and their friend.

“My sons’ friend had gone ahead and got into difficulty trying to climb down a waterfall, and just as I got to him he slipped down into the gulley,” remembers John Aplin, Professor of Reproductive Medicine at the University of Manchester.

“As I was helping him, I heard cries from my two boys, aged six and 11, who were on the overhanging cliff above me. Fearing the worst I made a snap decision to get to them as quickly as possible by the most direct route. I made the classic error of not looking after myself and fell 30 feet onto the rocks below.”

Remaining conscious throughout his ordeal, John Aplin was aware that he had broken his ribs and was unable to breathe properly. He actually walked a few steps before collapsing in complete agony, unable to move. He broke about 12 bones in the fall, including ribs, a wrist, fingers and toes, but most significantly, three vertebrae in his back. Luckily, two passing walkers made sure the boys were unhurt, and sounded the alarm. An ambulance arrived but was unable to reach him, so eventually after three hours John was “hauled off the mountain by men with beards from Glossop mountain rescue team.”

Doctors at first feared that John might not walk again because of possible damage to his spinal cord. These fears were happily unfounded, and what followed was six weeks of complete immobility in Manchester Royal Infirmary, while his bones slowly healed and his collapsed lung mended. Even during that time of enforced bed rest, with a bolster to lift and support his spine, he started doing deep breathing exercises, known in yoga terms as “pranayama,” which he found brought alertness and evenness of mood and made him feel less helpless.

When iyengar yoga teacher John Aplin faces his new class of novice yoga practitioners in September – all hoping to find relief from their back pain – his memory might find itself winding back 12 years.
Yoga and back pain

Weak and frail, he then started the long process of rehabilitation, before managing to return to work full-time, then as a senior lecturer at the university, four and a half months after the accident.

During that time he slowly started to practice yoga again. “I had lost weight and muscle mass and in a sense I was like a yoga beginner physically, but on the other hand I had all that knowledge,” he explains. “That came in very useful when I was able to go back to being a yoga teacher again!”

John started doing a remedial yoga class at the Iyengar Institute in Dukinfield, Tameside, but was also lucky enough to get a yoga programme specially devised for him by BKS Iyengar, the founder of Iyengar yoga, direct from his home in Pune in India.

“The yoga helped me hugely, massively,” says John Aplin. “It built up my strength and balance and also acted as a diagnostic. Armed with the right knowledge and teaching, little by little you find out what you can and can’t do. At first I was very unsure and concerned about causing more damage to my back, but I went very slowly. I did supported back bends but wasn’t allowed to do forward bends for a long time. Finally I got back to standing on my head!

“Who knows what would have happened, with or without yoga, but yoga was tremendously important in giving me confidence to know what I could do.”

John Aplin made a complete recovery from his injuries, and is soon to start teaching yoga to beginners as part of arc’s yoga and back pain trial, in two venues near his home in Stockport.

“My personal as well as my professional experience has made me very enthusiastic about this trial,” he says. “One of things we are trying to do for back pain patients is to give them tools to deal with their back pain more effectively; not to use yoga to treat the odd episode of back pain, but to give them a means by which they can deal with it in the long term. If I became sedentary I’m sure I’d start to feel my back again. But I know what to do.”

The arc’s £284,321 trial to find out if back pain can be helped by regular yoga is due to end in 2010. More than 200 people are taking part in the study, being run by the University of York.
When Dr Madeleine Devey took up her post with arc in 1990, she could only guess at the developments in arthritis research that were poised to take off in such a spectacular way. From the late 1980s onwards, the development of new techniques in biotechnology launched medical research into a new era of increasingly fast-paced discovery. Now, in 2008, about to retire, she is able to reflect on the impact of arc-funded research outcomes, as well as speculate on the potential developments.

**Inspired by immunology**

Dr Devey’s initial fascination with immunology and autoimmune disease was fuelled by the inspiring content of some of the postgraduate immunology lectures at Birmingham University that she attended after completing her degree. Later, her interest with the subject led to a PhD at Cambridge University, where she investigated antibody responses to a variety of antigens and allergens, and in 1977 was awarded a research fellowship. She forged a successful research and teaching career at the London School of Medicine and Tropical Hygiene for nearly 13 years, then, appointed as a Wellcome Trust senior lecturer in 1979, built up her own research team across a range of basic science projects in immunology-related areas.

**A challenging role**

In 1990, she became the first research-qualified science secretary appointed by arc. Her brief was to liaise between funding applicants and committees, provide advice to applicants, enable committees to function correctly, and develop policy, peer review process, and new funding schemes.

It was clear from the start, however, that supporting arthritis research was a challenging task. “Arthritis is not perceived as a ‘sexy’ disease, and has suffered a poor public and political profile, she says. “It’s commonly seen as a disease of the elderly that is not life-threatening, merely uncomfortable. But those involved know that it actually affects all age groups, including young people and children, with devastating effects, and it can kill.”

Dr Devey became a key driver in the development of strategies to expand the arc research and funding profile. In 1990, research funding was limited to just a few award categories. Now, the charity boasts 400 active project, programme and fellowship grants in universities and institutes throughout the UK, and there are 12 specific fellowship award categories. Her enthusiasm for career development motivated the introduction of a structured approach to funding fellowships that...
That these genes programme the cells to overproduce molecules which influence inflammation and tissue degradation, and then identifying and manipulating the molecules to block their effects, forms the basis of many potential therapeutic applications.

In terms of specific breakthroughs, Dr Devey highlights the development of anti-TNF therapy, which has transformed the lives of hundreds of thousands of arthritis sufferers and owes its development almost entirely to arc funding which has supported the majority of the research process. “It is a real triumph for arc,” she says. “Very few funding bodies ever solely achieve the production of a therapeutic drug from basic research concepts right through to clinical application.”

However, she points out that important developments often arise from the most unlikely sources. “It isn’t easy to second guess how research will progress. I remember how I felt when the early anti-TNF work was peer reviewed – it wasn’t apparent then that it was going to be so important. Now, the technology is winning awards worldwide. In the late 1980s there was even a train of thought that investment in cytokine research was a waste of money. The most important thing is to invest in good research people and arc has done just that.”

Following anti-TNF therapy, B-cell depletion is probably the most significant therapy development that has reached the clinic (in the form of rituximab), she believes. “It’s another area of research that wasn’t apparent then that it was going to be so important. Now, the technology is winning awards worldwide. In the late 1980s there was even a train of thought that investment in cytokine research was a waste of money. The most important thing is to invest in good research people and arc has done just that.”

Looking forwards

“In the future, being able to predict genetically which individuals are susceptible to specific arthritis conditions and to treat them early and appropriately would be a significant advance. Manipulating the molecular machinery that causes the autoimmune response is...
key: gene transfer therapies to alter faulty immune systems, the identification and blocking of target molecules causing joint damage, or the utilisation of stem cell tissue regeneration techniques would be incredible. The implications for patient care are huge. It’s a vast area of exciting research that promises significant returns, but it’s an enormous research challenge that is incredibly complex.”

Some research developments represent therapy approaches rather than the therapies themselves. “For example,” she adds, “the recognition that early and more aggressive treatment of rheumatoid arthritis can prevent joint damage – the emphasis now is on early diagnosis and rapid, combination therapy. This approach is revolutionising arthritis treatment.”

**A rural retirement**

When Dr Devey retires, she will still be working in a consultancy role for a few days each month for the charity. Her many retirement plans in rural Norfolk include gardening, coastal walking, fly fishing, furniture restoration, writing projects, and chicken keeping. With her husband, she plans to acquire another dog which will be company for their existing canine and two donkeys. She laughingly admonishes arc for contributing to the musculoskeletal wear and tear in her back: “All that struggling around the country with heavy bundles of committee papers!”

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ardiff University is internationally recognised as one of the UK’s top tier research-intensive universities, and is a member of the prestigious Russell Group of Universities, a status reflecting its culture of research excellence. In 2004, the university underwent a strategic merger with the nearby University Hospital of Wales to create a unified organisation offering new interdisciplinary opportunities and research capabilities. Within this academic hub, two thriving research departments are engaged in intensive programmes of basic science research to address the challenges of musculoskeletal tissue disease.

Set in the beautiful Cathays Park area of the city, the School of Biosciences boasts an impressive platform of research facilities and its current multi-million pound refurbishment programme will make it one of the best equipped bioresearch centres in the world. The Connective Tissue Biology group, headed by Professor Charlie Archer, is one of the School’s six major research areas, and has a particular research focus on the biology of synovial joint tissues and how these interact in the development of degenerative joint diseases.

**Stem cell breakthrough**

Once cartilage has been damaged, it is not easily repaired by the body. In younger patients who have suffered mechanical trauma, cartilage can be harvested from neighbouring healthy cartilage and transplanted into the damaged area, but cell regeneration is limited. However, stem cell technology offers new therapeutic potential for cartilage repair. Stem cells have the ability to develop into other cell types, and researchers at Cardiff have identified one type of stem cell taken from human cartilage that has the ability to develop into human chondrocytes (the cells that make up the body’s cartilage) in culture. Professor Archer first established cell types with the characteristics needed for cells to develop appropriately and repair cartilage lesions in animal models. The breakthrough came when the team, funded by arc and the Swiss AO Foundation, established a similar cell type in human tissue. “We have identified a cell, which, when grown in the lab, can produce enough of a person’s own cartilage to effectively transplant it and make treatment a realistic possibility,” says Professor Archer. “By culturing cartilage from a person’s resident stem cells, we can overcome the limitations of trying to transplant existing cartilage cells. If this research translates into treatment reality, there will be real benefits for patients, particularly those in the earlier disease stages who have not progressed to full-scale osteoarthritis.” The research has progressed sufficiently to embark on initial trials and if the results are positive, clinical trials will follow quickly.

Other research is investigating how mechanical load affects molecular elements of the cytoskeleton (the internal biochemical structure of the cell). Emma Blain, a senior post-doctoral scientist working in Professor Victor Duance’s team, has been arc-funded over a six-year period and last year was awarded the prestigious British Society of Matrix Biology Investigator’s Award for her work. She explains: “We are modelling the effects of mechanical strain on cartilage cells and looking at the biochemical changes that occur in the cell environment as a result. We have found that compared to healthy tissue, different elements of the cytoskeleton are affected in OA tissue.” The outcomes of this research could have important implications for...
the management of cartilage damage, and may be significant for studying the effects of exercise and obesity on cartilage structure.

The School of Medicine’s Department of Medical Biochemistry and Immunology is a large and dynamic research-dominated centre with many interlinked research strengths. It hosts a range of high profile research groups concentrating on cartilage biochemistry, inflammatory disease, and immune cell functioning. A combination of basic science and applied clinical studies encourages a translational research approach, driving new developments from bench to bedside.

New hopes for osteoarthritis therapies

Osteoarthritis (OA) affects some two million people in the UK and yet, despite its prevalence, remains a difficult disease to treat. Alongside his fellow professors, Professor Bruce Caterson heads up a large arc-funded programme of OA research. He points out: “Despite the slow progress in therapeutic advances for OA, it has become increasingly clear that synovitis, the inflammation of the joint lining, plays an important role in the progression of the disease. In rheumatoid arthritis, inflammatory cells called macrophages are known to be the main promoters of disease activity. They produce, and stimulate the production of a range of degradative chemicals that are essential in ‘normal’ inflammation, but are harmful when overproduced. But in OA, much less is known about the detail of these inflammation processes and this is our focus of interest.”

A unique enzyme in osteoarthritis

Dr Clare Hughes, an arc-funded senior lecturer, is studying how enzymes are involved in cartilage breakdown (enzymes are biomolecules that speed up chemical reactions). The key structural component of cartilage, a substance called aggrecan, is a protein material that is destroyed very early on in the disease process. The enzymes that attack aggrecan are called aggrecanases – they chop the protein up into sections ready for further degradation and generally speed up the whole breakdown process significantly. Dr Hughes has discovered a new form of one aggrecanase which has a different molecular structure. It is found in the synovial capsule of the joint and she is working to establish which type of joint cell produces it, how it functions, and how it can be measured easily so that its potential as a diagnostic or therapeutic agent can be assessed. “This enzyme is very interesting because, to date, it has only been found in human tissue, and only in osteoarthritic conditions, suggesting it may be particularly relevant to the control of OA,” comments Dr Hughes. “Potentially it could be used as a diagnostic test for the condition, or utilised to develop an inhibitory therapy.”

Novel therapies for rheumatoid arthritis

Dr Simon Jones is funded by a three-year arc project grant to investigate a key inflammation mediator, known as interleukin (IL)-6. Production of this molecule is increased significantly during inflammation and it normally acts to promote the inflammatory response, helping to prevent infection spreading and clearing up damaged tissue. However, when the control mechanism breaks down, it causes overproduction of damaging biological agents, which then destroy healthy tissue. IL-6 has already been extensively studied and drugs to block its actions have been developed with some clinical success. But, as Simon Jones points out: “It is difficult to judge whether a complete blockade of IL-6 will not give rise to clinical complications. The control of IL-6 is highly sophisticated and we are currently exploring the possibility of selectively blocking aspects of IL-6 activity that may be damaging in arthritis.”

His studies have revealed a crucial difference in the way that IL-6 interacts with joint tissue cells and the way that it interacts with other body cells, such as immune system cells. By exploiting this difference, he has developed jointly with a group in Germany a therapeutic approach to blocking IL-6 activity in joint cells only. He explains: “In joint tissue, if we administer a soluble agent, called soluble gp130 (sgp130), it selectively blocks certain activities associated with IL-6. sgp130 occurs naturally in the body but we have produced it in quantity in the lab and tested it on animal models. When it’s given in arthritic conditions, no further joint damage occurs,” Dr Jones points out: “Its action is remarkable and is capable of reducing joint inflammatory and joint disease progression. In addition, sgp130 doesn’t appear to interfere with immune cell function around the body. Its therapeutic potential is therefore considerable.”

The research has progressed sufficiently to begin considering clinical trials, and Simon Jones and his team intend to seek further support from arc to take their research forward.

Dr Mari Nowell, a research associate in the department, has been investigating joint biochemistry for several years and is enthusiastically developing her own research niche supported by a five-year arc non-clinical career development fellowship. Currently, she is studying a novel inflammatory mediator, known as PBEF, which causes tissue damage in rheumatoid arthritis (RA). Dr Nowell is interested in this particular mediator because its concentration is high in the synovial fluid of RA patients and it is...
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activated during arthritic episodes. Levels of PBEF correlate directly with other common RA measurement indices such as rheumatoid factor (RF), erythrocyte sedimentation rate (ESR), and DAS28 scores, and levels of this protein are a good indicator of disease state.

Earlier studies determined that PBEF is produced by cells in the joint tissue and released into the joint environment where it stimulates the production of tissue destroying chemicals. Like IL-6, when too much of it is produced inflammation persists and joint degeneration occurs. Why this happens in some people and not in others is very much under the control of genetics.

In collaboration with Dr. Rachelle Donne at the functional genomic group at the arc epidemiology unit in Manchester, Dr. Nowell hopes to investigate genetic variations that may predispose individuals to PBEF overproduction.

This approach may help to identify which individuals are most likely to benefit from treatment, and may also explain how PBEF production is switched on and off. Having tested an anti-PBEF agent in animal models of arthritis and established that it inhibits disease progression, she is currently testing out different dose regimens to find out how effective the agent is when given at different stages of disease progression. Although the work is still in the early stages, the results are very promising.

“If anti-PBEF factor is effective in the early stages of arthritis, it could possibly halt disease progress before too much irreversible damage occurs at the cartilage level,” says Mari Nowell. “The current strategy for RA treatment is to use an anti-TNF combined with methotrexate; drugs that use completely different biochemical pathways to exert their effects. It may be that a cocktail of the latest biological drugs, including new therapies such as anti-PBEF, could have additive effects and result in an even more beneficial treatment.”

**The Hints Box**

**Crocs are so comfortable!**
I have osteoarthritis in the bones on the top of my foot. Therefore I have had to abandon shoes with laces. Discovering Crocs shoes has been a great success. Great comfort but not elegant!

**John Tredgett, Steyning, West Sussex**

**Editor’s note:** After Carol Lewis’s letter praising Masai footwear (Arthritis Today 140) several readers asked where they could buy them. They can be obtained from:
Masai GB Ltd. Unit 2a, 83 Curtain Road
London EC2A 3BS
tel. 0207 684 4633 (9am - 5pm) or 0207 684 5565 or fax. 0207 684 5566
customer-service@swissmasai.co.uk

**Hot beakers and warm oil ease arthritic pain**

To ease the pain in arthritic hands, half-fill a tall beaker with hot water. Wrap a cloth around it if too hot to hold, then wrap the fingers around it until it gets cold. The warmth soothes and relaxes muscles and tissues. (This also works if the beaker holds hot tea!) To lubricate arthritic knees, massage in some warmed-up olive oil, or similar. Massage over and upwards. Warm oil opens the pores and soaks in better than cold oil.

**Mrs Olwen Evans, Swansea**

**Cooking spatulas and spaghetti serving spoons have other uses**
Being relatively new to arc these hints may have been given already: to spread lotion etc on the back, use a plastic cooking spatula. If you drop your flannel in the bath and can’t reach it you can use a plastic spaghetti server attached to a longer plastic pole. Hope these are of use!

**Sue Tupper, Morden, Surrey**

**Final correspondence on the Margaret Hills’ diet book**
I was diagnosed with sero-negative inflammatory arthritis in December 2006. I followed “Curing Arthritis the Drug-Free Way” by Margaret Hills religiously for over four months. I lost a stone in weight (I was already slim and became slightly underweight) but experienced absolutely no change in my symptoms. By contrast, I now enjoy a virtually pain-free life most of the time on a “normal” diet thanks to a combination of methotrexate and naproxen (NSAID). I found Hills’ portrayal of conventional medicine hysterical and vindictive in tone, which is no help when you’re a new sufferer at the mercy of your rheumatologist!

**Rebecca Jenkins, Letchworth, Hertfordshire**

The Margaret Hills’ diet book has now changed its name “Curing Arthritis the Drug-Free Way” to “Treating Arthritis the Drug-Free Way” with a consequent incurring price increase from £28 to £29. (including p&p). In the book there is a questionnaire to be filled on giving the details of your health including all drugs you are taking, a brief history of your health problems, any operations and previous serious illnesses. This is to be returned with a cheque for £67.10. In return you will receive a complete 30-day nutritional pack: the Margaret Hills Formula and the Margaret Hills Protein, together with a carefully planned treatment adapted to suit your particular requirements. Each subsequent 30 day supply of the above will be available from the clinic at a cost of £41.50. Needless to say I did not send £67.10. After 50 years I do not need to receive a 30-day nutritional pack but I was absolutely delighted to receive the Margaret Hills Protein and the Margaret Hills Formula, I highly recommend a change in your diet. A change of diet will do you good. I did put in practice some of her ideas re diet, exercises and the cider vinegar. But these cost me nothing as I borrowed these books from the library.

**Margaret Moody, Knotty Ash, Liverpool**

**Send your hints to Jane Tadman, arc, St Mary’s Gate, Chesterfield, Derbyshire S41 7TD.**
Dr Frances Williams and Dr Alex Betz explain their work in an ongoing series of questions and answers with arc-funded researchers.
What does your work involve?
As a group leader at the MRC Laboratory of Molecular Biology I am fortunate enough to be able to completely concentrate on research with relatively little teaching and administrative responsibilities. My group is trying to understand the initiation phase of immune responses. A wrong decision at this point might result in a failure to defend the body against invading pathogens such as viruses or bacteria or, on the other end of the spectrum, in an attack of the body itself. The latter is the case in arthritis. By understanding the molecular mechanisms that are involved in this decision making process, we hope to find new therapeutic avenues.

How long has arc been funding you?
Since 2005, arc has been funding two projects in my lab. The aim of the first project is to understand why many women experience an improvement in the symptoms of arthritis during pregnancy. The second one has just started and aims at developing a novel therapeutic approach to treat arthritis and other autoimmune diseases.

What’s the most important thing you have found out in the past 12 months? And why?
We have developed a strategy that promises to allow us to stop immune responses on demand. We were able to show that our approach works in mouse models, over the next few years we would like to examine whether our approach is transferable to human patients.

What do you do in a typical day?
The most interesting aspect of my work is that there isn’t a typical day. My work ranges from planning experiments, giving seminars, discussing results with members of my lab, reviewing grants, to the occasional bench work. Despite the fact that my administrative responsibilities are relatively small there are still loads of emails to be answered, manuscripts to be reviewed, grant applications to be written and publications to be read. In most cases, progress in research does not come from flashes of inspiration, but rather from re-examining data over and over again from different angles. I still find it most rewarding when I have the opportunity to do some experimental lab work myself.

What is your greatest research achievement?
Being able to demonstrate that regulatory T cells (a specialised immune cell type which is commonly associated with the prevention of autoimmunity) play a crucial role in the prevention of the rejection of the foetus by the maternal immune system was clearly a highlight. However, I wouldn’t like to dwell too long on past achievements, as I hope the best is still to come.

Why did you choose to do this work?
I am very nosey. It bugs me if I do not understand how something works. Even as a child I constantly took things apart to find out how they work. To the frustration of my parents I was not quite as accomplished at putting them together again. This is probably the reason why they encouraged me to focus on research rather than medicine.

Do you ever think about how your work can help people with arthritis?
Of course I do, and not only out of compassion. I am very aware that our research is extremely expensive and that there are expectations attached to our funding. I feel fortunate that our research has taken us in a direction where we can see a clear path to direct benefits for patients, even if it will still take a long time to make it into the clinic.

What would you do if you weren’t a scientist?
The time I started my scientific career coincided with the advent of personal computing and the internet. I found that very exciting too, and probably would have started my own ‘web’ company if I hadn’t fallen in love with molecular immunology first.

Dr Alex Betz

About Alex
My family consists of my wife, three children, a dog and a pony. We also used to have a hamster, but that was before the dog… I cannot remember ever being bored – not for a minute!
Questions & Answers

Are the exercises in your Keep Moving sheet applicable to people who have had joint replacements? Are there any other more specific exercises you could suggest?

Mrs Chambers, Sidcup, Kent

A The exercises given in the Keep Moving leaflet are good all round exercises for joint health and fitness. Some of these will be helpful for specific joint replacements but they are really not especially designed for this purpose. At the time of the joint replacement you should have been given specific exercises by a physiotherapist. If you have mislaid these then ask to see a physiotherapist again. The exercises will vary according to the joint replaced.

Is there a link between osteoarthritis and osteoporosis? If you have one of these conditions is there more chance that you may get the other? My mother had both. I had an early hysterectomy at the age of 47 in 2001, and was on HRT for five years. I recently had a DEXA scan and found that I have a condition called osteopenia.

Angela Advani, Swindon, Wiltshire

A As a long-term gout sufferer, I have been prescribed allopurinol at a hospital but it has tended to promote bouts of gout. The quick fire cure I have found is colchicine, as the side effects are not too dire. From being very young to the age of 30 I could not tolerate eating peanuts or ground nuts as they caused violent stomach ache. I have had gout since the age of 30 and from then to my present age, 64, I have enjoyed eating nuts again with no traumas to my digestion. I have had no bouts of gout for nearly two years and wondered if this was anything to do with being able to successfully ingest nuts? Food for thought?

Bob Woodman, West Totton, Hampshire

A A fascinating observation. There are two important points to come out of your letter. Firstly, when people who have gout first start allopurinol there is a tendency for them to get acute attacks of gout. This happens during the first three months of treatment. Therefore, rheumatologists recommend taking something to help prevent these attacks (known as a prophylaxis). Usually that something is an anti-inflammatory drug such as ibuprofen but it could equally be colchicine or even steroids (cortisone) if the other two drugs could not be tolerated. Not giving this prophylaxis is the single most important reason why people do not persist with allopurinol treatment. And allopurinol is currently the best way of preventing gout attacks. Secondly, nuts were originally thought to be bad for gout as they come from the legume family but it is now believed that they are not rich in purines (which are bad for gout) but that they do contain essential fatty acids, some of which have been shown to have anti-inflammatory properties.

For information, purine rich foods (to be avoided in gout) include: beer and other alcoholic beverages; anchovies, sardines in oil, fish roes, herring; yeast; animal organs (liver, kidneys, sweetbreads); legumes (dried beans, peas); meat extracts and gravies; mushrooms, spinach, asparagus, cauliflower. On the other hand beneficial foods include: dark berries; tofu (which is made from soybeans); fatty acids found in fish (such as salmon and mackerel), flax or olive oil, and nuts.

I have read in the Glasgow Herald recently that a man died of liver failure after taking glucosamine. I have been taking glucosamine and chondroitin for two years now, as I believe it lubricates my joints. However, paracetamol is enough to control my pain. I should be wary of drugs as I had a duodenal ulcer some years ago probably caused by Voltarol. Could you advise me whether to stop taking glucosamine. Is chondroitin safe? I also take cod liver oil.

Georgia Mankivell, King’s Park, Glasgow

A I have read the issue of the Glasgow Herald you refer to (4th March 2008) and I have also read the strong ‘online’ responses to the article! A 60 year old man, allegedly previously well, developed liver failure after starting to take glucosamine for joint pains. No other clinical details are available but a liver expert thought that there might be a link between the two. Without further evidence I think this is scaremongering. No such side-effects have been reported in any of the clinical trials and we have no reason to believe that this man was any different from the people included in the trials. Of course, we don’t know vital bits of evidence such as...
Questions & Answers

as how much alcohol he drank or how many other painkillers he took for his joint pains. So I would not advise you to discontinue your glucosamine at the present time but be careful with the paracetamol and do not exceed the recommended maximum daily dose of eight tablets.

Q I recently had a resurfacing operation on my left hip. I expected to be pain-free after the surgery, but unfortunately this was not to be. Within a short time I experienced altered sensation in my lower leg and foot, consisting of a severe burning pain on the outside of my ankle and foot. This area is hypersensitive to touch, and I also experienced short sharp pains like electric shocks. I have been told that this is due to bruising of the nerve during surgery and have been prescribed gabapentin, which takes the edge off the pain. I feel I have not benefited in any way from having the operation as one pain has been replaced by another. I was not warned in advance that this could happen, and have not heard of it happening before, so I would welcome any comments from you and other readers who may have experienced this.
Lindsey Hayes, Newport, South Wales

A For most of the thousands of operations carried out every day in the UK, the operation goes without a hitch and the surgery is successful. Occasionally problems occur. It is the surgeon’s duty to explain the possible complications of surgery and these are written on the patient consent form before it is signed by the patient. Obviously only the most frequent and the most devastating complications are mentioned. You had a rare complication, which is no comfort to you, obviously. The good news is that the symptoms of the nerve damage should improve with time, as the nerve heals itself. The gabapentin tablets you mention are only for symptomatic relief, pending the natural recovery process.

Equipment grant

Professor Graham Williams, Molecular Endocrinology Group, Imperial College London, Faculty of Medicine, 5th Floor MRC Clinical Science Centre, Hammersmith Campus, Du Cane Road, London; a high resolution portable x-ray machine for detailed analysis of bone structure, 12 months.

Project grants

Professor John Brazier, School of Health and Related Research, University of Sheffield, Sheffield; do non-patients understand life with rheumatoid arthritis? £7,814, 12 months.
Professor Carol Dezateux, MRC Centre of Epidemiology for Child Health, Institute of Child Health, University College London, London; neonatal hip dysplasia, hip osteoarthritis, genetics and body mass index – a cohort study, £200,000, 36 months.
Professor Ian Clark, Biomedical Research Centre, University of East Anglia, School of Biological Sciences, Norwich; analyses of a new player in the destruction of cartilage in osteoarthritis, £187,039 36 months.
Professor Bruce Caterson, Connective Tissue Biology Laboratories, Cardiff University, School of Biosciences, Cardiff; biomarkers for stem and progenitor cells, £161,966, 36 months.

Centre for Primary Care award

Professor Peter Croft, Primary Care Musculoskeletal Research Centre, Keele University, Keele; Arthritis Research Campaign Centre National Primary Care Centre, £2,499,968, 60 months.

Grants awarded May 2008

Experimental medicine grants

Professor Gabriel Panayi, Department of Academic Rheumatology, King’s College London, GKT School of Medicine, Guy’s Hospital, London; the use of the human protein BiP for the treatment of rheumatoid arthritis, £412,230, 32 months.
Professor Antony Jones, Human Pain Research Group, University of Manchester Rheumatic Diseases Centre, Hope Hospital, Salford; natural control of arthritic pain, £317,705, 36 months.

Allied Health Professional Training Fellowship

Ms Ruth Semple, School of Health and Social Care, Glasgow Caledonian University, Glasgow; tackling flat footedness in rheumatoid arthritis, £162,553, 36 months.

Clinical Research Fellowships

Mr Paul Jon Heaney, Institute of Immunology and Infection Research, University of Edinburgh, Edinburgh; effect of dying cells on immune cells in the regulation of autoimmune disease, £221,820, 36 months.
Dr Laura Coates, Section of Musculoskeletal Disease, University of Leeds, Chapel Allerton Hospital, Leeds; controlling inflammation to improve the outcome of people with psoriatic arthritis, £111,019, 24 months.
Dr Catherine Swales, Department of Rheumatology, University of Oxford, Nuffield Orthopaedic Centre, Oxford; the effects of the protein “LIGHT” on bone resorbing cells in rheumatoid arthritis, £158,473, 36 months.

Send your questions to Dr Philip Helliwell, arc, St Mary’s Gate, Chesterfield, Derbyshire S41 7TD.
The Kennedy Institute: what happened after anti-TNF therapy?

In the first of a three part report, Arthritis Today looks at the work of the clinical trials group at arc’s West London institute.

It doesn’t look very impressive, but the small, rather dingy rheumatology outpatient department in the bowels of Charing Cross Hospital in Fulham Palace Road in West London was the place where a drug therapy that would revolutionise the treatment of inflammatory arthritis was first tested on patients in the 1990s.

Anti-TNF therapy, pioneered and developed by scientists at arc’s flagship Kennedy Institute of Rheumatology (KIR) next door to the busy NHS hospital, has transformed the lives of thousands of patients worldwide and led to much acclaim and a clutch of awards for two of the main investigators, Professor Sir Tiny Maini and Professor Marc Feldmann.

Now, several years after the licensing of infliximab, etanercept and adalimumab, things have moved on. While Marc Feldmann has taken over from Professor Maini as director, the KIR has become part of Imperial College, although its core funding of £4.5m a year from arc remains.

And as well as pursuing several strands of basic science in both inflammatory and degenerative forms of arthritis, translational research is being spearheaded by Peter Taylor, rheumatologist, Professor of Experimental Rheumatology and head of the KIR Clinical Trials Unit. For the past four or five years he has been building up the team of clinical researchers and research nurses (arc-funded) plus a willing cohort of arthritis patients drawn from the local catchment area and more widely through a network of collaborators, with the aim of tackling unmet patient need.

Although anti-TNF treatment has been remarkably effective in 70 per cent of patients, there is a need to find something for the 30 per cent in whom it doesn’t work, to find early diagnostic and prognostic markers, and to establish better ways of assessing a satisfactory response to therapy.

With funding from various sources, including arc, the KIR trustees, and the pharmaceutical industry and the support of the newly formed Imperial College NHS health trust, a new imaging unit has been set up several floors above rheumatology outpatients, contrastingly bright and airy, and full of the latest imaging equipment, used for both research and clinical purposes.

Early-stage clinical trials

Peter Taylor is very conscious of the concept that lightning rarely strikes twice in the world of research, and that the likelihood of another treatment as successful as anti-TNF therapy emerging from basic science at the KIR for a rheumatoid arthritis (RA) indication is remote, however many new molecular targets are identified by his scientist colleagues, both for RA and other musculoskeletal disorders.

Hence, anticipating that basic science research by Professors Jerry Saklatvala and Hideake Nagase could lead to the testing of new therapies in osteoarthritis may yet be some years in the future, Professor Taylor is preparing the ground and developing a new approach to conducting early-stage clinical trials.

He is recruiting patients on whom to test new drug targets, and developing effective outcome measures using new imaging
Kennedy Institute of Rheumatology

techniques to assess disease progression and damage and response to treatment ever more effectively, such as high frequency ultrasound and specialist image analysis in association with magnetic resonance imaging. And in parallel to the basic science work at the KIR which he expects to at some point yield new molecular targets to test on his clinical trial cohort of patients, Professor Taylor is also working closely in collaboration with the pharmaceutical industry on early "proof of concept" trials which permit validation of a series of novel outcome measures.

"It may be many years before my scientist colleagues’ research work at the KIR reaches the clinical trial stage, and because there is potentially a long gap between basic science discoveries and the availability of related therapies in routine clinical use, I am trying to speed the process up," he explains.

"50 per cent of new drugs don’t make it to the marketplace"

With this goal in mind, Professor Taylor’s clinical trials unit is engaged in early testing of novel therapies on patients to find out if they are suitable for development for further large-scale clinical trials designed for drug registration purposes.

"Many potentially promising new therapies will never be tested unless new approaches are adopted to the design of early phase clinical trials," he says. "You can test some drugs on animals, but there are no perfect animal models for osteoarthritis, rheumatoid arthritis and ankylosing spondylitis and ultimately you have to do experiments in man. You also have to think about the likely future benefits, potential toxicities and the well-being of patients. It’s a completely new way of conducting clinical trials. There are dozens of potential targets for therapy for musculoskeletal disorders and a correspondingly high number of new compounds that need to be tested. We will focus on a few of greatest interest and relevance to our basic science programme. At present, about 50 per cent of new drugs fail at the phase III development phase and don’t make it to the marketplace. I hope that by employing more sensitive measures of response to a test therapy at the earliest stages of new drug development, that we will be able to rationally select those drugs most likely to be successful and benefit future generations of patients."

Patient safety, comfort and well-being is always the first concern at the KIR clinical trials unit. However, recruitment to the KIR clinical trials cohort has been a challenge, partly as a result of the media coverage and public perception of clinical trials following experimental work at Northwick Park Hospital two years ago when two volunteers were left in a critical condition when they suffered unexpected reactions.

It’s also increasingly difficult to recruit RA patients, even those who attend Professor Taylor’s early arthritis clinic at Charing Cross Hospital, because there are now relatively fewer patients with severe disease than was the case ten years ago, or who aren’t already on effective therapies. It is slightly easier to recruit osteoarthritis patients as there are still no effective disease modifying drug treatments and so patients are more willing to put themselves forward for something new and experimental.

**Potentially enormous patient benefit**

Peter Taylor is optimistic that the clinical trials work will lead to potentially enormous patient benefit. "We might not find another anti-TNF therapy but we might find a much better, more effective, safer way of doing clinical trials, and that will be very worthwhile," he says.

One of the trials they are currently conducting is on new oral therapies against new molecular targets for RA patients with an inadequate response to conventional oral drugs, and new therapies for ankylosing spondylitis that are anticipated to deliver the benefits of anti-TNF therapy at reduced costs.

Former KIR director Tiny Maini’s mantra was “from bench to bedside”; in other words, stressing the importance of developing treatment from the laboratory to the patients speedily.

Peter Taylor agrees, but turns the saying around. "We have a clear vision, a cohesive programme, yes, to take research from the lab to the clinic, but also to go from the bedside back to the bench – addressing unmet needs and using targeted therapies to investigate what patient response can tell us about the biology of disease. That’s exactly what we are doing."
Being hypermobile

There’s more to joint hypermobility than just being double-jointed and super-bendy. It can devastate young lives, as Jane Tadman reports.

For most of her young life, 18-year-old Phoebe Kemp has lived with severe pain. At the age of eight her knees suddenly began to lock for no apparent reason and by the time she was at secondary school she spent much of her time in a wheelchair or on crutches, her knees unable to bear her weight. In her early teens, Phoebe, from Box, in Wiltshire, suffered a series of bad flares which left her in agony and completely unable to walk for two months.

Medics struggled to diagnose Phoebe’s condition and for a time it was thought she was suffering from osteochondritis dissicans, a condition resulting from a loss of blood supply to bone beneath the joint surface.

Eventually, however, doctors at the Royal National Hospital of Rheumatic Diseases in Bath, known as the Min, decided that her symptoms were due to joint hypermobility.

By this time Phoebe’s hands were also affected and she was finding it increasingly difficult to write for long periods.

Two factors helped Phoebe set her life back on course. The first was drama. She explains: “I used to do a lot of dancing but I had to stop because of the pain and because at the time they thought it would damage my knees. And when I stopped my mum enrolled me in a drama group instead.”

The teenager is now taking three A-levels – including drama – and currently auditioning for drama schools in Bristol and London.

What is joint hypermobility?

- In people with joint hypermobility, some or all their joints have an unusually large range of movement (also known as double-jointedness).
- Generally children are more flexible than adults. Ten per cent of children are more flexible than their peers and have a condition known as benign joint hypermobility. At least ten per cent of these youngsters have joint pain.
- A small percentage of these youngsters have hypermobility as part of genetic conditions such as Marfans Syndrome and Ehler’s Danlos syndrome.
- The joints usually affected are knees, elbows, wrists and the lower back. Joints can become dislocated.
- Treatment involves physiotherapy/hydrotherapy, with muscle strengthening and joint protection often required.
- Many patients improve with age.
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The Stairlift People
The second was attending the three-week adolescent pain management programme, part of the Bath Pain Management Unit, at the Min.

The programme was set up in 1998 to take national referrals and is aimed at teenagers whose lives have been disrupted by pain to the extent that they can no longer attend school or college. These chronic pain conditions may be disease-related (juvenile idiopathic arthritis, childhood cancers) or non-disease related (complex regional pain syndrome, juvenile fibromyalgia). It is not uncommon to have young people with hypermobility-related chronic pain.

The multi-disciplinary rehabilitation course treats around 120 youngsters a year, helping them to become less dependent on hospital services and works with them to get back to a more normal lifestyle – despite the pain – through graded exercise, relaxation, goal setting and planning and pacing activities.

“The programme is for children and young people who are suffering persistent pain where they have got stuck and need helping moving on,” explains Dr Jacqui Clinch, consultant in paediatric rheumatology and adolescent chronic pain at the Min. With colleagues, Dr Clinch is currently setting up an adolescent chronic pain clinic at the Royal Bristol Children’s Hospital for less severely affected youngsters from the South West.

“Often these young people have moved from being extremely active, able individuals to a lifestyle ruled by pain. They are out of education, not sleeping, dependent on family members and prone to frustration and low mood. Our aim is to help rehabilitate them despite the constant pain they are in, and get them back to a normal teenage lifestyle.”

After the three weeks teenagers go back home and are treated locally, but are followed up by the Min for the next two years. More than 60 per cent are able to go back into full-time education or employment.

For Phoebe the programme was something of a turning point. “I’d not be able to do what I’m doing now if I hadn’t been on the course,” she says. “I used to take tramadol for the pain which made me feel all woozy, but now I just take paracetamol and ibuprofen when absolutely necessary. I can manage and live with the pain more effectively since going on the programme. It was so useful.”

Phoebe has been told that if she gets herself very physically fit now that she has stopped growing she has a good chance that her condition will lessen in adult life. She is now concentrating on passing her A-levels, enjoying the freedom that gaining her driving licence has given her, and looking forward to a career as an actress. She knows it will be tough; her mobility remains severely restricted, she can’t walk for more than 15 minutes and has to have constant rest breaks during exams because of her painful wrists, but she is determined.

“I want to do it too much not to do it,” she says simply.

**New arc research into joint hypermobility**

A major new research project based in Bristol aims to find out if children who are double-jointed are at increased risk of developing joint and muscle pain during adolescence.

Researchers and doctors at the University of Bristol and the Royal Bristol Children’s Hospital are carrying out the three-year £116,500 study.

“Children who have joint hypermobility may be at increased risk of developing chronic musculoskeletal pain which can affect their ability to do everyday activities, and also their schooling,” explains Dr Jon Tobias, reader in rheumatology at the University of Bristol, who is heading the study with a team that includes Dr Clinch.

Chronic pain in the joints and muscles affects between 15 and 20 per cent of children and teenagers, and may persist into adulthood.

“Understanding the relationship between joint hypermobility in childhood and the future risk of chronic pain is important, as, if the two are connected, we could then offer these youngsters treatment such as physiotherapy and exercise,” adds Dr Tobias. The team will also be looking at other possible connecting factors such as co-ordination and clumsiness.

The Bristol team hope to find out if having joint hypermobility in childhood is a predictor of chronic pain developing by the age of 17. Detailed questionnaires are being sent to up to 5,000 teenagers who are part of a unique population-based Avon Longitudinal Study of Parents and Children, which has followed up to 5,000 children from birth to the age of 17. They will be asked about any muscle or joint pain suffered over the past three months and how severe and widespread it was. Researchers will then relate these findings to records of examinations to look for evidence of joint hypermobility that were carried out when teenagers attended research clinics at 13 years of age.

Chronic pain syndromes in children and teenagers are similar to those suffered by adults, which are little-understood by the medical profession and researchers. However, the Bristol team believe that establishing that joint hypermobility is a contributory factor could be significant and lead to better treatments for affected youngsters throughout the UK, including physiotherapy to improve postural abnormalities, and exercise programmes.
**Fundraising**

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- **Brazil Horse Ride:** 15 – 24 May 2009
  A five day horse trek through rural Brazil, taking in rainforests, National Parks and beautiful villages.

- **Cycle London to Paris:** 26 – 29 June 2009
  This long-weekend challenge links two great European cities, London and Paris, and covers around 300km in just three days.

Contact Lyndsey on 01246 541108 or email l.whitehouse@arc.org.uk for further information.

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**Arc Noddy Appeal**

It’s not too late to support the **arc Noddy Appeal** which continues into a fourth year. Why not hold your own sponsored walk and help raise funds for children with arthritis? Just log onto www.noddyappeal.org.uk or ring the Noddy events team on 01246 541108 to find out more or to get your fundraising pack.

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**Another marathon effort!**

Despite the damp conditions, 66 people pulled on their running shoes and completed the gruelling 26 miles in this year’s Flora London Marathon on behalf of **arc**. Among them were Claire Gedge, Roger Wallwork and Sara McKenna (pictured) who all ran the race dressed as Noddy in honour of Roger’s daughter Arabella, aged four, who suffers from arthritis. The Wallwork family are keen supporters and fundraisers for the **arc Noddy Appeal**. If you are interested in taking part in the 2009 Flora London Marathon please visit www.arc.org.uk/marathon or contact Lyndsey on 01246 541108 for further information.

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**Top of the class in fundraising**

School pupils at Sir Henry Floyd Grammar School in Aylesbury held a charity week in April and raised a whopping £3,800 for **arc** from events which included an eating competition, tug of war, talent competitions, battle of the bands and a bouncy castle. It is a tradition of the school that Year 12 choose several charities to benefit and then pitch to the school information about each charity. Sam Birkett, a Year 12 pupil (pictured left) has arthritis and fellow-students felt this was a special reason for choosing **arc**.

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**Spiderman swings in to help **arc**

Spiderman has swung in to help an old friend with arthritis raise funds for **arc**. Brian Nelson from Mexborough who has had arthritis since childhood and has had two hips replaced, held various events, and roped in old mate James Temperton to don a Spiderman costume and take part in a sponsored abseil. Brian is pictured centre, with James (right) and Kathryn Turner (left)

Photo courtesy of the Rotherham Advertiser.

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**The **arc**OGEN project**

We’ve had a fantastic response to our request to help raise funds for the **arcOGEN** project and our loyal supporters have between them raised £93,450 (at the time of going to press) with donations still arriving. A great big thank you to all who supported this exciting research project.

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**Long-term support**

Area appeals manager Viv Foss presents long term supporter and fundraiser of **arc**, Anne O’Neill, with a certificate and pin in recognition of nearly 33 years unstinting support, starting at the age of just 17. Despite suffering from severe arthritis in her knees and feet, Anne has participated in more than 100 runs and charity walks.

**Adidas Women’s Challenge**

The Adidas Women’s Challenge (formerly known as the Hydro Active) is a 5km women’s only race that will take place simultaneously on Sunday, September 7, in Hyde Park in London, Birmingham city centre, and Sefton Park in Liverpool. The races are for women of all ages and you can register to take part by visiting www.womenschallenge.co.uk if you already have a place and would like to raise money for **arc** please contact our events team on events@arc.org.uk or telephone 01246 541108 for your official sponsor pack.
GPs in the saddle
Dr Daniel Wardleworth, a GP with a special interest in musculoskeletal medicine in Haworth, completed the 110-mile Etape du Dales cycle race across the Yorkshire Dales in a time of 9hrs 29mins. The challenge took in Tan Hill, the highest pub in the UK, and pictured here with Daniel are Johnnie Rosie (left) and (centre) Dr Adrian Dunbar, of Postgraduate GP Education at Leeds University. Dedicating the ride to his late grandmother, Eileen Goldsworthy, who died the week before, Daniel hopes to raise £700 for arc.

May Fair money
Ruth McRae, Pauline Forster and Nora Smalies from Whickham branch near Newcastle are pictured running a children’s tombola at Whickham May Fair. In spite of terrible weather £177 was raised. The branch has been going more than 35 years, and three members recently received 35 year awards.

Rising to the Yorkshire challenge
Seven researchers from the arc Epidemiology Unit at Manchester University successfully completed the Yorkshire Three Peaks Challenge in April alongside 30 other fellow-walkers. The Manchester team raised over £1,600 for arc, increasing the event total to more than £6,000. Pictured are the epidemiology contingent with arc area appeals manager Kathryn Leverett, and walker Alison Watson and her dog — who completed the challenge in nine hours and 50 minutes.

Wheely great
Bob Griffiths of Caterpillar Reman in Shrewsbury took part in a unique sponsored unicycle to work in aid of arc. He raised £275 through sponsorship from fellow employees, friends and family. Karen Scurry, arc Shrewsbury branch treasurer, who works with Bob and has rheumatoid arthritis, gratefully received the donation on behalf of the branch. Photo courtesy of The Shropshire Star.

Raise a glass to the Butcombe Brewery!
After a glass of warming mulled wine at The Swan in Rowberrow 100 walkers set off on the Butcombe Brewery arc Pub Trail in March. Led by a team of wardens, they walked almost nine miles over the Mendips to the Ring O’Bells at Compton Martin for supper. Butcombe Brewery Ltd in Somerset sponsored the event which raised a fantastic £3,700 for arc. Pictured are Guy Newell, managing director of Butcombe Brewery and Suzie Ladbrook, arc Southwest area appeals manager. Photo courtesy of The Cheddar Valley Gazette.

Scottish Inner Wheel success
President of the Inner Wheel Club of Ayr, Margaret Clark, adopted arc as her charity of the year and through a number of fundraising events raised the fabulous total of £1,150.
Inner Wheel of Bourne End and Cookham presented **arc** area appeals manager Viv Foss with a cheque for £600 at their Red, White and Blue evening in celebration of the Queen and Prince Philip’s Diamond Wedding Anniversary. Pictured from left are Anne Birt, Ladies’ Captain at Cottrell Park Golf Club; Fred Johnson, **arc** appeals manager and Gareth Gamblin, Men’s Captain.

**Cornish golf day**
St Mawes **arc** branch held a very successful Golf Day at Killiow Golf Club in Truro in May, with 20 teams taking part. The golf club and local businesses were extremely generous with their support and over £3,000 was raised on the day. Pictured, left to right, are the winning team: Bruce Hick, Geraldine Hislop, Alison Davey (branch chairman), Pat Crowson, Suzie Ladbrooke (**arc** area appeals manager) and John Binmore. Photo courtesy of Toby Weller.

**Big leap for **arc**
TV presenter Carol Malia went over the top when she abseiled from the roof of a Tyneside hotel for several charities, including **arc**. The BBC Look North anchorwoman joined forces with colleague Jeff Brown in abseiling down the Quayside’s Malmaison Hotel. She is also pictured with young arthritis sufferer Lee Chapman from Newcastle. Photo courtesy of The Journal.

**Freemasons make massive donation**
The Freemasons’ Grand Charity has generously supported **arc** with a major donation of £100,000 in total. The cash has helped to fund one of our research projects based at the University of Newcastle. Dr Drew Rowan, the lead researcher, and his team are looking into what triggers the destruction of cartilage by enzymes and how to prevent further joint destruction in sufferers.

**Good sport**
Sporting Mandy Candy decided to make **arc** her charity of the year when she became the Ladies’ Captain of the Mid Sussex Golf Club, resulting in £2,650, which was accepted by area appeals manager Jenny Oakshott.

**Swinging golf day**
Members of Cottrell Park Golf Club in South Wales tee-ed off in a special fundraising event in aid of **arc** for the third year running, and raised more than £6,000 for the charity. Pictured from left are Anne Birt, Ladies’ Captain at Cottrell Park Golf Club; Fred Johnson, **arc** appeals manager and Gareth Gamblin, Men’s Captain.

**All aboard the Quitania**
The community of Goring and Streatley village turned out in full to once again support **arc** with a sell-out evening with a cruise ship theme at the village hall. The event raised a fantastic £3,100. Pictured are Margaret Powell and Neil Bowler finding their sea legs.

**CAN YOU RUN FOR US IN THE GREAT SOUTH RUN?**
Places are now available for this year’s Great South Run in Portsmouth on October 26, so if you would like to run for **arc** contact John Mason on 02392 513456. Women from Bannatyne’s Health Club in Lowestoft are pictured chilling down after successfully completing last year’s event, which raised more than £10,000 for **arc**.

**Big thanks to Oxford Inner Wheel**
Inner Wheel of Bourne End and Cookham presented **arc** area appeals manager Viv Foss with a cheque for £600 at their Red, White and Blue evening in celebration of the Queen and Prince Philip’s Diamond Wedding Anniversary. Viv is pictured (left) with Elaine Morris, President of Bourne End and Cookham Inner Wheel. This brought the total of £1,600 presented to the charity that day from the Inner Wheel; the No 9 District committee presented Viv with £1,000 at an earlier meeting in Benson, Oxford.

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Christopher England, Managing Director, Ampli-Ear