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Cutting costs and caseloads with a monofilament debridement pad

Respiratory assessment: causes of symptoms

Recognising and managing postmenopausal health problems

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# Contents

Compassionate care and community nursing Annette Bades	4
Community matters — What effect is the cost-of-living crisis having on community patients?	8
Tackling Long Covid in the community Eve Thrupp	12
Sensory garden project supports wellbeing Helen Hurst	14
Menopause, the workplace and self-care Dr Peter Smith	16
Why evidence is more than just a NICE to have in MedTech Jen Lodge, Angela Crossland	19
Important role of non-specialists in wound care Liz Neal	24
Clinical skills: Chronic oedema — compression therapy, concordance and self-care	26
Managing mixed aetiology and arterial leg ulceration Annemarie Brown	33
Cutting costs and caseloads with a monofilament debridement pad Andrew Kerr	42
Respiratory assessment: causes of symptoms Linda Pearce	49
Recognising and managing postmenopausal health problems Margaret Perry	55
Advance care planning for people with dementia and their families Karen Harrison Dening	61

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# Compassionate care and community nursing



As 2022 comes to an end, thinking back, I was hopeful this time last year that we would soon return to 'normality' post Covid. However, lives this year have been different and we have certainly encountered new and unexpected challenges. This issue's 'community matters' piece (pp. 8–11) reflects on the cost-of-living crisis, which has become a serious issue for everyone and seems set to continue well into the new year. While its impact is putting pressure on household budgets with energy,

fuel and food prices rising, there is also the accompanying health emergency to consider, especially for the vulnerable. People may struggle to afford an adequate diet which could lead to malnutrition, and being unable to keep homes sufficiently warm could result in developing or exacerbating existing respiratory conditions. There's also the issue of increased anxiety around being unable to make ends meet, causing stress or even depression. As community nurses, we are ideally placed to recognise when help is needed and to offer support to the many vulnerable people we see. Never forget that you can, and do, make a real difference to the lives of so many people every day. However, it is recognised that this crisis is affecting everyone, so remember to access the support available to us if you need to — there is help out there. And, as the 'community matters' feature points out, there is some exceptional work and creative projects underway in the community to help spread Christmas cheer and offer compassionate care in creative ways.

As well as looking at chronic oedema, wound care, respiratory care and advance care planning for those with dementia, this issue also focuses on the menopause — historically, a topic not widely discussed despite being a stage of life no woman can avoid. It is heartening to learn that the NHS, as with other workplaces, is now committed to championing women's wellbeing, with greater recognition around the emotional and physical changes associated with the menopause (pp. 16–18). Margaret Perry (pp. 55–60) also provides an insight into common postmenopausal problems to help you offer women advice and treatment.

I hope you enjoy reading this issue and if you would like to receive a print copy of the journal, don't forget to take advantage of our 50% discount on annual subscriptions to mark the journal's golden anniversary ([www.jcn.co.uk/journal/subscribe](http://www.jcn.co.uk/journal/subscribe)).

And finally, of course, here at JCN we would like to wish you all a very merry Christmas and New Year.

Annette Bades, editor-in-chief, JCN



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I am a district nurse, nurse teacher in practice, associate lecturer and Queen's Nurse who believes that excellent community nursing is vital and that community nurses should be more visible. Care should be available to everyone who wishes to remain at home. I have an interest in dementia, end-of-life care and teaching in practice to support newly qualified nurses. I am very pleased to be a part of the JCN editorial board, an accessible journal for all community nurses to inform their practice and strive for excellent care.  
*Gail Goddard*

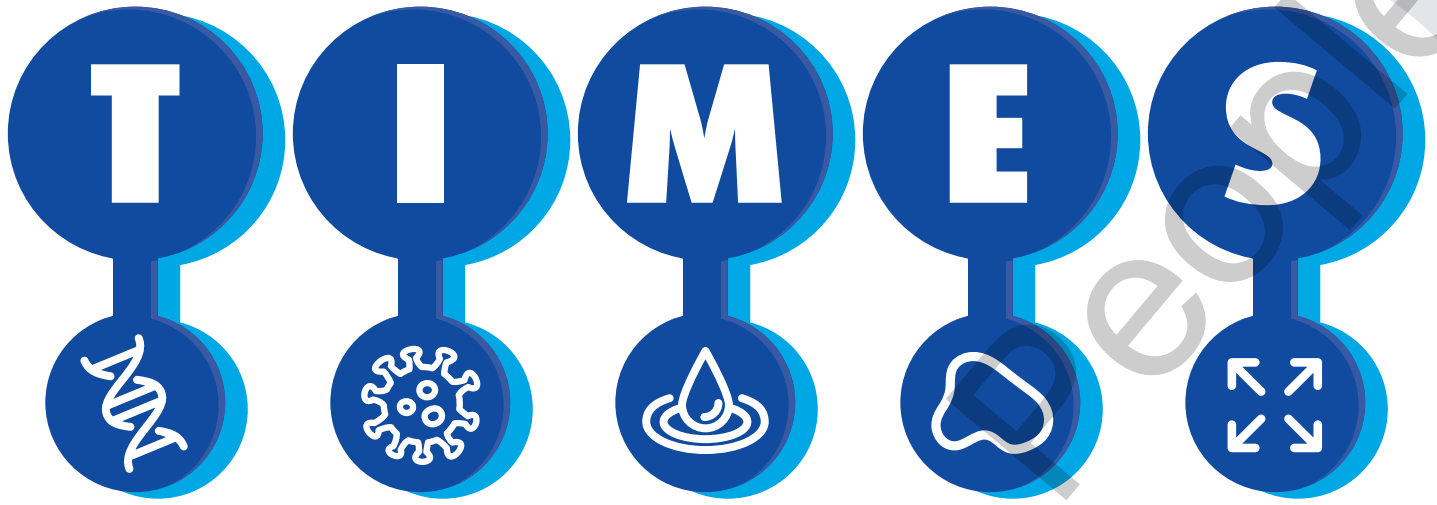
I am a district nurse, nurse teacher and Queen's Nurse with a passion for excellent community nursing education and practice. I am also an advocate for care being close to people's homes and for supporting people to self-care and regain independence where possible. I also have an interest in nurse prescribing, dementia, frailty, loneliness and social isolation. I am delighted to be a part of the JCN editorial board, a journal for all community nurses to access for the very latest and best evidence to inform their practice.  
*Sue Boran*



I am a freelance tissue viability nurse (TVN) and health visitor. My true passions are in pressure area care and moisture-associated skin damage. I sit as a registrant panel member on the NMC Fitness to Practice Hearings, and work with the Institute of Health Visiting (IHV), where I have recently supported the development of a training package on domestic violence and abuse (DVA). I am delighted to be part of the JCN editorial board, where current best practice can be discussed.  
*Melanie Lumbers*

I've been working in district and community nursing for 20 years. My particular passion is for continuity of care in community nursing, which encourages healthy behaviour, builds trusting relationships, can reduce healing times, and makes people feel more positive about their healthcare experience. We have a responsibility to prepare for the future by continuing to develop leadership and clinical skills. The JCN is a great resource for support, education and to share best practice.  
*Hattie Taylor*

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In each issue of the *Journal of Community Nursing*, we investigate a topic affecting our readers. Here, we ask...

# What effect is the cost-of-living crisis having on community patients?

As we drift inexorably towards Christmas on a wave of sentimental TV adverts and last-minute shopping panic, there is one question on everyone's lips (and no, it is not 'How did Matt Hancock finish third in the jungle?').

Friends and colleagues will all be asking you this question and your reply will say a lot about your attitude to self-denial, the amount of disposable income you have (or do not have) and how many rooms there are in your house.

The question is, of course: 'Have you turned the heating on yet?'

While everyone in the UK, including nurses, struggles with the cost-of-living crisis, there is one group of people for whom being unable to heat their home or afford decent food is not a matter of endurance, or 'penny pinching', or even simply bloody mindedness. For vulnerable people living in the community, a lack of heating and nutrition can literally mean life or death.

## HOW DID WE GET HERE?

Depending on who you listen to, the cost-of-living crisis has been blamed on Russia's invasion of Ukraine, profiteering oil and gas corporations and even Liz Truss and her albeit short but (very) eventful period as UK prime minister.

In truth, the current hikes in energy and food prices have a variety of sources.

According to the BBC, oil and gas prices have risen fivefold since



*Community nurses see at first hand the effects of the cost of living crisis on individuals, families and communities. As well as their regular working lives, they truly understand the importance of communities, often keeping an eye on neighbours and those they know are more vulnerable.*

*Keeping warm is a problem for all vulnerable people, but especially so for older people who may be less active than previously, so extra blankets, regular hot drinks/soups will be well received by many.*

*People tend to be very proud when you question them about whether they have adequate food in the house saying they're fine, but when you open their fridge, you find nothing in it! It can be heart breaking to realise the circumstances some people may be living in. Checking up on people regularly, helping provide meals when you can do so, this is what community is all about.*

*For community nurses who are themselves having financial difficulties, the QNI has financial support available at: <https://qni.org.uk/support-for-nurses/financial-help/apply-for-financial-help/> with small grants that can ease the burden. The QNI also has links to other resources on the website which can help nurses at this time of need for many.*

**Sue Boran**

Director of nursing programmes, Queen's Nursing Institute

2020, with Russia cutting supplies to European neighbours by up to 80% because of their opposition to its invasion of Ukraine, and in turn causing a bidding war for gas. This has had the knock-on effect of tripling the price of coal, as power stations switch from gas to coal. Oil has also rocketed in price due to worldwide bans on the purchase of Russian oil ('Why is there a global energy crisis and who might suffer most from it?' — [www.bbc.co.uk](http://www.bbc.co.uk)).

At the same time, the price of food is also at record levels. According to *The Guardian*, the price of fresh produce as well as everyday items such as milk and sugar rose by a record 11.6% in October 2022 ('UK food prices soar by fastest rate on record as cost of living crisis bites' — [www.the-guardian.com](http://www.the-guardian.com)).

According to retailers, these rises in food prices are primarily due to the soaring cost of logistics, such as





*Every winter as a community nurse I am aware of patients who are living in cold houses — perhaps only heating one room and then staying in that room both day and night. This has a negative impact on their health, such as increases in pressure damage to skin and leg oedema due to sleeping in a chair overnight. There are also the burns from small heaters and hot water bottles which occur at this time of year in our elderly population. However, I am approaching this winter with a feeling of dread as I am concerned that the numbers of people struggling to heat their homes will rise and that we will not have enough help to offer them. We have already this year heard stories of patients and their carers who require oxygen condensers and pressure relief equipment turning off the equipment as they are concerned about the running costs and whether they will be able to afford them. There is some funding available to help with this via our social service colleagues, but the challenge will be to make sure that all community nurses are aware of what is available to help in their own area so that they can signpost those in need to the help that they require.*

*Many of our colleagues are also struggling with the cost of living. I am aware of staff members requesting to work extra shifts, more weekends and walk rather than drive to their visits etc in order to be able to afford to live. Some healthcare trusts are already providing food banks and financial assistance for their staff, but this is not available to all the healthcare workers who need it.*

*This winter will be a huge challenge for many of our patients and colleagues and I will do all I can to assist, as I am sure will my fellow community nurses.*

**Gail Goddard**

Mobile district nurse team manager, Hounslow and Richmond Community Healthcare; associate lecturer, Bucks New University

transport and staff shortages. None of which helps the average person trying to make ends meet, or worse, struggling to pay the bills as winter closes in.

As community nurses, it will come as no surprise to you who is going to be the most affected by rising prices. The Health Foundation estimates that those families on lower incomes will feel the effects more than most because they have less spare cash in the first place, with the poorest families spending almost 40% of their income on basic items such as food, housing and gas and electric ('The cost-of-living crisis is a health emergency too' — [www.health.org.uk](http://www.health.org.uk)).

Just like the Covid-19 pandemic before it, the cost-of-living crisis will affect the health of low-income families most ('Cost of living impact hit poor like Covid — health boss' — [www.bbc.co.uk](http://www.bbc.co.uk)).

## WHAT ARE THE HEALTH EFFECTS OF FUEL AND FOOD POVERTY?

A rising cost of living can have

## 'Of course, the cost-of-living crisis is not only restricted to patients. Community nurses are also facing the implications of rising living costs at home and at work...'

various health consequences. For example, not being able to afford enough food leaves people at risk of malnourishment, which in turn can contribute to stress, mental health issues, obesity, diabetes and heart disease ('Millions forced to skip meals as UK cost of living crisis deepens' — [www.theguardian.com](http://www.theguardian.com)).

Similarly, many vulnerable people in the community are also trying to cut back on heating, meaning homes become cold and damp, exacerbating respiratory conditions. The constant anxiety about paying bills can increase stress, leading to elevated blood pressure and compromised immune systems ('The cost-of-living crisis is a health emergency too' — [www.health.org.uk](http://www.health.org.uk)).

In a survey of patients by the Royal College of Physicians, doctors reported increased health inequalities resulting from the cost-of-living crisis, with specific examples including patients missing lung cancer investigations because of travel costs, and respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD) worsened by poor living conditions such as mould ('Rising cost of living is damaging people's health, says royal college' — [www.bmj.com](http://www.bmj.com)).

Of course, the cost-of-living crisis is not only restricted to patients. Community nurses are also facing the implications of rising living costs at home and at work, for example having to absorb increased fuel prices when travelling to see patients ('Call for action to support community nurses facing rising fuel bills' — [qni.org.uk](http://qni.org.uk)).

## WHO IS MOST IN DANGER?

Older people are particularly affected by the cost-of-living crisis, with many

skipping meals and buying cheaper products in an effort to save money. In older people unintended weight loss is associated with reduced muscle mass and function, and is a key risk factor for developing frailty ('Do oral nutritional supplements effectively reduce malnutrition or its adverse outcomes in older people with frailty?' — [www.thelancet.com](http://www.thelancet.com)).

A report from Swansea University also reported that people's mental health may be significantly affected by concerns about heating their homes and affording food ('Cost of living crisis having significant impact on mental health, study shows' — [www.swansea.ac.uk](http://www.swansea.ac.uk)). The researchers emphasised that those from deprived communities are experiencing higher levels of anxiety about their future, while many felt a lack of control over their lives and were in danger of developing 'learned helplessness'.

Children are also at risk, with the charity Children's Health Scotland stating that a lack of food and adequate heating can stunt children's physical development, as well as compounding the risk of malnutrition, obesity and respiratory conditions such as asthma ('Cost-of-living crisis threatens to stunt children's physical development, paediatricians warn' — [www.childrenshealthscotland.org](http://www.childrenshealthscotland.org)).

## WHAT IS BEING DONE?

The NHS Federation, the membership body for organisations such as healthcare trusts, agrees that the cost-of-living crisis represents a clear and present danger to people's health ('The rising cost of living' — [www.nhsconfed.org](http://www.nhsconfed.org)). However, it does at least provide some solutions. In the case of fuel poverty, it states that the government should be:

- Targeting support such as grants at those least able to heat their homes.
- Considering poverty as a key determinant of health.
- Providing financial support to help those in low-income households insulate their homes.

While these strategies may be of little day-to-day use to community



*The cost-of-living crisis is impacting upon individuals in the community setting in a plethora of ways, but it is the relentless ripple effect that may well be equally as damaging.*

*Individuals with mental and physical health issues based in the community arena are struggling to heat their homes and eat healthily due to the price surges, and juggle to pay the other increasing bills that they are facing.*

*However, friends, family, neighbours, and the community within which they live may also offer less support, whether it be physical or mental assistance, as the cost of living also places inherent pressures upon them. This sadly and potentially tragically provides a perfect opportunity for vulnerable individuals in the community to have their physical and mental health needs unmet and their social opportunities eroded.*

*In these challenging times, including the increasing NHS waiting lists, strikes and winter pressures, working together in an intelligent manner utilising all resources — physical and digital, health and social care organisations, statutory and third sector-based — may well be a way forward. Utilising local resources has always been a support to individuals in the community arena and they may well continue despite the additional pressures these supporters will also be facing. This needs to be acknowledged by those providing care and they need to be able and prepared with adequate resources to offer additional support to the carers and supporters in the community, so that this vital lifeline for individuals in the community setting can continue.*

*Effective interagency collaboration delivering integrated person-centred care could, for example, reduce duplication — indeed, saving resources and being person-centred will ensure services are delivered appropriately and promptly to continue to enhance the physical and mental health of individuals. Challenging times are certainly ahead not only for individuals who require care in the community, whether it is to address and assist with their physical or mental health needs, but also for those who provide their care, with help and support whether they are paid or unpaid.*

**Teresa Burdett**  
Principal academic, Bournemouth University

nurses, the NHS Federation does give some examples of community projects that are actively working to manage the impact of fuel poverty. These include a 'systems approach' adopted by health and care services in Nottingham, which aims to ensure that community teams 'make every contact count' when speaking to patients by enquiring about their heating and recommending community facilities such as 'warm

hubs' in buildings such as churches and libraries.

Similarly, in terms of food insecurity, the NHS Federation details some top-line solutions (such as expanding eligibility for free school meals and breakfast clubs to all low-income households), while also providing some examples of more useful strategies for community services. These include

*As an NHS community health provider, we are there to provide health care, but we do this within the context of the lives people lead and as we enter a person's home, we have a unique insight into how the present 'cost-of-living crisis' is impacting those at risk of their ill health becoming worse. At this time of year, we know the impact of cold weather on people's health, and we continue to do the obvious things that we do every winter, i.e. checking for signs of fuel and food poverty — is the property cold, is there food in the house? However, this year there is more to do (and more to know) — does a pile of unopened post indicate this might be one of the many households not realising that there may be unclaimed fuel vouchers hidden among the bills? Do we need to signpost to sources of support for emergency food (will it be culturally sensitive)?, fuel bills, income maximisation/debt management? In our minds, are the considerations of is it a freephone number that can be contacted whether or not the person has credit on their phone, or if they have internet and are digitally literate, can they access online support for free, or if not, who could support them to? Are they able to go out and can we suggest some of the warm spaces that are nearby?*

*We have to be equipped with the knowledge and information that will support people throughout this time. For this, local partnerships are essential. Without them we risk missing opportunities or duplicating what's already available. In Leeds, these partnerships start at a structural level with gold, silver, and bronze command meetings, with our staff part of all these groups. There is a new partnership website as one source of information to help with the cost of living, supported by the Leeds Anchor Network. At a neighbourhood level, our Local Care Partnerships have hosted training and events to ensure that all local frontline health and care staff are aware of what is on offer locally. Awareness and actions are driven throughout our Community Healthcare NHS Trust, including regular meetings led by our chief executive to establish our role in supporting community patients during the cost-of-living crisis and donation points in health centres and other staff bases as part of #LeedsWinterCoatAppeal, which has collected and distributed over 3,000 warm winter coats.*

*We also recognise that the cost-of-living crisis is not just about the people we serve but our staff too. Staff wellbeing initiatives include physical, mental and financial wellbeing, which are critical especially for those in lower grade post. We need to look after our staff, not only to manage financially, but also to support them through the emotional impact of seeing such levels of poverty and distress.*

**Lucy Jackson, Consultant in public health; Em Campbell, Health equity lead, both at Leeds Community Healthcare NHS Trust**

Morecambe Bay NHS Foundation Trust, which provides care packages for patients about to be discharged from hospital and who require an extra level of support in the community. Nurses assess patients' food insecurity according to whether they are likely to have food at home, if they have relatives living nearby, or if they have been in hospital for a long time. Eligible patients are discharged with a package including tea and coffee, bread, tins of soup and cereal.

## HOW TO MAKE A DIFFERENCE

As well as these strategic examples of assistance that community services can provide for people struggling with the cost of living, there may also be creative ways that you can help. In one trust in York, community nurses have been taking Covid-19

and flu vaccinations to vulnerable community patients rather than having them travel to clinic, as well as setting up a local well-being café for people with dementia and their carers ('New services launched to help patients in cost of living crisis' — [www.yorkpress.co.uk](http://www.yorkpress.co.uk)).

In other innovative schemes, staff at GP surgeries have been prescribing help with heating bills to low-income families to avoid subsequent hospital costs should they become unwell with cold-related conditions such as pneumonia ('Energy bills: Patients prescribed heating as part of health trial' — [www.bbc.co.uk](http://www.bbc.co.uk)).

In a similar scheme, community staff and charities have been involved in prescribing fruit and vegetables to vulnerable families, usually using a system of vouchers,

to combat conditions such as obesity, diabetes and hypertension ('Fresh fruit and veg prescribed to low-income families in UK trial' — [www.theguardian.com](http://www.theguardian.com)).

Whatever way you choose to help, it is clear that the coming winter months are going to be challenging for some of your patients and their families, as well as for you and your colleagues. While this piece has outlined some strategies that you might use to help vulnerable patients with heating and nutrition, perhaps the most important intervention you can make is to be present. Keep visiting patients; keep offering them the best possible care. Because, if the experience of Covid-19 showed us anything, it was that the UK's community nurses know better than anyone how to get through a crisis.



*Eve Thrupp, nursing programmes manager (leadership), Queen's Nursing Institute (QNI); Queen's Nurse*

The pandemic has undoubtedly had catastrophic effects on the health and wellbeing of the population. This will continue to unravel for years to come, so it is understandable that health and social care staff are still trying to unpack, unpick and attempting to make sense of the Covid-19 pandemic.

The pressures on the workforce have been written about across literature; pre-pandemic it is estimated that the UK had 50,000 nurse vacancies (Guo et al, 2012, Royal College of Nursing [RCN], 2020). Therefore, it cannot be assumed that due to new contextual influence (the pandemic), the nursing workforce has become burnt out and depleted, rather the pandemic has exacerbated pre-existing challenges (Charles and Ewbank, 2021).

During the initial stages of the pandemic, the media served up pictures of hospital nurses and intensive care beds — a very medical model of nursing. The often-forgotten community nurse that provides complex care, within the patient's safe haven — their home — was largely invisible from such media reports (Green et al, 2020; Day et al, 2022). Considering some statistics, NHS England data shows that community nurses counted 42.2 million patient contacts in the year 2019–20. This figure highlights the vital role of community nurses in managing patient need, which needs to be valued and recognised more publicly (NHS England, 2020).

## Tackling Long Covid in the community

Reflecting back, very few images and journeys of patients being cared for in their homes were portrayed in the media during the pandemic. For part of the time during which that data was being collected, community nurses remained unaware of the stark challenges that were ahead of them. However, community nurses continued to provide complex, specialist care and rose to the constant challenge that Covid-19 presented.

When we also consider that in 2021 the National Institute for Health and Care Research (NIHR) recognised that 1.3 million people (and this number is progressing) are suffering from 'Long Covid', it should also be recognised that these patients will receive the majority of their care in their communities, from highly skilled specialist practitioners in the community (Senek et al, 2022). Long Covid is something our generation of community health and social care staff will be caring for in people, for generations ahead. It is imperative that nurses feel adequately prepared for this. Appropriate time must be allocated to the workforce for supervision, and training in Long Covid. Covid-19 and Long Covid present complex health issues and it requires a whole-system approach to management and for people's recovery.

It should also be recognised that the Covid-19 pandemic in the UK shone a light on the complex health inequalities communities deal with, as never before. It needs to be accepted that while much work has been done to investigate and analyse the health disparities that Covid-19 and Long Covid have caused, further work in this area must be sustained.

The evidence is that Covid-19 had a disproportionate impact upon Black, Indigenous, and Latinx

communities (Nana-Sinkham et al, 2021). This serves as a stark reminder to health services that further work is needed to investigate and address the health inequalities within our health systems, and community nurses are arguably the most skilled and knowledgeable professionals to help with this (Aiken et al, 2012).

These multifactorial areas should be considered and acknowledged when completing assessments and supporting patients with Long Covid. Community nurses are best placed, skilled, and professional at communicating patient-focused assessments of health with their patients.

### NEW QNI RESOURCE

The Queen's Nursing Institute (QNI) constantly champions the role of community nurses, and during the Covid-19 pandemic provided much needed guidance and support for nurses nationally. One of the actions of the QNI was to create, develop and sustain a Long Covid nurse expert group for community nurses and other healthcare staff. The network aims to raise awareness of Long Covid, the impact it is having on service delivery, and to advocate for people and their 'lived experiences' of Long Covid. It also seeks to recognise the impact of deconditioning and variability of symptoms on those affected.

Creating a resource for community nurses, *Living with Covid-19 (Long Covid) and Beyond* ([www.qni.org.uk/wp-content/uploads/2020/12/Living-with-Covid-19-Community-and-Primary-Care-Nursing-Resource.pdf](http://www.qni.org.uk/wp-content/uploads/2020/12/Living-with-Covid-19-Community-and-Primary-Care-Nursing-Resource.pdf)), the QNI aimed to support nurses with a wealth of information, through signposting and guidance on what to look for, and how to holistically assess patients with Long Covid.





Helen Hurst, general practice nurse,  
The Orchard Surgery, Bromborough;  
Queen's Nurse

When I applied to become a Queen's Nurse in 2020, I had no idea where this journey was going to take me — it certainly has become a fulfilling accolade with many opportunities. From a project that identified, coded and introduced an emotional health and wellbeing check for Military Veterans, to now being awarded an Elsie Wagg (Innovations) Scholarship from the National Garden Scheme and Queen's Nursing Institute (QNI), to create a sensory garden space using Military Veterans and learning disability patients.

Attending one of the QNI's conferences, George Plumptre spoke about the Elsie Wagg scholarship. Elsie was a QNI council member, who originally had the idea to open gardens to raise money for the charity, which led to the creation of the National Garden Scheme in 1927. Looking around our GP practice, I noticed it looked a bit unkempt and chatting with our practice manager, an idea was born that followed on from the Military Veterans' emotional health and wellbeing check project, funded by the Charlie Waller memorial fund.

The garden project has involved networking with Walking with the Wounded, One Wirral Community Interest Company (CIC), Willaston Farm CIC, Everton Free School, Sally Coulthard MBE, founder and managing director at Defence Gardens scheme, and staff from Healthier South Wirral PCN. Together, we have planned a sensory

## Sensory garden project supports wellbeing

garden and safe place for Military Veterans and learning disability patients. The garden's aim is to support the five ways of wellbeing for these two groups of vulnerable people, namely:

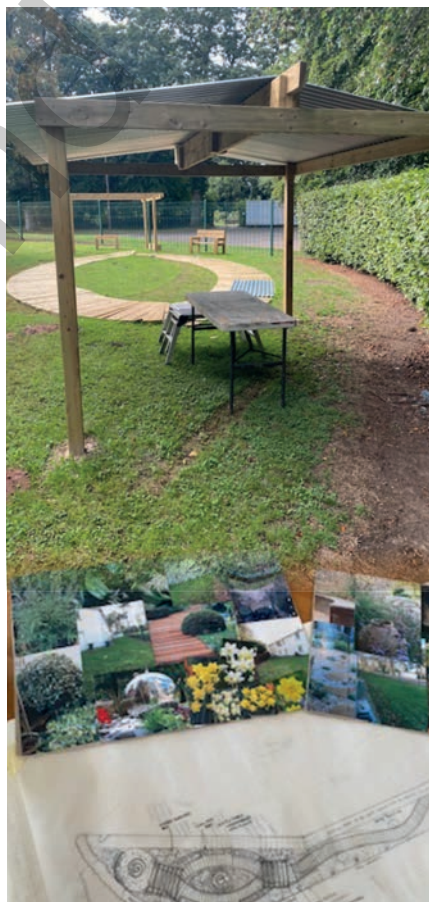
- ▶ 'Learning' through working the garden
- ▶ 'Connecting' with others. Using the garden and reducing isolation in a safe environment
- ▶ Staying 'Active' — doing physical work and walking around the space
- ▶ 'Give' — by maintaining the garden for everyone to enjoy
- ▶ 'Take notice' — encouraging mindful practice and having the five sensory elements incorporated into the space.

The National Garden Scheme commissioned the King's Fund in 2015 to compile a report on the impact of gardens and gardening on health

and wellbeing, exploring what the NHS and the wider health and social care system can do to maximise this impact. Taking this blueprint, the idea of the sensory garden is now evolving from creating the garden to maintaining it using the social prescribing team and another project happening at One Wirral CIC, which is prescribing gardening to improve health and wellbeing.

Post pandemic, it is an exciting time to be involved in an innovative project like this. It is about bringing communities together and clinicians working in a different way, which will hopefully make them think about their prescribing in a greener way. Can a prescription of vitamin G (gardening) be the next new drug? According to Professor Alistair Griffiths (director of science and collection at the Royal Horticultural Society [RHS]), there is an ever increasing body of scientific evidence that gardens and gardening are good for physical, mental and social wellbeing.

The study days at the QNI have been thought-provoking, encouraging thinking outside of the box, being creative not just with the budget, but to build and create an area that will have an impact on a community for hopefully generations to come. I wanted to create a garden for the senses and wellbeing, which as Kendra Wilson puts it in her book, *Garden for the Senses*, 'how your garden can soothe your mind and awaken your soul.' JCN



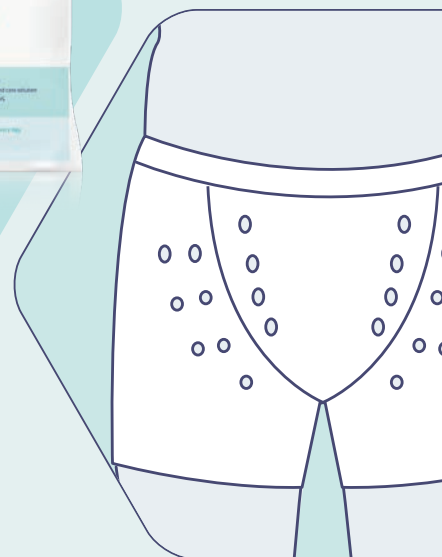
### More information...

Applications are now open for the QNI's Community Nursing Innovation programme, for more information visit: <https://qni.org.uk/explore-qni/nurse-led-projects/partnerships-for-innovation/>



# HidraWear

## Wearable Wound Care



To find out more visit [www.hidrawear.com](http://www.hidrawear.com)  
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Dr Peter Smith, president,  
the Self Care Forum

The impact of the menopause, particularly in the workplace, has only recently been given the attention it deserves. Seventy-five percent of the NHS's workforce are women, and for nurses working in the community the figure is even higher (NHS England, 2021). 'Women' includes transgender, non-binary and intersex staff. The NHS and clinical leaders have responded to concerns and the menopause guidance for the NHS workforce managers was launched in November 2022 (NHS England, 2022).

The guidance, produced by NHS England through its NHS menopause programme, the Menopause Care Improvement Programme (MCIP) (NHS England, 2022), will be underpinned by the 'Optimal Treatment Pathway', which is currently in development and will give frontline clinicians clear guidance on best practice, based on the most recent and relevant scientific studies with clear diagnostic, prescribing and referral pathways.

Supporting the menopause guidance is an easy to read, short factsheet containing up-to-date and evidence-based information on the menopause for use by both people and professionals. It has been developed by the Self Care Forum, providing a summary of the consensus view of the MCIP clinical reference group (CRG). It is hosted

# Menopause, the workplace and self-care

on the Forum's website ([www.selfcareforum.org/menopause/](http://www.selfcareforum.org/menopause/)), alongside a further 22 self care aware factsheets.

The factsheets are pitched at a level that allows them to be understood and used by the general public, but are sufficiently detailed and authoritative to act as an 'information passport' to facilitate the all-important early conversations between people and professionals. Although the content may be read online, the limitation to two sides of A4 restricts the word count and graphics to a level that allows people to digest it in a single sitting. It also ensures that it is easy for professionals to print off during a consultation or conversation.

The menopause factsheet includes sections on the nature and definition of the menopause, symptoms, advice on management, including basic self-care, treatment options and when and where to seek professional advice. Below are some of its highlights.

## WHAT IS THE MENOPAUSE?

The menopause is the time when a woman stops having periods and can no longer get pregnant naturally, including people who are transgender, non-binary and intersex who have ovaries. The ovaries stop releasing eggs and no longer produce the hormones oestrogen and progesterone. For women reaching menopause naturally, it is defined as having occurred when a woman has not had a period for 12 continuous months.

Menopause occurs between the ages of 45 and 55 for 94% of women. Between 40 and 45 it is known as early menopause, but for 1% it may occur before the age of 40 (Sullivan et al, 2016). This is known as premature menopause, or premature ovarian insufficiency.

Symptoms can start years before periods stop as hormone levels become erratic. This is called the 'perimenopause' or 'menopause transition'. Symptoms may continue long after the menopause. This time of life is known as 'postmenopause'.

## SYMPTOMS

Around 75% of women will get symptoms; for 25% of women they are severe and can have a huge impact on daily life (including on relationships and at work) (Griffiths et al, 2013; Wellbeing of Women, parliamentary evidence, 2021; British Menopause Society [BMS], 2022a).

The commonest symptoms of the perimenopause are changes in periods, hot flushes, anxiety and mood swings. The factsheet lists many more (*Figure 1*).

Calculations by NHS England and NHS Improvement suggest that even if only the 5% of women with the most severe symptoms were helped, it could lead to annual benefits to the NHS of over half a billion pounds. This amount doubles if the next 15% with 'bothersome symptoms' are included.

## MANAGING YOUR MENOPAUSE AND SELF-CARE

For many women, menopausal symptoms are mild and can be managed without specific treatment. For those with troublesome symptoms, the most effective treatment is usually hormone replacement therapy (HRT) (Cagnacci and Venier, 2019), although it may not be suitable for all women. This includes helping with hot flushes, joint pains, mood swings and vaginal dryness, as well as prevention of osteoporosis. Early advice can help reduce the effects the perimenopause and menopause may have on your health, relationships and work.



Simple lifestyle changes and self-care can help during the perimenopause and menopause and are recommended whether or not HRT is used, including regular physical exercise, appropriate rest, reaching and maintaining a healthy weight and eating a healthy diet can all help.

Mood problems and anxiety can be helped by regular sleep, relaxation and cognitive behavioural therapy (CBT).

Vasomotor symptoms, such as hot flushes and night sweats, can be helped by a variety of simple measures, including using fans during the day and reducing stress. There are also over-the-counter and prescribable non-hormonal alternatives. The workplace guidance refers at length to the benefits of a flexible and understanding work environment, particularly in relation to vasomotor symptoms (NHS England, 2022).

Vaginal dryness can be ameliorated using over-the-counter preparations, which now include vaginal oestrogen for postmenopausal women over the age of 50 after discussion with a pharmacist.

Reduced sex drive can be caused by relationship and stress issues. The National Institute for Health and Care Excellence (NICE) recommends testosterone is only generally prescribed after a trial of HRT (Nathorst-Böös et al, 2006).

Protection against bone loss is best achieved with HRT (Cagnacci and Venier, 2019), but regular weight-bearing exercise, eating calcium-rich foods, taking vitamin D supplements, cutting down alcohol and stopping smoking can be helpful.

## HORMONE REPLACEMENT THERAPY (HRT)

For most women, HRT is generally a safe and effective treatment for symptoms of the menopause. It replaces the oestrogen the body is not producing, although women with a uterus also need to take a progestogen (combined HRT), to reduce the risk of endometrial cancer.

**The Menopause**  
SELF CARE FORUM FACT SHEET NO. 22

**Facts about the menopause and the perimenopause**

*The menopause is the time when a woman stops having periods and can no longer get pregnant naturally. The ovaries stop releasing eggs and no longer produce the hormones oestrogen and progesterone.*

- Menopause is traditionally defined as having occurred when a woman has not had a period for 12 continuous months (for women reaching menopause naturally).
- It usually occurs between the ages of 45 and 55. Between 40 and 45 it is known as early menopause but for some women it may occur before the age of 40. This is known as premature menopause, or premature ovarian insufficiency.
- Changes can also be brought about by treatments for cancer (e.g. chemotherapy), through removal of the ovaries and by some types of hormone therapy. People with some genetic conditions are more likely to experience a premature menopause.
- Symptoms can appear years before periods stop, as the body makes its changes leading up to the menopause. This is called the 'perimenopause' or 'menopause transition'.
- The commonest symptoms of the perimenopause are: changes in periods, hot flushes, anxiety and mood swings. See the box alongside for more.
- Symptoms can have a big impact on people's lives, including on relationships and work.
- Symptoms may continue long after the menopause. This time of life is known as the 'postmenopause'.
- There are things people can do to help with symptoms and there are treatments to replace the missing hormones.
- Contraception must still be used up to the menopause and for a further 2 years if under the age of 50, or for 1 year if over 50. If the diagnosis is not clear, contraception should be continued to the age of 55.

**What might happen during the menopause and perimenopause?**

**Common signs and symptoms of the perimenopause and menopause**  
Around 75% of women will get symptoms; for 25% of women they will be severe and they can have a big impact on daily life. Symptoms may be worse if your menopause comes on suddenly, for example after surgery to remove your ovaries. If you have any of the symptoms listed here, think menopause, but be aware that some of the symptoms (e.g. fast heartbeat or worsening migraines) may indicate a more serious problem. If in doubt consult the nhs.uk website or speak to a health professional.

**Changes to your periods with menopausal symptoms**

- You will normally notice a change in the pattern of your periods. They may get lighter or heavier, happen less often or more often, or become unpredictable. Eventually, you will stop having periods altogether.

**Mental health symptoms**

- Mood changes, like low mood, anxiety, mood swings and low self-esteem.
- Problems with memory or concentration (brain fog).

**Physical symptoms**

- Hot flushes, when you have short, sudden feelings of heat or cold, usually in your face, neck and chest. They can make you sweaty or dizzy and make your heart beat faster.
- Night sweats.
- Difficulty sleeping, which may be a result of night sweats, making you tired and irritable during the day.
- Headaches, including worsening of existing migraines.
- Muscle aches and joint pains.
- Changing body shape.
- Skin changes, including dry and itchy skin.
- Reduced sex drive (libido).
- Vaginal dryness and pain, itching or discomfort during sex.
- Repeated urinary tract infections (UTIs) or urinary frequency.

**Symptoms can last for months or years, and can change with time.**  
For example, hot flushes and night sweats may improve, and then you might develop low mood and anxiety.

**A typical menopause timeline**

Menopause 12 months after your periods stop

Regular periods | Perimenopause (Change in periods, menopausal symptoms) | Postmenopause (No further periods, symptoms may persist)

This does not apply to all women e.g. those who are not having periods due to certain types of contraception, or who have had a hysterectomy, when symptoms are used to make the diagnosis.

Fact Sheet No 22: Menopause. Produced by the NHS National Menopause Clinical Reference Group and the Self Care Forum. www.selfcareforum.org  
Created May 2022. Updated November 2022. Next review: May 2023.

Figure 1.  
Page 1 of 2 of the factsheet.

## Benefits of HRT

HRT is effective at relieving most perimenopausal and menopausal symptoms. Hot flushes, night sweats and mood changes can start to improve within a few days. Other symptoms, such as joint pain and vaginal dryness, can take a few weeks to improve. Many people find their quality of life at home and at work improves when they take HRT.

Taking HRT can also reduce the risk of hormone-related health problems (Cagnacci and Venier, 2019), including osteoporosis, and, possibly, type 2 diabetes.

## Risks of HRT

For most women, the benefits of HRT

outweigh the small risks and it can often be taken for many years after the menopause. In the opinion of the chair of the Menopause CRG, 'many women are still suffering in silence and are reluctant to seek advice and support due to concerns around the risks associated with HRT' (<https://bit.ly/3uqhkmE>).

Some types of HRT can slightly increase the risk of breast cancer, blood clots and strokes, but others do not. The overstating of risks in the early 2000s resulted in a 50% reduction in the use of HRT (Burkard et al, 2019; Cagnacci and Venier, 2019). The scares continue to influence views of the general public and many professionals. The

factsheet summarises the risks and gives sources for good supportive evidence-based information, including the BMS (2022b) and NICE (2015). It is hoped that more women will feel empowered to request HRT and professionals will feel more confident in prescribing it.

## CONTRACEPTION

Contraception is recommended until the menopause and for a further two years if under the age of 50, or for one year if over 50. If the diagnosis is unclear, contraception should be continued until 55.

## WHEN AND WHERE TO SEEK HELP

Women should feel comfortable approaching their GP at an early stage for help, along with other professionals trained in managing the menopause, such as workplace and practice well-being champions.

They should particularly seek help if they have perimenopause or menopause symptoms and:

- ▶ Are under 45
- ▶ Want to know more about treatment
- ▶ Want to discuss contraception
- ▶ Are already on hormonal treatment or have had a hysterectomy
- ▶ Their periods have stopped unexpectedly or have become a problem
- ▶ Any symptoms have become a problem
- ▶ They are not on HRT and experience vaginal bleeding more than 12 months after their last period.

A shortlist of the best online sources is provided for further reading, including the Menopause section on nhs.uk.

The NHS is committed to creating a supportive working environment that champions the well-being of women. 'Women' includes transgender, non-binary and intersex staff, but the approach impacts everyone living with people going through the menopause, whether at home or at work. It is hoped that the



Photograph: belushi/Shutterstock

menopause guidance, the MCIP, the 'Optimal Treatment Pathway' and the factsheet will give women confidence to ask for help, request HRT, and ultimately stay in work in the NHS, thriving through the menopause and beyond.

The Self Care Forum is privileged to have been involved with the development of the menopause factsheet. We look forward to it contributing to understanding of the subject that will allow more women to feel empowered to start discussions with professionals and for the latter to feel more confident in supporting women and prescribing HRT. **JCN**

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Jen Lodge (top), clinical nurse specialist, Leeds Community Healthcare NHS Trust; Angela Crossland (bottom), market access manager, Coloplast UK and Ireland

# Why evidence is more than just a NICE to have in MedTech

**‘Healthcare professionals in intimate health care need the flexibility to treat individual needs of diverse patients with the right product at the right time.’**

hospital admissions in 2017/18. Alongside this, NHS England spent £168 million on constipation and £87 million on laxative prescribing in 2018/19 (Bowel Interest Group, 2020). With the NHS operating under a post-Covid recovery plan and resources being stretched, ensuring cost-effective treatments that prevent the consumption of other healthcare resources is essential.

For patients living with intimate healthcare needs, the product(s) they wish to use also forms an essential part of their healthcare rights as outlined in the NHS Constitution. These products provide solutions to the challenges people living with intimate health needs face, and help to improve their quality of life. Every day, Coloplast UK and Ireland hear from patients using its products about how these have helped to transform their lives and improve health.

Coloplast develops products and services to make life easier for people with deeply personal and private medical conditions. These conditions are often associated with trauma and taboo. The more intimate the condition

for the patient, the greater the requirement to understand their world and develop solutions that are sensitive to their specific needs.

Due to the nature of intimate health care — where products are typically prescribed by a specialist rather than a generalist; product choice for clinicians is in the first author’s clinical experience welcomed. Healthcare professionals in intimate health care need the flexibility to treat individual needs of diverse patients with the right product at the right time (Coggrave, 2012). It is already well documented that personalised care can, in turn, improve patient compliance and eliminate or reduce costly avoidable incidences of poor health for the wider health system (NHS England, 2022).

## TRANSANAL IRRIGATION (TAI)

TAI is used as a treatment for patients with bowel dysfunction, helping to improve faecal incontinence and chronic constipation by facilitating the emptying of the bowels. When performed regularly, TAI can also help people with bowel dysfunction to regain control of bowel function, ‘including time and place of bowel movements’ (Mekhael et al, 2021).

People will be introduced to TAI for a variety of reasons. It could be for neurological and non-neurological conditions — but, as with all intimate health care, for

Many people across the UK live with poor bowel health, suffering with chronic constipation and/or faecal incontinence, which can be debilitating and prevent those suffering from enjoying their best life possible. The ‘Cost of Constipation Report’ (2020), published by the Bowel Interest Group, documents that in fact one in seven adults are affected by constipation at any one time; while many people suffer in silence (Bowel Interest Group, 2020).

Similarly, the group’s preceding ‘Cost of Constipation Report’ illustrates that a primary diagnosis of constipation led to 71,430

many, talking about it can still be extremely awkward. Therefore, in the authors' opinion, knowledge is power — having choice of product combined with trusted clinical advice and guidance is important.

At a time where shared decision-making is key, the guidance that the National Institute for Health and Care Excellence (NICE) provides can help patients and carers to 'receive care that is based on the best available clinical evidence; be accountable for their care and know they will be cared for in a consistently evidence-based way; improve their own health and prevent disease' (NICE, 2022a). NICE guidance and the implementation resources it provides also support commissioners to provide high quality, evidence-based services for patients and local populations (NICE, 2022a).

by NICE's Medical Technologies Evaluation Programme (MTEP). This programme takes the time to consider which technologies could offer benefits to patients and the health and social care system over current practice, and develops guidance and recommendations to the NHS. Medical technology guidance not only helps people in the NHS make efficient, cost-effective and consistent decisions

Here, the 'case for adoption' was based on the claimed advantages of introducing Peristeen<sup>®</sup> compared with current management of constipation. This was reviewed against the evidence submitted, alongside expert advice, and the case for adopting Peristeen<sup>®</sup> was supported. In other words, the product was found to offer advantages to patients and the NHS. NICE states that: 'Peristeen<sup>®</sup> can provide important clinical benefits in most people with bowel dysfunction, including improving quality of life and promoting independence' (NICE, 2022b).

More recently, NICE reviewed this medical technology guidance (MTG36) and proposed an amendment to reflect changes in the technology from Peristeen<sup>®</sup> to Peristeen<sup>®</sup> Plus (Figure 1) and revised the cost-savings which demonstrate that Peristeen<sup>®</sup> Plus is more cost effective than standard bowel care alone.



Figure 1.  
Peristeen<sup>®</sup> Plus.

## IMPORTANCE OF EVIDENCE

HealthTech has become increasingly regarded as having the potential to reduce costs and increase the efficiency of healthcare systems (Association of British HealthTech Industries [ABHI], 2021a; 2021b).

For many years, Coloplast has invested in clinical studies to examine the effectiveness of its TAI system, Peristeen<sup>®</sup>. In 2016, the opportunity arose to have this data reviewed and assessed

**'Given the impact which bowel dysfunction has on patients and the healthcare system as a whole, healthcare professionals are always looking for clinically appropriate, cost-effective treatments to address these challenges.'**

about adopting new medical technologies, but also supports innovation and transformation, improving healthcare delivery.

## COST-EFFICIENCY

Given the impact bowel dysfunction has on patients and the healthcare system as a whole, healthcare professionals are always looking for clinically appropriate, cost-effective treatments to address these challenges.

At a time when resources are stretched and healthcare professionals are working tirelessly to address the challenges brought about by the Covid-19 pandemic, it was important to see the updated

NICE guidance reaffirming that, used routinely, Peristeen® Plus is a cost-effective solution to optimising bowel dysfunction and reducing the severity that chronic constipation can bring (NICE, 2022b).

Indeed, by helping people with bowel dysfunction to better manage their condition, the device has been found to support cost-savings within the system by reducing the need for avoidable healthcare professional visits, facilitating fewer hospitalisations, reducing the incidence of urinary tract infections (UTIs), freeing up time for carers, and decreasing the additional costs associated with managing recurring episodes of faecal incontinence (NICE, 2022b). This combination of factors led NICE to advise that the NHS adoption of Peristeen® Plus could facilitate savings of £5,144 per patient over a 37-year time horizon and recommend that 'it is likely' that Peristeen® Plus 'provides additional clinical benefits without costing more than standard bowel care' (NICE, 2022b).

## CLINICAL PERSPECTIVE

*As a clinical nurse specialist who has worked closely with people with spinal cord injuries and neurological conditions, I know first-hand how much bowel dysfunction can affect a person's confidence and wellbeing; especially when standard methods to address these challenges are not working effectively.*

*Every bowel management specialist wants to see a world where nobody's quality of life is affected by faecal incontinence and constipation, and it is important that we use evidence-led clinical guidance to support this ambition. Peristeen® Plus has an important role to play in supporting good bowel function, and, where appropriate, I'll certainly be looking to implement the updated NICE guidance in my everyday clinical practice.*

Jen Lodge, clinical nurse specialist, Leeds Community Healthcare NHS Trust

## PATIENT PERSPECTIVE

*Spinal cord injured people consistently tell us how critically important good bowel management is to them, and I know from my own experience that having improved control of my bowel had a really significant impact on the quality of my life and mental health. Knowing that NICE has made evidence-based recommendations for the adoption of Peristeen® Plus by the NHS means patients can have complete confidence that there is an effective treatment option available to them. We're pleased that NICE has recognised the importance of supporting good bowel function and hope this sends a message that people do not need to suffer in silence; support for good bowel management is always available.*

Dave Bracher,  
campaigns manager,  
Spinal Injuries Association

## CONCLUSION

In conclusion, evidence-based practice provides healthcare professionals with a method to use critically appraised and scientifically proven evidence for delivering quality health care to a specific population. Reassuringly, the processes for the development of medical technology guidance at NICE means that patient benefits, system benefits and cost benefits have already been considered. **JCN**

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Liz Neal, head of communications, UK and Ireland, Mölnlycke Healthcare

# Important role of non-specialists in wound care

**‘There is a clear need to ensure that community nurses feel supported and confident in their ability to deliver wound care.’**

Wound management is increasingly falling to those who are not wound care specialists (Guest et al, 2020).

For the period from 2012/13 to 2017/18, the number of patients requiring wound care services rose by a staggering 71% (Guest et al, 2020). Now, 3.8 million people in the UK have a wound being managed by the NHS, equivalent to 7% of the population (Guest et al, 2020). Over the same period, NHS spending on wound care services has only grown by 48% (Guest et al, 2020), meaning that spending per patient has fallen. Taken together with reports of the difficulty in recruiting people into wound care services, this means that non-specialists are increasingly involved in treating wounds while specialist involvement is diminishing.

A huge amount of wound care is now being delivered by non-specialists: 68% of acute wound care costs were borne by community healthcare in 2017/18, compared with only 48% in 2012/13 (Guest et al, 2020). For chronic wounds, 85% of the cost was borne by the community in 2017/18, compared with 78% in 2012/13 (Guest et al, 2020). As wound care moves to

the community, community nurses have an increasingly essential role in managing wounds, yet there is limited time within nurse training dedicated to wound care. One study that looked into nurse training and confidence in wound care, highlighted ‘differences in the degree of training and education they received’, as well as a ‘distinct lack of formal training related to wound care or wound dressings’. Of particular

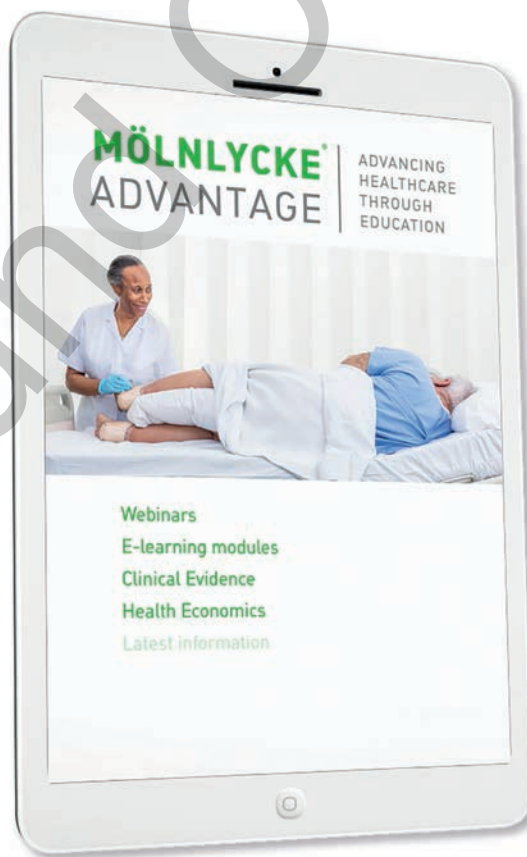
This is an important area to get right; it is an issue affecting many people, having a negative impact on their quality of life and costing the NHS £8.3 billion annually (Guest et al, 2020). Getting it right has the potential to deliver for patients first and foremost, but it can also help to make NHS services more effective and efficient.

There is therefore a clear need to ensure that community nurses feel supported and confident in their ability to deliver wound care.

At Mölnlycke, we have developed a wealth of experience in wound management through designing and delivering wound care solutions. It’s imperative that we fully support community nurses treating wounds. But, what is the most effective way to do that?

To answer this question, we ran a survey on healthcare professionals’ attitudes to the redesign of wound care services over the Covid-19 pandemic. This survey and the ensuing report, *Making Wound Care Work* ([www.molnlycke.co.uk/campaigns/making-wound-care-work/](http://www.molnlycke.co.uk/campaigns/making-wound-care-work/)), helped to identify some of the opportunities presented by the pandemic-enforced redesign of services in tackling some of the challenges that existed before the pandemic, and those which have been emerging since.

One result was particularly illuminating: 86% of respondents to the survey agreed that ‘digital education and remote learning have supported their organisation during Covid-19’. Later in the survey, when asked specifically about how industry can support teams to rebuild and improve wound care services,



relevance, the study points out that it is common for nurses to describe their training as ‘on the job’, and via ‘hands-on experience’ (Blackburn et al, 2019).



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37% wanted to see the provision of advanced education and best practice among healthcare professionals, and 40% wanted to see the provision of patient education materials to assist supported self-care.

This is somewhere where we can add significant value.

Mölnlycke contribute to professional development in wound care by sharing best practice, and lessons learned, and by providing practical tips and advice. This is primarily done through Mölnlycke Advantage, an online clinical learning hub. It is designed to advance knowledge to help get the best outcomes for both those delivering care and those receiving it. We are also proud sponsors of Microworld, a free, independent, educational platform that provides patients, carers, students, and healthcare professionals with access to engaging, interactive, CPD-validated medical content on wound care in an innovative format. To see for yourself, visit: [www.mymicroworld.online/](http://www.mymicroworld.online/).

Mölnlycke has also been pioneering the use of intuitive digital solutions for wound care, including the Mölnlycke Wound

Support app, My Mölnlycke, and our Case Finder app. The Mölnlycke Wound Support app provides in-app knowledge for advice and guidance on managing wounds, available free of charge on smartphone or tablet, while the My Mölnlycke platform, accessible via on-packaging QR codes, helps to tailor support both for the healthcare professional managing the wound, and the patients and carers involved in supported self-care. Best practice sharing was highlighted in the research, which is where the Case Finder platform helps — it provides instant access to clinical evidence generated by healthcare professionals in the UK and globally, which facilitates fast and informed decisions, even when dealing with matters outside your speciality.

Providing wound care is often a smaller part of a wider nursing role, so not everyone who is treating patients with wounds is necessarily an expert in doing so. By listening to healthcare professionals' needs, then supporting education in wound care, Mölnlycke intend to support non-wound care specialists in their role, to increase their knowledge and enable them to provide the best care possible for patients.

NHS staff see the benefit that companies such as Mölnlycke can bring to their learning and development. We will, of course, continue to work closely with tissue viability nurses and the specialist nurses who support them. But, as community nurses and specialists in other fields take on more responsibility for wound management, we are expanding the ways we share our knowledge. **JCN**

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## More information...

For more information on how Mölnlycke Advantage can support non-specialist staff to access wound care knowledge, please visit: [www.molnlycke.co.uk/education/](http://www.molnlycke.co.uk/education/)

This JCN clinical skills series provides a guide to the identification, assessment and management of chronic oedema of the lower limb and associated complications.

## Part 5: Chronic oedema: compression therapy, concordance and self-care

This clinical series aims to demystify and simplify approaches to assessment and management of chronic oedema in the community, including the promotion of self-care, to improve efficiency and the delivery of evidence-based care for patients with chronic oedema. Part 5 concludes the series and looks at chronic oedema management, finishing with compression therapy, concordance and self-management (Wound Care People, 2019).

Earlier articles in this series discussed the importance of chronic oedema assessment, and how it is crucial to identify the cause(s) so that effective management can be put in place (Wound Care People, 2019). Part 4 began to examine chronic oedema management, beginning with skin care and exercise. Part 5 concludes the series by discussing compression therapy, concordance and self-management.

### COMPRESSION THERAPY

Compression therapy is seen as one of the principles of chronic oedema management, both for the intensive phase of limb volume reduction and long-term maintenance (Moffatt et al, 2007). It can make a valuable contribution to the management of oedema, as well as improving patients' quality of life (World Union of Wound Healing Societies [WUWHS], 2009; Butterfield, 2013).

Compression therapy can be applied using bandaging, hosiery or wraps (Ritchie and Freeman, 2018). Clinicians should consider the

following when selecting which type of compression to use for patients with chronic oedema:

- ▶ Patient preference, dexterity, and lifestyle: compression choice should fit in with the patient's circumstances and level of activity, otherwise long-term therapy is unlikely to be successful (WUWHS, 2009)
- ▶ Frequency of application needed: is the resource available to deliver care at the frequency required? For example, is a competent practitioner available to apply compression bandaging (Lymphoedema Framework, 2006)
- ▶ Clinician expertise: is a competent healthcare professional available to deliver care for as long as needed? (Lymphoedema Framework, 2006)
- ▶ Size and shape of the leg: the presence of an irregular limb shape and/or skin folds may require padding applied beneath bandages, whereas a larger/smaller limb may require a made-to-measure garment (Wound Care People, 2019)
- ▶ If a wound is present: ensure the right type of compression is

selected, since not all compression choices will accommodate large wounds with large dressings (Wound Care People, 2019).

Involving patients in the choice of which compression therapy to use can help them feel empowered and encourage them to follow their treatment plan in the long term (Ritchie and Taylor, 2018).

### Intensive phase: compression bandaging or wrap system?

In the intensive phase of treatment, the aim is to reduce limb swelling to a point where it remains stable. In this phase of therapy, short-stretch (inelastic) compression bandaging, or a compression wrap system can be used. Both of these options can accommodate the reduction in size of the limb as oedema is moved from the tissues back into the circulation (Wound Care People, 2019).

### Short-stretch bandaging

The traditional way of delivering compression to the limb during the intensive phase is by using multi-layer lymphoedema bandaging (MLLB). Bandaging allows for

## Quick revision: how compression works

- ▶ Compression therapy can be delivered using bandaging, wraps or hosiery to reduce and maintain oedema (Ritchie and Freeman, 2018)
- ▶ The reduction of oedema resulting from compression therapy is thought to be mainly due to a reduction of capillary filtration, an increase of lymphatic drainage, a shift of fluid into non- or less-compressed parts of the body and the breakdown of fibrosclerotic tissue (International Lymphoedema Framework [ILF], 2012)
- ▶ Compression therapy delivers external pressure to the limb so that on contraction of the calf-muscle pump, blood and lymph within the limb are squeezed from the tissue back into the circulation via the lymphatics (Moffatt et al, 2007)
- ▶ The amount of pressure delivered to a limb is measured in millimetres of mercury (mmHg)
- ▶ Compression therapy should be applied in a graduated way, with pressure that is greatest at the ankle gradually decreasing towards the knee, with further reduction to the thigh if compression is applied to the full length of the leg. This graduation allows the venous blood to be pushed back up the leg towards the heart (Anderson, 2006; Grey et al, 2006)
- ▶ Compression affects the volume of blood in veins and arteries and fluid in the tissues to varying degrees, depending on the amount of pressure delivered (which in turn is influenced by the type of compression material used and how it is applied) (Moffatt et al, 2007).

correction of distorted limb shape using padding and can be reapplied and adjusted as the limb reduces in size as swelling alleviates (Lymphoedema Framework, 2006).

There are a number of bandages available, that are categorised by



**Figure 1.** Short-stretch bandaging, including toe bandaging.

their construction, elasticity and level of compression that they apply (International Lymphoedema Framework, 2012). Short-stretch bandages, also known as inelastic bandages, are recommended for the intensive phase of management since they provide a rigid casing around the limb, providing resistance to the calf and foot muscle pumps helping to drive fluid from the tissues, back into the lymphatic system (Figure 1) (Lymphoedema Framework, 2006; Bianchi et al, 2012).

In limbs that are graduated in shape, the decrease in pressure from ankle to knee automatically occurs. However, if the limb is misshapen, for example, due to severe oedema or the presence of bulky dressings, padding will need to be used beneath compression bandaging to restore a regular limb shape (Ritchie, 2018).

Frequent re-application of short-stretch bandaging — approximately every one to three days for a period of two to four weeks — is needed in the intensive phase of management. As long as the bandage has been correctly applied, slippage can be a positive sign that oedema is reducing. The bandage will need frequent reapplication to ensure it

remains therapeutically effective (Lymphoedema Framework, 2006).

It is therefore important to consider if there is available resource to deliver the level of care required, and if the frequent reapplication of bandaging is compatible with the patient's lifestyle. The frequency of reapplication needed will, however, decline as reduction in swelling stabilises (Wound Care People, 2019).

From a patient's perspective, compression bandaging can restrict ankle movement and as a result, movement. It can also be bulky and limit the patient's choice of footwear and clothing, and ability to wash when they wish. These difficulties are known to contribute to poor concordance and thus poor healing outcomes (Ashby et al, 2014).

There may be a limited number of clinicians who are trained to apply compression bandaging within the community team (Wound Care People, 2019). Resource should therefore be a consideration before committing to compression bandaging for the intensive phase of chronic oedema treatment. When bandaging is used, it should not be considered a lifelong solution. Although effective at reducing swelling, it has a number of disadvantages which mainly impact on the patient's quality of life, but

### Red Flags Contraindications to MLLB

- Severe arterial insufficiency (ankle brachial pressure index [ABPI] <0.5), although modified MLLB with reduced pressures can be used under close supervision
- Uncontrolled heart failure
- Severe peripheral neuropathy.

Caution required: cellulitis/erysipelas (MLLB can be continued, if tolerated, at reduced pressure), diabetes mellitus, paralysis, sensory deficit, controlled congestive heart failure (application of MLLB to one limb at a time may be advisable).

(Lymphoedema Framework, 2006)

can prove labour-intensive for the clinician too (Ritchie, 2018). Thus, it is important to reassess the limbs for improvement and re-evaluate treatment options if no improvement is seen (Lymphoedema Framework, 2006).

### Compression wrap systems

Adjustable compression wrap systems (Figure 2) can be used in both phases of management; they may be preferable to bandaging since they promote self-care, and as long as competent, there is no need for qualified nurse application after initial fitting and instruction (Lymphoedema Framework, 2006). The application of a compression wrap system is simple and does not require training or competency to the same extent as bandaging. This can result in a reduction of nursing time needed to deliver care, with associated cost savings (Ritchie and Freeman, 2018).

Wraps have been shown to be a clinically and cost-effective alternative to traditional bandaging to reduce oedema (Damstra and Partsch, 2013; Elvin, 2015; Mosti et al, 2015; Wicks, 2015).

Wraps can aid self-management, being readjusted by the patient or carer if they become loose (Ritchie and Freeman, 2018).

The ability to readjust as the limb reduces has shown that a compression wrap system is more effective in managing oedema over 24



**Figure 2.**  
Compression wrap system.

## Practice point: avoiding common compression mistakes

- ▶ Don't keep doing the same thing, just because it is what you or your colleagues have always done... engage with the patient and question if the compression choice is right for them
- ▶ Do not apply reduced compression thinking that this is kinder for the patient and that you can build up the compression gradually; getting it right first time and helping the patient to understand and engage in therapy is more likely to achieve successful outcomes
- ▶ Don't just apply compression below the knee and above the ankle if swelling extends beyond here; all areas of swelling need to be contained or else it will worsen around the compressed area
- ▶ Do not recommend that the patient stops wearing compression if they have been doing so without any complaint for a while — swelling will recur while awaiting an investigation or new garment
- ▶ Bandage the feet and toes if swelling extends there; if not bandaged, they should be monitored for signs of swelling. The application of toe-caps to prevent swelling is recommended
- ▶ If bandaging slips while using short-stretch bandaging (providing slippage is not a result of poor application), or if a wrap compression system becomes looser, this is a positive sign indicating that swelling is reducing. Switching to a long-stretch bandaging system will not help to reduce the oedema.

(Wound Care People, 2019)

hours and one week when compared with inelastic bandaging (Damstra and Partsch, 2013; Mosti et al, 2015).

On average, four weeks of intensive treatment for chronic oedema using bandaging or a wrap should be sufficient to reduce swelling and stabilise it (Wound Care People, 2019). At this point, the majority of people can move into the maintenance phase of compression therapy using hosiery or a wrap (Ritchie and Freeman, 2018).

### Maintenance phase: compression hosiery or wrap?

Compression hosiery or wraps used in the maintenance phase need to continue to deliver the same amount of pressure used in the intensive phase of treatment or swelling may recur (Lymphoedema Framework, 2006; Todd, 2015).

If a compression wrap has been used successfully for intensive treatment, the patient may be happy to continue to use in the maintenance phase. Maintenance with a wrap may also be beneficial where the patient cannot apply or tolerate hosiery, or where wound dressing changes are needed. Factors to be considered when selecting a compression garment for maintenance are outlined in Table 1 (Wounds UK, 2016).

Traditionally, hosiery is used for long-term management of chronic oedema and chronic venous insufficiency (Todd, 2015).

### Compression hosiery

Hosiery is used to prevent recurrence or deterioration of swelling, once limb volume has initially been reduced with compression bandaging or a wrap (International

**Table 1:** Criteria for compression product selection in the maintenance phase of treatment

Factor	Circular-knit hosiery	Wrap system	Flat-knit hosiery
Normal leg shape	Y	Y	Y
Distortion due to oedema	N	Y	Y
Mild-to-moderate swelling	Y	Y	Y
Risk of rebound oedema	N	Y	Y

**Table 2:** Different compression standards and the classes of compression delivered

	German standard RAL-GZ 387	British standard BS 661210	French standard ASQUAL	US compression levels
1	18–21mmHg	14–17mmHg	10–15mmHg	15–20mmHg
2	23–32mmHg	18–24mmHg	15–20mmHg	20–30mmHg
3	34–46mmHg	25–35mmHg	20–36mmHg	30–40mmHg
3 Forte	34–46mmHg			
4	49–70mmHg		>36mmHg	
Testing method	HOSY	HATRA	IFTH	

Adapted from: Lymphoedema Framework, 2006

Lymphoedema Framework, 2012). When selecting compression hosiery, it is important to consider the limb — the patient may fit into a standard garment or may be better suited to a made-to-measure garment that fits exactly to the patient’s limb shape. There are several types of hosiery available, and they are classified according to how they are made, and the standards used to measure the amount of compression that they deliver (Wound Care People, 2019).

#### Circular- versus flat-knit hosiery

As their names suggest, circular and flat-knit hosiery are produced using two different knitting techniques. Circular-knit garments are produced as a seamless tube, whereas flat-knit garments are constructed as a flat piece of fabric that is then sewn together, with a resulting seam (Wounds UK, 2021). These differences in production influence the properties of the garment (see box below).

#### Compression class

Compression class is determined by the specified testing methods known as standards (Wounds UK, 2021). Standards are used to determine how much compression is delivered in mmHg at the ankle by a garment. For example, all class 1 garments tested using the British standard will deliver between 14–17mmHg, whereas class 1 garments manufactured to the German standard, will deliver 18–21mmHg at the ankle (Table 2) (Lymphoedema Framework, 2006; Wounds UK, 2021). To overcome possible confusion, it is recommended that garments are referred to by the mmHg they deliver, rather than the class.

Whatever the class, compression hosiery should:

- ▶ Be comfortable and fit well. It should not roll, cut in, or mark the skin
- ▶ Never cause blue digits, tingling, or pins and needles
- ▶ Cover the swollen area as far as possible, e.g. swelling to the knee requires thigh-length hosiery, while swelling to the thigh needs tights (Elwell, 2016).

#### Garment selection

A wide range of compression hosiery is available in a variety of sizes, lengths, with open- and closed-toe, and in multiple colours (Wounds UK, 2021).

Working with the patient to find a suitable garment can help to improve compliance (Gray, 2013). While the patient should not be responsible for selecting the class of garment or the

fabric it is constructed from, as this influences therapeutic effect, they can contribute their preferences, such as if the garment has an open- or closed-toe, a silicone top band, or colour (Wound Care People, 2019).

There are a number of aids available for patients to use to help apply and remove their garments. Furthermore, some garments have zips or Velcro fastenings that can alleviate difficulty with application and removal, which is especially beneficial for patients with fragile skin (Elwell, 2016).

#### Prescribing

When completing a prescription for a compression garment, it is important to use the manufacturer’s ordering instructions, measurements and codes to ensure the correct product is delivered.

There is such a large range of products available, inaccuracies in prescription dispensing might occur (Woods, 2015; 2018), including:

- ▶ Inaccurate information recorded/missing from the prescription
- ▶ Dispensing difficulties leading to substituting of items
- ▶ Product codes not listed on electronic primary systems, therefore registering as unavailable.

It may be necessary to work with the medicine’s optimisation

### Circular- versus flat-knit garments

Circular-knit hosiery is elastic and contains oedema in the same way as a balloon holding water: the more fluid that is put into it, the more it will expand.

This means for severe swelling, a circular-knit garment may continue to expand and may roll or dig in, forming a tourniquet that can result in skin breakdown.



The elasticity can make them difficult to put on and remove in higher classes, but they are considered cosmetically acceptable to the patient.

Flat-knit hosiery, however, is more rigid, like a paper cup, and holds its shape to contain fluid. It is therefore more effective at containing stubborn oedema, and less likely to roll and form a tourniquet effect on the limb.

(Wound Care People, 2019; Wounds UK, 2021)



or management team within the organisation to overcome any repeated difficulties. Alternatively, the use of a dispensing appliance contractor (DAC) — a business contracted to the NHS and able to dispense prescriptions — with expertise in compression may help to reduce inaccuracies in dispensing (Elwell, 2016).

## CONCORDANCE

It is important not to underestimate the negative impact of chronic oedema on patient wellbeing, self-esteem and body image (Linnitt, 2005; Keeley, 2008). The presence of swelling can make finding appropriate clothes and footwear very difficult (Green, 2008).

It is important to consider how patients are feeling and give them the opportunity to discuss their concerns (Board and Harlow, 2002; Gray et al, 2011).

Chronic oedema, with the accompanying swelling, pain

and possible ulceration can have a negative impact and lead to anxiety, depression and social isolation (Mason et al, 2008). These psychosocial symptoms should be considered in any care plan. Patients are more likely to follow their treatment plan in the long term if:

- ▶ They are fully informed about their care and involved in decision-making which empowers them to be active participants in their treatment
- ▶ They have a say in their treatment regimen and are listened to during the decision-making process
- ▶ They are supported throughout treatment (Moffatt, 2004).

## Issues of concordance

Ongoing, comprehensive holistic assessment is vital if patients are to concord with treatment. In this way, healthcare professionals not only develop an understanding of the patient's physical status, but also of their skill, knowledge and motivation to concord, as well as any psychosocial issues that might prevent it (Moffatt, 2004).

There are many factors that affect concordance, including:

- ▶ Previous bad experience of compression therapy: patients who have had a previous poor experience of compression therapy may be reluctant to undergo treatment again. This may be because the bandage or garments prescribed were uncomfortable or ill-fitting (Wound Care People, 2019)
- ▶ Knowledge about the condition and its treatment: provision of education is important to ensure that patients understand why they need to continue compression therapy in the long term (Brown, 2011)
- ▶ Pain while wearing compression: pain inevitably leads to poor concordance with treatment (Douglas, 2001; Van Hecke et al, 2007). Garments should be assessed for correct fit, and pain controlled (Briggs, 2005)
- ▶ Disturbed sleep: this is common yet often overlooked (Moffatt, 2004), and can occur as a result of inadequately managed pain (Stevens, 2006), or incorrect

- ▶ product selection and application
- ▶ Social pressures: chronic oedema can impact significantly on quality of life, particularly younger patients, or those who may have poor body image and low self-esteem and view compression therapy as a treatment only for older people (Green, 2008)
- ▶ Social isolation: chronic oedema can restrict patients' activities of daily living. Patients might feel too embarrassed to go out and to mix socially, which in turn can lead to low self-esteem, depression and anxiety (Wound Care People, 2019).

## Improving concordance

Patients who fail to progress with their treatment may lose faith in their clinician and/or management decisions and become discouraged. Rather than labelling such patients as 'non-concordant', healthcare professionals should work with the patient to develop a positive relationship to ensure that a therapeutically correct treatment regimen is in place, with which the patient is also happy (Wound Care People, 2019).

## SELF-MANAGEMENT

If, following assessment and discussion, the patient is willing/able to engage with self-management, the following should be done:

- ▶ Show empathy and take time to understand the family dynamic (if relevant). Understanding the impact of this on the patient enhances the nurse/patient relationship (Mayor, 2006)
- ▶ Establish that support systems are in place for self-management (Piller, 2012)
- ▶ Provide information on the cause of chronic oedema, factors that help and hinder improvement, and circumstances that need further nursing input (Todd, 2014)
- ▶ Give the patient information on what to do, e.g. skin care, how to apply and remove compression garments, exercises, etc (Todd, 2014)
- ▶ Provide written literature in addition to verbal instructions, to help the patient retain the information (Todd, 2014)

## Practice point

- ▶ Re-evaluate your management choices regularly. Remember that a variety of methods may be tried before a suitable option is found that will ensure good clinical outcomes and with which the patient is happy
- ▶ The success of long-term management is heavily dependent on selecting the correct compression product for the patient, so they commit to wearing it in the long term
- ▶ Do not be disheartened if the first garment you select does not fit the patient's needs. This is common and once you work in partnership with your patient to find out about their individual circumstances and preferences, a good fit can be found
- ▶ Make sure you inform the patient about the importance of the key components of their management plan.  
(Wound Care People, 2019)

**Table 3: Self-management actions according to management phase (adapted from Todd, 2014)**

Prevention	<ul style="list-style-type: none"><li>▶ Provide information on where to seek help if swelling occurs in at-risk people</li><li>▶ Give advice on skin care to maintain integrity</li><li>▶ Emphasise the impact of lifestyle choices, healthy body mass index (BMI), role of exercise</li></ul>
Intensive	<ul style="list-style-type: none"><li>▶ Some aspects of the intensive phase can be self-managed, e.g. exercise, weight management, skin care, avoidance of compounding factors, such as dependency of the limb</li></ul>
Maintenance	<ul style="list-style-type: none"><li>▶ Support and review treatment plan according to patient's changing needs</li></ul>

- ▶ Provide continual support; more nursing input may be needed at varying times. For example, if ulceration occurs during an episode of general ill-health, if infection occurs, or if the patient becomes unwilling to self-care (Piller, 2012)
- ▶ Plan a self-management strategy that is patient-led at all times. Try to make the self-management transition occur smoothly (Todd, 2014; Table 3)
- ▶ Providing a named healthcare contact for times of need provides reassurance; initially maintain periodic contact until the patient is confident in self-caring
- ▶ Self-care can be supported at all levels of chronic oedema management, depending on the stage of management, level of empowerment, physical and

mental ability and willingness to take ownership of their care.

Within the community setting, there are a number of important things that the patient can do to enhance their self-care of chronic oedema. These include being able/willing to:

- ▶ Sleep in bed
- ▶ Apply and remove compression garment/wrap
- ▶ Mobilise/exercise, even if seated
- ▶ Modify lifestyle factors — nutrition, lifestyle, smoking, drinking, etc
- ▶ Lose weight either independently or with assistance and accept referral to bariatric services as indicated (Wound Care People, 2019).

It is important to have realistic expectations of the patient and not to implement too many changes at once; for example, gentle exercise or encouraging movement when TV commercials come on is realistic and achievable. Once this change is embedded, introduce another.

## CONCLUSION

Compression therapy is one of the principles of management for chronic oedema, both for the intensive phase of limb volume reduction and long-term maintenance, and can make a valuable contribution to improving patients' quality of life. There are a variety of ways that compression can be applied, but the key to success is involving patients in the choice of which compression therapy to use. Doing this will help them feel empowered and encourage them to follow their treatment plan long term.

Promoting self-management, quality of life and the correct use

of bandages and stockings is vitally important to clinical practice and will have a major impact in outcomes for patients (Humphreys et al, 2017). **JCN**

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## Revalidation Alert

Having read this article, reflect on:

- How often you involve patients in choice of compression therapy
- Which of your patients may be encouraged to be more involved in their own care
- Some of your cases and if you re-evaluate your management choices regularly.

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## KEY POINTS

- Chronic oedema is the term used to describe swelling that has been present for longer than three months.
- It is a progressive and debilitating condition that requires long-term management.
- Assessment is crucial to identify the underlying cause(s) of chronic oedema and can be approached using the six S': story; self-care; site; skin; size; shape.
- STORY: it is essential to obtain the patient's background 'story' or history to identify the possible cause(s) of chronic oedema.
- SELF-CARE: determining the patient's ability to self-care is important, as their involvement in management can improve outcomes.
- SKIN: chronic oedema can have a detrimental effect on the skin, therefore, the patient's skin can give vital clues to the duration of the condition and the underlying cause of the oedema.
- SIZE: the size of the limb is used to obtain a baseline set of measurements to refer to throughout the patient's journey to chart their progress.
- SHAPE: the shape of the limb will influence product choice when selecting compression therapy.
- Chronic oedema management should aim to alleviate swelling, pain and the impact of the condition on the patient and is split into two phases: intensive and maintenance phases.
- Compression therapy is one of the principles of management for chronic oedema and can make a valuable contribution to improving patients' quality of life.



# Managing mixed aetiology and arterial leg ulceration

Annemarie Brown

There is an abundance of literature on the management of venous ulceration, however, increasing numbers of patients are presenting with ulcers of mixed aetiology — arterial and venous. Compression therapy is the gold standard treatment for venous ulcers, however, high levels of compression are contraindicated in the presence of severe arterial disease. Nevertheless, the venous element of a mixed aetiology ulcer needs to be addressed, which can pose a dilemma for healthcare professionals caring for these patients. This article discusses the different aetiologies and current literature on how these ulcers can be managed effectively to achieve healing.

## KEYWORDS:

■ Venous leg ulcers ■ Arterial ulcers ■ Mixed aetiology

Poor blood circulation is responsible for the development of leg ulceration, and it is estimated that 1% of the population will suffer from a leg ulcer at some point (Broderick et al, 2020). The majority of ulcers (around 70%) result from venous hypertension and are called venous leg ulcers, which are generally treated with compression therapy. Arterial leg ulcers, which account for around 22% of ulcers, occur because of poor blood supply to the legs, when there is a block in a leg artery or narrowing of the arteries (atherosclerosis) (Beaumier et al, 2020; Broderick et al, 2020). Without treating the underlying poor arterial blood supply, ulcers take a long time to heal or may never even heal. Arterial ulcers are treated to promote healing and protect from infection, by covering them with dressings or using topical antimicrobial agents, or both (Broderick et al, 2020).

**'... mixed aetiology ulcers pose a challenge for healthcare professionals as the venous-related cause needs to be corrected while also managing the peripheral vascular disease.'**

Up to 25% of patients with a venous leg ulcer will also have concomitant peripheral arterial disease (PAD) (Isoherranen et al, 2020). These mixed aetiology ulcers pose a challenge for healthcare professionals as the venous-related cause needs to be corrected while also managing the peripheral vascular disease (O'Donnell et al, 2014). The number of ulcers with more than one aetiology is increasing and thus healthcare professionals need to ensure that the correct diagnosis is made to provide optimum and appropriate treatment (Isoherranen et al, 2020). However, Isoherranen et al (2020) acknowledge that while precise wound diagnosis may be easy in theory, it is not always so straightforward in practice. Failure or delay in diagnosing an arterial ulcer can lead to devastating

consequences for the patient, e.g. limb amputation (Hirsch et al, 2001; Criqui and Aboyans, 2015). *Figures 1 and 2* show examples of mixed aetiology ulceration.

## DIAGNOSIS

Taking an initial patient history, including past medical history, medication and lifestyle will start the process of diagnosis.

*Table 1* outlines factors in the patient's medical history and the likely aetiology of the ulcer, while *Table 2* highlights clinical features to look out for to distinguish between arterial and mixed aetiology ulcers.

## PERIPHERAL ARTERIAL DISEASE AND LEG ULCERATION

According to Bolton (2019), PAD, which increases cardiovascular morbidity and mortality, is present in 3–10% of the global population. It is associated with an increased hypertensive response and decreased calf muscle oxygenation during calf muscle flexion exercise (Dua and Lee, 2016). Up to 18% of those over 50 years of age with PAD experience intermittent claudication (IC), that is, pain on walking that subsides at rest (Criqui and Aboyans, 2015). Among those with PAD, 20–70% have chronic leg ulcers and those with a chronic leg ulcer have a 37–70% likelihood of having PAD

## Practice point

PAD is associated with decreased quality of life, increased risk of amputation, and increased mortality. The five-year mortality for PAD patients is 50–60%, with coronary events and strokes accounting for at least 70% of deaths (Mills et al 2014).

complications (Lazareth et al, 2009; Forssgren and Nelzén, 2012). Without timely interventions, PAD-related ischaemia (Table 3) increases the chance of significant deterioration within one year by 35% and the risk of major amputation by 22% (Mills et al, 2014). These estimates may be conservative because PAD and ischaemic leg ulcers are often underdiagnosed and ineffectively treated (Hirsch et al, 2001; Weir et al, 2014). Figures 3–5 show patients with PAD and arterial ulcers.

### ASSESSMENT OF LOWER LIMB LEG ULCERS

All patients who present with a leg ulcer should have a comprehensive assessment of clinical and psychosocial needs, review of medication, pain and analgesia requirements, possible infection, and nutrition within 14 days of presentation (National Wound Care Strategy Programme [NWCSP], 2020). In addition, wound assessment should be documented, using as a minimum, data such as dimensions and description and photograph



Figures 1 and 2. Mixed aetiology ulceration.

of the wound bed. Lower limb assessment, including vascular assessment of arterial supply, as well as neuropathic assessment for sensation and lymphoedematous changes to determine the cause of

non-healing wounds and develop a management plan, is essential (NWCSP, 2020). The NWCSP (2020) recommends the prescribing of mild graduated compression therapy (20mmHg) as an initial immediate care intervention in the absence of symptoms of PAD, until a more detailed vascular assessment can be undertaken, usually within 14 days.

### VASCULAR ASSESSMENT

The arterial system should be assessed in every patient, including pulse palpation and measurement of the ankle brachial pressure index (ABPI) (Isoherranen et al, 2020; National Institute for Health and Care Excellence [NICE], 2012, updated 2020). This is also mandatory before the use of compression therapy. The American Diabetes Association has determined that:

- ▶ ABPI of between 0.91 and 1 is within the normal range
- ▶ Mild PAD is defined as an ABPI of 0.7–0.9
- ▶ Moderate ischaemic disease as 0.41–0.69
- ▶ Critical limb ischemia as  $\leq 0.4$  (Isoherranen et al, 2020).

However, ABPI is not always reliable in patients with diabetes or elderly patients, as the arteries may

Table 1: Factors in patient history and likely aetiology of the ulcer

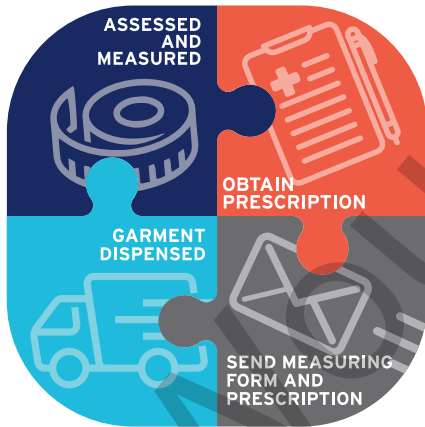
Patient history	Likely leg ulcer diagnosis
Primary varicosis or history of deep vein thrombosis (DVT)	▶ Venous
Coronary heart disease, cerebrovascular accident, myocardial infarction (MI), smoking	▶ Arterial
Diabetes	▶ Diabetic or arterial
Rheumatoid arthritis	▶ Mixed aetiology or arterial

Table 2: Clinical features to distinguish between arterial and mixed aetiology ulcers

Arterial	Mixed aetiology
Typically deeper, drier than venous ulcers and may have necrosis	Combine typical characteristics of venous ulcers, such as skin changes related to chronic venous hypertension including eczema, hyperpigmentation caused by haemosiderin deposits, induration of the skin and the underlying tissue (lipodermatosclerosis) and visible capillaries around the ankle (ankle flare), but ulcer may be deeper, drier, with necrotic tissue Atrophie blanche, oedema
Typically located in toes, feet and heel locations, but any other location is possible	They are located in the medial or lateral aspects of the leg and may be circumferential
Cold, hairless legs	
Pain on walking, or even at rest	
Weak or unpalpable pulses	



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Figure 3.  
Patient with PAD.



Figure 4.  
Infected arterial ulcer.



Figure 5.  
Arterial ulcer.

not be easily compressed due to calcification (Weller et al, 2018). If the pulses are not palpable in patients with diabetes or if the suspicion of ischaemia is high in elderly patients, prompt referral should be made to a specialist for measurement of toe brachial index (TBI) and toe pressure (TP), and for accurate interpretation of the results (Isoherranen et al, 2020). Unfortunately, there are variations in the guidance on

the specific ABPI range where compression can be safely applied. Mills et al (2014) suggest that the TP values shown in *Table 4* should be used to grade levels of ischaemia.

### TREATMENT: MIXED AETIOLOGY ULCERS — TO COMPRESS OR NOT?

Weller et al (2018) conducted a scoping review on these variations, in particular in relation to the area of uncertainty around ABPIs between 0.6 and 0.8, with some guidelines advocating that compression is contraindicated and others that reduced compression should be used at these readings. They found that wound, ostomy and continence nursing (WOCN) and infection control and prevention (ICP) guidelines recommend that reduced or low compression therapy can safely be initiated when the ABPI score is between 0.5 and 0.8 and 0.6 and 0.8, respectively (Agus et al, 2005; Kelechi and Johnson, 2012). Five guidelines advised that reduced or low compression therapy can safely be initiated when ABPI values are  $\geq 0.6$ ,  $\geq 0.8$ , or  $< 1.2$  (Scottish Intercollegiate Guidelines Network [SIGN 2010]; Australian Wound Management Association, 2011; O'Donnell et al, 2014; Marston et al, 2016) and, according to Haute Autorité de Santé (HAS) guidelines, high level compression can be used safely in patients with an ABPI  $> 0.8$  or  $< 1.3$  (HAS, 2007). The authors therefore concluded that, if the ABPI is  $> 0.6$  to  $< 0.8$ , mild graduated compression therapy ( $< 30$ mmHg [elastic] or high stiffness [inelastic]) can be applied, provided that there are no signs of arterial disease or diabetes mellitus (Weller et al, 2019).

Conversely, Mosti et al (2020) in a retrospective study found that in patients with mixed, arterial-venous ulcers with an ABPI of  $> 0.5$  and ankle perfusion pressure of  $> 60$ mmHg, an increase in the arterial inflow was demonstrated as long as the exerted pressure (by properly applied inelastic bandages) did not exceed 40mmHg (Mosti et al, 2012; Stansal et al, 2018). In addition, Mosti et al (2012) found a positive effect on inflammatory cytokines was demonstrated as

**Table 3:** Interventions to reduce PAD-related ischaemia (adapted from NICE, 2012)

Offer all people with peripheral arterial disease oral and written information about their condition
Discuss it with them so that they can share decision-making, and understand the course of the disease and what they can do to help prevent disease progression
Discuss: <ul style="list-style-type: none"> <li>▶ Causes of their symptoms and severity of their disease</li> <li>▶ The risks of limb loss and/or cardiovascular events associated with PAD</li> <li>▶ Key modifiable risk factors, such as smoking, control of diabetes, hyperlipidaemia, diet, body weight and exercise</li> <li>▶ How to manage pain</li> <li>▶ All relevant treatment options, including the risks and benefits of each</li> <li>▶ How they can access support for dealing with depression and anxiety</li> </ul>

compression is able to decrease the inflammatory mediators and increase their antagonists (Beidler, 2008; 2009). Mosti et al (2020) concluded that this indicates that PAD represents a real contraindication for compression therapy only in the case of critical limb ischaemia with an ABPI of  $< 60$ mmHg, irrespective of diabetes occurrence.

Lim et al (2021) concurred with these findings to some extent but suggest that, in the absence of UK guidelines on the management of mixed aetiology ulceration, modified compression therapy can be safely used in patients with moderate arterial insufficiency if their ABPI is  $> 0.5$ .

Mosti et al (2020) applied inelastic compression bandages to a group of 107 patients with either venous or mixed venous/arterial ulceration. The patients with purely venous leg ulcers (VLU) received short-stretch bandages applied with full stretch on top of a sub-bandage padding layer made up of cotton padding and a multilayer cohesive short-stretch bandage applied in a spiral at  $> 60$ mmHg. The patients with mixed aetiology ulcers (MAU) received modified inelastic bandaging, where the top, short-stretch bandage was omitted, giving  $< 40$  mmHg. All bandages were applied by trained professionals and

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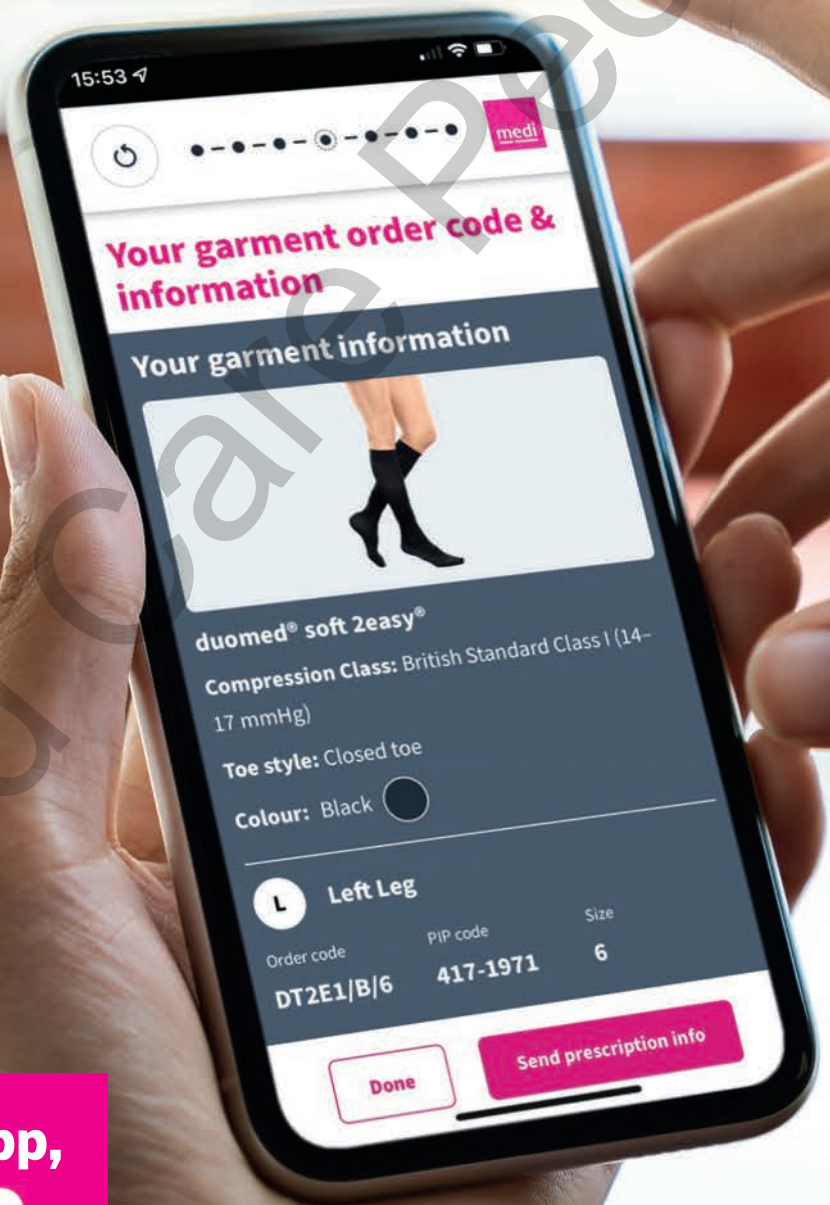
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**Table 4:** Values of TP and ABPI to determine severity of ischaemia (adapted from Mills et al, 2014)

ABPI	Ankle systolic pressure	TP or $T_cPO_2$
>80mmHg	>100mmHg	>60mmHG
0.6–0.79mmHg	70–100mmHg	40–59mmHg
0.4–0.59mmHg	50–70mmHg	30–39mmHg
<39mmHg	<50mmHg	<30mmHg

the ulcers were treated with identical wound care products. The average healing time for the VLU group was 25 weeks and 27 weeks for the MAU group, which the authors found statistically insignificant. It must be noted, however, that all patients received ultrasound guided foam sclerotherapy (UGFS) of the superficial incompetent veins with the reflux directed to the ulcer bed in addition to the compression therapy.

Neill and Turnbull (2013) applied a cohesive inelastic bandage system to eight patients with mixed aetiology leg ulcers. The patients were individually assessed using Doppler ultrasound and a rigorous set of validated risk factor criteria. Where Doppler ultrasound was considered to be unreliable, due to an inability to detect sounds, or where further diagnostic information was required, arterial duplex scanning was carried out by the cardiac department at the local hospital. The authors reported that all patients had healed within six to 30 weeks of the first application of bandaging and no adverse events occurred.

Stansal et al (2018) conducted an observational study on 25 hospitalised patients with moderate peripheral arterial occlusive disease, defined as an ankle-brachial pressure index of >0.5, an ankle pressure of >70mmHg and a toe cuff pressure (TP) of >50mmHg.

Short-stretch bandages were applied daily with pressures from 20–30mmHg. Ankle brachial pressure, toe pressures and transcutaneous oxygen pressures ( $T_cPO_2$ ) on the dorsum of the foot were measured at baseline and after their removal at 24 hours. Compression pressure (CP) was measured with a sub-bandage device at baseline, at 10 minutes,

**'... consensus appears to be that in patients with an ABPI of >0.5 with very mild or asymptomatic PAD, mild or reduced compression of 20–30mmHg can safely be applied to heal their ulcer..., although close and frequent monitoring is advisable.'**

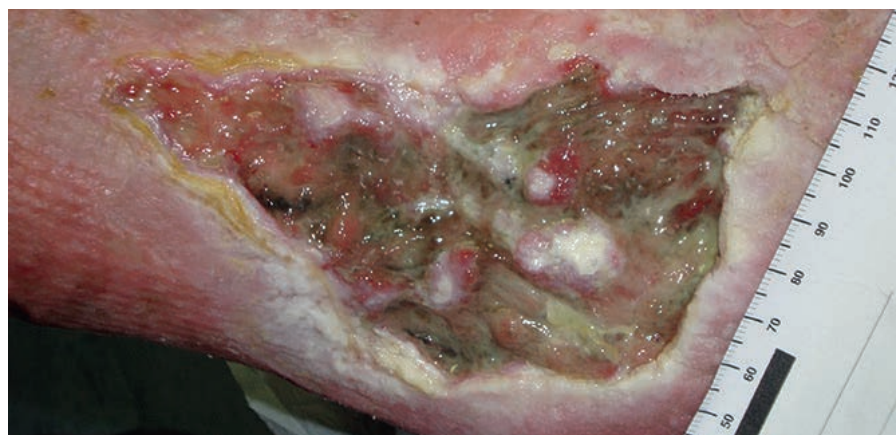
and before bandage removal at 24 hours. The mean age of the patients was 80 years ( $\pm 15$ ) and mean ulcer duration 18 months, with one-third having diabetes and the majority hypertension. There was no increase in pain and no ischaemic skin damage occurred under compression therapy. As a result, the authors concluded that in elderly patients with mixed aetiology ulcers and a TP of >50mmHg, short-stretch compression of up to 30mmHg does not adversely affect arterial flow and is well tolerated by patients.

Rother et al (2020) conducted prospective analysis of 94 consecutive patients undergoing medical compression therapy. The study cohort consisted of 44 patients with diabetes mellitus, 45 patients

with PAD and five healthy controls. The inclusion criteria for the PAD group were Rutherford stage 1–3 (the symptomatic claudication) leg oedema, no palpable foot pulses, ABPI >0.6 and <0.9, ankle pressure <60mmHg and absence of diabetes. The patients received two different compression classes (compression class I [CCLI], 18–21mmHg on one leg and compression class II [CCLII], 23–32mmHg) on the other leg for at least three hours. Throughout the study, microvascular perfusion was measured by a combined method of Doppler flowmetry and white light tissue spectrometry at different points on the legs, with the patients supine and legs elevated at 65cm.

The authors did not find any significant impairment of microvascular perfusion, although the foot elevation of 65cm resulted in a significant decrease in the microcirculation in all groups, including the healthy patients. They concluded that, presuming close medical supervision, patient cohorts at risk due to PAD or suffering from leg oedema can benefit from compression therapy. This treatment was confirmed as safe in application and was also well tolerated by the patients. However, they suggest that these results need to be confirmed by long-term tolerance data.

The precise level of compression that can be safely applied to patients with PAD is currently debated within the literature and is unclear. However, consensus appears to be that in patients with an ABPI of >0.5 with very mild or



**Figure 6.**  
*Venous leg ulcer.*



**Figure 7.**  
*Arterial leg ulcer.*

asymptomatic PAD, mild or reduced compression of 20–30mmHg can safely be applied to heal their ulcer (Weller et al, 2018; Mosti et al, 2020; Lim et al, 2021), although close and frequent monitoring is advisable. If the patient has cardiac symptoms, is unable to tolerate mild compression or has an ABPI of <0.5, referral to the vascular team is recommended (NWCSP, 2020). Currently, if the patient has obvious signs and symptoms of PAD, it is recommended that compression is applied and monitored by specialists.

## VENOUS LEG ULCERS

The NWCSP (2020) recommends that for patients with no evidence of compromised arterial supply, determined by vascular assessment, strong compression, defined as an elastic compression system that is intended to apply at least 40mmHg at the ankle or a non-elastic (e.g. short-stretch) system applied at full stretch, is implemented (NWCSP, 2020: 11).

Ashby et al (2014) suggest that two-layer compression hosiery kits:

- ▶ Are an effective alternative to four-layer bandaging for healing venous leg ulcers
- ▶ Are more cost-effective
- ▶ May reduce recurrence rates and increase quality of life
- ▶ Are more likely to enable people to self-care.

However, Shi et al (2021) found that using compression bandages

or stockings versus no compression resulted in complete wound healing more quickly with a probable reduction in pain and improved quality of life. They did though voice uncertainty about adverse effects and cost-effectiveness. Although compression therapy is considered the most effective treatment for venous leg ulcers, oral pentoxifylline, which helps blood flow, has been found to be effective in non-healing venous leg ulcers, even in the absence of compression (Jull et al, 2012), although some adverse effects, such as gastrointestinal disturbances, have been found with this medication.

Two-layer compression hosiery kits may not be suitable for all people with venous leg ulcers, for example, if there is significant oedema, copious exudate, fragile skin or abnormal limb shape. In which case, multilayer bandaging may be more suitable, and the patient's preference must always be considered when implementing compression therapy (NWCSP, 2020). *Figure 6* shows classic venous leg ulceration.

## ARTERIAL ULCERS

High levels of compression therapy are contraindicated in patients with signs and symptoms of severe arterial disease. Broderick et al (2020) suggest that treatment aims for arterial leg ulcers should focus on correcting poor arterial blood supply, for example by correcting arterial blockages (either surgically or pharmaceutically) (Beaumier et al, 2020).

If the blood supply has been restored, these arterial ulcers can heal following the principles of good wound care. If the underlying poor arterial blood supply is not corrected, however, arterial ulcers can take a long time to heal or may even never heal (Broderick et al, 2020). This is because arterial insufficiency inhibits the wound healing process, as tissues are poorly perfused and the delivery of systemic antimicrobials is often compromised as a result of the lack of blood supply to the wound site. In addition, the clinical signs of infection may be more subtle due to the decreased blood supply to the ulcer (Bonham et al, 2014) and therefore, clinical infection should always be suspected if the ulcer becomes more painful, or the local wound site begins to deteriorate or fails to heal (Federman et al, 2016).

Arterial ulcers (*Figure 7*) are treated to promote healing and protect from infection by covering them with dressings or using topical agents, or both. A variety of types of dressings can be used, depending on whether the main intention is to treat infection, reduce ulcer pain, or manage the exudate and so promote healing (Broderick et al, 2020).

Chiriano et al (2010) and Marston et al (2006) found that most arterial leg ulcers or mixed aetiology ulcers healed in one year or less receiving conservative care with adequate protection from injury or pressure, debridement, infection control, and moist wound healing. However, in their Cochrane review, Broderick et al (2020) were unable to determine whether the choice of dressing or topical agent improved arterial ulcer healing, due to the weak evidence reviewed.

## WOUND CARE AND MANAGEMENT FOR ALL LEG ULCERS

The NWCSP (2020) recommends the following for ulcers of all aetiologies:

- ▶ Wound bed cleansing and debridement if required
- ▶ Periwound and limb skin cleansing as required
- ▶ Use of simple low-adherent dressings with sufficient absorbency

- ▶ Following NICE guidance and local trust policies on the use of systemic antibiotic therapy in the case of infected ulcers
- ▶ Offering advice on skin care, footwear, exercise, rest, limb elevation, nutrition and supported self-care and, if appropriate, smoking cessation and weight loss
- ▶ Providing written information about diagnosis and treatment plan, and identify, discuss and incorporate opportunities for supported self-care into treatment plan as agreed with the individual
- ▶ Providing analgesia as required.

## ONGOING MANAGEMENT

The NWCSP (2020) advocates the need to review and reassess all leg ulcers at four weekly intervals to monitor progress. Photographs are helpful in assessing whether the treatment plan is working. If the patient is receiving compression therapy, their ankle circumference should be measured at each dressing change to ensure that the correct compression is being applied, as oedema will reduce once compression has been established. At 12 weeks, comprehensive reassessment should take place and ulcers that show no signs of healing, stalled healing or are deteriorating, should be referred to a specialist team for advice.

## CONCLUSION

There is an abundance of literature on the diagnosis and management of venous leg ulceration. The management of mixed arterial and arterial ulcers, however, is less commonly discussed in the literature, although up to 25% of all leg ulcer patients will have a combination of arterial and venous ulceration, which needs to be managed appropriately.

In view of the ageing population, this aetiology is set to become more commonplace. The issue of safely applying compression to patients with arterial ulcers has also been discussed, however, further research and more guidance on this is needed before implementation. Healthcare

professionals need to seek advice from specialists before applying compression to this patient group.

This article discusses the literature on mixed aetiology ulcers and provides some guidance to healthcare professionals who care for these patients. **JCN**

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## KEY POINTS

- Increasing numbers of patients are presenting with ulcers of mixed aetiology — arterial and venous.
- These mixed aetiology ulcers pose a challenge for healthcare professionals as the venous-related cause needs to be corrected while also managing the peripheral vascular disease.
- All patients who present with a leg ulcer should have a comprehensive assessment of clinical and psychosocial needs, review of medication, pain and analgesia requirements, possible infection, and nutrition within 14 days of presentation.
- The arterial system should be assessed in every patient, including pulse palpation and measurement of the ankle brachial pressure index (ABPI).
- The NWCS (2020) advocates the need to review and reassess all leg ulcers at four weekly intervals to monitor progress.
- At 12 weeks, comprehensive reassessment should take place and ulcers that show no signs of healing, stalled healing or are deteriorating, should be referred to a specialist team for advice.

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## Revalidation Alert

Having read this article, reflect on:

- The different aetiologies of leg ulceration
- Factors to consider to make correct diagnosis of a wound
- Your knowledge of applying compression therapy safely to a patient with arterial ulceration.

Then, upload the article to the free JCN revalidation e-portfolio as evidence of your continued learning: [www.jcn.co.uk/revalidation](http://www.jcn.co.uk/revalidation)

# Cutting costs and caseloads with a monofilament debridement pad

Andrew Kerr

Debridement is the removal of non-viable tissue from the wound bed and surrounding skin and is an important part of wound healing and wound bed preparation. Devitalised tissue, such as necrosis, slough and hyperkeratosis, interfere with the process of wound healing. When a wound fails to progress, there is a need to assess the wound bed and surrounding tissue and promote an optimum environment that encourages the formation of healthy granulation tissue (Young, 2014). Recent advances in debridement techniques using monofilament fibre technology can be practised by non-specialist nurses and used safely and effectively in a patient's home. In a recent audit, a dataset of 486 patients who had been newly prescribed a monofilament fibre debridement pad was obtained to validate clinical effectiveness and cost efficiency. The total cost of wound care prescribing fell by 14% or £101,723 in the six months after the intervention compared with the six months before. The average monthly expenditure per patient fell from £244 before the intervention to £209 after (Burnett et al, 2021). This evidence reinforces the National Institute for Health and Care Excellence (NICE) recommendations for use of monofilament fibre debridement in the community, based on evidence of its effectiveness and estimated cost savings (NICE, 2019).

## KEYWORDS:

- Debridement ■ Biofilm ■ Monofilament fibre debridement
- Hard-to-heal wounds ■ Cost-effectiveness

The Burden of Wound Care studies (Guest et al, 2015; 2017; 2020) explored and detailed current standards of wound care, use of resources, and the unsustainable financial cost to the health service. Acknowledging the negative impact of chronic wounds and infections both on patients and healthcare resources (including nursing time), there is undoubtedly a need for significant changes in wound care management delivery and

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**'Effective holistic patient assessment is integral to promoting timely wound healing, supported by structured wound bed assessment, such as the TIMES principle...'**

improvements in wound healing outcomes (Guest et al, 2020). The National Wound Care Strategy Programme (NWCSP) aims to drive a high standard of wound care across England by:

- ▶ Reducing variations in practice
- ▶ Improving safety
- ▶ Improving patient outcomes while minimising the burden of wound care for patients,

carers and healthcare providers (NWCSP, 2020; Adderley et al, 2021).

It is important to identify both the underlying pathology of a wound and any contributory factors that could delay healing. Effective holistic patient assessment is integral to promoting timely wound healing, supported by structured wound bed assessment, such as the TIMES principle (tissue, infection, moisture, edge of wound, and surrounding skin) (Wounds UK, 2019).

Holistic wound bed assessment should ascertain differences between viable and non-viable/devitalised tissue to ensure suitable treatment planning, such as appropriate and effective debridement (Ousey and Cook, 2012).

## DEBRIDEMENT

Debridement is the removal of non-viable tissue from the wound bed or surrounding skin to encourage wound healing (Strohal et al, 2013). It is an important part of wound bed preparation, creating a hygienic, moist environment to promote optimum wound healing (Burnett et al, 2021). Debridement should include the wound bed, wound edges and periwound skin. Although the safe and effective removal of devitalised tissue across the wound bed is a fundamental part of wound healing, there is also much debate about biofilm and its role in delayed healing. All non-healing chronic wounds potentially harbour biofilm and, therefore, clinicians should assume all non-healing, chronic wounds that have failed to respond to standard care may have a biofilm (World

Union of Wound Healing Societies [WUWHS], 2016). Therefore, treatment should be targeted towards disrupting the biofilm burden through regular/repeated cleansing and/or debridement, and preventing the reformation and attachment of biofilm (Wounds UK, 2017).

There are few wounds where it is not safe to debride, as long as the correct method of debridement is chosen. However, in patients with peripheral arterial disease (PAD), debridement should only be initiated by a specialist, ideally after adequate revascularisation has been established (Wounds UK, 2013a).

Wound bed preparation involves removing the barriers to wound healing, such as devitalised tissue, biofilm and infection (Schultz et al, 2003). By doing this, other therapeutic treatments, such as compression therapy and pressure relief, will be more effective (Schultz et al, 2003). Barriers to wound healing should be identified by undertaking a comprehensive patient and wound assessment (Laryea, 2020).

Type of tissue found in the wound bed can often provide a clear indication as to whether debridement is needed. However, other factors, such as bioburden, condition of the wound edges and periwound skin, can also influence the decision of whether to debride or not (Atkin, 2016). Timely debridement of devitalised tissue improves visibility of the wound bed resulting in more accurate assessment and clearer wound management objectives.

## Methods

As said, debridement is a crucial component of wound management, which can be delivered via a range of different techniques, such as autolytic, biological, surgical/sharp, hydrosurgery and mechanical debridement (Atkin, 2014). These work in the following ways:

- ▶ Autolytic — although autolysis is the body's own enzymatic

mechanism to remove devitalised tissue, wound dressings that add moisture to the wound bed or remove excess fluid can be used to facilitate autolytic debridement. Although this requires a relatively low level of skill, it may be time-consuming (weeks) with high costs both in the total treatment and the risk of complications due to time (Atkin, 2014)

**'Debridement is necessary to allow clinicians to fully assess the true extent of the wound and has also been associated with a reduction in exudate and odour, alongside the promotion of granulation tissue.'**

- ▶ Biological — larval therapy is the controlled therapeutic application of maggots to a wound bed. Maggots secrete an enzyme which liquefies necrotic tissue which they then ingest, along with bacteria (Nigam, 2021). Although this can facilitate quick results, it can be expensive, needs a high skill level, and can have an associated 'yuk' factor (King, 2020)
- ▶ Surgical sharp and conservative sharp — historical techniques, such as sharp debridement, require advanced education and training and so are not typically first choice. Sharp debridement is typically performed in an operating theatre using surgical instruments, such as a scalpel. Although this method can be instant, it can increase the size of the wound as healthy tissue may be lost (Atkin, 2014)
- ▶ Hydrosurgery — this uses pressurised water or saline through a disposable handset. This cutting tool provides a quick method of debridement but can be painful for patients and occasionally requires local

or regional anaesthetic (Atkin, 2014)

- ▶ Mechanical — mechanical debridement was historically the method of removing dead tissue with wet-to-dry gauze. However, this is now considered to be potentially harmful and painful (Nazarko, 2015). Innovative products, such as monofilament fibre pads, have been introduced to the market as an alternative method of mechanical debridement. These offer a quick and effective form of debridement that requires no specialist training and can be used to physically disrupt biofilm in acute and chronic wounds, and can be used in adults and children (Burnett et al, 2021).

As said, some methods of debridement require specialist training and a clinical environment, whereas other more modern products and techniques are easy to use and need little training, making them ideal for general wound care practice (Atkin, 2014; Burnett et al, 2021) — for example, mechanical debridement using single-use, monofilament fibre debridement pads and debridement cloths (Burnett et al, 2021).

This article focuses on mechanical debridement, best practice guidance, and how to achieve clinically effective and cost-efficient outcomes using monofilament fibre debridement.

## Importance of debridement

Debridement is necessary to allow clinicians to fully assess the true extent of the wound and has also been associated with a reduction in exudate and odour, alongside the promotion of granulation tissue (Wounds UK, 2013b). Without debridement, an optimal wound bed cannot be restored and healing is unlikely to progress. Therefore, active debridement can accelerate wound healing, prevent and manage wound infection, disrupt biofilm, and, by removing non-viable tissue,

## Practice point

NICE medical technologies guidance (MTG) addresses specific technologies notified to NICE by sponsors. An expert panel is consulted comparing the status quo with the advantages of the technology under review. If the case for adopting the technology is supported and it is found to offer advantages to patients and the NHS, guidance is published.

reduce a food source needed for bacterial cell proliferation (Strohal et al, 2013; Roes et al, 2019). On the other hand, failure to facilitate debridement when clinically indicated can:

- ▶ Create a physical barrier to healing and impede the healing process
- ▶ Increase exudate volume
- ▶ Increase risk of maceration to the surrounding skin
- ▶ Result in a source of nutrients for bacteria and cause them to proliferate
- ▶ Cause the wound to become malodorous
- ▶ Induce chronic inflammation
- ▶ Prevent effectiveness of topical treatments
- ▶ Cause an underestimation of the wound depth
- ▶ Mask or mimic signs of infection
- ▶ Contribute to a septic response
- ▶ Lead to poor quality of life for the patient

(Wounds UK, 2011; 2017).

## EVIDENCE BASE (NICE)

The National Institute for Health and Care Excellence (NICE) has published the benefits of using single-use monofilament debridement through a medical technologies guidance (NICE, 2019). This guidance considers both the patient and healthcare provider. NICE concluded that mechanical debridement using monofilament fibre technology, namely Debrisoft® (L&R Healthcare), was both clinically and cost-effective when compared to other debridement methods.

The guidance was subsequently updated on 25 March 2019 to include all three sizes of a specific monofilament fibre debridement product, including medium- and large-sized pads for accessible areas of skin and a lolly for smaller wounds and hard-to-reach areas, such as cavity wounds, between digits and skin folds.

Benefits of monofilament fibre debridement for patients, clinical teams, and service providers, include (Lorenzelli et al, 2018):

- ▶ Effective for the patient
  - Access to effective and quick debridement in all care settings with little training required
  - Well tolerated by patients during treatment. In a 60-patient multicentre, comparative case series, Bahr et al (2011) reported that there was no pain in 45% of debridement sessions
  - Reduced risk of infection and increased exudate volume from devitalised tissue
  - After positive assessment of the patient's psychosocial status and assessment of their capability and capacity to self-care, monofilament fibre debridement can be used by patients in a shared/self-care management programme to maintain debridement of hyperkeratosis, dry skin and wound debris
- ▶ Effective for the clinician
  - Monofilament fibre debridement offers a range of products, including medium- and large-sized pads for accessible areas of skin and a lolly for smaller wounds and hard-to-reach areas, such as cavity wounds, between digits and skin folds
  - Achieves more effective debridement facilitating initial assessment, which may result in less frequent and fewer overall care visits
  - Likely to debride wounds more quickly. In a 20-patient

case study, the shortest time for debridement with the monofilament fibre debridement pad was 10 seconds and the longest time for debridement was three minutes and 23 seconds (Lorenzelli et al, 2018)

- Following comprehensive review, NICE MTG considered that the studies provided evidence that the Debrisoft® pad and Debrisoft® Lolly were safe to use for wound debridement in acute or chronic wounds in the community
  - Easy to use by general healthcare professionals in all care settings with little training required
- ▶ Effective for the NHS
  - Increasing the quality and standard of care
  - Monofilament fibre debridement provides a cost-saving for complete debridement compared with other debridement methods, including hydrogel, gauze and bagged larvae (NICE, 2019). By actively and rapidly removing debris, monofilament fibre debridement leaves the wound and skin clear and ready for assessment and healing, releasing time to care. According to NICE (2019), using Debrisoft could result in savings of £15 million per annum nationally/up to £484 per patient
  - Can reduce the time and resources associated with debridement, leading to a reduction in the time to healing

## Practice point

Debrisoft is the only mechanical debridement range recommended by NICE, that uses technology to remove barriers to healing by lifting slough and debris from the wound (Wound Care Today, 2017).



People.Health.Care.

Recommended by  
**NICE**

# The whole Debrisoft® Family is now recommended by NICE

**NICE concluded that Debrisoft® is more clinically and cost effective than other debridement methods**



To know more about our Debrisoft® family and other L&R products visit [lohmann-rauscher.co.uk](http://lohmann-rauscher.co.uk)

Debrisoft is registered to L&R. © 2019.

- Reduce the amount of community care needed, leading to reduced overall costs, shorter waiting times for treatment and reduced referrals to hospital.

**COST-EFFECTIVENESS**

In a recent audit, prescription data was obtained from the NHS Business Services Authority and analysed across 486 patients where costs were identified for the six months before and the six months after the month of the first prescription of Debrisoft (Burnett et al, 2021). This audit has subsequently provided evidence regarding the impact of implementing Debrisoft on wound care prescribing costs and product use for patients whose wounds were not healing after six months of treatment without Debrisoft. The result of this demonstrated that the total cost of wound care prescribing fell by 14% (Figure 1), equating to £101,723 in the six months after the initiation of Debrisoft compared with the six months before (Figure 2). The number of patients who received a wound care prescription in each month also fell from 486 in the first seven audited months, to 276 in the sixth months after the intervention of Debrisoft, equating to a decrease of 210 patients or 43% (Figure 3).

The reduction in total prescribing costs for this audited dataset identified that following the introduction of Debrisoft, there was a positive impact across many key areas of use (Table 1). There was a reduction of:

- ▶ 33% in antimicrobial dressing use
- ▶ 28% for negative pressure wound therapy (NPWT)
- ▶ 16% for non-medicated dressings.

In the author’s clinical opinion, this suggests that the use of Debrisoft could reduce overall prescribing costs. The cost of treatment for the patients in the dataset not only fell as a whole, but also reversed the upward trend

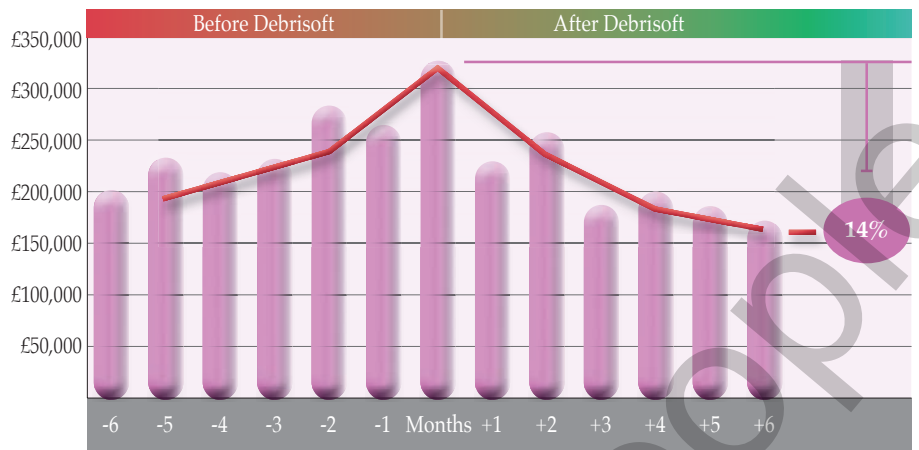


Figure 1. Reduction in wound care costs since introduction of Debrisoft.

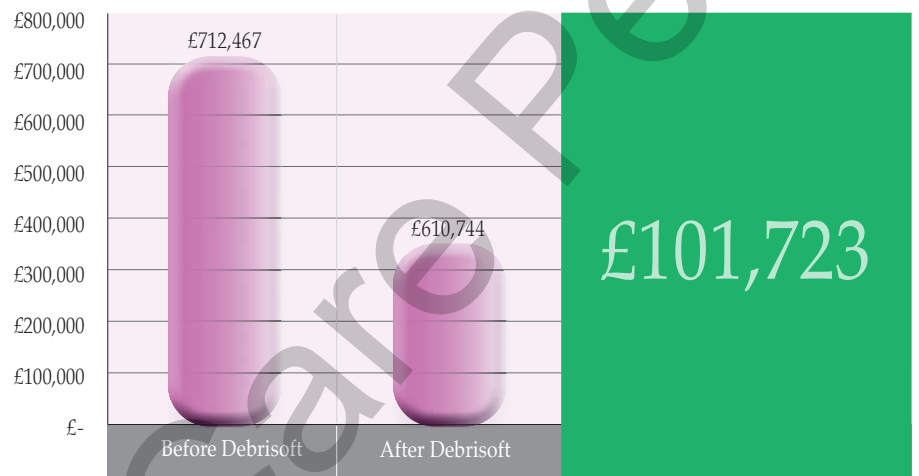


Figure 2. Total six months prescribed wound care expenditure on selected 486 patients.

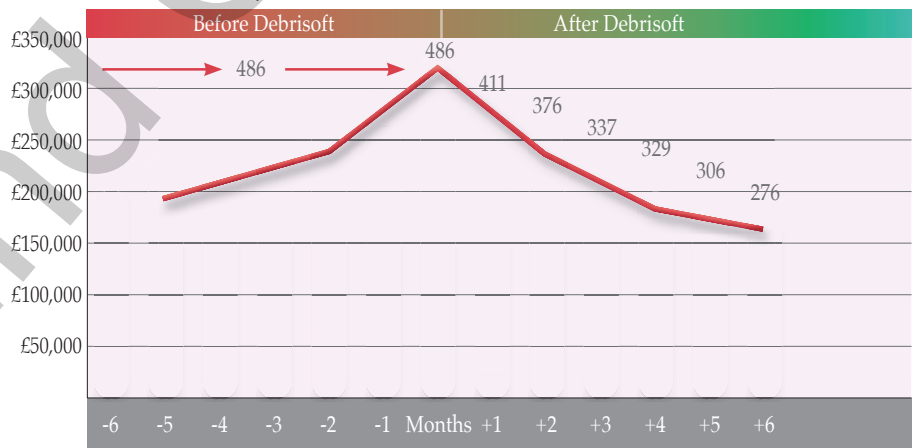


Figure 3. Fall in wound care prescriptions after intervention of Debrisoft — down 43%, similar to the percentage segment in Figure 1.

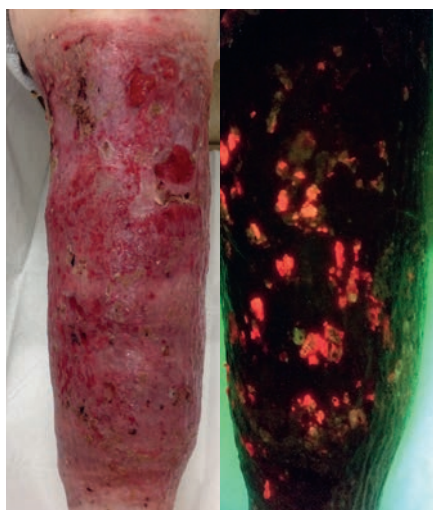
Table 1: Impact of introducing Debrisoft

Dressing	6 months before Debrisoft (£)	6 months after Debrisoft (£)	Difference (£)	Percentage fall (%)
Antimicrobial dressing	146,611.51	97,566.28	49,045.23	33.45
Antimicrobial other	4565.41	4141.42	423.99	9.29
Negative pressure dressing	14,134.97	10,116.82	4018.15	28.43
Negative pressure other	4370.16	1591.14	2779.02	63.59
Non-medicated dressing	532,910.53	447,457.49	85,453.04	16.04
Non-medicated other	9874.05	7399.37	2474.68	25.06
Total	712,466.63	568,272.52	144,194.11	20.24
Debrisoft	0.00	42,471.76		
Totals inc. Debrisoft	712,466.63	610,744.28	101,722.35	14.28



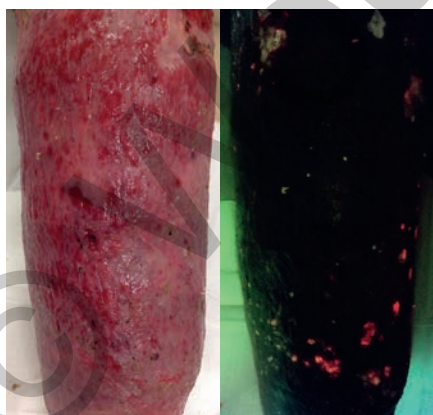
Figures 4 and 5.

Before treatment with a pre-moistened cleansing and debridement cloth.



Figures 6 and 7.

After first treatment showing removal of superficial bacteria and uncovering deeper pockets of bacteria with monofilament fibre debridement technology.



Figures 8 and 9.

After second treatment showing removal of deeper pockets of bacteria with monofilament fibre debridement technology.

in costs observed in the six months before the intervention.

## CASE STUDY

Liam was a 26-year-old man who suffered a post-trauma deep vein thrombosis (DVT) when just 18 years old and had a history of chronic venous leg ulceration for eight years. He described having a leg ulcer at a young age as 'life changing', stopping him from playing sport and swimming, and also how it had changed how he interacts with friends. Due to his damaged circulation and medication, he has lived with the constant fear that his leg was going to deteriorate or bleed. Despite this, Liam continued to work full time and support his family. In the summer of 2018, Liam's nurse changed his treatment, introducing Debrisoft monofilament debridement pad as part of his treatment regimen, with the aim of expediting wound bed preparation and promoting removal of devitalised tissue and bacteria at every dressing change. As part of this change in care, compression therapy moved from a combination long-stretch cohesive bandage system to a cohesive short-stretch bandage (Actico®, L&R Healthcare).

The use of a fluorescent imaging device after two treatments with Debrisoft highlighted the effectiveness of the monofilament fibre technology in removing bacteria not visible to the eye, as well as devitalised tissue (Figures 8–9). There was a dramatic reduction in leg oedema and improvement in leg shape, almost immediately. Liam also reported that the cohesive short-stretch bandage system made 'his leg feel much more comfortable with less ridging and less slippage'. In December 2018, after eight years of treatment, Liam's venous leg ulcer healed.

This case study demonstrates how implementing new knowledge, innovative technology and skills, and embracing evidence-based best practice can

translate into improved patient outcomes. Liam's story shows the devastating effect that a leg ulcer can have, especially on a teenager and young adult. Liam now has a bespoke plan for the prevention of future venous leg ulcers, which will include using a short-stretch adjustable wrap system (ReadyWrap®, L&R Healthcare) to encourage continued self-care and ownership of his long-term condition.

*This case study was presented as a poster at the Wound Care Today conference, 2019, Milton Keynes (Weale, 2019).*

## CONCLUSION

All too often, it is believed that the use of wound dressings *per se* is the major cost driver in wound management, whereas in fact, nursing time and poor outcomes affect the total cost of care. Healing time, frequency of dressing change, and complications are three important cost drivers when calculating cost efficiency.

Guest et al (2020) stated that the annual NHS cost of wound management is £8.3 billion, of which £2.7 billion and £5.6 billion are associated with managing healed and unhealed wounds, respectively. Early and appropriate wound debridement can facilitate healing, reduce the risk of infection and improve patient quality of life (Vowden, 2011). Monofilament fibre debridement delivers a more accessible, safe, effective and cost-efficient form of debridement compared to other debridement methods, including hydrogel and bagged larvae (NICE, 2019).

Following a comprehensive review, NICE's MTG (2019) recommends monofilament fibre debridement as part of the management of acute and chronic wounds in the community. Integrating appropriate use of monofilament fibre debridement into wound care practice offers clinical improvements, fewer nurse visits, and savings on prescribing spend. This increasing evidence

base has been shown to be beneficial to the patient, clinical team and commissioned service provider. **JCN**

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## KEY POINTS

- Debridement is the removal of non-viable tissue from the wound bed and surrounding skin.
- There are few wounds where it is not safe to debride, as long as the correct method of debridement is chosen.
- The National Institute for Health and Care Excellence (NICE) has published the benefits of using single-use monofilament debridement through a medical technologies guidance.
- Integrating appropriate use of monofilament fibre debridement into wound care practice offers clinical improvements, fewer nurse visits, and savings on prescribing spend.



# Respiratory assessment: causes of symptoms

Linda Pearce

Nurses play a key role in recognising the clinical signs of diseases. Learning to be proficient in one's ability to define the problem accurately, through both subjective and objective assessment, will provide both the competence and confidence to refer a patient onward for appropriate investigations and/or care. Part one of this series focused on respiratory assessment, including history-taking and physical assessment (Pearce, 2022a). Although there are many non-respiratory causes of respiratory symptoms, part two in this series focuses on respiratory conditions. Two case studies are discussed followed by potential differential diagnoses. The reader can make an assessment using part one and two of this series and the papers referenced, to help consider the potential/working diagnoses.

## KEYWORDS:

- Causes ■ Symptoms of lung disease ■ Working diagnoses
- Differential diagnoses

This is the second part of a two-part series. The first part discussed history-taking and physical assessment of the respiratory system. This article focuses on respiratory causes of the symptoms, which are primarily breathlessness (including wheeze or stridor), cough (including sputum and haemoptysis), chest pain and other symptoms of lung disease (Pearce, 2022a; National Institute for Health and Care Excellence [NICE], 2022a). As can be seen in *Tables 1* and *2*, there is a wide range of potential causes of breathlessness. This article focuses on adults and respiratory causes. There are many aetiological factors involved in breathing pattern disorders which are independent of disease and/or may be influenced by health-related factors. Examples may include chronic mouth breathing as a consequence of

living with breathlessness associated with respiratory or cardiac disease, or altered breathing patterns as a consequence of living with pain (*Table 1*). Breathlessness can be classified by the speed of onset; as acute where it develops over minutes, subacute where it develops over hours or days, or chronic where it develops over weeks or months (NICE, 2022b).

A full assessment, as described in part one of this series (Pearce, 2022a), will help distinguish the normal from the abnormal, and also assist in deciding if urgent action is required. (Auscultation sounds are described on *page 59* of part one of this series.) The aim of assessment is to define the problem and develop a management plan.

In this article, two case studies are documented and differential diagnoses considered. Detailed investigations will not be discussed, but would include chest x-ray, blood tests following consideration of the history and examination, sputum specimens for microscopy, culture and sensitivity (MC&S), and possibly acid-fast bacilli (AFB)

may be indicated. Lung function tests and chest high-resolution computed tomography (HRCT) and bronchoscopy may also be indicated. While these case studies may appear complex, in the author's clinical experience they reflect people that live with multiple comorbidities and their associated management.

## CASE STUDY ONE

This 74-year-old gentleman had a history of presenting symptoms. He had had a dry cough for approximately four and a half years, which was not associated with any signs of infection, and no phlegm or haemoptysis. Over the last six to eight months, the cough had become more persistent and he reported progressive breathlessness and tiredness, both at rest and with activity. There has been some weight loss and poor appetite.

## General history

He developed rheumatoid arthritis at the age of 59 years and retired from working as an accountant at the age of 64. He has no known exposure to noxious substances at work or through hobbies, although in his late teens/early 20s he worked for a building firm for approximately three years. He is a lifelong non-smoker. There is no relevant family history of diseases. He lives with his wife, who has a five-year-old pet parrot that is housed in the dining room where evening meals are eaten. His mobility and dexterity are mildly limited by rheumatoid arthritis, but the breathlessness and cough are more of a problem. His weight is 75kg and height 178cm.

## Medications

Previously, he was on regular 25mg of oral prednisolone for four years before starting methotrexate.

**Table 1: Factors to consider for breathing pattern disorders (Pearce and Stewart, 2017)**

<p><b>Biomechanical factors</b></p> <ul style="list-style-type: none"> <li>▶ Postural changes</li> <li>▶ Upper limb movement</li> <li>▶ Chronic mouth breathing</li> <li>▶ Cultural, i.e. tight fitting clothes around the waist and societal pressure for flat abdomen, particularly younger females</li> <li>▶ Congenital</li> <li>▶ Abnormal movement patterns</li> <li>▶ Postoperative pain causing tense/braced posture</li> <li>▶ Chronic pain, especially back pain</li> <li>▶ Obesity</li> <li>▶ Occupational/hobbies, i.e. divers, singers, swimmers, body builders</li> <li>▶ Vocal chord dysfunction</li> </ul>
<p><b>Physiological/biochemical factors</b></p> <ul style="list-style-type: none"> <li>▶ Lung disease</li> <li>▶ Metabolic disorders</li> <li>▶ Postnasal drip, rhinitis, sinusitis</li> <li>▶ Diet</li> <li>▶ Drugs, including caffeine and alcohol</li> <li>▶ Hormonal</li> <li>▶ Exercise/poor exercise technique</li> <li>▶ Speech/laughter</li> <li>▶ Chronic low grade fever</li> <li>▶ Heat</li> <li>▶ Altitude</li> <li>▶ Vocal chord dysfunction</li> </ul>
<p><b>Psychological factors</b></p> <ul style="list-style-type: none"> <li>▶ Anxiety</li> <li>▶ Stress</li> <li>▶ Panic disorders</li> <li>▶ Personality traits, obsessive, high achiever</li> <li>▶ Suppressed emotions, anger</li> <li>▶ Conditioning — learnt response</li> <li>▶ History of abuse</li> <li>▶ Sustained concentration</li> <li>▶ Sustained boredom</li> <li>▶ Pain</li> <li>▶ Depression</li> <li>▶ Phobic avoidance</li> <li>▶ Fear of symptoms</li> </ul>

He takes statins for slightly raised cholesterol.

**Physical assessment**

His temperature, pulse and blood pressure are normal, with pulse oximetry of 91%. His respiratory rate is slightly increased and physical activity causes increased breathlessness and cough. On examination, finger clubbing was noted. Chest examination is unremarkable apart from auscultation revealing bilateral late inspiratory crackles worse in the upper chest.

**Differential diagnosis**

The following factors were identified as potentially causing his symptoms:

- ▶ Rheumatoid arthritis progression — more information on this disease and its management can be found in National Institute for Health and Care Excellence guidance (NICE, 2018)
- ▶ Drug-related, i.e. methotrexate pulmonary toxicity can cause MTX-pneumonitis (British National Formulary [BNF]; Fragoulis 2019)
- ▶ Malignancy — including mesothelioma (see below)
- ▶ Asbestosis
- ▶ Interstitial lung disease (ILD), including hypersensitive pneumonitis (see below).

Interstitial lung disease (ILD) refers to a group of over 200 lung disorders causing inflammation where the interstitium becomes scarred and thickened, ultimately leading to stiffening of the lungs (Pearce and Pearce, 2018). As a consequence of lung fibrosis, the gas exchange is compromised (Pearce and Pearce, 2018). ILD can be subdivided into:

- ▶ Idiopathic (no cause identified; NICE, 2017a)
- ▶ Pulmonary fibrosis (IPF)
- ▶ Connective tissue and autoimmune-related pulmonary fibrosis (Cojocaru et al, 2011), for example, lung involvement related to rheumatoid arthritis
- ▶ Hypersensitive pneumonitis — prolonged or frequent exposure and inhalation of any substance which can have the potential to cause hypersensitivity pneumonitis, such substances are categorised as animal proteins, microbial or chemical (Pearce and Pearce, 2018)
- ▶ ILD resulting from exposure to pneumotoxic drugs, such as methotrexate (NICE, 2017), or as lung involvement related to the rheumatoid arthritis.

ILD should be considered/excluded in anybody aged over 45 years with persistent breathlessness on exertion, bilateral inspiratory crackles when listening to the chest, clubbing of the fingers, and unexplained persistent cough.

Malignancy, including lung cancer, should be considered and is discussed in more detail in *Case study two*.

In an older population, asbestos-related disease should also be borne in mind as a differential diagnosis. Asbestos was widely used in the construction industry as pipe lagging, to fireproof buildings, in decorative materials, and in textiles such as heat-resistant gloves and clothing (Walters et al, 2018). Asbestosis is an inflammatory response, causing scarring of the lungs leading to diffuse pulmonary fibrosis. Occupational history with exposure to asbestos helps to make a differential diagnosis from other types of lung fibrosis. Progression is often slow, but it is irreversible and supportive care should be

**Table 2: Chronic causes of breathlessness (adapted from <https://patient.info/doctor/breathlessness>)**

Cardiac	<ul style="list-style-type: none"> <li>▶ Left ventricular disease</li> <li>▶ Heart valve disease (mitral and aortic stenosis)</li> <li>▶ Arrhythmia</li> <li>▶ Pericardial disease</li> </ul>
Pulmonary	<ul style="list-style-type: none"> <li>▶ Asthma</li> <li>▶ Chronic obstructive pulmonary disease (COPD)</li> <li>▶ Bronchiectasis</li> <li>▶ Cystic fibrosis</li> <li>▶ Lung fibrosis</li> <li>▶ Pleural effusion</li> <li>▶ Lung malignancy</li> <li>▶ Pulmonary hypertension</li> <li>▶ Chronic pulmonary thromboembolic disease</li> <li>▶ Covid-19 (most cases follow a subacute course, with breathlessness developing over a few days; the pathology appears to involve a bilateral inflammatory reaction within the respiratory bronchioles)</li> </ul>
Neuro-muscular	<ul style="list-style-type: none"> <li>▶ Myasthenia gravis</li> <li>▶ Guillain-Barré syndrome</li> </ul>
Other	<ul style="list-style-type: none"> <li>▶ Severe anaemia</li> <li>▶ Diaphragmatic splinting (due to ascites, obesity or pregnancy)</li> <li>▶ Thyroid disease</li> <li>▶ Psychogenic, i.e. anxiety</li> <li>▶ Obesity</li> <li>▶ Being deconditioned</li> </ul>

provided. Non-malignant pleural disease occurs as a result of diffuse pleural thickening and can be as a result of previous asbestos exposure. Symptoms include shortness of breath and chest discomfort. Mesothelioma is a cancer of the lining between the lungs and the chest, caused by exposure to asbestos (Pearce, 2022b).

### Potential diagnoses

Persistent and slow progression of the symptoms with no signs or symptoms of infection and exposure to a parrot should raise suspicion of hypersensitivity pneumonitis — more specifically, 'bird fanciers' lung. MTX-pneumonitis is more common in the earlier stages of starting methotrexate, but can occur at any time. As the patient's past history includes building work where exposure to asbestos is recognised as a potential hazard to life, asbestos-related disease cannot be excluded without onward referral for further investigation.

### CASE STUDY TWO

This 65-year-old female presented with shortness of breath, cough and morning phlegm. These symptoms had gradually been getting worse over the last two to three years. Over the last one and a half weeks she has had a general ache in the right lower side of her chest and to her right lower back. She usually produces white or pale phlegm in the mornings, but this has become more frequent and persistent through the day and is now green in colour. She feels tired and a little confused. Her sleep is also disturbed by coughing.

### General history

She was diagnosed with asthma at the age of five but has had no symptoms and no anti-asthma medication since the age of seven. She has no known trigger factors or allergy. Her weight is 92kg, height 160cm. Her exercise capacity is limited by bilateral leg lymphoedema with cellulitis, and a left lower leg ulcer requiring dressings. She previously worked in an office with no obvious occupational risk factors. She smokes 20 cigarettes a day and has smoked for the last 45 years. Previously, she was able to sleep

throughout the night, but over the last week has been woken up by feeling short of breath and coughing. She is not prone to regular chest infections. There is no relevant family history of disease. She is divorced with no children and lives alone in a house and has noticed shortness of breath when climbing the stairs for the last 18 months. Physical activity is also limited by her build, lymphoedema and leg ulcer. She describes her leg with the ulcer as becoming more uncomfortable over the last week.

Her only medications are a non-steroidal anti-inflammatory drug for arthritis and a steroid inhaler, which her GP prescribed one year ago with no specific reason given for this prescription. This inhaler did not appear to help her symptoms and has been discontinued by the patient.

### Physical assessment

Her respiratory rate was 30/minute, temperature 37.6, pulse 84, blood pressure 110/60, oxygen saturation 88. Chest examination found that percussion note was dull in the right lower lobe and auscultation revealed widespread wheeze and late inspiratory crackles worse in the right lower lobe than the left, with reduced sounds at the right lower lobe.

### Differential diagnosis

As a result of assessment, differential diagnosis considered the following conditions:

- ▶ Undiagnosed COPD with exacerbation
- ▶ Respiratory tract infection
- ▶ Community-acquired pneumonia (CAP)
- ▶ Influenza
- ▶ Tuberculosis (TB)
- ▶ Bronchiectasis
- ▶ Underlying malignancy
- ▶ Venous thromboembolism
- ▶ Pleural effusion
- ▶ Asthma
- ▶ Recurrence of childhood asthma with exacerbation.

### Chronic obstructive pulmonary disease (COPD)

Chronic obstruction pulmonary disease (COPD) is usually suspected in people over the age of 35 years with a history of smoking and/or persistent exposure to noxious

substances in the work environment (NICE, 2021a). Symptoms include:

- ▶ Shortness of breath with activity/exertion which is progressive over time
- ▶ Chronic cough with phlegm
- ▶ Increased incidence of lower respiratory tract infections

(Global Initiative for Chronic Obstructive Lung Disease [GOLD], 2022).

Diagnosis is made from the patient history and confirmed by an obstructive picture on spirometry (GOLD, 2022). There is no cure for COPD, but the condition can be managed by reducing risk factors with smoking cessation, maintenance of physical activity, for example, attending a pulmonary rehabilitation programme and learning good breathing techniques. Medications to help manage symptoms of COPD include bronchodilator inhalers as first-line therapy, with inhaled steroids only introduced for those having frequent exacerbations. It is important that individuals with a diagnosis of COPD understand that they will always have breathlessness with exertion, and this cannot be completely eradicated.

Signs of an acute exacerbation of COPD include worsening breathlessness, cough, increased volume and purulence of sputum, wheeze, fever, increased respiratory and heart rate (GOLD, 2022). A severe exacerbation will include all of these symptoms, but with increased breathlessness and tachypnoea. There will also be a reduction in physical activity. Use of accessory muscles and pursed lip breathing may be observed. There may be signs of cyanosis, acute confusion or drowsiness, and new onset peripheral oedema may be observed, which can be difficult to assess in a patient with lymphoedema (NICE, 2019).

### Respiratory tract infections

Respiratory infection, such as acute bronchitis, can be mild, which will resolve with no intervention apart from managing the symptoms with simple analgesia such as paracetamol. The main symptoms of chest infection include a chesty cough with green/yellow/grey phlegm, shortness

of breath and wheeze (NICE, 2021b). There is usually a raised temperature, general muscle ache and tiredness with chest pain or discomfort.

**Community-acquired pneumonia (CAP)**

Pneumonia is defined as inflammation cause by bacterial or viral infection. Symptoms include:

- ▶ Cough emanating from the chest
- ▶ There may or may not be phlegm
- ▶ Raised temperature
- ▶ Pleural pain

(NICE, 2021b).

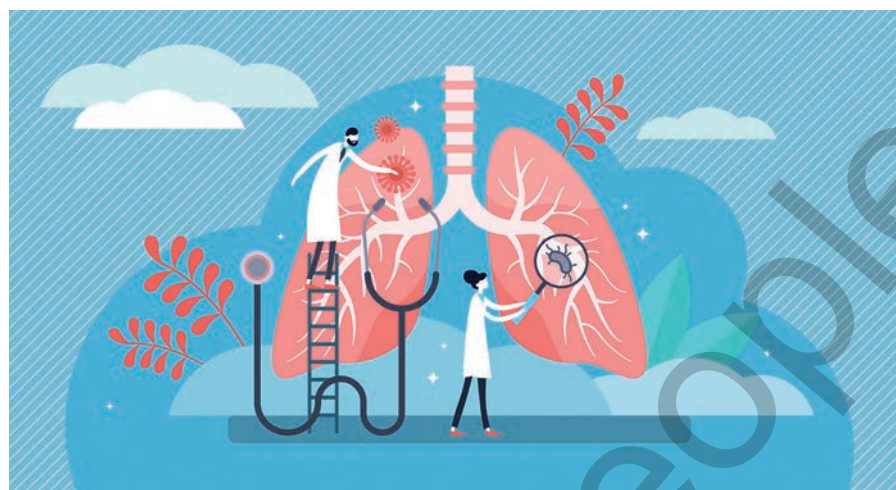
Assessment of severity should include increased respiratory rate of 20 or more per minute, reduced blood pressure with a diastolic measurement of 60mmHg or less. Temperature of 38C or above and increased heart rate above 100. The patient may be hypoxic and there may be a new symptom of confusion. There may also be reduced chest sounds. Differentiating bacterial pneumonia from Covid-19 viral pneumonia can be difficult, but as experience with understanding Covid-19 has emerged, so has the differentiation between the two become clearer (Table 3).

**Influenza**

Influenza is an acute viral infection, which although transmitted through droplets is not a specific respiratory viral infection but is likely to present with more systemic symptoms. Influenza is usually self-limiting in healthy people, but can cause complications, such as pneumonia, in older people and those who are part of the established clinical risk groups with chronic disease (Pokutnaya et al, 2022).

**Tuberculosis (TB)**

Tuberculosis (TB) can cause many systemic effects, although symptoms are most commonly



Photograph: VectorMine/Shutterstock

seen in the respiratory system and may be contracted by inhaling droplets through close contact with a person with active pulmonary TB. Persistent productive cough, particularly if associated with progressive breathlessness and haemoptysis, where other causes have been excluded, should consider investigating for TB, particularly if the symptoms include unexplained weight loss, night sweats, anorexia, and malaise (NICE, 2016).

**Bronchiectasis**

Bronchiectasis is a chronic lung condition resulting from insult and damage causing irreversible dilation of the bronchi leading to damage to the elasticity and muscular function of the airways, which impacts the mucociliary escalator drainage system resulting in ‘pooling’ of mucus and leading to persistent cough, sputum production and recurrent chest infections (Pearce, 2019). It can occur as an isolated disease or a consequence of diseases, such as COPD or asthma, causing further damage to the airways (Chalmers and Sethi, 2017).

The most common symptoms of bronchiectasis are persistent cough, with persistent but variable/large volumes of sputum. The sputum is

often mucoid, white or clear, but will vary in colour ranging to dark yellow, green or brown depending on current infection status. Frequent chest infections/pneumonia and slow recovery from these infections is common. Fatigue, breathlessness on exertion and non-specific chest pain are also common, often associated with infection or chronic coughing (Pearce, 2019).

**Malignancy, lung cancer**

There are many symptoms associated with lung cancer, which can be divided into respiratory and systemic symptoms. These include persistent cough that lasts three weeks or more, or change in a long-term cough or cough that gets worse, breathlessness, recurrent chest infections, chest and/or shoulder pain, haemoptysis, loss of appetite or unexplained weight loss, unexplained fatigue or lack of energy, hoarseness, finger clubbing, and pulmonary embolism (PE) (Sørensen et al, 2000; Iyen-Omofoman et al, 2013). Tobacco smoking, either active or passive, is the main cause of lung cancer (Brown et al, 2018). Exposure to pollutants or substances such as asbestos and, in a small portion of the population, genetic factors, increase the risk of lung cancer (Sung et al, 2021).

**Venous thromboembolism**

This is a term used to encompass both PE and deep vein thrombosis (DVT) (NICE, 2015). DVT is where blood clots occur, most commonly in the lower limbs. The risk factors are well established (NICE, 2022c). PE is where the emboli have obstructed the pulmonary artery system resulting in ventilation with reduced perfusion

**Table 3: Differentiating bacterial pneumonia from viral Covid-19 (adapted from NICE, 2021c)**

Bacterial pneumonia	Covid-19 pneumonia
Becomes rapidly unwell with a few days of symptoms	Typical Covid-19 symptoms for about one week, i.e. cough and generally feeling unwell
Pleuritic pain	Breathless but no pleuritic pain
Purulent sputum	Myalgia
	Anosmia

and impaired gas exchange. PE can be subdivided into provoked or unprovoked. Examples of provoked PE include; DVT, previous venous thromboembolic disease, cancer, recent surgery, immobility, lower limb trauma, obesity and acute infection (British Thoracic Society [BTS], 2018). Symptoms of PE can include breathlessness, tachypnoea, chest pain, cough, haemoptysis, and dizziness. Assessment may reveal hypoxia and chest auscultation may identify the presence of a pleural rub (BMJ Best Practice, 2022).

### Pleural effusion

This occurs when fluid builds up between the lung and the chest wall. It can be caused by pneumonia, TB, heart failure, arthritic conditions, and liver failure (Hooper et al, 2010). The most common symptoms are breathlessness, pleuritic pain, and cough. A raised temperature can occur, particularly if infection is present. Dullness on percussion and auscultation may be noted (Hooper et al, 2010).

### Asthma

Asthma most commonly presents in childhood, but can start at any age. Symptoms are usually intermittent and may include wheeze, breathlessness, chest tightness or cough. Asthma is frequently worse at night or during the morning, or when exposed to specific triggers such as exercise, allergens, changes in environmental temperature or taking medications such as beta-blockers or NSAID medications (BTS/SIGN, 2019; Global Initiative for Asthma [GINA], 2022). Key to good asthma control is avoidance and/or reduction in exposure to known trigger factors, combined with good adherence to inhaled medication, with inhaled steroid being first-line medication (BTS/SIGN, 2019; GINA, 2022). The most common failure of good asthma control is poor adherence and poor inhaler technique (BTS/SIGN, 2019; GINA, 2022). Each inhaler package has a patient information leaflet inside, which describes how to use the inhaler, and the individual and/or carer should familiarise themselves with the technique to support good inhaler technique.

National and international guidelines grade the severity of an asthma exacerbation (BTS/SIGN, 2019). Signs of deteriorating asthma control include more persistent symptoms, increased use of reliever inhaler, usually salbutamol, a short-acting beta-2 agonist, or if on a maintenance and reliever therapy (MART), combined inhaler, which contains an inhaled steroid and long-acting B2 agonist, with poor relief of symptoms (NICE, 2017, updated 2021; GINA, 2022).

There will be a lower tolerance to activity and an increased respiratory rate. There may be signs of exhaustion. Examination may confirm use of accessory muscles of respiration at rest and an expiratory wheeze on auscultation. Peak expiratory flow rate (PEFR) will be reduced when compared to best or predicted values. Oxygen saturations should also be measured if pulse oximetry is available. Early intervention is required to reduce the risk of near fatal/fatal asthma (Royal College of Physicians [RCP], 2014).

Life-threatening signs on examination/observation include:

- ▶ PEFR less than 33% best or predicted
- ▶ Oxygen saturation of less than 92%
- ▶ Altered consciousness or exhaustion
- ▶ Cardiac arrhythmia
- ▶ Hypotension
- ▶ Cyanosis
- ▶ Poor respiratory effort
- ▶ Silent chest or confusion (BTS/SIGN, 2019).

Acute severe asthma is indicated by the following signs:

- ▶ PEFR 33–50% best or predicted, (less than 50% best or predicted in children)
- ▶ Respiratory rate of at least 25/minute in people over the age of 12 years, 30/minute in children between the ages of five and 12 years, and 40/minute in children between two and five years old
- ▶ Pulse rate of at least 110/minute in people over the age of 12 years, 125/minute in children between the ages of five and 12 years, and 140/minute in children between two and five years old

- ▶ Inability to complete sentences in one breath, or use of accessory muscles, or inability of infants to feed (BTS/SIGN, 2019).

Moderate asthma presents as:

- ▶ PEFR more than 50–75% best or predicted (at least 50% best or predicted in children)
- ▶ Normal speech, with no features of acute, severe or life-threatening asthma (BTS/SIGN, 2019).

### Potential diagnoses

As the diagnosis of asthma in childhood was for a very short period of time with no further known recurrence and the GP had already trialled an inhaled steroid a year previously, the presenting symptoms are unlikely to be related to asthma or deteriorating asthma. The acute symptoms and physical assessment raise the possibility of pneumonia. Deep vein thrombosis and PE should be considered as part of the differential diagnosis and investigated given the patient's build, lymphoedema, leg ulcer, immobility and respiratory symptoms. The chronic symptoms raise the possibility of undiagnosed COPD, which will require confirmation with spirometry once the acute episode has resolved and a period of recovery for maybe eight weeks has taken place. There is also the possibility of bronchiectasis, which unless severe, will not be seen on a chest X-ray and chest HRCT will aid diagnosis. The long history of smoking and the possibility of a lobar pneumonia may also raise the possibility of lung cancer.

### SUMMARY

The aim of these case scenarios is to consider a range of respiratory presentations and to associate the information gleaned from a comprehensive history-taking and careful examination, with the likely, possible or probable differential diagnoses. Where comorbidities exist, through this process of effective history-taking and physical assessment, an understanding of the current issues can help clinicians to draw together the current findings

and make appropriate onward referral and/or suggest or arrange appropriate investigations. JCN

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# Recognising and managing postmenopausal health problems

Margaret Perry

The menopause affects every woman, but the age at which it occurs, the symptoms experienced, and the later development of menopause-related problems varies widely. For some, the transition is relatively smooth, but for others it is not, and the later development of postmenopausal health problems can affect general health and wellbeing, as well as quality of life as women age. This article gives an insight into some of the commonest postmenopausal problems with a view to increasing confidence in community nurses and non-medical prescribers in recognition and management of the conditions discussed, so that they can offer advice and treatment where appropriate and if able to do so.

## KEYWORDS:

■ Post menopause ■ Women ■ Advice ■ Treatment

The menopause is a naturally occurring stage in life which every woman will encounter. However, every woman is affected differently, with some fortunate enough to have minimal symptoms, while others encounter several unpleasant effects, and in some cases the later development of postmenopausal health problems which can cause distress and affect quality of life. This article gives an overview of postmenopausal problems, discussing atrophic vaginitis, osteoporosis, increased risk of cardiovascular disease (CVD), and genitourinary syndrome of the menopause (GSM) to give community nurses and non-medical prescribers some knowledge and confidence in the recognition and management of these associated conditions.

## STAGES OF THE MENOPAUSE

Perimenopause, also called the 'menopausal transition' or 'climacteric', is the period before the menopause when the features (endocrinological, biological, and clinical) suggesting approaching menopause begin. It is characterised by irregular cycles of ovulation and bleeds, and ends 12 months after the last menstrual period (National Institute for Health and Care Excellence [NICE], 2019). The average age of the menopause in the UK is 51 (NICE, 2019; Hazell, 2022), although in some women it can occur earlier — premature menopause being before the age of 45 (Hazell, 2022).

## PATHOPHYSIOLOGY OF THE MENOPAUSE

The changes which occur are highly complex and therefore a simplified version will be given here. The menopausal transition is the time when the level of hormones produced by ageing ovaries begins to fluctuate, leading to irregular periods, changes to the duration of bleeds and the frequency at which menstruation occurs (Stoppler, 2022). While the

duration of menopausal transition varies from woman to woman, it can last for over a decade in some cases (Santoro et al, 2021). Hormonal changes include:

- ▶ Inhibin: one of the first hormonal changes is a decrease in a hormone called inhibin, which is produced by the ovary and functions to tell the pituitary gland to make less follicle-stimulating hormone (FSH)
- ▶ FSH: as inhibin levels go down, FSH levels go up. FSH is produced by the pituitary gland. Levels of this hormone vary on a daily basis and can be very high one day and very low the next day. When FSH levels are high, the ovaries make more oestrogen and when they fall, oestrogen levels also fall. These changes can happen months to years before menopause
- ▶ Progesterone: this is produced by the ovaries and levels usually increase after ovulation. However, with ovulation occurring less frequently, progesterone levels remain low causing periods to be missed
- ▶ Anti-müllerian hormone (AMH): also made by the ovaries. Levels drop as a woman ages, until they are no longer detectable a few years before she enters menopause (American Society for Reproductive Medicine, 2015).

As ovaries age, their response to the pituitary gonadotropins follicle-stimulating hormone (FSH) and luteinising hormone (LH) decreases, initially causing the following sequence of events (Pinkerton, 2021):

- ▶ A shorter follicular phase (with shorter and less regular menstrual cycles)
- ▶ Fewer ovulations
- ▶ Decreased progesterone production
- ▶ Number of viable follicles

decreases; eventually the remaining follicles do not respond and the ovaries produce very little oestradiol

- ▶ Oestrogens produced by peripheral tissues (e.g. fat, skin) from androgens (e.g. androstenedione, testosterone) also decrease
- ▶ Total oestrogen level gradually decreases during the five years after menopause, and oestrone replaces oestradiol as the most common oestrogen.

## MENOPAUSAL SYMPTOMS

Many women experience symptoms during the transition period, but the form in which these occur varies widely. A study conducted in 2016 by Ipsos MORI on behalf of the British Menopause Society (BMS) reported that one in two women aged 45–65 had gone through the menopause without seeking advice from a healthcare professional, despite those questioned saying they had experienced an average of seven symptoms, with 42% of those surveyed saying that they felt their symptoms had been worse or much worse than they had expected them to be (BMS, 2020a). Some of the early symptoms are shown in *Table 1*.

Prevalence of postmenopausal problems varies widely and some women will have few symptoms, however others will have much more severe symptoms lasting for a greater period of time, in some cases years. It is estimated that around eight out of 10 women will develop menopause-related symptoms such as hot flushes at some point (Hazell, 2022), including:

- ▶ Atrophic vaginitis
- ▶ Urinary disorders
- ▶ Osteoporosis
- ▶ Cardiovascular disease (NICE, 2022a).

### Red Flags

- Menopause affects every woman
- Average age in the UK is 51
- Symptoms vary from woman to woman and range from mild to more severe.

## Atrophic vaginitis

Atrophic vaginitis (also called vaginal atrophy) is an unpleasant condition which is estimated to affect 50–60% of postmenopausal women (Naumova and Castelo-Blanco, 2018). The condition is characterised by a number of symptoms such as vaginal or vulval dryness, burning, painful intercourse, vaginal or vulval itching, skin splitting at the entrance to the vagina and vaginal spotting (Oakley, 2014). Despite the unpleasantness of symptoms and impact on quality of life, it is thought that only 20–25% of women seek medical advice, many believing their symptoms to be part of ageing (Naumova and Castelo-Blanco, 2018). In addition to the menopause, there are a number of other risk factors. These are shown in *Table 2*.

### Pathophysiology

The underlying processes leading to atrophic vaginitis and subsequent urinary problems (see below) are linked, in that both occur as a result of falling oestrogen levels, leading to thinning and inflammation of the vaginal walls and associated thinning of the bladder and urethral linings (Zagaria, 2011).

### Diagnosis

Atrophic vaginitis is usually apparent during clinical examination. The vulva appears paler and vaginal skin looks thin and dry, with tiny blood vessels under it resulting in patchy redness, and stretching of the vulva which may cause splitting of the skin (Oakley, 2014).

### Treatment and management

Treatment aims to alleviate symptoms

### Red Flags

- Atrophic vaginitis is a very common postmenopausal problem
- Urinary disorders are regarded as secondary complications caused by changes to the tissue as a result of oestrogen depletion
- Symptoms of urinary disorders are variable, but both problems are treatable.

and improve quality of life. Topical oestrogen is highly effective in helping to resolve symptoms, having the following benefits (Oakley, 2014):

- ▶ Improved vaginal thickness and elasticity
- ▶ Improved blood flow
- ▶ Improvement in sexual function
- ▶ Reduction in vulvo-vaginal symptoms
- ▶ Reduced vaginal pH
- ▶ Normalisation of the cells of the vaginal wall.

Vaginal oestrogen, pessary, gel, cream or ring can be prescribed. The tablet and cream are usually inserted every night into the vagina for two to three weeks and then reduced to twice weekly. However, once treatment is stopped, symptoms can recur. The ring, once inserted, lasts for three months. Non-hormonal approaches (such as vaginal moisturisers) are usually first-line choice for managing urogenital symptoms (or related urinary symptoms) experienced by women during or after treatment for an oestrogen-receptor-positive breast cancer (Newson et al, 2021).

**Table 1: Early menopausal symptoms (Nuffield Health, 2017; Santoro et al, 2021; Hazell, 2022)**

Symptom	Additional information
Hot flushes	Hot flushes affect as many as 55% of women even before the onset of the menstrual irregularity, their incidence and severity increasing and peaking in the late transition period, and tapering off over the next few years
Sleep disturbance	Some women will experience difficulty falling asleep, waking early, and interrupted sleep during the night
Mood changes	Fatigue, and emotional changes such as anxiety, hypersensitivity and irritability may also affect some women
Breast tenderness	Similar to that experienced by younger women before a period
Increased facial hair	Some women will develop hair growth on the upper lip, chin, chest and/or abdomen
Hair loss	Hair on the scalp may become thinner and more brittle and women will notice more hair on their hairbrush



**Table 2:** Additional risk factors for atrophic vaginitis (Mayo Foundation For Medical Education and Research [MMFER], 2022)

▶ After surgical removal of both ovaries (surgical menopause)
▶ During breast feeding
▶ While taking medications that can affect oestrogen levels, such as some birth control pills
▶ After pelvic radiation therapy for cancer
▶ After chemotherapy for cancer
▶ As a side-effect of breast cancer hormonal treatment

However, evidence has shown no increased risk of cancer recurrence among women using vaginal oestrogen who are undergoing treatment for, or have a history of, an oestrogen-receptor-positive cancer. Women with a history of any type of cancer, including oestrogen-receptor-positive cancer, should use vaginal oestrogen if required and, if beneficial, can do so long term (Newson et al, 2021)

## Urinary disorders

Urinary disorders are a symptomatic complex of secondary complications associated with the development of atrophic vaginitis and changes to the skin of the vagina and vulval area (dystrophy) in oestrogen-dependent tissues, such as the bladder, urethra, vagina, pelvic ligament apparatus and pelvic floor muscles (Portnov, 2021).

Symptoms of urinary disorders include (Portnov, 2021):

- ▶ Frequency of micturition
- ▶ Nocturia (needing to pass urine several times during the night)
- ▶ Urinary incontinence: a strong urge to pass urine which can lead to loss of bladder control before the woman is able to reach the toilet
- ▶ Stress incontinence: leakage of urine when laughing, coughing or sneezing
- ▶ Urinary tract infections (UTIs) (which may be recurrent): the menopause has been identified as a predominant risk factor for UTIs and recurrent UTIs because the urogenital microbiome (the normal flora of the vaginal and

urinary tract) undergoes changes as women age, often reducing a woman's natural defence mechanisms against UTI (Jung and Brubaker, 2019).

## Pathophysiology

The atrophy which occurs as a result of declining oestrogen levels weakens the bladder and the urethra, impairing the body's ability to control normal bladder function. In addition, alteration to the acidity of the vulva and vagina increases the likelihood of infection by various pathogens (University of Colorado 2022). Some women may develop pelvic organ prolapse (POP) as a result of a difficult vaginal delivery, which has caused damage to pelvic organs leading to subsequent urinary problems, although whether specific urinary symptoms are related to the menopause, ageing, or a combination of the two remains under scrutiny (University of Colorado, 2022).

## Treatment

Treatment aims and options are the same as those described above for atrophic vaginitis. Topical vaginal oestrogen preparations have been shown to reverse urogenital atrophic changes and may relieve associated urinary symptoms while avoiding systemic effects (Ewies and Alhaily, 2010).

## Osteoporosis

Osteoporosis is a chronic disorder of the skeletal system which puts the affected person at increased risk of fractures, and therefore has a significant impact on quality of life as well as carrying a financial burden (Bonaccorsi et al, 2021). In women, up to 20% of bone density loss occurs during the first five years after menopause (Bone Health and Osteoporosis Foundation, 2022). However, after this period of rapid bone loss, the age-related rate of bone loss in women changes so that it is similar to that seen in men (Pinkerton, 2021).

Osteoporosis is categorised as:

- ▶ Primary osteoporosis: which results from the normal ageing process in humans and includes postmenopausal osteoporosis
- ▶ Secondary osteoporosis: this

occurs as a result of specific disorders, e.g. adverse effects of drug therapy, endocrine disorders, eating disorders, immobilisation, marrow-related disorders, disorders of the gastrointestinal or biliary tract, renal disease, and cancer

(Fitzpatrick, 2002; Bhatnager and Kekatpure, 2022).

## Pathophysiology

Due to the complex underlying processes which lead to osteoporosis, a simplified version will be given here. The achievement of peak bone mass is important to bone health and plays a vital part in preventing osteoporosis and subsequent fractures in later years (Ji and Yu, 2015). Accumulation of bone mass starts in childhood and continues into adulthood. However, after the age of forty, bone mass normally begins to decline, and by the age of 70 there has been a reduction of approximately 30–40% (Ji and Ju, 2015).

In postmenopausal women, bone metabolism changes and there is an imbalance between bone resorption and bone formation, with resorption far exceeding new bone formation (Shuai et al, 2019). Certain bone cells which are responsible for constantly remodelling the bone have oestrogen receptors, so the activity of these cells is affected by declining levels with a resultant increase in osteoclast activity — the cells responsible for bone resorption (Shuai et al, 2019).

## Risk factors

As well as occurring as a result of the decline in oestrogen levels in women during the menopausal years, there are a number of other situations which can increase risk. The commonest of these are shown in *Table 3*.

## Diagnosis

There is currently no national screening programme for osteoporosis in the UK. In some cases, the condition may be diagnosed if the patient is considered to be at high risk (*Table 3* or following a fracture occurring as a result of a fall or injury). A DXA scan (dual-energy X-ray absorptiometry) or DEXA scan is the gold standard test for assessing

**Table 3: Additional causes of osteoporosis (Harding, 2018)**

Problem	Additional information
Age	Menopause before the age of 45
Family history	Osteoporosis in close family members, father, mother, brother, sister
Low body mass index (BMI 18.5 or less)	Poor diet over a prolonged period will affect osteoporosis risk
Previous bone fracture	Patient has already had a fracture after a fall or bump
Cessation of periods six to 12 months before menopause	Some women will develop hair growth on the upper lip, chin, chest and/or abdomen
Oral steroids	Long-term steroid use for certain conditions (e.g., chronic obstructive pulmonary disease [COPD] or arthritis diseases) causes bone loss
Lack of calcium and vitamin D	May occur as result of limited exposure to sunlight or poor diet
Immobility	Limited mobility, e.g. wheelchair use or bed bound
Current or past history of certain medical conditions	For example, chronic kidney disease (CKD), chronic liver disease, Crohn's disease, coeliac's disease, overactive thyroid, rheumatoid arthritis, type 1 diabetes

bone mineral density. Clinicians can refer to the NICE guidelines on osteoporosis and prevention of fragility fractures (NICE, 2021).

**Treatment**

Treatment aims to improve bone health and prevent fragility fractures and usually includes a combination of lifestyle changes and drug treatment.

With regard to lifestyle changes, patients can help themselves by increasing their levels of physical activity, smoking cessation, reducing alcohol intake and achieving and maintaining a healthy body weight. Dietary adjustments to ensure adequate calcium and vitamin D intake are also beneficial (Association of UK Dieticians, 2022).

First-line drug options for most patients are alendronic acid and risedronate sodium, both of which have been shown to reduce occurrence of vertebral, non-vertebral and hip fractures (NICE, 2021; BNF, 2022). Alternative drug treatments are shown in *Table 4*.

**Cardiovascular disease**

Cardiovascular disease is a leading cause of death worldwide in both males and females and is the leading cause of death in women, who have a notable increase in risk for this disease after menopause (Khoufary et al, 2020). However, evidence suggests that it develops seven to 10 years later in women than in men (Maas and Appelman, 2010).

Hormone replacement therapy (HRT) initiated before the age of 60 or within 10 years of the menopause is likely to be associated with a reduction in coronary heart disease and cardiovascular mortality, but if used in women over 60 years of age, lower doses should be started, preferably with a transdermal route of oestradiol administration (BMS, 2020b). Women with premature ovarian insufficiency (POI) and early menopause, should be encouraged to use HRT at least until the average age of the menopause (BMS, 2020b).

**Pathophysiology**

Postmenopausal women lack oestrogen which has a cardioprotective effect in that it increases high density lipoprotein

(HDL) levels and reduces low density lipoprotein levels (LDL) (Dul, 2018). HDL transports cholesterol back to the liver for excretion, while LDL carries it to the arteries where it can be deposited causing atherosclerosis.

Risk factors include (American Heart Association, 2022):

- ▶ Age at menopause: women with early-onset menopause (<45 years of age) have a significantly higher risk of CVD, even after adjustment for established risk factors
- ▶ Cause and timing of the menopause: menopause induced by surgical removal of both ovaries (oophorectomy) at an early age can lead to a higher risk of cardiovascular disease, but surgery done around the age of natural menopause does not appear to have any effect on CVD risk
- ▶ Declining oestrogen levels: as menopause approaches, levels of oestrogen, which help keep blood vessels relaxed and open, start to decline markedly increasing the risk of heart disease or stroke. Additional risk factors are shown in *Table 5*.

**Diagnosis**

When assessing patients for CVD, a full assessment needs to be completed. Routine bloods, including cholesterol levels, weight and body mass index (BMI), blood pressure, electrocardiogram (ECG) and echocardiogram, if necessary, may be undertaken to aid diagnosis. In

**Table 4: Alternative drug options for treating osteoporosis (Scottish Intercollegiate Guidelines Network [SIGN], 2021; BNF, 2022)**

Drug	Additional information
Ibandronic acid	Possible alternative oral treatment if other options are unsuitable
Denosumab	May be an option for women who are unsuitable or intolerant to oral bisphosphonates
Raloxifene hydrochloride or strontium ranelate	May be used if alternatives are not tolerated or are unsuitable
Hormone replacement therapy (HRT)	Generally reserved for younger postmenopausal women at high risk of fractures who are experiencing menopausal symptoms
Tibolone	Possible option for younger postmenopausal women with menopausal symptoms
Teriparatide	Reserved for women with severe osteoporosis who are at high risk of fractures
Romosozumab	Option for postmenopausal women with severe osteoporosis who have already had a fragility fracture and are thought to be at risk of another (within 24 months)
Teriparatide or Romosozumab	Both are favoured over oral bisphosphonates in postmenopausal women who have had at least one or one severe or two moderate low trauma vertebral fractures

**Table 5: Additional risk factors for CVD in postmenopausal women (American Heart Association, 2022)**

Problem	Additional information
Hot flushes and night sweats	These are associated with a greater risk of cardiovascular disease
Depression and sleeping difficulties	The evidence is not conclusive, but there may be a link between these problems and heart disease
Increased visceral fat	This is the accumulation of fat in the abdominal cavity close to the vital organs and its presence is associated with an increased risk of heart disease and cancer
Metabolic syndrome	This is usually diagnosed when a person has three or more of the following risk factors: high blood pressure, high blood sugar levels, raised cholesterol levels with high HDL and low HDL levels, and/or abdominal obesity

**Table 6: Summary of lifestyle choices for CVD prevention (Webb, 2022)**

Lifestyle choice	Additional information
Diet	A diet rich in foods containing plant sterols is advised. Examples include, whole grain cereals, beans and lentils, fruits and vegetables, nuts and seeds
Fat-free or low-fat milk	Regular consumption, ideally two to three cups daily, is associated with lowering blood pressure
Nuts	Regular inclusion of nuts in the diet can reduce CVD risk factors. Almonds, pistachios, pecans and walnuts are recommended
Oily fish	At least two servings per week is advised. Fish such as salmon, sardines, and halibut are high in eicosapentaenoic acid, or EPA, and docosahexaenoic acid, or DHA, both of which are associated with a reduced risk of sudden death from coronary artery disease (CAD)
Olive oil	Research shows that a diet rich in olive oil can increase HDL, cholesterol and lower C-reactive protein over and above the benefits obtained from a cholesterol-lowering diet. Other foods rich in monounsaturated fats include avocados, hazelnuts, pecans, and pistachios
Alcohol	Alcohol in moderation may have beneficial effects. UK guidelines recommend no more than 14 units per week
Fruit and vegetables	Diets rich in vegetables and fruits have been shown to lower blood pressure and improve other CVD risk factors, resulting in a decreased risk of CVD and stroke. UK guidelines recommend five portions of fruit and/or vegetables each day

In addition, a QRISK3 score will be undertaken and for those with a risk of >10%, in addition to lifestyle advice, a statin can be offered. Please refer to NICE guidelines for further information (NICE, 2020). Additional tests, including exercise stress test, magnetic resonance imaging (MRI) scan, computer tomography (CT) scan, X-rays, coronary angiography and radionucleotide tests may also be appropriate (NHS, 2020).

**Treatment and management**

Prevention is always better than cure and nurses spend a great deal of time trying to educate patients to make healthy lifestyle choices. A guide to dietary changes which may help is shown in Table 6. Medical treatment

to treat hypertension and high cholesterol levels may be needed. This is not included in this article, but nurses can refer to NICE guidelines (NICE, 2020; 2022b).

**CONCLUSION**

The menopause is a stage of life which no woman can avoid. The variable nature of symptoms and the risk of long-term problems is impossible to predict, but there is treatment available for women experiencing distressing symptoms. In addition, there are steps women can take to try and prevent complications. For postmenopausal women already having health problems, treatment is available. It is

hoped that this article has increased knowledge of the issues discussed and will give community nurses and non-medical prescribers more confidence in advising women.

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## KEY POINTS

- The menopause affects every woman, but the age at which it occurs, the symptoms experienced, and the later development of menopause-related problems varies widely.
- It is estimated that around eight out of 10 women will develop menopause-related symptoms.
- Atrophic vaginitis (also called vaginal atrophy) is an unpleasant condition which is estimated to affect 50–60% of postmenopausal women.
- In women, up to 20% of bone density loss occurs during the first five years after menopause.
- Postmenopausal women lack oestrogen which has a cardioprotective effect.

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# Advance care planning for people with dementia and their families

Karen Harrison Dening

There are many challenges in providing palliative and end-of-life care to people with dementia; some of which may be reduced through advance care planning (ACP) to support the person with the diagnosis to have a greater influence on their care at end-of-life. Advance care planning has been defined as a process of discussing and recording wishes, values, and preferences for future care and treatment held between an individual, family members and their care provider(s) that takes effect when the person loses capacity. This paper considers some of the barriers and enablers to lead to better support of ACP in families affected by dementia.

## KEYWORDS:

■ Dementia ■ Advance care planning ■ Shared decision-making

There are estimated to be 944,000 people living with dementia in the UK and estimates indicate that this will increase to one million people by 2025 (Wittenberg et al, 2019). Although the predicted numbers for people with dementia have been challenged over time (Matthews et al, 2013; Norton et al, 2013), it is known that increasing age appears to be the strongest risk factor for developing dementia (O'Connor, 2010) and that these numbers are forecast to rise. While increasing age is considered the most significant risk factor to developing dementia in later life, a person can develop dementia at any age (Kuruppu and Matthews, 2013). Of the total

**'... dementia is a progressive, irreversible neurodegenerative condition (Browne et al, 2021), and once diagnosed people will die with dementia regardless of the primary cause of death.'**

number of people with dementia in the UK, an estimated 7.5% or 70,800 have young onset dementia where the onset of their symptoms occurred under the age of 65 (Carter et al, 2020). In the UK, it has been estimated that as many as 25 million people (42% of the UK population) will know a close friend or family member affected by dementia (Luengo-Fernandez et al, 2010).

Historically, dementia is a disease that has been generally assigned to the broad domain of mental illness. However, a landmark challenge to this was made in the Nuffield Council on Bioethics report on dementia (2009), where a formal statement

was made that dementia arises as a result of brain damage and, as such, should be regarded from a more neurological perspective. Thus, dementia is a progressive, irreversible neurodegenerative condition (Browne et al, 2021), and once diagnosed people will die with dementia regardless of the primary cause of death (Sampson and Harrison Dening, 2021). Further, from analysis of a longitudinal population based cohort study, Xie et al (2008) reported a median survival time from symptom onset of dementia to death was 4.5 years, concluding that dementia was indeed a life-shortening illness and that one in three people (30%) will die with or from dementia.

Given that dementia is now recognised as a life-limiting condition, access to good quality palliative and end-of-life care has historically been poor (Sampson and Harrison Dening, 2021).

## PALLIATIVE AND END-OF-LIFE CARE

As far back as 2001, a call was made for equitable access to palliative and end-of-life care for older people in the 'National Service Framework for Older People' (Department of Health [DH], 2001). Following several years of policy and guidance indicating the need for improved access to palliative care services for older people at the end of life, it was a natural next step to call for fair access to palliative and end-of-life care for people with dementia (van der Steen et al, 2013). The 'End-of-Life Care Strategy' (DH, 2008) stated that all people should identify their needs, priorities and preferences (advance care

planning [ACP]) for end-of-life care, document and review them, and that these should be respected and acted upon wherever possible. More recently, in the dementia guideline refresh, the National Institute for Health and Care Excellence (NICE) recommended that all people diagnosed with dementia should be offered the opportunity to plan for their future care in the form of ACP (NICE, 2018).

### ADVANCE CARE PLANNING (ACP) IN DEMENTIA

Advance care planning has been defined as a process of discussing and recording wishes, values, and preferences for future care and treatment held between an individual and their care provider(s), which takes effect when the person loses capacity (DH, 2005). ACP differs from general care planning in that it is usually used in the context of progressive illness and anticipated deterioration. Planning for the future and making decisions about care and treatment at a time when we may not have the ability to do so is an important part of exercising autonomy and control over our lives and is considered an essential element in maintaining personhood (Middleton-Green et al, 2017).

There is suggestion of a 'window of opportunity' within which people with dementia could engage with ACP at a time when they have decision-making capacity, and what knowledge professionals need to facilitate this (Harrison Dening et al, 2011; Sampson and Harrison Dening, 2021).

### AUTONOMY, DEMENTIA AND DECISION-MAKING

Autonomy is an important concept in relation to the philosophy of the self and with regard to decision-making. The philosopher, Locke (Jolley, 1999), adds the dimension of time to the argument and states that autonomy and personal identity depend upon consciousness: that is to say, we are conscious of our past and future thoughts and actions in the same way as we are conscious of our present thoughts and actions.

Dementia would confound this perspective on autonomy because, as dementia progresses, the ability to consider future thoughts and actions becomes compromised, thus affecting decision-making abilities (Fratiglioni and Qiu, 2013).

### 'ACP differs from general care planning in that it is usually used in the context of progressive illness and anticipated deterioration.'

The literature is divided on whether a person with a diagnosis of dementia is able to engage in ACP. Some propose that it is possible for people with early dementia to develop plans (Poppe et al, 2013), while others find that even in the early stages of the illness people with dementia find it difficult to think about themselves in the future (Harrison Dening et al, 2012). Aside from this, there is evidence to indicate that ACP actually influences outcomes which are commensurate with the wishes and preferences of people with dementia (Harrison Dening et al, 2017; Mountford et al, 2020).

In the author's clinical opinion, ACP in dementia may be a process that is more complex than was originally appreciated when policy

recommendations were initially made. However, there is much that nurses can do to support families affected by dementia to consider their wishes and preferences for future care.

### SUPPORTING PEOPLE WITH DEMENTIA TO MAKE AN ADVANCE CARE PLAN

Advance care planning is a voluntary process of discussion and review to help an individual who has capacity to anticipate how their condition may affect them in the future. If they wish, they can set on record choices about their care and treatment. They may also choose to make an advance decision to refuse a treatment in specific circumstances. These can be referred to by those responsible for their care or treatment (whether professional staff or family carers) in the event that they lose capacity to decide once their illness progresses.

ACP is not only about the paperwork and documentation of wishes, but is concerned with the opportunity for professionals to instigate and conduct conversations related to death, dying, bereavement and anticipatory loss (Harrison Dening et al, 2019). However, professionals often lack the confidence and the skills in breaking bad news to initiate the process of ACP with sensitivity and empathy (Piers et al, 2018). Similarly, people with a life-limiting illness, especially dementia, are not routinely consulted about their wishes and preferences for future care. There are

#### Box 1

#### Barriers to advance care planning (Harrison-Dening, 2011)

- ▶ Procrastination, or waiting to do it later
- ▶ Dependence on family for decision-making
- ▶ Lack of knowledge of ACP
- ▶ Difficulty in talking about the subject
- ▶ Waiting for healthcare professionals to initiate a discussion with the patient
- ▶ Waiting for the patient to initiate discussion with the healthcare professional
- ▶ Believing a lawyer is needed to fill out the forms
- ▶ Fatalism, or acceptance of the 'will of God'
- ▶ Fear of 'signing my life away'
- ▶ Fear of not being treated

several potential barriers that may hinder the completion of an ACP (Box 1).

However, what may confound the situation further in dementia is the impact of other comorbid illnesses that are in addition to dementia, such as cancer or heart failure, as well as difficulty in knowing when a person stops living with and starts to die with dementia (Sampson and Harrison Dening, 2021).

### DYING WITH OR FROM DEMENTIA

Many people with dementia often have other multiple health conditions, as well as their dementia. Taudorf et al (2021) found that multiple and comorbid medical conditions were positive predictors of mortality in dementia, although dementia itself was the strongest predictor of mortality. Thus, multiple conditions not only have a cumulative effect but also interact to have a multiplicative impact. However, they went on to state that dementia disorders alone contribute to excess mortality. René et al (2013) conducted a population-based cohort study of 310 people with dementia and compared their illness trajectories with those of 679 people without dementia. They found that multiple morbidity was related to accelerated decline in people with dementia, but not in those without dementia. These illnesses and conditions are in addition to the dementia and often present the carer with, for example, practical problems in following treatment regimens or in understanding prognosis.

It is often when a comorbid condition threatens the life of a person with dementia that carers find decision-making especially difficult. Such events can expose how they may not fully understand the life-limiting nature of dementia, or the failure to have ACP discussions about end-of-life care when the person with dementia still has capacity to do so. However, such difficulties may be ameliorated if the person with dementia were to extend their autonomy and articulate their wishes for end-of-life care

**Table 1: Advance care planning in dementia (Harrison Dening, 2011: 143)**

Many of the best practice points generally applicable to ACP discussions will apply to people with dementia but, in addition, there are others that need to be considered:	
Skilled interviewer	▶ Those undertaking ACP with people with dementia will need to have appropriate knowledge and skills to understand the issues in communication in dementia
Right time	▶ As with all ACP discussions, they need to be held at the right time. However, in dementia, these discussions need to be held early on in the illness when the person still has the capacity, cognition and language to hold meaningful discussions and make informed decisions. Ideally, ACP discussions in dementia should be part of supportive post-diagnostic counselling processes within, for example, a memory clinic
Family involvement	▶ Once a person is no longer deemed and assessed to have capacity, decisions will need to be made in their 'best interest' and the Mental Capacity Act framework for determining best interest applied. A lasting power of attorney with appropriate authority (personal welfare) may be empowered to make decisions on behalf of a person with dementia, based on their knowledge of the person and on what they believe the person would or would not have wanted for themselves
Take time	▶ People with dementia will require more time for any ACP discussions; these may need to be done over some period of time with some repetition and clarification
Scenarios	▶ People with dementia may need examples of situations which they need to consider in making an advance care plan, such as clinical vignettes illustrating cardiac resuscitation or percutaneous endoscopic gastrostomy (PEG) feeding for them to conceptualise and apply to their own situation. This has been done using pictures, video clips and narratives
Life story	▶ Much information that is of relevance to developing an advance care plan can be gained from undertaking life story work with people with dementia. Family members can also be involved in this work
Recording	▶ When a person with dementia does not have the capacity to undertake ACP, a note should be made in the ACP document of who was involved in the discussion (for example, as in the Gold Standard 'Thinking Ahead' document — <a href="http://www.goldstandardsframework.org.uk/cd-content/uploads/files/Library%2C%20Tools%20%26%20resources/ACP%20General%20July%202013.v21.pdf">www.goldstandardsframework.org.uk/cd-content/uploads/files/Library%2C%20Tools%20%26%20resources/ACP%20General%20July%202013.v21.pdf</a> ). It should be noted that due to cognitive impairment most information was obtained from a named relative

before they have lost capacity to make such decisions.

There are certain actions that clinicians can take to ensure that a person in the early stages of dementia has the best possible opportunity to consider ACP (Harrison Dening, 2011) (Table 1).

As discussed, the wishes and preferences of a person for their future care are assumed to be based upon the principles of autonomy, whereby a person expects to retain personal control in making decisions. In dementia, the individualistic sense or value of autonomy becomes more collectivist when considering healthcare decisions, with the person having a preference for shared decision-making with family members (Lord et al, 2016). However,

decisions about what or what not to do range in importance: for example, from decisions to be made as a result of a health crisis to decisions to be made about day-to-day needs. How decision-making is best supported will vary with the circumstances and the complexity and seriousness of the issue in question. ACP for the end of one's life requires serious consideration and provision is made to support ACP within the Mental Capacity Act.

### MENTAL CAPACITY

In the UK, the Mental Capacity Act 2005 (MCA) protects and supports people who do not have the ability to make decisions. At its core are a set of principles which recognise the rights of people with impaired decision-making capacity caused by

mental illness, learning disability, head injury, dementia or related conditions. The principles of the MCA encompass the right of the person (with dementia) to exercise their autonomy as far as possible and require others to support them to do so.

Capacity must be assessed in relation to the decision in question and at the time the decision needs to be made. Capacity is assumed unless evidence suggests the contrary. If there is doubt about an individual's capacity, a capacity assessment must be made to ensure any decision is valid.

To have capacity, a person must be able to (DH, 2005):

- ▶ Understand the information that is relevant to the decision they want to make
- ▶ Retain the information long enough to be able to make the decision
- ▶ Weigh up the information available to make the decision
- ▶ Communicate their decision by any possible means.

The general legal and ethical rule is that people without capacity are treated in their 'best interests'. Part of what makes up their 'best interests' are their own wishes and preferences, as well as what is clinically viewed as the most appropriate action. Where individuals lack capacity, consideration should be given to their past wishes and preferences. If these are not recorded or known, relatives should be asked about what the person would or would not have wanted. If there is no lasting power of attorney (Box 2), the closest relative must be consulted and their views only disregarded for a good reason, such as if they do not seem to be in the patient's best interests or are impossible.

## SHARED DECISION-MAKING FOR END-OF-LIFE CARE

Successful shared decision-making for a family affected by dementia involves sharing knowledge, experience and wishes and preferences for care across

all stakeholders: the person with dementia, the family carers(s), and health and social care professionals. In practice though, shared decision-making should embrace the wishes and preferences of each and may mean striking a balance between considering the perspectives and wishes of the person with dementia (if known) and those of the carer. For example, the person with dementia may wish to die at home, but there may be instances where these preferences are in conflict with the those of the spouse or family carer.

Family carers often experience increasing demands in making decisions as dementia progresses, and are frequently pressed for decisions at times of crisis or transition (Bosco et al, 2020). Similarly, patterns of decision-making differ according to a carer's previous experiences, education, and social and cultural background (DeVries et al, 2019; Goossens et al, 2020). Not surprisingly, carers often find decision-making difficult and studies have reported on certain practical issues, including:

- ▶ Difficulties in deciding what to do about day-to-day care
- ▶ Distress in making health-related decisions
- ▶ Having insufficient information about any possible alternatives and their effects (Sanders Thompson, 2013).

Decision-making about appropriate end-of-life care seems to be particularly difficult for family carers. Several influential elements can affect this, such as relationships with professionals,

level of trust, etc (Lord et al, 2016). However, professional reliance on family decision-makers carries the assumption that they can articulate the patient's preferences accurately (Sanders Thompson, 2013). This can lead to the unhelpful situation in which the person with dementia increasingly lacks capacity, the family carers struggle to make decisions on their behalf, and professionals turn to the carer as being the person they believe knows what to do.

Kelly et al (2012) found that the majority of respondents wanted a close family member to act as their decision-maker when capacity was lost, believing that family members would know which treatments they would want or not. However, Harrison Denning et al (2016) found that carer decision-makers were only able to predict patients' treatment preferences with little more than chance (33% accuracy). Even discussing wishes and preferences for treatment or designating a person to make decisions on their behalf failed to improve predictive accuracy. Thus, this questions the professional and policy claim that reliance on family members in decision-making is justified by their ability to predict incapacitated patients' treatment preferences.

When looking at family decision-making in end-of-life care, it has been reported that families in conflict, with poor inter-relational dynamics, were more likely to opt for aggressive care at end of life (Xie et al, 2018). Winter and Parks (2008) interviewed 68 family proxy decision-makers for elderly relatives and found that greater family discord was associated with stronger

### Box 2

#### Lasting power of attorney (LPA) (Gov.UK, 2022)

##### Property and affairs LPA

A property and affairs LPA covers decisions about finances and property. This can include various aspects of financial administration, e.g. paying bills, collecting income and benefits, selling a house.

##### Health and welfare LPA

A health and welfare LPA allows the attorney to make decisions about a donor's health and welfare. A health and welfare attorney could make decisions about, e.g. place of residence, day-to-day care, etc.



preferences for life-prolonging treatments and weaker preferences for palliative care, independent of end-of-life values and socio-demographic characteristics of participants. However, when a family is in doubt or uncertain as to what to decide, would they err on the side of caution and elect for treatment and intervention for the person with dementia?

In the author's clinical experience, making decisions about end-of life care and treatment on behalf of a family member is not straightforward and can at times be extremely difficult, thus requiring the support of health and social care professionals. It may involve complex issues around whether to treat or withhold treatment. There may be several treatment options to choose from, and the context of the decision will also be important (e.g. in a crisis as compared to states of chronic ill-health). Overlaid on this are the perspectives, preferences and wishes for future care of the person for whom decisions are to be made. For clinicians, it will often be difficult to know whether proxy decision-making and treatment choices are consistent with the previously expressed wishes of the older partner/family member with dementia.

## CONCLUSION

There will be increasing numbers of people diagnosed with dementia in the UK as the population continues to age. Dementia is a progressive, irreversible neurodegenerative condition that greatly reduces life, with one in three of the population expected to die with or from dementia. Literature suggests that people with non-malignant disease, such as dementia (and their families), are much in need of palliative care services, requiring support in ACP and decision-making in preparation for end of life.

Dementia care is underpinned by the philosophical application of autonomy that is embedded in person- and relationship-centred care. UK law and policy is also

becoming a major influence on autonomy and control in end-of-life care through recommending improved access to palliative care and ACP. The process of ACP in dementia is far from straightforward — as dementia progresses, the ability to consider future thoughts and actions becomes compromised, thus affecting decision-making abilities.

**'Dementia care is underpinned by the philosophical application of autonomy that is embedded in person- and relationship-centred care.'**

Family carers find themselves increasingly in a position whereby they are called on to inform, or directly make, decisions on behalf of the person with dementia. It is often assumed that they know what the person with dementia decisions might have been when capacity is lost, even though wishes and preferences have not been articulated. This requires health and social care professionals not only to be aware of the barriers to ACP and decision-making in families affected by dementia, but also actively to support and enable the process while acknowledging the difficulties in ensuring treatment choices that are consistent with the previously expressed wishes of the older partner/family member with dementia. **JCN**

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## KEY POINTS

- The numbers of people with dementia is increasing, many of which have additional and multiple morbidities.
- People with dementia (and their families) should have equitable access to palliative care services, including support to develop advance care plans.
- Advance care planning is a way of supporting the autonomy of a person with dementia as the condition progresses.
- Many of the processes for supporting ACP in a general population are also applicable to dementia.
- Making decisions about end-of-life care and treatment on behalf of a family member is not straightforward and can at times be extremely difficult, thus requiring the support of health and social care professionals.

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## Revalidation Alert

Having read this article, reflect on:

- What needs to be considered when having ACP discussions with people with dementia
- How ACP differs from general care planning
- The barriers to ACP and decision-making in families affected by dementia.

Then, upload the article to the free JCN revalidation e-portfolio as evidence of your continued learning: [www.jcn.co.uk/revalidation](http://www.jcn.co.uk/revalidation)

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\*\* When comparing lab test results for retention under pressure with Aquacel®, Aquacel® Extra™, Durafiber® and UrgoClean® dressings. \*\*\* As part of a holistic biofilm management approach as per international guidelines (i.e. cleansing, debridement and reassessment) (Bjarnsholt T, Eberlein T, Malone M, Schultz G. Management of wound biofilm Made Easy. London: Wounds International 2017)

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