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skin 'n' bones connection

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Dear Reader

Welcome to the sixtieth edition of Skin 'n' Bones Connection. In the 30-plus years the journal has been produced, we have seen significant changes in both the understanding and the awareness of the psoriatic condition, which this journal's eponymous title has tried to reflect.

There is greater understanding of the connection that it is more than just a skin condition, which is why it is now commonly referred to as psoriatic disease. It is clear that it is more than its individual parts and this is explored on pages 4 and 5, where new understanding of the role of genetics is leading to potential new therapies.

With genetics in mind, the impact on the family was the theme of World Psoriasis Day, reported on pages 6 and 7.

Although there's the need to understand the wider impact, it is also important that we continue to see the other health risks and take more responsibility for avoiding those that will cause us harm, not least the role of nicotine, as discussed on pages 8 and 9.

The Patient Initiated Follow-Up (PIFU) initiative (pages 10 and 11) aims to give power, control and tools to patients to make better decisions. This is also an important part of what is needed in the ever-challenging NHS. This brings us to the call to "have your say" about the NHS's future, reported on page 16.

Of course, while all this change and consulting goes on, research also needs to continue, and once again our Pso Pscience sheds light on that research exploration.

Managing editor

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If you have a social media presence, then why not follow us and join the conversation to see what others have to say?

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Disclaimer

The contents of the journal are aimed at providing information that may be of interest to people with psoriasis and/or psoriatic arthritis or those who have a specialist interest, whether in a personal or professional capacity. Some articles which will be included are of general interest and may or may not relate directly to either psoriasis or psoriatic arthritis. This material may include aspects related to health, services or products that are available.

We believe that at the time of printing all information is correct and cannot be held responsible for any inaccuracies that may occur, nor do we endorse any products that may appear in this journal.

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Always consult your own doctor or medical healthcare provider.

PAPAA is an independently funded UK patient-centred charity that supports both patients and professionals by providing material that can be trusted (evidence based), which has been approved and contains no bias or agendas

Main activities revolve around the themes of Care, Cause and Cure, where we provide extensive information, provide education and support research via a small grants scheme. Collaborative work is also part of the charity's activities, we are open to approaches to work together as a partner organisation or as a supportive promotor, to raise awareness of areas of activity, which are beneficial to people affected by psoriasis, psoriatic arthritis and associated co-morbid conditions, including other auto-immune mediated diseases.

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Artificial intelligence assistance for medical healthcare

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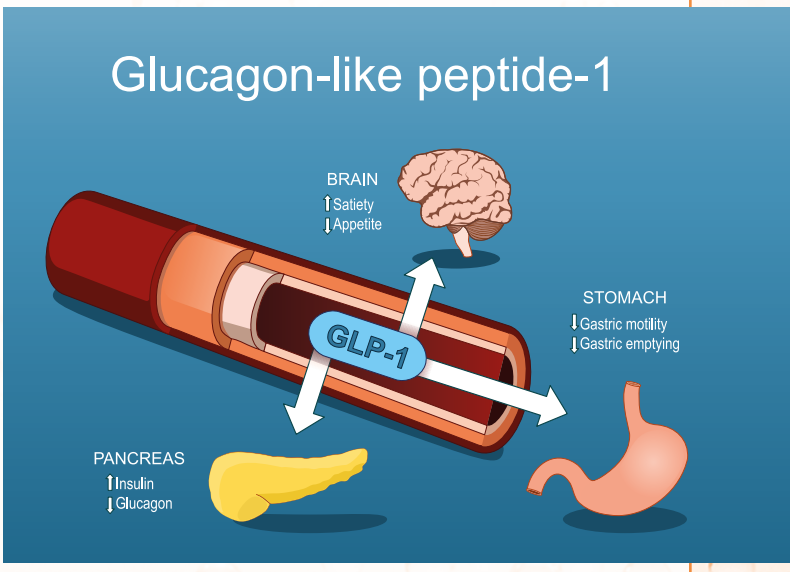
Recently, scientists have begun exploring GLP-1 (glucagon-like peptide-1), which could offer new benefits for those living with psoriatic disease. Although the term GLP-1 may not be widely known, the associated drug names of semaglutide (Ozempic and Wegovy) or tirzepatide (Mounjaro) may be more familiar, particularly given the wide press and media coverage their use has inspired.



What is GLP-1?

GLP-1 is a hormone that helps the body manage sugar levels and control appetite. Medicines that mimic GLP-1 are already used to treat type 2 diabetes and obesity.

Researchers believe that GLP-1 might also help reduce inflammation in the body, a key issue for patients with psoriasis and psoriatic arthritis.

There are several potential benefits of GLP-1 for UK patients. For starters, it may help lower inflammation levels, which could reduce the severity of psoriasis patches and ease joint pain. Additionally, since many people with psoriasis are overweight, the weight loss support provided by GLP-1 could improve both skin and joint health. Beyond that, GLP-1 might help manage comorbid conditions like diabetes and heart problems, leading to better overall health for patients.

Another promising aspect of GLP-1 is its potential to complement existing treatments. It could be used alongside current therapies for psoriasis, possibly enhancing effectiveness for those who haven't found relief with traditional options.

Challenges for consideration

While GLP-1 shows promise, there are challenges that UK patients and healthcare providers should consider. Currently, there isn't enough research specifically focused on using GLP-1 for psoriasis. More clinical trials are necessary to ensure its safety and effectiveness for such conditions.

Patients may also experience side effects such as nausea or diarrhoea, which could discourage some from continuing treatment. Furthermore, GLP-1 medicines can be expensive, and not all NHS trusts may cover them for off-label use in psoriasis treatment. This financial barrier might limit access for some patients.

There is also a risk that patients and healthcare providers may become overly optimistic about GLP-1 without sufficient evidence. High expectations could lead to disappointment if the treatment does not yield the desired results. Additionally, if too much focus shifts to GLP-1, important research and resources might be diverted away from established, effective psoriasis treatments.

Conclusion

GLP-1 could be a promising new option for treating psoriatic disease in the UK, but careful consideration is essential. Its potential to reduce inflammation, support weight loss, and improve overall health offers hope for many patients. However, more research is needed to establish its safety and effectiveness specifically for psoriasis and psoriatic arthritis. As scientists continue to study GLP-1, it may become an important part of treatment strategies for these conditions. Meanwhile, it's crucial for patients and healthcare providers to balance excitement for new therapies with caution, ensuring that all available options are explored for effective care.

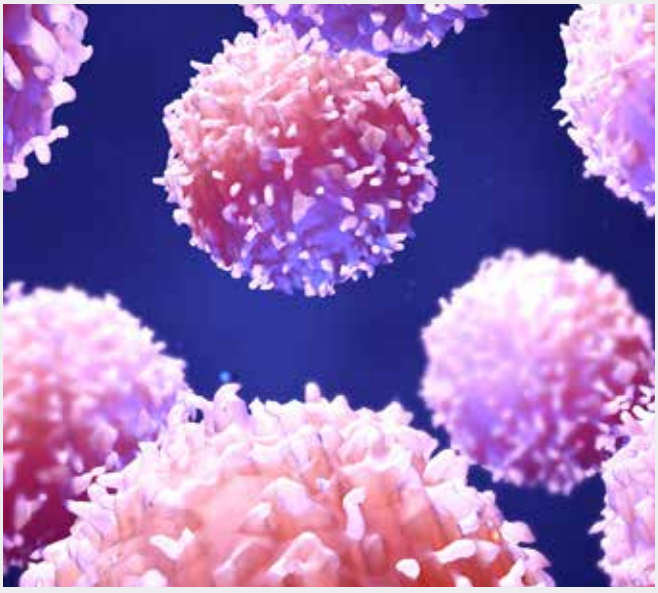
PAPAA will continue to monitor this and other scientific innovations by providing both commentary and actions that are balanced and innovative in this ever-changing landscape.

It's in your genes

Recent research has highlighted the crucial connection between genetics and the immune system in the context of psoriatic disease. This relationship plays a significant role in how the body responds to inflammation, particularly in conditions like psoriasis and psoriatic arthritis. Here, we explore the evidence suggesting the immune system's involvement in these diseases and the potential for future treatments.

A double-edged sword

The immune system is our body's defence mechanism, primarily composed of white blood cells, including T lymphocytes. These cells patrol the bloodstream and tissues, identifying and eliminating foreign invaders such as viruses and cancerous cells. Each of our cells carries specific identity markers, enabling the immune system to recognise them. However, in some cases, the immune system can misfire, attacking healthy tissues and leading to autoimmune disorders.



In psoriatic disease, research indicates that inflammation in the skin and joints is significantly influenced by T lymphocytes. Under normal conditions, these immune cells perform the vital task of monitoring for infections. Yet, in individuals with psoriasis, T lymphocytes are found in increased numbers within the affected skin and joints. Their heightened activity contributes to the thickening of the epidermis typical of psoriasis and the joint damage seen in psoriatic arthritis.

T lymphocytes

When T lymphocytes encounter a pathogen, they act swiftly to destroy the infected cells and signal other immune cells to join the fight. However, the presence of these cells in excess within psoriatic lesions indicates a malfunction in their regulatory mechanisms. This overactivity leads to chronic inflammation and the characteristic symptoms of psoriasis.

To combat this condition, healthcare providers often prescribe powerful immunosuppressive drugs such as methotrexate and azathioprine. These medications reduce the activity of T lymphocytes, effectively curbing the

inflammatory response. While effective, they can also indiscriminately affect both beneficial and harmful immune cells, underscoring the need for more targeted therapies.

Genetic research

As our understanding of the immune system's role in psoriatic disease deepens, researchers are taking strides toward more precise treatment options. A noteworthy breakthrough has come from Australian scientists who have identified a gene called IKBKB, which is integral to the immune response in psoriasis. Mutations in this gene can disrupt the function of regulatory T cells, which normally help keep immune activity in check. When these cells are compromised, they can contribute to the inflammation that characterises psoriasis and psoriatic arthritis.

Interestingly, individuals with just one copy of the mutated IKBKB gene may experience skin symptoms, while those with two copies are at a higher risk of developing psoriatic arthritis. This discovery not only enhances our understanding of the genetic underpinnings of these diseases but also opens the door to potential preventative measures.

The future

The identification of the IKBKB gene marks a significant milestone in psoriasis research. It allows for the possibility of screening patients to determine their risk of developing psoriatic arthritis, enabling early intervention and treatment. Additionally, advancements in genetic technology may one day allow for the editing of faulty genes, potentially restoring normal immune function.

While this prospect remains in the realm of future possibilities, it represents an exciting direction for the treatment of psoriatic disease. As researchers continue to unravel the complexities of immune responses in these conditions, we may see the emergence of therapies that are not only more effective but also tailored to individual genetic profiles.

Conclusion

The interplay between genetics and the immune system is pivotal in understanding psoriatic disease. With ongoing research and advancements in genetic technologies, there is hope for more targeted therapies that could significantly improve the quality of life for those affected by psoriasis and psoriatic arthritis. As we continue to explore these connections, the future of psoriatic disease management looks promising.

https://www.papaa.org/learn-about-psoriasis-and-psoriatic-arthritis/fertility-and-pregnancy/genetics/

World Psoriasis Day

The 29th of October 2024 marked another impactful World Psoriasis Day, a global initiative dedicated to raising awareness of psoriatic disease and advocating for better treatments. This year's theme, Psoriatic Disease and Family, highlighted the profound impact the condition has, not only on those diagnosed, but also on their families. The event focused on the unique challenges faced by families supporting loved ones - whether young or old – living with psoriatic disease, which affects both the skin and joints.

The burden on families

Psoriatic disease is more than just a physical condition. In addition to visible skin lesions and painful joints, the emotional and psychological toll can be equally significant, often invisible to others. Many individuals with psoriatic disease struggle with anxiety, depression, and social isolation, compounded by the long-term nature of treatments and societal stigma.

These struggles extend beyond the individual to their families. Caregivers - whether parents, spouses or children - often take on a range of responsibilities, from managing medications to assisting with daily activities during flare-ups. Despite the critical role families play, their emotional and physical support is frequently overlooked, even by healthcare professionals treating the patients.

In response to these challenges, the International Federation of Psoriasis Associations (IFPA) released a report titled *Inside Psoriatic Disease: Family*, which revealed that nearly 90% of families reported a significant impact on their quality of life. Everyday activities, from attending school or work to managing routines, become more difficult when a family member is living with psoriatic disease. As a result, family members themselves often experience stress, burnout, and feelings of isolation.

Family dynamics

Beyond medical treatments, psoriatic disease affects family logistics in profound ways. Taking time off work or school for medical appointments, managing the costs of ongoing treatments, and adjusting to the emotional strain all influence daily life. These challenges can create significant financial and emotional pressure on families.

This year's campaign also emphasised the need to recognise the unsung role of family members, who often manage complex care routines, help with medications, and provide extra supportive comfort during flare-ups. Despite their pivotal contributions, many families are not always equipped with the knowledge or resources to cope with the medical and emotional challenges of the disease.

Recognition and support

World Psoriasis Day 2024 called for greater recognition of the vital role families play in managing psoriatic disease. Frida Dunger, executive director of IFPA, stated:

"Psoriatic disease impacts not only those living with the condition but also their loved ones. Families shoulder the physical and emotional challenges, providing essential support as they navigate the complexities of care and treatment together."

The campaign stressed the need for stronger support networks for families, including better access to mental health resources, educational materials, and social support. It called on healthcare providers, policymakers, and communities to ensure families have the resources they need to navigate the physical and emotional demands of caring for a loved one with psoriatic disease.

Advocating for change

To further raise awareness, the IFPA encouraged families and individuals to share their personal stories on social media using the hashtag #psoriaticdiseaseandfamily. By sharing their experiences, families could connect, offer support, and advocate for better resources. These stories played a crucial role in raising awareness of the often-overlooked challenges of living with psoriatic disease and highlighted the importance of empathy and understanding.

The IFPA also made available a range of educational materials, including the Family Report, to inform both families and the public about the far-reaching impact of psoriatic disease.

The future

World Psoriasis Day is not only a time to reflect, but also a call to action. It underscored the need for continued advocacy and education around psoriatic disease. The IFPA called for greater global cooperation to reduce stigma, improve treatment access, and build stronger support networks for families.

Looking ahead, the IFPA envisages a future where family support is better recognised and equipped with the resources and training necessary to manage the medical and emotional aspects of psoriatic disease. By offering more comprehensive support systems, we can ensure that families feel empowered and better prepared to navigate the challenges of living with the disease.

Conclusion

World Psoriasis Day 2024 reinforced the importance of understanding the emotional and practical challenges faced by families supporting a loved one with psoriatic disease. The fight against psoriatic disease requires not only advances in medical treatments but also a collective effort to support families. By sharing stories, raising awareness, and providing better resources, we can create a world where families are empowered and equipped to manage the challenges of living with psoriatic disease.

For more information and to access additional resources, visit **www.psoriasisday.org**

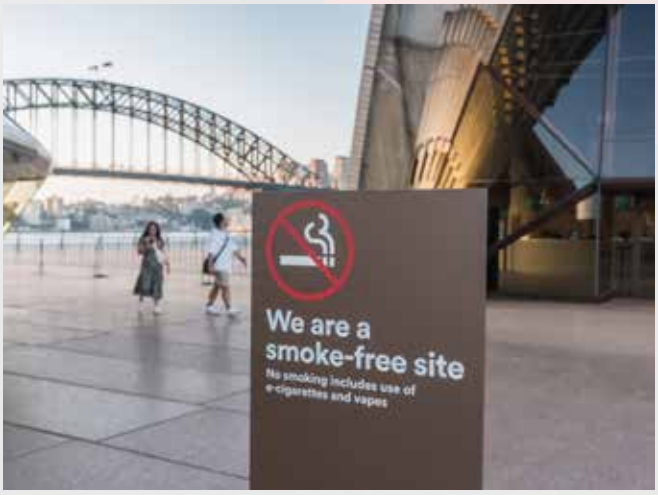
With renewed calls to limit both smoking and vaping in public spaces for health reasons, it is interesting to look further than the direct implications of inhaling smoke or vapour that contains nicotine.

Nicotine is a highly addictive substance found in the tobacco plant. Nicotine changes how our brains work, causing cravings for more, which is how an individual becomes addicted.

Reducing dependency on nicotine can be difficult, so the process of 'weaning off' via replacements such as patches, gum, or vapes is seen as a positive approach to eventually quitting the need to absorb the addictive chemical. It is recognised that such products can also remove exposure to the other harmful effects of smoking tobacco.

The NHS details some of the reduced risks of smoking-related diseases:

"Your longer-term risks of cancer, lung disease, heart disease, and stroke will be significantly reduced. After 1 year, the risk of heart attack halves compared to a smoker; after 10 years, the risk of death from lung cancer falls to half that of a smoker; after 15 years, the risk of heart attack falls to the same as someone who has never smoked. You will also be less likely to develop type 2 diabetes, bone disease including osteoporosis, eye disease, and dementia."



The problem is that these replacement products are no longer just viewed as therapeutic devices to quit smoking tobacco, but as long-term alternatives or indeed a lifestyle choice, and serve as an introduction to another addictive product.

The British Medical Association (BMA) has produced a report and wants action taken to stop this worrying trend. In a recent press release, Professor David Strain, chair of the BMA's board of science, said:

"There is no denying we are living in a vaping epidemic. Vape usage has risen hugely in the last decade, with one in ten adults now vaping.

"However, far more worrying is the increase in young people who vape, with almost six times more 11-17-year-olds vaping now compared with ten years ago.

"As a doctor, I understand the role vapes can play in helping people to stop smoking, but they have no rightful place in our children and young people's lives and when it comes to protecting their health, we cannot afford to gamble.

"An industry so obviously targeting children with colours, flavours and branding, to push a product that can lead to nicotine addiction and potential further harms, cannot be allowed to happen any longer.

"And with two vapes thrown away every second in the UK, the environmental impact of this epidemic is disastrous."

Their call is to ban *"... the commercial sale of all disposable vapes, on the grounds of disproportionate and harmful use by children and young people and their adverse impact on the environment."*

There is also an unknown long-term impact of inhaling vapour, beyond the known issues with nicotine addiction. Vapes, according to various sources, contain potentially harmful chemicals too, which may include metals, cadmium, formaldehyde, propylene glycol and other cancer-causing chemicals. Only time will tell if these fears are proven.

In the context of psoriatic disease, all of the above applies, but it is equally worth considering the further effects too. In studies, tobacco smoking has been strongly associated with palmoplantar pustulosis. For nicotine, there have been some studies that suggest a worsening of inflammatory conditions, including both skin and joints. The problem is that there is substantial evidence about the effects of tobacco smoking and very limited research around the use of vapes and nicotine. More investigation needs to be sought; absence of evidence is not evidence of absence. It is, therefore, important to be fully aware of what is known and consider what may not be known.

Source:

BMA press release

The British Society for Rheumatology has launched an innovative resource aimed at transforming how follow-up care is managed for patients with rheumatic conditions. The Patient Initiated Follow-Up (PIFU) Toolkit, co-created by leading experts, clinicians, and patients, empowers individuals to take control of their care by allowing them to schedule follow-up appointments based on their needs, rather than adhering to rigid clinical schedules. This approach not only reduces unnecessary hospital visits but also ensures timely and personalised care for those who need it most.

Why PIFU?

The PIFU initiative responds to the evolving needs of both patients and the NHS. Following the reconfiguration of UK outpatient services in 2020, there has been a concerted push to adopt PIFU across various specialties, including rheumatology. However, poorly implemented PIFU services can inadvertently harm both patients and NHS staff.

As Laura Coates, associate professor at Oxford University and a key figure behind this project, notes: *"PIFU is a complex and nuanced intervention. When it works, it's brilliant. But when it doesn't, it can be challenging."*

Recognising the need for a more standardised and informed approach to implementing PIFU, especially in rheumatology where patients often require lifelong care, Professor Coates emphasises the difficulties many patients face:

"Many patients, especially those from vulnerable populations, struggle to understand their conditions and navigate the healthcare system. This can lead to missed opportunities for care and worsened outcomes."

The PIFU Toolkit aims to bridge this gap by providing high-quality, practical materials that cater to both healthcare professionals and patients.

How the PIFU Toolkit can be used

The PIFU Toolkit serves as a comprehensive resource for clinicians and patients, offering essential tools for effective implementation. Among the resources available are:

- a PIFU handbook for clinicians
- patient-friendly FAQs
- infographics and leaflets that explain the process in simple terms
- videos with both English and translated subtitles
- practical templates for personalising the approach to fit individual services.

Accessible and free to download, the toolkit is also fully customisable for different NHS services, enabling local hospitals to co-brand and adapt the materials to their specific needs.

Importance for rheumatology

For patients with chronic rheumatic diseases, PIFU signifies a significant shift in how care is managed. Rheumatology services are predominantly delivered in outpatient settings, where traditional models often lead to fixed appointments, even when they may not be necessary. With PIFU, patients gain the flexibility to arrange follow-ups based on their symptoms and circumstances, aligning care with their personal needs.

As Professor Coates highlights: *"Shared decision-making is critical to a successful PIFU service. With the right educational materials, patients can make informed decisions about their care, leading to better outcomes and more efficient use of healthcare resources."*

By supporting patients in making these decisions, the PIFU Toolkit fosters a foundation of trust between healthcare providers and patients, which is crucial for improving both satisfaction and outcomes over time.

A milestone

This toolkit represents the culmination of extensive collaboration between clinicians, researchers and patients. The research was funded by the British Society for Rheumatology's advanced research funding call and was co-produced with input from patients and advocacy groups.

Professor Coates reflects on the impact of this support:

"The BSR advanced research funding has been instrumental in advancing our work on the PIFU Toolkit. It allowed us to coordinate a wide range of expertise, from animation and graphic production to patient and clinician collaboration, creating accessible resources that will improve PIFU care across the NHS. This funding was pivotal in getting our research off the ground while applying for additional support from the National Institute for Health Research (NIHR). It has not only helped us prepare for the upcoming TaILOR trial, which will test how well PIFU works for people with inflammatory arthritis, but has also supported my professional growth as we explore the effectiveness of PIFU in rheumatology on a national scale."

Informed choices, better outcomes

The launch of the PIFU Toolkit supports the theme of informed choices and better outcomes in healthcare. By providing patients with the information and tools they need, the toolkit empowers them to make decisions about their care.

This initiative marks a significant step forward in fostering informed, patient-centred care for those with arthritis and other rheumatic conditions. By facilitating shared decision-making and enhancing patient engagement, the PIFU Toolkit aims to improve outcomes and overall satisfaction in rheumatology care.

AI and the NHS

Artificial intelligence (AI) is changing healthcare, and the NHS (National Health Service) in the UK could benefit a lot from it. AI can help doctors provide better care, improve hospital operations, and speed up medical research. However, using AI in the NHS also comes with risks that need careful management.

The benefits of AI in healthcare

AI is already helping the NHS in several ways, making healthcare more accurate, efficient, and personalised.

Better diagnoses and treatment: AI can help doctors make better diagnoses by looking at large amounts of medical data, such as scans and medical histories, and helping spot problems early. For example, AI can help find signs of cancer or heart disease before they get worse, leading to earlier treatments and better outcomes.

Personalised medicine: AI can also help doctors create treatment plans tailored to each patient. By looking at a patient's genes, lifestyle, and health history, AI can predict which treatments will work best. This helps doctors choose the right medication or treatment, reducing the risk of side effects and making care more effective.

Running hospitals more efficiently: AI can make the NHS more efficient. It can help manage hospital resources like staff, rooms, and equipment. For example, AI can predict how many patients will need treatment and help plan the number of doctors and nurses needed. AI can also automate administrative tasks like booking appointments, which saves time and reduces waiting times for patients.

Remote monitoring and virtual care: AI helps with remote monitoring and virtual healthcare. During the pandemic, telehealth became more common, and AI is improving it. With AI, doctors can monitor patients' health from a distance, tracking vital signs like heart rate or blood pressure. This means patients don't always have to visit a hospital, making healthcare more accessible.

Speeding up drug development: AI is also speeding up the discovery of new medicines. By analysing large amounts of data, AI can help scientists find new drugs more quickly. This means new treatments can be developed faster, helping patients get access to new medications sooner.

The risks

While AI offers many benefits, there are also risks that need to be addressed carefully.

Data privacy and security: AI uses a lot of patient data, including personal and sensitive health information. If AI systems are not secure, there could be data breaches, where personal information is exposed. This could damage trust in the NHS and break privacy laws. To prevent this, AI systems need to be designed to protect patient data.

Bias: AI systems are only as good as the data they are trained on. If the data is not fair or doesn't include a wide range of people, the system might not work well for everyone. For example, if AI is trained mainly on data from one group, it may not work as well for others, especially minority groups. This could lead to unfair treatment. It is important to use diverse data to make sure AI works for everyone.

Over-relying on AI: There is a risk that healthcare workers may depend too much on AI. While AI can help with diagnosing and suggesting treatments, it should not replace human judgment. Doctors and nurses need to use their expertise to make decisions. Too much reliance on AI could affect the personal care and empathy that patients need.

Challenges of using AI in healthcare: Introducing AI into the NHS will require investment in training, technology, and support. Some healthcare workers may be unfamiliar with AI and may resist using it. There is also the cost of setting up AI systems, which could take resources away from other areas of care. This needs careful planning to ensure AI improves the system without creating new problems.

Rules and regulations: AI technology is evolving quickly, and current rules may not fully address its use in healthcare. Policymakers need to create new guidelines to make sure AI is used safely and fairly. Clear rules are needed for testing, monitoring, and updating AI systems.

The wider debate: What Experts Are Saying

Many organisations are looking at how AI should be used in healthcare:

- **The NHS AI Lab** is working on improving patient care with AI and sharing information about AI projects in the UK.
- **The Lancet** discusses the benefits and challenges of AI in healthcare, especially safety and fairness.
- **The Nuffield Trust** studies AI's impact on healthcare efficiency and patient outcomes.
- **The British Medical Journal (BMJ)** writes about the ethical issues with AI, such as bias and fairness.
- **The World Health Organization (WHO)** gives guidelines on how AI should be used safely, especially in terms of privacy and ethics.
- **Health Data Research UK** looks at how AI can improve healthcare while keeping data secure.
- **The National Academy of Medicine** and **JAMA (Journal of the American Medical Association)** discuss the ethical challenges AI brings, such as accountability and bias.

Conclusion

AI offers great potential for improving healthcare in the NHS. It can make diagnoses more accurate, create personalised treatments, and help hospitals run more efficiently. However, the risks, such as protecting patient data, avoiding bias, and ensuring healthcare workers remain in control, must be addressed. By managing these challenges, the NHS can use AI to benefit both patients and healthcare professionals.

As AI becomes more common in healthcare, it's important to find the right balance between using technology and ensuring it is safe, fair, and ethical. This will help AI become a force for good in the NHS.

A cure for psoriasis?

Scientists may have uncovered the root cause of psoriasis, a chronic and sometimes debilitating skin disease that affects 2-3% of the global population. The condition is characterised by red, scaly patches that impact the quality of a patient's life and can sometimes be life-threatening.

New research strongly suggests the hormone hepcidin may trigger the onset of the condition. This marks the first time hepcidin has been considered a potential causal factor. In mammals, hepcidin is responsible for regulating iron levels in the body.

The international research team behind this discovery – which includes Dr Charareh Pourzand from the Department of Life Sciences, the Centre for Therapeutic Innovation and the Centre for Bioengineering and Biomedical Technologies at the University of Bath – hopes their finding will lead to the development of new drugs able to block the action of the hormone.

Those most likely to benefit from such a treatment are patients with pustular psoriasis (PP) – a particularly severe and treatment-resistant form of the disease that can affect a patient's nails and joints as well as skin.

Dr Pourzand, who studies ways to mitigate iron imbalances in the skin, said:

"Psoriasis is a life-changing dermatological disease. Patients face a potentially disfiguring and lifelong affliction that profoundly affects their lives, causing them both physical discomfort and emotional distress. The condition can also lead to other serious health conditions.

"A new treatment targeting iron hormone imbalance in the skin offers hope. This innovative approach could significantly enhance the quality of life for millions, restoring their confidence and wellbeing."

Not too much iron

Iron is an essential trace metal, not just for transporting oxygen through the body's circulatory system but also for maintaining healthy skin: it's involved in many essential cellular functions,

including wound healing, collagen production and immune function. However, iron overload in the skin can be harmful, amplifying the damaging effects of UV sunlight and causing hyperproliferative chronic diseases (where cells grow and multiply more than normal), including psoriasis.

Studies going back 50 years have reported high iron concentrations in the skin cells of psoriatic patients, however the cause of this excess and its significance to the condition have remained unclear until now.

The new study is the first to name hepcidin as the likely link. Hepcidin is responsible for controlling how much iron is absorbed from food and later released into the body. In healthy individuals, it's produced exclusively in the liver, however the new study has found that in people with psoriasis, the hormone is also generated in the skin.

Exposure to hepcidin triggers iron overload

In the new study, mice (which have many genetic and physiological similarities to humans) developed a rodent form of psoriasis after being exposed to high levels of skin-produced hepcidin.

This overabundance of the hormone caused the animals' skin cells to retain far more iron than was required. In turn, this excess iron triggered both a hyperproliferation of skin cells and an abnormally high concentration of inflammation-inducing neutrophils (a type of immune system cell) in the topmost layer of skin.

These two outcomes – an overproduction of skin cells and an abundance of neutrophils – are main features of human psoriasis.

Psoriasis runs in families, though experts believe environmental factors such as weight, infections and smoking are also triggering.

A disease with no cure

Currently there is no cure for psoriasis, though treatments (which include topical creams, light therapy and oral drugs) can help keep symptoms under control for patients with some forms of the condition. Recent treatments have focused on targeting the immune pathways that contribute to psoriasis development.

Dr Pourzand believes a drug targeting hepcidin has the potential to dramatically improve treatment options for all psoriasis patients. She said:

"Our data strongly suggests hepcidin would be a good target for skin psoriasis treatment. A drug that can control this hormone could be used to treat flare-ups and keep patients in remission to prevent recurrence.

"Also, by adjusting the excess iron in psoriatic skin with customised iron chelators (substances that bind to excess iron in the body and help remove it), we would aim to halt the uncontrolled proliferation of psoriatic skin cells. This hyperproliferation is a major focus of our laboratory's research on psoriasis therapy, conducted in collaboration with national and international scientists from the Skin@Bath Network, including those from this study."

Dr William Tillett, a senior lecturer at the University of Bath and a consultant rheumatologist specialising in the diagnosis and treatment of psoriatic arthritis, said:

"This research from Dr Pourzand and colleagues is an exciting step forward for people living with psoriasis and for the clinical teams treating them.

"We don't know exactly why people develop psoriasis, but the identification of hepcidin as an important factor in the development of the disease opens doors not only to potential new treatments but also to the possibility of preventing the disease developing in people at high risk. Existing drugs – called biologics – can be highly effective but they are costly and rationed in the UK. Furthermore, these drugs don't work for everyone and they can stop working after a while, so a new approach to treatment would be very welcome."

He added: *"However, developing drugs is notoriously time-consuming and costly, so a new treatment won't be available immediately and it's important for patients to manage expectations."*

Dr Penelope Pratsou, a consultant dermatologist and spokesperson for the UK charity the British Skin Foundation, said:

"The findings of this study shed new light on the pathophysiology of psoriasis, with hepcidin overabundance in psoriatic skin thought to be another culprit. These results appear promising for patients, though more research is required to further elucidate the role of hepcidin and its potential as a prospective treatment target in psoriasis."

Reference:

Skin hepcidin initiates psoriasiform skin inflammation via Fe-driven hyperproliferation and neutrophil recruitment, published in Nature Communications: https://doi.org/10.1038/s41467-024-50993-8.

Source:
The University of Bath

The NHS Plan

The 10-Year Health Plan is an essential component of the government's mission to create a health service that is prepared to meet the needs of future generations. This initiative aims to ensure that the NHS remains resilient and responsive in the face of evolving health challenges.

Understanding the challenges

The development of the plan began with Lord Darzi's independent review of the NHS in England, which was published on 12 September 2024. This comprehensive review sought to evaluate the significant challenges confronting the health service, including staffing shortages, funding pressures, and the increasing demand for services. With the findings now available, the government is working to formulate a strategic plan to effectively address these critical issues.

Goals of the plan

The overarching goal of the 10-Year Health Plan is to create a modern NHS that can adapt to the changing needs of the population. This plan will focus on enhancing patient care, improving accessibility to services, and ensuring that the health service is equipped to manage future health crises. Importantly, the approach will not be top-down; the government states that it is committed to engaging in a collaborative process with the public, healthcare staff, and patients. This collaborative effort aims to ensure that the voices of those directly impacted by the NHS are heard and integrated into the planning process.

National conversation

To facilitate this collaboration, the government has launched the initiative "Change NHS: Help Build a Health Service Fit for the Future". This national conversation is designed to actively involve stakeholders in shaping the 10-Year Health Plan. By soliciting input from a diverse range of voices, the initiative aims to foster a sense of ownership and shared responsibility for the future of the NHS.

How to get involved

The government invites the public and healthcare staff in England to share their thoughts, experiences and ideas regarding the future of the NHS. The Change NHS online portal, which opened on 21 October 2024, will be available for several months, allowing ample opportunity for participation. Individuals are encouraged to contribute their insights through surveys and discussions available on the platform.

In addition to the online portal, a series of regional events will be organised across the country. These events will provide opportunities for face-to-face discussions, enabling participants to engage in more in-depth conversations about how to improve the NHS. Attendees will have the chance to share their ideas, discuss challenges, and brainstorm potential solutions with both fellow community members and healthcare professionals.

The government emphasises that this initiative is not just about gathering feedback; it is about building a collaborative framework that reflects the needs and aspirations of all stakeholders. Everyone is encouraged to participate and contribute to shaping a health service that works effectively for all.

By engaging in this dialogue, individuals can play a crucial role in influencing the direction of the NHS for years to come.

To give your views, go to the portal at:
https://change.nhs.uk/en-GB/

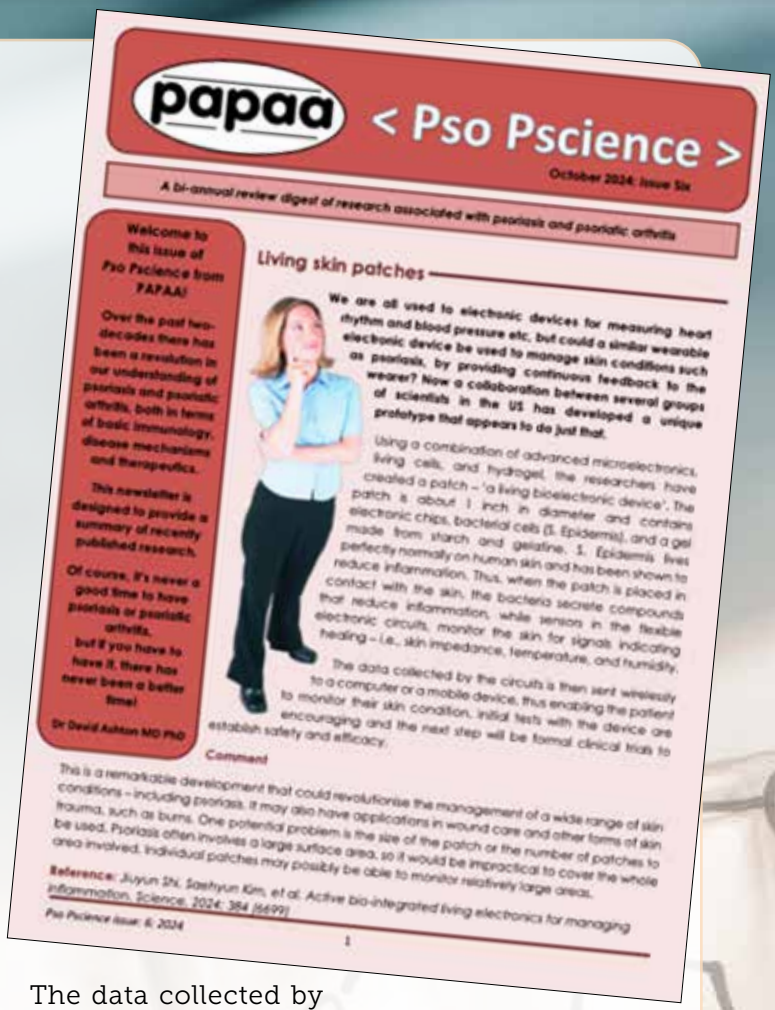
Over the past two decades, our understanding of psoriasis and psoriatic arthritis has dramatically advanced, thanks to breakthroughs in basic immunology, disease mechanisms, and treatment options. In April and October, PAPAA's senior medical advisor, Dr David Ashton, summarised recent research findings that shed light on these conditions. The following are the topics he explored for issue 6:

- Living skin patches
- Promising new treatment for psoriatic arthritis
- Risk of deep vein thrombosis in psoriasis
- Colitis and psoriasis.

Living skin patches

We are all used to electronic devices for measuring heart rhythm and blood pressure etc. but could a similar wearable electronic device be used to manage skin conditions such as psoriasis, by providing continuous feedback to the wearer? A collaboration between several groups of scientists in the US has developed a unique prototype that appears to do just that.

Using a combination of advanced microelectronics, living cells and hydrogel, the researchers have created a patch – 'a living bioelectronic device'. The patch is about 1 inch in diameter and contains electronic chips, bacterial cells (S. epidermis) and a gel made from starch and gelatine. S. epidermis lives perfectly normally on human skin and has been shown to reduce inflammation. Thus, when the patch is placed in contact with the skin, the bacteria secrete compounds that reduce inflammation, while sensors in the flexible electronic circuits monitor the skin for signals indicating healing, i.e., skin impedance, temperature and humidity.



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October 2024: Issue Six

A bi-annual review digest of research associated with psoriasis and psoriatic arthritis

Welcome to this issue of Pso Pscience from PAPAA!

Over the past two decades there has been a revolution in our understanding of psoriasis and psoriatic arthritis, both in terms of basic immunology, disease mechanisms and therapeutics.

This newsletter is designed to provide a summary of recently published research.

Of course, it's never a good time to have psoriasis or psoriatic arthritis, but if you have to have it, there has never been a better time!

Dr David Ashton MD PhD

Living skin patches

We are all used to electronic devices for measuring heart rhythm and blood pressure etc, but could a similar wearable electronic device be used to manage skin conditions such as psoriasis, by providing continuous feedback to the wearer? Now a collaboration between several groups of scientists in the US has developed a unique prototype that appears to do just that.

Using a combination of advanced microelectronics, living cells, and hydrogel, the researchers have created a patch – 'a living bioelectronic device'. The patch is about 1 inch in diameter and contains electronic chips, bacterial cells (S. Epidermis), and a gel made from starch and gelatine. S. Epidermis lives perfectly normally on human skin and has been shown to reduce inflammation. Thus, when the patch is placed in contact with the skin, the bacteria secrete compounds that reduce inflammation, while sensors in the flexible electronic circuits, monitor the skin for signals indicating healing – i.e., skin impedance, temperature, and humidity.

The data collected by the circuits is then sent wirelessly to a computer or a mobile device, thus enabling the patient to monitor their skin condition. Initial tests with the device are encouraging and the next step will be formal clinical trials to establish safety and efficacy.

Comment

This is a remarkable development that could revolutionise the management of a wide range of skin conditions – including psoriasis. It may also have applications in wound care and other forms of skin trauma, such as burns. One potential problem is the size of the patch or the number of patches to be used. Psoriasis often involves a large surface area, so it would be impractical to cover the whole area involved. Individual patches may possibly be able to monitor relatively large areas.

Reference: Jiuyun Shi, Saehyun Kim, et al. Active bio-integrated living electronics for managing inflammation. Science, 2024; 384 (6699).

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Reference

Jiuyun Shi, Saehyun Kim, et al. Active bio integrated living electronics for managing inflammation. Science, 2024; 384 (6699).

Promising new treatment for psoriatic arthritis

Around 30% of patients with psoriasis go on to develop psoriatic arthritis (PsA), the main symptoms of which are fatigue, pain, swelling, and stiffness in one or more joints, as well as swollen fingers or toes. The condition can impact people's quality of life and their day-to-day activities. When someone develops PsA, doctors usually prescribe conventional synthetic disease-modifying antirheumatic drugs. However, if these do not work well, the doctor may switch to (or add) biologic drugs, such as tumour necrosis factor-alpha (TNF-α) inhibitors. These drugs are highly specific and target a particular immune system pathway to reduce inflammation, but while they often relieve symptoms and slow the progress of the disease, not everyone responds positively and some patients are left with ongoing symptoms.

The good news is that the pharmaceutical company UCB has developed a new treatment option called Bimzelx (bimekizumab), which will hopefully prove to be especially effective in PsA. Bimzelx belongs to the general group of biologic agents which target specific pathways involved in the inflammatory process leading to psoriasis and PsA. Published clinical trials have shown that Bimzelx is well tolerated, reduces the severity of symptoms and slows structural damage to the joints. Trial participants also reported improvements in their physical function, with less pain and fatigue.

Importantly, Bimzelx appears to be superior to existing treatments for PsA, but with a similar safety profile. The drug is administered by injection and was approved for use in the UK in 2023.

Comment

PsA is a very debilitating condition which is sometimes difficult to manage. For those who do not respond adequately to more conventional treatments, Bimzelx is a powerful and effective alternative.

Reference

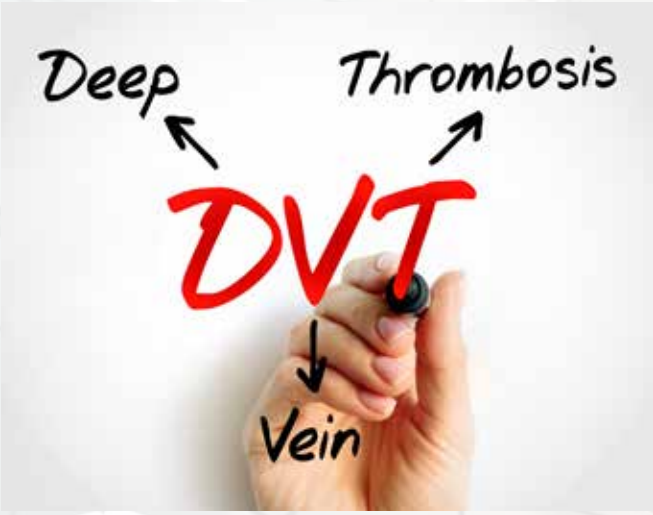
Mease PJ, Gladman DD, et al. Comparative efficacy and safety of bimekizumab in psoriatic arthritis: a systematic literature review and network meta-analysis. Rheumatology, 2024, 63: 1779–1789.

Risk of deep vein thrombosis in psoriasis

Psoriasis is an inflammatory skin disease affecting around 2-3% of the global population. It is well known that patients with psoriasis are more at risk for cardiovascular disease, due to the inflammation which underlies both conditions.

Inflammation is also believed to be the primary mechanism involved in venous thromboembolism (VTE), more commonly known as deep vein thrombosis (DVT). Given that psoriasis and VTE share similar inflammatory mechanisms, it is possible that patients with psoriasis may be more prone to developing VTE. A recent investigation conducted in Taiwan was designed to explore that possibility.

Nine studies with 12,052,781 participants examined the association of psoriasis with incident VTE. They found that patients with psoriasis had an approximately 30% increased risk for venous thrombosis. Since the severity of psoriasis



influences the inflammatory burden, it seems reasonable to conclude that the more severe the psoriatic disease, the greater the risk of venous thrombosis, though this needs to be confirmed in further studies.

Comment

This study, along with a number of others, confirms an increased risk of venous thromboembolism in patients with psoriasis. The typical presentation of a DVT is a hot, red, and painful calf, following a period of immobilisation such as a long flight or car journey. The risk is that a part of the thrombus (clot) in the vein, will break off and travel to the lung – a pulmonary embolus. Patients with psoriasis should be aware that they may be at increased risk of DVT. They should therefore consider using compression stockings and a small dose of aspirin (75mg 'junior aspirin') before a long flight or journey.

Reference

Tai-Li Chen, Ling-Ling Lee, et al. Association of Psoriasis with Incident Venous Thromboembolism and Peripheral Vascular Disease: A Systematic Review and Meta-analysis. JAMA Dermatol.2022;158:59-67.

Colitis and psoriasis

There is a well-recognised link between psoriasis and various forms of inflammatory bowel disease, including ulcerative colitis. Microscopic colitis (MC) is a recently recognised inflammatory disease of the large intestine which typically occurs in patients aged 60-70 years and is more common in women. MC is characterised by symptoms such as watery (non-bloody) diarrhoea, abdominal pain, and weight loss. Given that both psoriasis and MC are immune-mediated conditions, researchers in this Swedish study conjectured that there could be a link between them.

Data were collected from various Swedish healthcare registers, and from registers on the Swedish population operated and maintained by the government. Since all Swedish citizens have a personal identity number, researchers are able to link information from multiple sources, thus allowing for an almost complete follow-up. During the period 2007-2017, they identified 8404 patients with a first-time diagnosis of MC. These

patients were then matched with 37,033 reference individuals from the general population. A total of 179 MC patients and 440 reference individuals were subsequently diagnosed with psoriasis. After various statistical adjustments, patients with MC were found to have around twice the risk of developing psoriasis compared with the general population.

Comment

These findings are consistent with other studies detailing an association between inflammatory bowel disease and psoriasis. What is interesting about this study is that it was prospective – it identified patients with MC who went on to develop psoriasis. It underscores the fact that psoriasis is a not just a skin disease, but an expression of systemic inflammation which may have an adverse effect on multiple organs throughout the body. It should alert medical practitioners to the very real association between psoriasis and various forms of inflammatory bowel disease.

Reference

Bergman D, Roelstraete B, et al. Microscopic Colitis and Risk of Incident Psoriasis: A Nationwide Population-Based Matched Cohort Study. Clinical Epidemiology. 2024:16 213–225.

To read all issues of Pso Pscience, go to: www.papaa.org/news/pso-pscience/

To get an alert when the next issue is available, sign-up to our eNewsletter: www.papaa.org/news/digital-newsletter/

Making a difference

At PAPAA, we believe no one should face the challenges of psoriasis and psoriatic arthritis alone. Our mission is to provide everyone affected by these conditions with the best resources, and trusted information, they need to live healthier lives.

How we help

- **Informed choices:** We provide clear, reliable information to help people manage their conditions confidently.
- **Real stories:** People living with psoriatic disease share their experiences to inspire and show that no one is alone.
- **Interactive tools:** From self-help programmes to helpful articles, we aim to give people the tools to take charge of their health.

Creating change

We work to improve lives through education, research, and advocacy. By supporting medical research and training healthcare professionals, we aim to make sure people with psoriatic disease get the care they deserve.

How we are helped

PAPAA depends on supporters to drive its mission.

Here's how you can help:

Fundraise:

Organise events or nominate PAPAA to receive funds.

Subscribe:

Stay updated on research and ways to help.

Spread awareness:

Share materials and raise awareness.

Donate:

Fund vital resources for those living with psoriatic disease.

Give regularly:

Boost impact through regular donations and Gift Aid.

Volunteer:

Support research, review materials, and advocate for the cause.

Supporters: Make PAPAA's work possible and change lives.

Why support matters

Psoriasis and psoriatic arthritis affect millions, but too many still lack the knowledge they need. Help, whether through donations, fundraising, or raising awareness, makes a real difference. Together, we can ensure that no one faces psoriatic disease alone.

PAPAA is funded by donations, subscriptions, and grants, ensuring our work remains independent and focused on the needs of people with psoriatic disease. This means that all support provides an ongoing legacy for today and tomorrow.

Together, we can create change. Visit our website to learn more and get involved: **www.papaa.org/donate**

www.papaa.org