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# The State of MSK in the Workplace 2025

**How MSK issues are fuelling skyrocketing employer costs - and what data-driven leaders can do about it**

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# Executive Summary - *When Back Pain Breaks the Budget*

**Who is this report for?** MSK pain doesn't sit neatly in one function - and neither does its impact.

- **Health & Safety / OH:** Duty of care, DSE compliance, and workplace risk management
- **HR / Benefits / Wellbeing:** Absence, presenteeism, and benefit equity
- **CFO / Finance:** Rising PMI premiums, indirect costs, and productivity drag
- **Line Managers & Leaders:** Day-to-day support, early risk spotting, and culture change

Reducing MSK pain requires shared ownership - this report is written for everyone with a stake in workforce health, performance, and compliance.

Musculoskeletal (MSK) pain has quietly become one of the biggest cost burdens facing employers in 2025.[1] Across the UK and beyond, PMI premiums are surging - up to 17% [2] on average, with many employers seeing even higher. Indirect costs linked to absence, presenteeism, and quality defects multiply the financial hit even further.

What's driving this? It's not just ageing workforces or hybrid setups. The real issue is that MSK wellbeing has lagged behind other pillars of employee support. Widespread practice has shifted to proactive, prevention-first approaches in mental health, financial wellbeing, even career development. But when it comes to back, neck, and joint pain, many employees are still stuck with a reactive model - wait until it hurts badly enough, then try to fix it.

The result? Soaring claims, worsening productivity, and an epidemic of employees quietly struggling in pain. Vitrue's data shows that over 60% of the workforce experiences MSK pain, and women are disproportionately affected - making this not just a health crisis, but one with a clear inclusivity gap.

**Key Stat:** Over 60% of the workforce experiences MSK pain - with women disproportionately affected.

At Vitrue, we've worked with hundreds of employers globally to tackle this differently. The companies seeing real results - cutting pain rates by over 50% in some cases - are those that:

- Understand MSK as everyone's business - from Health & Safety, to Benefits, to line managers and employees themselves
- Invest in prevention and early risk detection, not just treatment

[1] Business Group on Health. "2024 Large Employer Health Care Strategy Survey", 2023.
[2] Aon. "Global Medical Trend Rates Report", 2025

- Instill a culture to empower people to take control, rather than reinforcing learned helplessness

The following pages explore the true cost stack of MSK pain, why PMI claims are only part of the story, and the practical, evidence-based steps employers can take to regain control - before back pain breaks the budget.

**Shane Lowe**
*Chief Executive Officer, Vitrue Health*

”MSK pain shouldn’t be inevitable. But for too long, we’ve treated it like a fact of life - especially once people hit their 30s, 40s, or 50s. That belief is costing companies millions. It’s time to apply the same prevention mindset we’ve used elsewhere to physical health. It works - and it’s long overdue.”

**Dr. Nicola Tik**
*Clinical Lead, Vitrue Health*

”In clinics, we see the same pattern every day: pain left unmanaged becomes harder - and more expensive - to resolve. Many MSK conditions are entirely preventable, but only if we spot risks early. Employers have a unique window to intervene before small issues spiral.”

**Natasha Adkins**
*Head of Customer Success, Vitrue Health*

”The organisations that win on MSK aren’t waiting for perfect conditions. They’re embedding prevention into the culture, using their existing comms, benefits, and health & safety structures. And when they do, they don’t just cut claims - they create healthier, higher-performing teams.”

**Alex Haslehurst**
*Co-founder and Chief Technology Officer, Vitrue Health*

”Technology, including AI, has huge potential to help solve the MSK problem - but only if it’s applied thoughtfully. This isn’t about replacing clinicians or people. It’s about giving teams better insight, earlier signals, and more accessible tools to manage risk before pain escalates.”

# The Cost Crisis: How MSK Pain Is Fueling Unsustainable Healthcare Cost Trends

> *"Global medical inflation is projected to remain at double-digit levels for a second year running, with 2025 costs expected to rise by 10% on average across regions. Musculoskeletal conditions are among the leading drivers of these claims, particularly in North America and Europe."*
>
> — Aon, *2025 Global Medical Trend Rates Report*

## 1.1 The Bigger Picture - Global Healthcare Trends Increasing Employer Responsibility

Across the world, demographic and lifestyle trends are increasing pressure on public healthcare systems. As demand grows, we're seeing more of the burden shift to employer-sponsored health benefits - particularly for conditions that may not be life-threatening but significantly impact quality of life.

That macro trend is driving major increases in the cost of employer-provided healthcare - but it also creates an opportunity. If employers approach this shift proactively, there's a chance to redesign how certain health issues are managed. Get it right, and we reduce preventable costs while improving workforce health. Get it wrong, and the same unsustainable costs we've seen in public healthcare simply shift onto employers - which, for many, is exactly what's happening today.

## 1.2 Direct Costs: Medical Inflation, Claims and Premiums

Employers around the world are facing the steepest rise in medical costs in nearly a decade. Aon's latest data shows global employer-sponsored healthcare costs are expected to increase by **10.0%** in 2025, with Europe close behind at **8.9%**. That's more than triple the general inflation rate in many markets - and it's not showing signs of slowing.[1]

[1] Aon. *The Global Medical Trend Rates Report 2025*. 2025.

**Key Stat:** Many employers - particularly those with higher PMI utilisation - are facing **15–30%** premium hikes at renewal, putting serious pressure on budgets.

*That 10.0% is just the average.* In reality, many employers - especially those in high-risk sectors or with ageing workforces - are reporting annual increases well above that mark. Internal benchmarking across Vitrue's global customer base suggests that in cases with high musculoskeletal claim volumes, premium hikes of **15–30%** are not uncommon. For HR and finance teams already balancing flat budgets with increasing demand, these numbers are becoming unmanageable.

Musculoskeletal (MSK) issues sit squarely at the centre of this cost surge. In the UK, MSK is now the second most common driver of private medical claims, behind only cancer. It's a similar story globally, with orthopaedic procedures and related conditions consistently ranking among the top five cost drivers for employers across North America, Europe, APAC, and the Middle East.

UK companies, particularly mid-sized firms, are navigating substantial Private Medical Insurance (PMI) premium increases for 2025 renewals, often in the double digits, with many seeing rises of **15%** or more. Industry data consistently identifies Musculoskeletal (MSK) conditions as a leading driver of these rising costs, significantly impacting scheme utilisation and overall premiums. [1] [2]

It's not just a UK problem. Rising MSK claim rates, combined with higher demand for surgery and physiotherapy, are driving similar cost pressures worldwide. Public health system backlogs mean more employees turn to private cover sooner - accelerating the trend.[1]

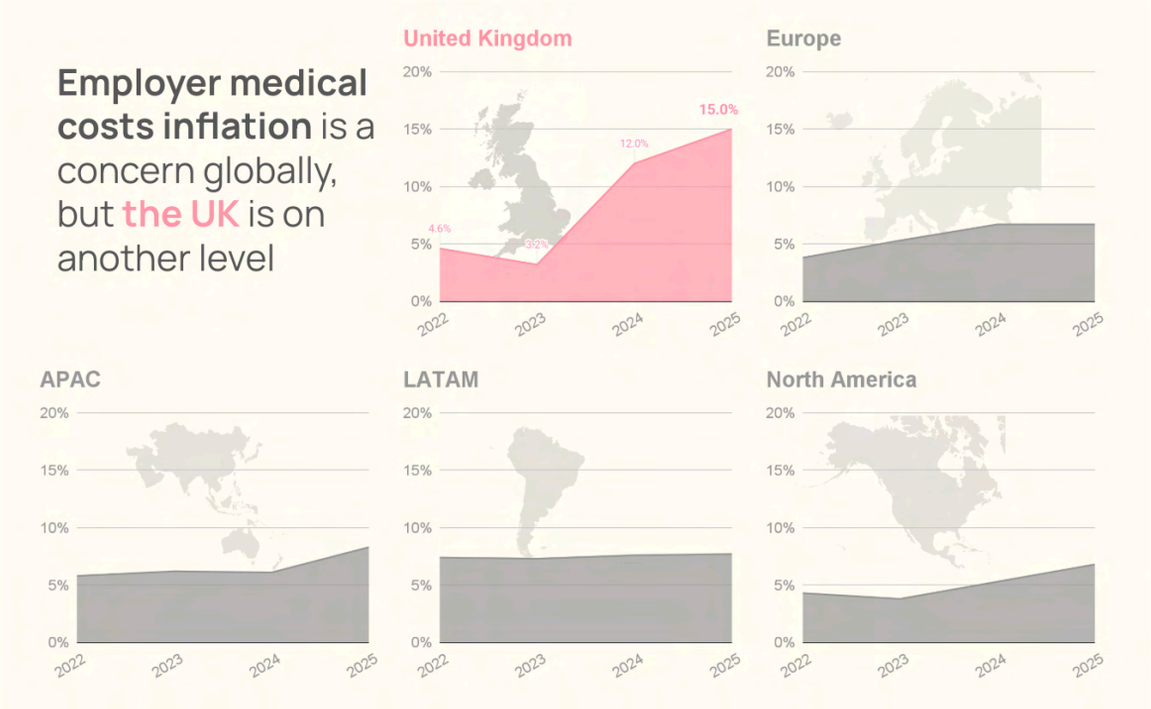


Figure 1.1: *
Rates of employer medical cost inflation by region, 2022–2025. *Source: Aon Global Medical Trend Rates.*

For CFOs, Heads of Benefits, and Health, Safety & Wellbeing leaders, this isn't theoretical. It's already shaping budgets and renewal negotiations. Without targeted action, these trends will continue to compound - making MSK prevention and early intervention not just a health priority, but a financial imperative.

[2] Mercer. "Employee Benefits UK: Trends for 2025, Q2 Insights & Tips", Published Q2/Q3 2025.

## 1.3 Indirect Costs: Presenteeism, Lost Output and Hidden Absence

Rising premiums are only part of the MSK cost stack. For many employers, the bigger drain is hidden in plain sight - absenteeism, and presenteeism linked to pain.

The UK is already seeing the impact. Average sickness absence reached **7.8 days per employee** last year[3] - one of the highest in over a decade . MSK issues accounted for one in four of all long-term absences.

But absence only tells part of the story. Most employees experiencing pain don't stay home - they push through, often at reduced capacity.

Research from the Institute for Health and Productivity Management shows that for every 0.84 days lost to musculoskeletal-related sickness absence, an additional 3.11 days are lost to presenteeism – where employees are at work but underperforming due to pain or discomfort. [4]

**Hidden Cost:** Based on Vitrue's modelling, each hour an employee works through MSK pain translates into an average productivity drag of around 15%. For a fully loaded salary in the £70k range, that's equivalent to roughly £7 lost per person, per hour - and the impact scales significantly across large workforces.

Presenteeism's hidden costs extend beyond output. A 2024 study by Versus Arthritis found that **53%** of UK employees working with pain reported that pain has a negative impact on work. That cycle risks burnout, lower engagement, and higher attrition - all quietly eroding organisational performance. [5]

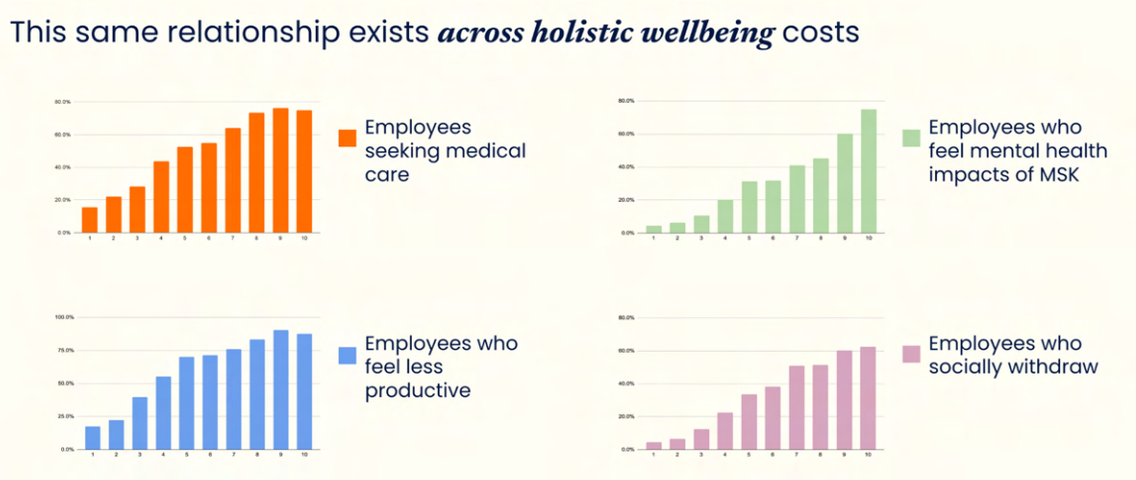


Figure 1.2: *
Employer cost escalation as MSK pain progresses from "mild" to "moderate" to "intense" *Source: Vitrue actuarial model, 2024.*

## 1.4 Cost Uplift: The Compounding Effect of Reactive Intervention

One factor drives MSK costs more than any other: how quickly issues are identified and addressed. Delays aren't just frustrating for employees - they multiply employer liability.

[3] UK Government. Civil Service sickness absence, 2024 report
[4] Institute for Health and Productivity Management. Global Burden of Chronic Musculoskeletal Pain in the Workplace, 2018.
[5] Versus Arthritis. The State of Musculoskeletal Health, 2024

- Moving a case from *early pain* to *serious acute* increases direct spend by over **3×**. [6]
- Allowing issues to progress to *chronic* status (beyond 12 weeks) raises total employer cost by nearly **6×**, factoring in surgery risk and long-term modified duties. [7]

> *"Every month of delay adds roughly **£500 per affected employee** in combined medical, absence, and productivity loss. Faster intervention isn't just clinical best practice - it's financial risk management."*
>
> — Vitrue actuarial benchmark (2024)

For employers reliant on public-sector pathways, the risk is growing. In the UK, NHS orthopaedic wait times now average over **50 weeks** for routine cases.[8] Private scheme leakage - and associated claims inflation - is inevitable.

For Benefits and H&S leaders, these numbers present both a challenge and an opportunity. Reactive, claims-first strategies leave organisations vulnerable to spiralling costs. But employers who shift to prevention, early risk identification, and cultural change can contain both insured and self-insured cost growth - as explored in the chapters ahead.

[6] Bevan, S., et al."The burden of musculoskeletal disorders in the workplace." *Journal of Occupational Medicine and Toxicology*, 2015

[7] Dagenais, S., et al."A systematic review of low back pain cost of illness studies in the US and internationally."*The Spine Journal*, 2008.

[8] NHS England. Referral to Treatment (RTT) Data, April 2024.

# Four Forces Fueling the Musculoskeletal (MSK) Cost Surge

The sharp rise in employer healthcare costs isn't happening in a vacuum. Four converging forces are driving up musculoskeletal (MSK) claims, spiking premiums, and inflating indirect costs worldwide.

Understanding these trends is critical for HR, Benefits, Health & Safety, Wellbeing, and Finance leaders trying to regain control.

## Ageing, Hybrid, and Physically Inactive Workforces

Workforces across Europe, North America, and parts of APAC are ageing fast. In the UK alone, nearly one in two workers will be over 50 by 2030.[1] Ageing is linked to higher MSK risk - joint pain, back issues, reduced mobility - but that risk isn't inevitable.

Physiologically, many age-related MSK issues can be delayed or prevented entirely through the right movement habits, strength maintenance, and early intervention. The challenge is that most workforces aren't designed to support that.

Meanwhile, hybrid and remote working patterns, though popular, have downsides. Prolonged sedentary hours have been linked to higher rates of back, neck, and shoulder pain - but the risk doesn't stop at your desk.[2] Reduced mobility, tight muscles, and postural fatigue increase injury risk across all parts of life - whether it's lifting a child, playing sports, or basic day-to-day movement.

**Key Stat:** Nearly one third (31%) of adults globally do not meet the WHO recommended physical activity guidelines contributing to elevated musculoskeletal (MSK) health risks across the workforce.[a]

[a] WHO, Global Status Report on Physical Activity 2024

[1] Legal & General Retail Retirement and Centre for Economics and Business Research (2021).

[2] Wells, J., et al. A Systematic Review of the Impact of Remote Working on Health. *International Journal of Environmental Research and Public Health*, 2013

## Public Health Backlogs and Private System Leakage

Public healthcare systems are struggling to keep pace with demand - particularly for non-life-threatening but quality-of-life-critical issues like MSK conditions.

NHS data shows orthopaedic waiting lists exceeding **50 weeks** [3] for routine cases. Similar pressures are reported globally: staff shortages, ageing populations, and pandemic-driven care delays have created a bottleneck.

The result? Employees increasingly rely on employer-sponsored private medical pathways to access care. While PMI provides vital access, it also accelerates claims costs for organisations - a trend clearly seen below.

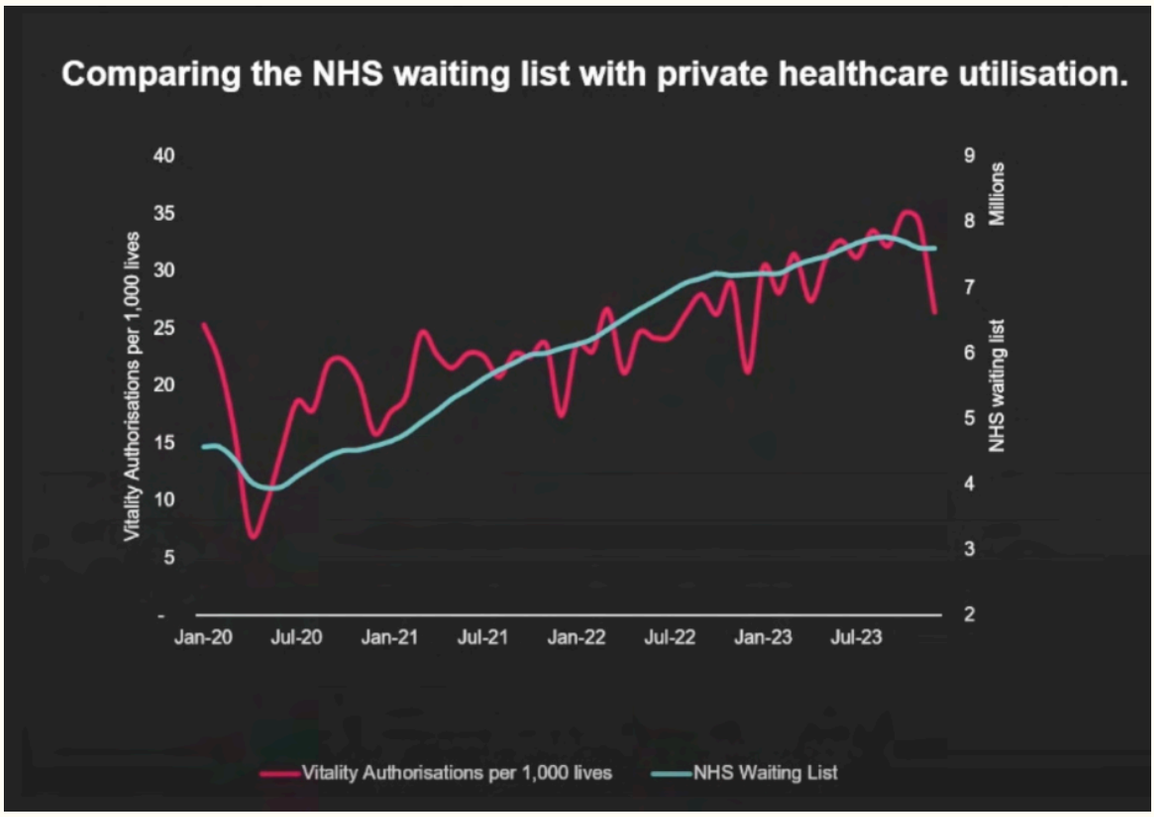


Figure 2.1: *
NHS orthopaedic waiting-list length vs. PMI MSK claims per 1,000 Vitality members, 2019–2024.

Without meaningful prevention strategies, employers risk replicating the same reactive, high-cost care model inside their own benefits ecosystem.

## Rising Lifestyle Risk Factors: Obesity and Physical Deconditioning

Lifestyle-driven health risks are compounding MSK issues. Global obesity rates continue to climb, with **1 in 8** adults worldwide now classified as obese.[4] Excess weight places additional strain on joints, increasing the likelihood of back, hip, and knee pain.

Sedentary working patterns, physical deconditioning, and underinvestment in proactive wellbeing further elevate MSK vulnerability. In Vitrue's global data set, we consistently see higher pain prevalence and faster escalation among employees with low activity levels and poor baseline strength.

[3] NHS England. Referral to Treatment (RTT) Data, April 2024.
[4] World Health Organisation. Obesity and overweight fact sheet, May 2025

## Better Awareness, Easier Access, Higher Utilisation

Ironically, some of the rise in MSK claims reflects a positive trend: greater awareness and willingness to seek help.

Campaigns promoting mental health, inclusive wellbeing, and injury prevention have improved understanding of physical health risks - and more employers are offering high-quality benefits that make it easier to access physiotherapy, diagnostics, and surgical interventions.

The challenge? Greater awareness and easier access, without upstream prevention, can accelerate utilisation - driving up claims costs and productivity losses in a reactive cycle.

Employers need to balance access with sustainability - ensuring that benefits reduce barriers to care while also embedding prevention, early risk detection, and employee empowerment.

### What This Means for Employers

These four forces are amplifying one another: an ageing, inactive workforce. Public system strain. Rising lifestyle risks. Higher demand for care. Together, they're accelerating the MSK cost curve.

But employers aren't powerless. The companies breaking this cycle are those shifting from reactive treatment to prevention, embedding early risk management into their health, safety, and benefits strategies - as explored in the next chapters.

# The Hidden Cost Stack - Breaking Down the Total Employer Burden

The true financial toll of musculoskeletal (MSK) pain on employers goes far beyond premiums and direct claims. Behind every absence, productivity dip, or safety incident lies a hidden stack of costs - many of which never appear on a balance sheet but erode business performance all the same.

Real-world employer data is starting to quantify that hidden stack, and the results are striking.

## Direct vs Indirect: The True MSK Cost Split

A landmark study at Rolls-Royce UK revealed the scale of MSK's economic impact within a highly skilled, safety-critical workforce. Despite having extensive occupational health (OH) support, employees with work-relevant persistent MSK pain took significantly more sickness absence than matched peers - totalling over **39,000 lost days** in just 12 months. [1]

Crucially, indirect costs - lost productivity, overtime requirements, quality defects, and rework - were modelled at nearly three times higher than direct wage losses:

These ratios align with broader research suggesting indirect MSK costs often exceed insured medical expenses by a factor of three or more.[2]

**Key Insight:** Even in highly resourced, safety-critical industries, indirect MSK costs quietly dwarf visible absence expenses - underlining why prevention and early action matter commercially.

For employers, the commercial message is clear: hidden costs quietly erode performance, often outweighing visible claims and absence expenses - reinforcing why prevention, early intervention, and cultural change are essential.

## Absenteeism: The Underestimated Cost Driver

MSK pain is one of the leading causes of absence - yet many organisations underestimate just how disruptive that absence becomes.

[1] Roomes et al., "Quantifying the Employer Burden of Persistent Musculoskeletal Pain", *JOEM*, 2022.

[2] Gorasso,V et al." Direct and indirect costs attributable to musculoskeletal disorders in Belgium." *The European Journal of Public Health*,2022.

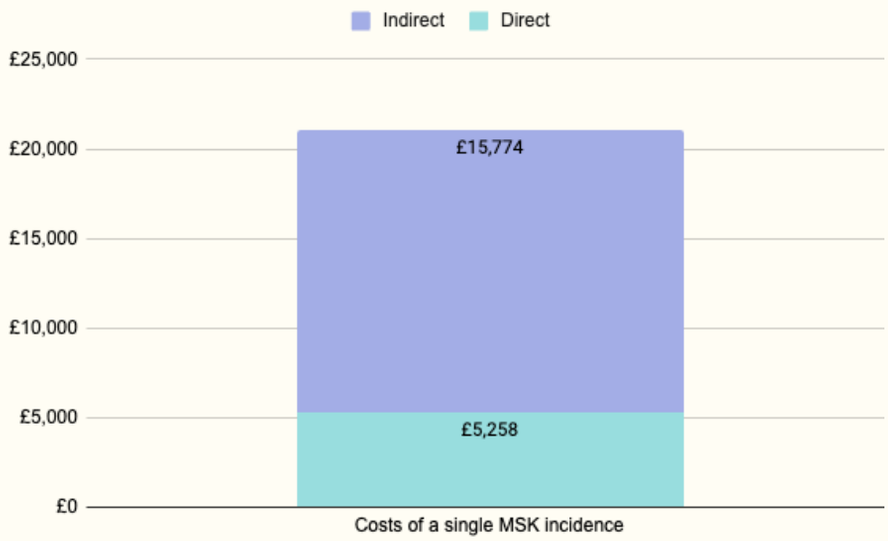


Figure 3.1: *
**R**olls-Royce data shows indirect costs of MSK pain (e.g., productivity loss, rework, safety incidents) are three times higher than direct absence costs. *Source: Roomes et al., 2022.*

Across major markets, absence rates are climbing:

- UK sickness absence hit **7.8 days per employee** - the highest in over a decade.[3]
- MSK conditions account for around **51%** of all long-term absences.[3]
- The average MSK-related absence lasts **14.3 days**, with a significant portion extending beyond 12 weeks - tipping into complex care territory.[4]

Many MSK absences are recurrent - employees cycle in and out of work as pain flares or mobility fluctuates.

Vitrue's aggregated workforce data shows:

- **High repeat rates:** Nearly 40% of MSK absences recur within 13 months.
- **Escalating costs:** Each subsequent absence period is longer and more disruptive.
- **Hidden presenteeism spikes:** Employees often work in pain between absence spells, reducing output and raising safety risks.

## Pain Intensity Drives Absence Risk

Unmanaged pain severity is the clearest predictor of MSK absence. The higher the pain intensity, the more likely employees are to be off work - and for longer durations.

Early detection, employee empowerment, and accessible prevention pathways are proven to flatten this curve - reducing both absence frequency and total days lost.

[3] CIPD. Health and Wellbeing at Work Report. 2023.
[4] Health and Safety Executive. *2023/24 Statistics.* 2024.

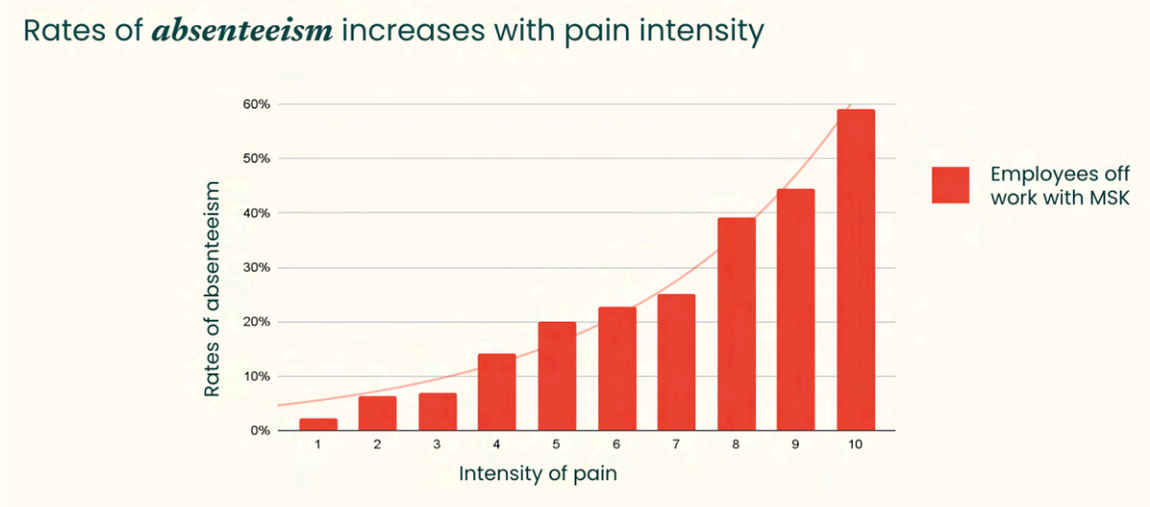


Figure 3.2: *
**Rates of absenteeism increase sharply with MSK pain intensity.** *Source: Vitrue aggregated dataset, 2024.*

## Beyond Absence - Other Hidden Costs That Erode Performance

While absence is often the visible cost driver, MSK pain affects multiple bottom-line levers:

- **Workplace Safety:** Employees with MSK pain experienced twice as many safety incidents - heightening risk exposure.[1]
- **Mental Health:** MSK pain correlates strongly with anxiety and depression - compounding absence and presenteeism.[5]
- **Ill-Health Retirement:** Over **45%** of ill-health retirements among affected employees were linked to MSK conditions.[1]

The commercial message is clear: even with occupational health services in place, unmanaged MSK pain drains productivity, inflates risk, and drives hidden costs - costs that escalate the longer intervention is delayed.

## Pain Progression: Why Timing Dictates Total Cost

Vitrue actuarial models show a sharp cost escalation curve as pain progresses from early discomfort to chronic conditions:

- **Early pain** (under 4 weeks) is the least disruptive, with minimal direct or indirect cost.
- **Serious acute pain** (4–12 weeks) triples total employer cost.
- **Chronic pain** (over 12 weeks) increases total cost by up to six times - factoring in both treatment and workplace performance impacts.

[5]Johansson, F.,et al. "Study environment and the incidence of mental health problems and activity-limiting musculoskeletal problems among university students: the SUN cohort study." *BMJ Open*,2023.

## Looking Ahead

The most effective employers aren't just reacting to claims - they're tackling MSK pain earlier through cultural change, prevention, and smarter risk detection.

The next chapters explore how leading organisations are shrinking the hidden cost stack to protect both employees and business performance.

# The Evolving Regulatory Landscape - Compliance, Wellbeing, and MSK Health

Regulation has always shaped how employers approach workplace health - but the scope is changing.

Today, musculoskeletal (MSK) wellbeing isn't just a health and productivity issue - it's increasingly part of how organisations demonstrate legal compliance, equality, and duty of care.

Managing DSE compliance is complicated enough within a single country. But for global organisations, the picture becomes exponentially more complex.

Health and safety - including DSE obligations - fall under the remit of a wide range of national authorities, each with their own expectations, standards, and enforcement approaches. Consolidating a consistent, effective MSK strategy across borders isn't just good practice - it's an operational challenge.


Figure 4.1: A selection of national organisations responsible for workplace health and DSE regulation worldwide.

Figure 4.1 shows just a small subset of the national organisations shaping workplace health regulation worldwide - from the HSE in the UK to Safe Work Australia, OSHA in the US, and beyond.

For multinational employers, navigating this regulatory patchwork - while striving for global consistency - is one of the defining challenges of modern MSK and wellbeing.

## 4.1 DSE Regulations: A Familiar Baseline, But New Challenges

Display Screen Equipment (DSE) regulations have been a workplace standard since the early 1990s. The core requirements - risk assessments, employee education, and ergonomic support - are well established. [1]

But the way we work has changed dramatically. Hybrid workforces, global operations, and evolving wellbeing expectations create new challenges:

- How do you deliver consistent DSE compliance when employees work from anywhere?
- How do you align approaches across different countries - ensuring standards in Brazil match those in the UK or Indonesia?
- Can DSE obligations drive meaningful health outcomes, or are they just legal box-ticking?

The reality today? For many organisations, DSE compliance is treated as a burden:

- Time spent administering assessments, chasing completion rates, and processing reports is seen purely as overhead
- Employees often passively sit through mandatory training, with little expectation it will translate into real change
- Even when risks are identified, acting on them is often disconnected from broader wellbeing, health, or performance strategies

In other words, DSE processes are managed like a cost centre - something to minimise, rather than optimise.

But done differently, DSE obligations have the potential to be a profit multiplier:

- Targeted, data-driven risk management can reduce absence, presenteeism, and claims
- MSK prevention integrated into DSE processes drives real-world health improvements
- Technology enables scalable, consistent global compliance - while freeing admin time and improving employee experience

The organisations leading this shift don't treat compliance as the end goal. They treat it as the starting point for measurable workforce health, productivity, and risk reduction.

[1] Health and Safety Executive.Health and Safety (Display Screen Equipment) Regulations, 1992.

## 4.2 Beyond Pay: The EU Transparency Directive and Wellbeing Outcomes

The EU's Pay Transparency Directive introduces a new dimension to this conversation. The legislation rightly demands equal pay for equal work - but also considers wellbeing benefits, in cash or kind, as part of overall remuneration. [2]

It's an important step. But it raises a crucial question: should we only measure equality in inputs - or in outcomes too?

Vitrue's data shows women experience:

- 28% higher MSK pain incidence rates than men
- 11% more intense MSK pain on average

Even when wellbeing benefits are equally valued on paper, unequal health outcomes - the "gender pain gap" - persist.

Forward-thinking organisations will use this legislation not just to meet pay equity requirements, but to drive equitable health outcomes through tailored, inclusive wellbeing strategies.

## 4.3 Psychosocial Risk, Whole-Person Health, and Global Trends

Across the world, workplace health regulation is broadening. Australia's introduction of legally mandated psychosocial risk management in 2023 reflects a growing trend - mental health, stress, and psychological safety are no longer optional extras. [3]

This shift has direct implications for MSK health:

- Stress and mental health directly influence MSK pain severity and recovery
- Physical discomfort impacts mental wellbeing, productivity, and safety
- Whole-person approaches are increasingly expected by regulators, not just clinicians

For global employers, these changes mean compliance is evolving - from physical safety to whole-person wellbeing, across borders.

## The Takeaway

MSK prevention isn't just commercially smart - it's increasingly part of how organisations meet legal and social expectations.

Companies that embed proactive, inclusive, and scalable MSK strategies are better positioned to manage costs, reduce risks, and lead on compliance - without waiting for regulation to catch up.

[2] European Union. Directive (EU) 2023/970, 2023.
[3] Government of Australia. Work Health and Safety (Psychosocial Risks) Amendment Regulations.,2023.

## MSK Wellbeing Requires Cross-Company Ownership

For MSK strategies to succeed, they can't sit in silos. Too often, responsibility is fragmented - with Health & Safety focusing on compliance, HR driving benefits, and CFOs managing costs in isolation.

But MSK pain doesn't respect those boundaries.

Successful organisations bring together:

- **Health & Safety and OH** - to manage regulatory risk and duty of care
- **HR, Benefits, and Wellbeing teams** - to improve productivity, inclusion, and employee experience
- **CFO and Executive leaders** - to control PMI spend and protect commercial performance

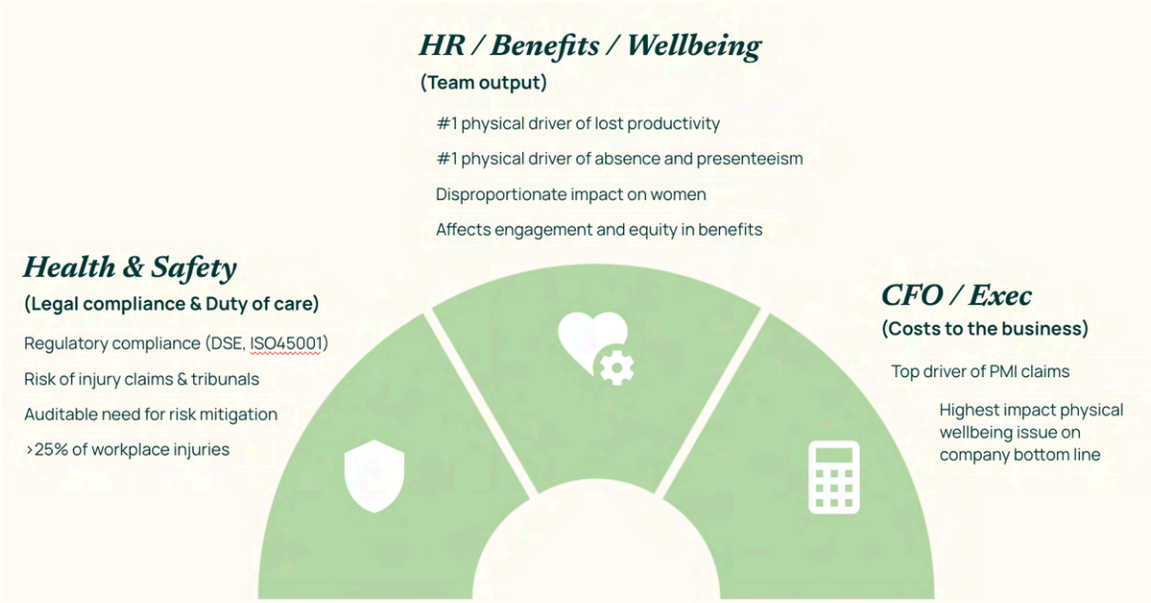


Figure 4.2: *
MSK wellbeing is a cross-company priority, spanning legal, cultural, and financial impacts.

MSK success isn't owned by one team. It's delivered by aligning strategy across compliance, wellbeing, and finance - recognising MSK as a business-wide priority.

# The Cultural Barriers - Learned Helplessness and Outdated Solutions

Musculoskeletal (MSK) pain isn't just a physical health challenge - it's a cultural one. For many organisations, the biggest barrier to lowering pain rates isn't budget or medical access - it's mindset.

Outdated beliefs about MSK pain, from leadership and employees alike, quietly sustain the reactive, high-cost model employers are stuck in today.

## 5.1 MSK Pain Is Not Inevitable - But That's Not the Narrative

One of the most pervasive cultural barriers is resignation. Many employees assume back pain, joint aches, or stiffness are simply part of working life - especially after their 40s.

This belief shows up in workforce surveys and Vitrue's aggregated data. In companies with no proactive MSK interventions:

- Employees are less likely to report early-stage pain
- Pain severity at first clinical presentation is higher
- Resolution rates after intervention are lower

In short: the learned belief that pain is inevitable leads to delayed action - which makes it harder, more expensive, and more disruptive to solve.

## 5.2 The Myth of the Panacea Chair

For decades, workplace MSK prevention has centred on equipment - better chairs, standing desks, ergonomic assessments. But while proper setups are important, they only solve part of the problem.

Modern MSK research shows pain is far more complex[1]:

[1]Visser, B.,et al "A first step towards a framework for interventions for individual working practice to prevent work-related musculoskeletal disorders: A scoping review." *BMC Musculoskeletal Disorders*, 2023.

- Poor movement habits outside of work
- Low baseline strength and conditioning
- Psychological factors like stress and burnout
- Delayed help-seeking or avoidance of early signals

Buying a better chair without addressing these deeper issues is like buying a treadmill and never stepping on it - the investment looks good on paper, but fails to move the needle.

## 5.3 MSK Pain Isn't Siloed - It's Personal and Multifactorial

Another cultural barrier is how narrowly we tend to think about musculoskeletal health. It's easy to assume someone's back pain comes from poor posture, or that discomfort at work means you need a better chair. But MSK health - and MSK pain - is far more complex.

Pain isn't just physical - it's shaped by how we move, think, feel, and live.[2]

The risk factors that lead to pain vary dramatically between individuals. A sedentary job might lead to tight hamstrings, but for one employee that shows up as back pain during their commute, while for another it affects their golf swing.

Hormonal factors like menopause, pregnancy, or the menstrual cycle can amplify pain risk in ways that traditional workplace assessments often miss. So can new hobbies, returning to activity after time off, or even day-to-day differences in how active someone is outside work.

Treating MSK pain as a "one-size-fits-all" workplace issue - or as something that only happens at your desk - limits both understanding and prevention.

A modern MSK strategy recognises people as whole individuals, with interconnected, changing risk factors that require a more holistic, personalised approach.

## 5.4 The Whole-Person Model - Moving Beyond Medical Labels

In clinical settings, most MSK experts now use the "bio-psychosocial model" to understand pain. It recognises that physical discomfort rarely has a single cause - instead, pain emerges from a complex mix of biology, movement habits, psychological factors, and social context.[3]

It's well accepted in healthcare, but this model often gets lost when we step into the workplace. Too often, MSK pain is treated as purely a medical issue - a sore back, a muscle strain - disconnected from someone's lifestyle, mental health, or broader wellbeing.

The reality is that pain isn't just physical. It's influenced by how we move, think, feel, and live - and it shows up differently for everyone.

For workplaces, adopting a "whole-person" approach to MSK health means:

- Recognising individual risk factors beyond the desk or workstation

[2] Bezzina, A., et al."Workplace psychosocial factors and their association with musculoskeletal disorders: A systematic review of longitudinal studies." *Workplace Health & Safety*, 2023.

[3] Nicholas, M., et al. "The IASP classification of chronic pain for ICD-11: Chronic primary pain." *Pain*, 2019.

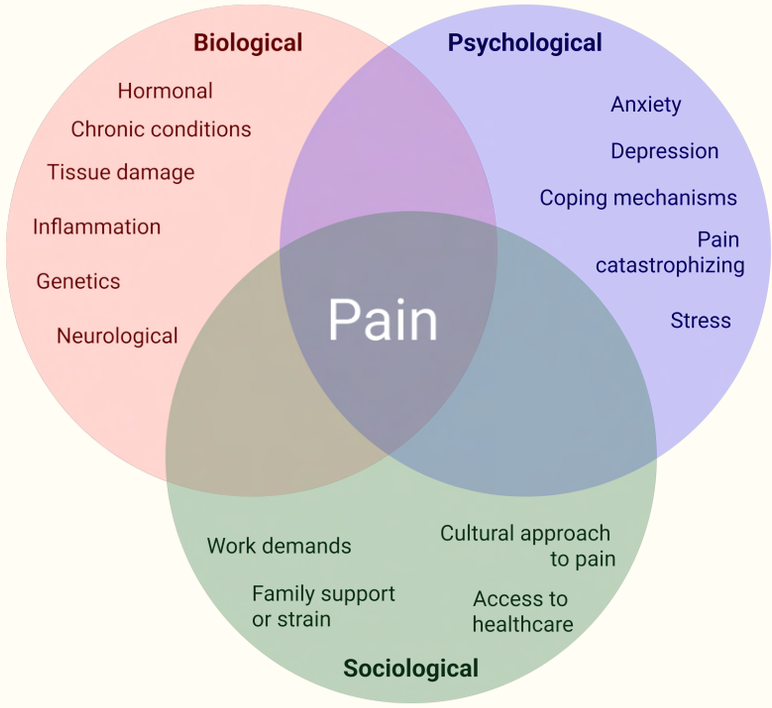


Figure 5.1: *
**Figure 9:** The Bio-Psychosocial Model of Pain - recognising how biological, psychological, and social factors combine to influence MSK health. *Source: Adapted from European Pain Federation, visualised for workplace application.*

- Understanding the links between stress, mental health, and pain sensitivity
- Tailoring prevention and support tools to real-world behaviours, not just static risk assessments

Without this cultural shift, even well-funded benefits programmes can fall short - because they miss the full picture of how pain develops, persists, and disrupts work.

## 5.5 Learned Helplessness in MSK Health

This cycle reflects a well-documented behavioural phenomenon: learned helplessness. In MSK health, it looks like [4] :

- Employees feeling they “just have to live with” pain
- Limited understanding of modifiable risk factors
- Over-reliance on reactive care pathways like PMI or surgery
- Missed opportunities for self-management and prevention

The result? Higher claims, higher absence, and persistent indirect costs - even in companies offering good benefits on paper.

[4] Camacho, E. M.,et al.”Learned helplessness predicts functional disability, pain and fatigue in patients with recent-onset inflammatory polyarthritis.” *Rheumatology*, 2013.

Importantly, learned helplessness isn't employee failure - it's a system and leadership challenge. Without clear education, accessible tools, and visible cultural messaging, resignation becomes the default.

## Looking Ahead

The good news? This mindset is modifiable.

Employers that embed MSK literacy, early risk detection, and clear prevention pathways can dismantle learned helplessness - reducing pain rates, productivity drag, and hidden costs.

The next chapter explores how MSK pain is tightly intertwined with mental health - and why siloed solutions fail to fix either problem.

# Inclusivity - Closing the MSK Health Gap

Musculoskeletal (MSK) pain isn't just a health challenge - it's an inclusivity issue. For many employers, gaps in MSK prevention and support disproportionately affect already underrepresented or higher-risk groups.

Tackling MSK pain effectively means recognising - and addressing - these disparities.

**Intersectionality matters.** MSK risks rarely exist in isolation - a young woman returning from maternity leave with scoliosis, or an older male worker in a high-sedentary role, may face compounded barriers to prevention and care. Recognising how gender, age, life stage, and pre-existing conditions intersect is essential for designing MSK strategies that are truly inclusive.

## 6.1 The Gender Pain Gap: A Hidden Workplace Inequity

Globally, women are more likely to experience chronic MSK pain, report higher pain intensity, and face delayed treatment or recovery compared to men. [1].

This isn't just a clinical trend - it's a workplace performance and equity issue:

- Workplace MSK risks are not distributed equally - sectors with high sedentary demands disproportionately impact underrepresented or higher-risk groups, including women
- MSK pain can compound gender gaps in engagement, absenteeism, and promotion pathways
- Cultural factors often discourage disclosure or help-seeking, reinforcing underreporting and delayed intervention [2]

Vitrue's aggregated data shows women are:

- **5.6% more likely** to report persistent MSK symptoms
- **4.2% more likely** to experience pain impacting daily work

[1] Bartley and Fillingim. "A Brief Overview: Sex Differences in Prevalent Chronic Musculoskeletal Conditions." *International Journal of Environmental Research and Public Health*, 2023.

[2] Reckitt. Nurofen Gender Pain Gap Index Report, 2024, pages 7 and 9.

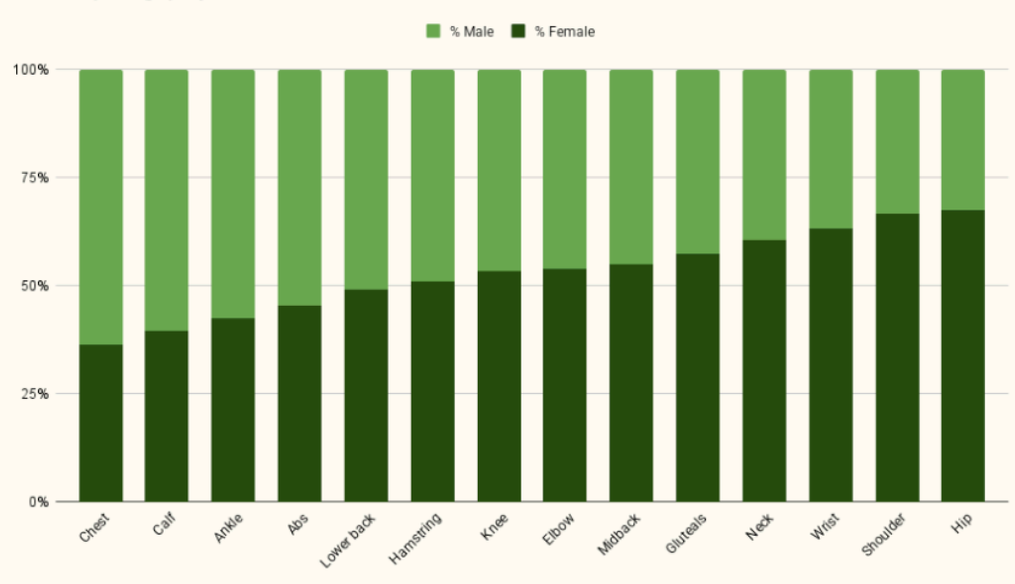


Figure 6.1: *
Proportion of MSK pain cases by gender, segmented by body region. Women experience disproportionately higher rates of hip, shoulder, neck, and wrist pain, reflecting both biological and workplace design factors. *Source: Vitrue dataset, 2024.*

- **Less likely** to access early intervention pathways when available

These disparities translate into both increased healthcare seeking and greater productivity impacts for women - underscoring the need for gender-responsive MSK strategies.

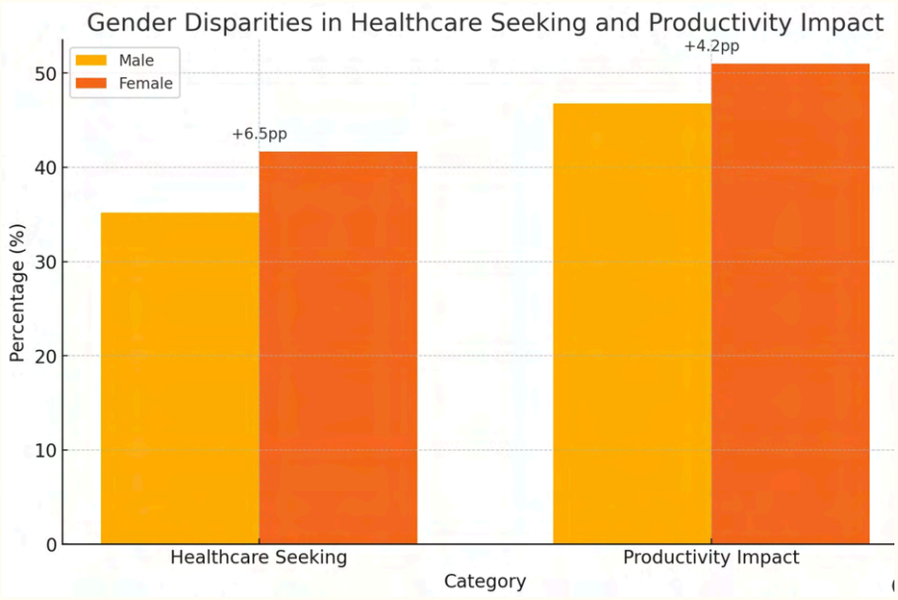


Figure 6.2: *
Gender differences in healthcare seeking and productivity impact linked to MSK pain. *Source: Vitrue dataset, 2024.*

For Benefits, Wellbeing and H&S leaders, closing this gap isn't optional - it's essential for workforce health, productivity, and legal compliance under evolving equality frameworks.


Figure 6.3: *
Pain dismissal and MSK disparities drive hidden costs from mental health impacts to career progression barriers.
*Source: Nurofen Gender Pain Gap Index Report 2024, pages 5–7, 9 and GPG Index Survey References Document 2022.*

**Practical Actions for Employers: Closing the Gender Pain Gap**

Leading organisations are tackling MSK disparities through targeted, inclusive strategies:

- Embedding MSK risk assessments into return-to-work, maternity, and menopause support pathways
- Designing workstation setups and ergonomic tools with diverse body types in mind
- Actively promoting early intervention options, with messaging tailored to higher-risk groups
- Training line managers to recognise MSK risks that may disproportionately affect women and other underrepresented groups

These steps improve outcomes, protect performance, and support DEI goals.

## 6.2 Supporting Employees with Pre-Existing Conditions

Many employees enter the workforce with underlying MSK conditions - arthritis, scoliosis, previous injuries, or congenital issues.

A one-size-fits-all MSK approach often overlooks these groups, leaving them at higher risk of:

- Faster pain escalation and work disruption
- Higher absence and presenteeism rates

- Reduced access to effective, tailored interventions

Inclusive MSK strategies account for these realities by:

- Embedding flexible prevention and risk detection tools
- Offering tailored self-management plans based on individual profiles
- Reducing stigma and normalising early help-seeking

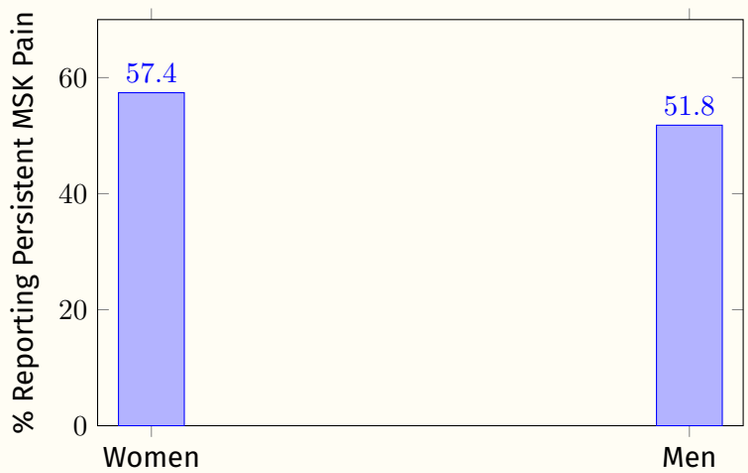


Figure 6.4: *

**Figure 10:** Gender disparity in persistent MSK pain prevalence. *Source: Vitrue dataset*

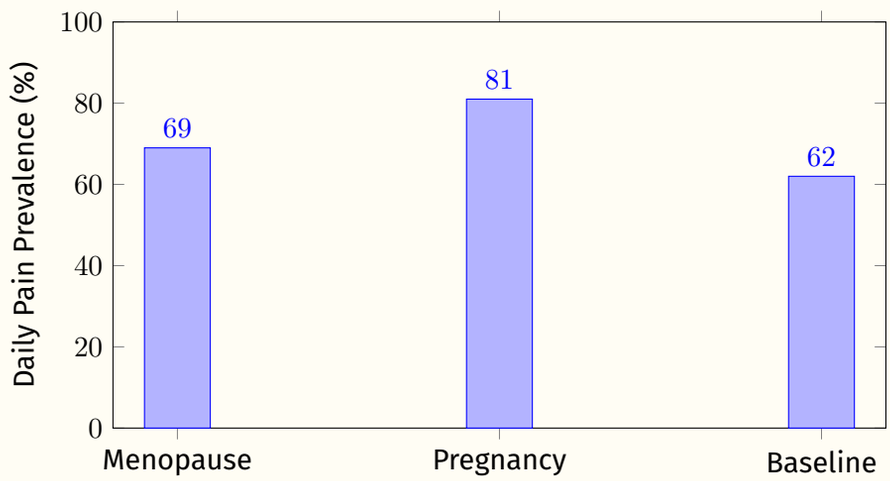


Figure 6.5: *

**Figure 11:** Elevated MSK pain rates linked to life-stage triggers. *Source: Vitrue dataset.*

## 6.3 Life Stage and Age-Based MSK Disparities

MSK pain isn't just a challenge for older employees - younger workers often experience disproportionate impacts, despite assumptions that pain is an issue that emerges later in life.

Vitrue's aggregated data shows that employees under 35 report:

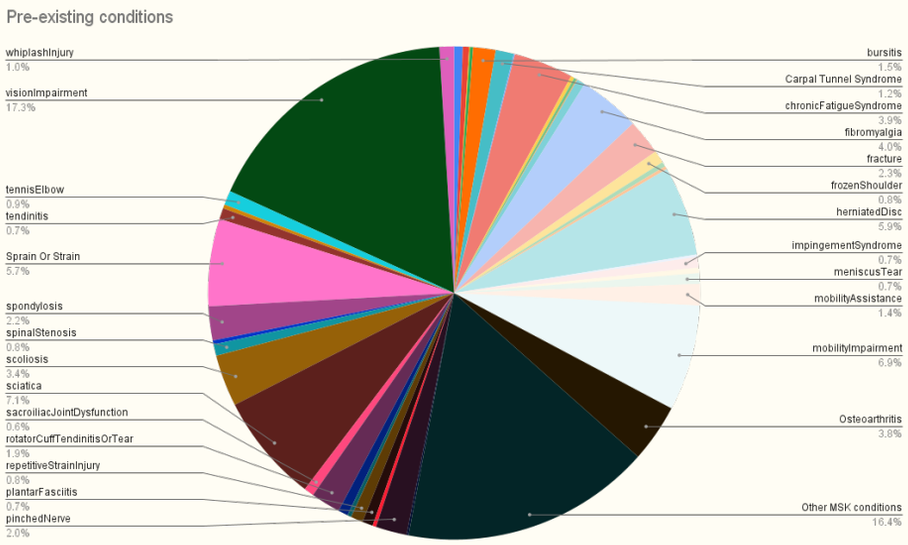


Figure 6.6: *
Of those with pain, 10% report a pre-existing condition such as arthritis, scoliosis, or prior injury. This chart shows the breakdown of those conditions. *Source: Vitrue dataset.*

- Greater disruption to productivity and work performance
- More significant impacts on mental health and social wellbeing
- Lower likelihood of accessing healthcare support when needed

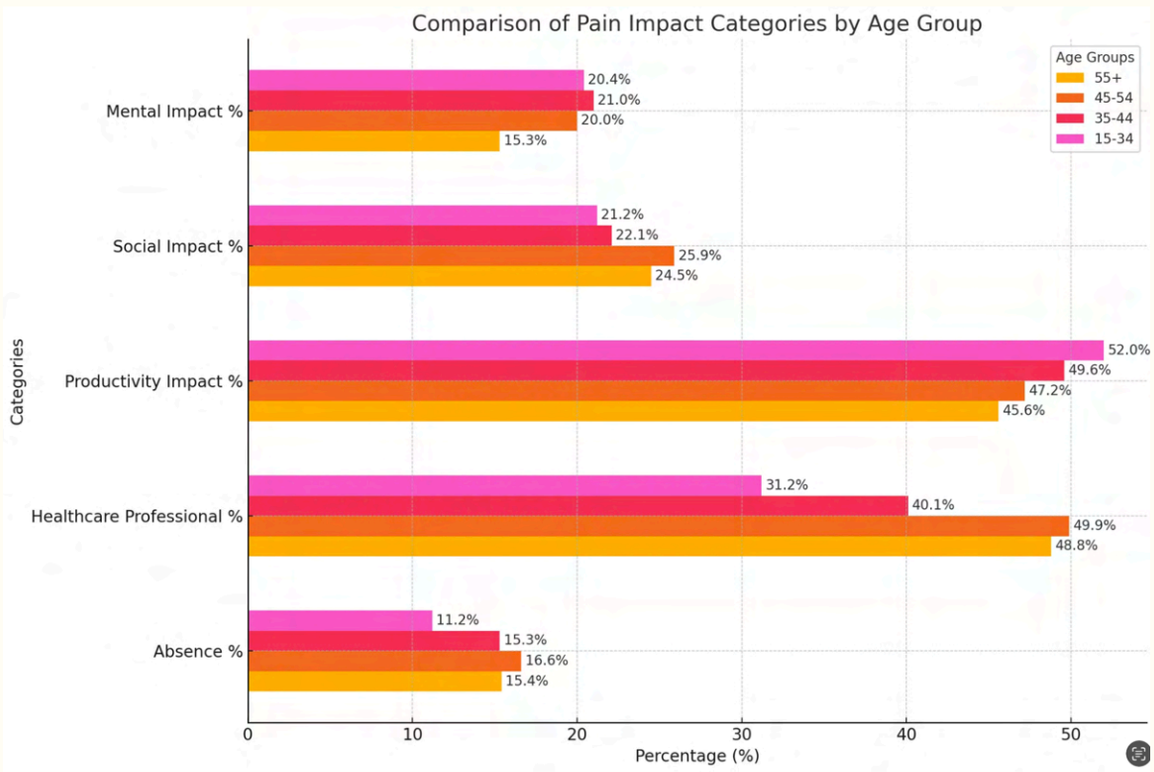


Figure 6.7: *
Younger employees often report higher productivity impact linked to MSK pain - highlighting overlooked age-related disparities. *Source: Vitrue dataset, 2024*

These trends challenge outdated views that MSK wellbeing only becomes relevant in later working life. Smart employers design prevention and support strategies that recognise how life stage, role demands, and personal health risks combine - ensuring MSK solutions are inclusive across age groups, not just targeted at older workers.

## 6.4 The Commercial Case for Inclusive MSK Support

Failure to address MSK disparities impacts:

- Productivity - through higher absence and presenteeism among under-supported groups
- Talent retention - particularly among women and employees with pre-existing conditions
- Benefit equity - when MSK solutions don't account for differing risk levels


Figure 6.8: *
Pain-related absenteeism among women drives £11 billion in lost output annually - with knock-on impacts to productivity, innovation, and talent retention. *Source: NHS Confederation, Women's Health Economics: Investing in the 51% (2024)* .

Smart employers are baking inclusivity into MSK prevention, early detection, and intervention pathways - protecting both workforce health and organisational performance.

### Looking Ahead

The next chapters outline how an integrated, prevention-first MSK pathway - done right - tackles both the commercial and inclusivity costs of unmanaged MSK pain.

# The Missing Link - Mental and Physical Health Are Inseparable

For decades, workplace health has been treated in silos. Mental health strategies. Physical health strategies. Sometimes financial wellbeing in a separate track. But science - and lived experience - tell us those lines are artificial.

Nowhere is that clearer than with musculoskeletal (MSK) pain. Physical discomfort, poor movement, and MSK injury risk are tightly linked to mental health - and when organisations separate the two, both problems worsen.

## 7.1 The MSK–Mental Health Loop

Employees dealing with MSK pain are significantly more likely to experience:

- Increased stress and burnout symptoms
- Lower mood and reduced motivation
- Sleep disruption, which compounds physical pain

It's not just correlation - it's a two-way street. Mental health challenges like anxiety and depression increase muscle tension, heighten pain sensitivity, and reduce physical resilience. [1]

The cycle is clear:

*More pain → Worse mental health → Lower resilience → More pain*

## 7.2 Evidence from Real Workforces

The data backs this up. Vitrue's analysis across 24,000 employees globally shows:

[1] Burton, C. M., et al. "Anxiety and depression are associated with greater pain sensitivity and altered pain modulation." *Pain*, 2015.

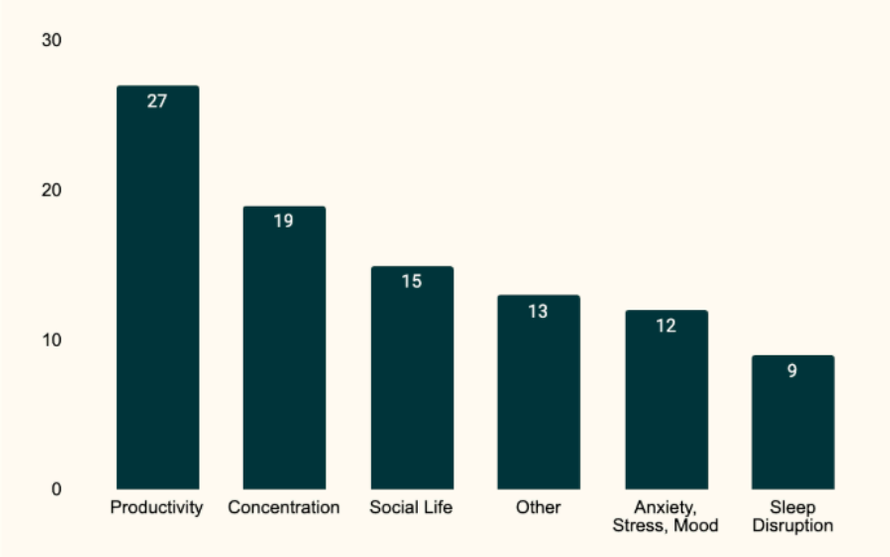


Figure 7.1: *

**Figure 13:** Impact of MSK pain across key life areas per 100 employees reporting pain. Productivity and concentration are the most affected. *Source: Vitrue dataset, 2024.*

- Employees with moderate to severe MSK pain report **5.5× higher rates** of stress, anxiety, or low mood
- Resolution rates for physical pain improve by up to **30%** when mental wellbeing support is embedded [2]
- Unaddressed mental health challenges delay MSK recovery by weeks, inflating claims and productivity costs

Met Life's 2024 benefit trends study support this. **86%** of employers say that improving the overall health of employees, both physical and mental health of employees in the workplace is a top benefits priority [3].

## 7.3 Siloed Strategies Waste Time and Budget

Despite the evidence, many organisations still run physical and mental health interventions in isolation:

- Mental health apps and campaigns, but no proactive MSK tools
- Physical ergonomics assessments, but no resilience or stress management pathways
- Medical claims analysed separately, missing the root cause links

The result? Higher absence, higher presenteeism, lower ROI on both physical and mental health spending.

[2] MacLean, R. R., et al. "Using daily ratings to examine treatment dose and response in cognitive behavioural therapy for chronic pain: A secondary analysis of the Co-Operative Pain Education and Self-Management clinical trial." *Pain Medicine*, 2023.

[3] MetLife. MetLife's Employee Benefit Trends Study, 2024.

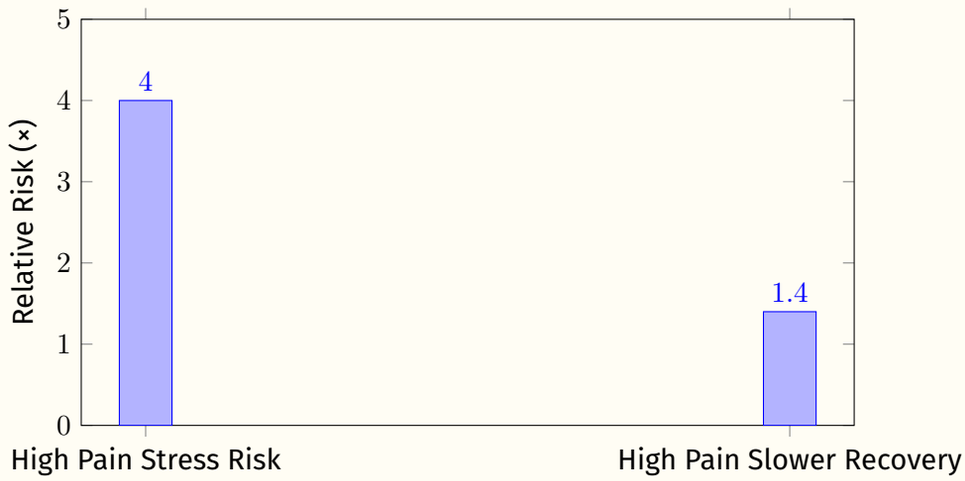


Figure 7.2: *

**Figure 14:** Employees with pain scores ≥7 face 4× higher stress risk and 40% slower recovery. *Source: Vitrue dataset, 2024.*

## 7.4 The Opportunity: Integrated MSK and Mental Health Approaches

Forward-thinking employers are starting to break the silos:

- Integrating MSK assessments into mental health and wellbeing checks - identifying physical pain as an early flag for burnout risk
- Linking MSK pain reduction metrics to broader wellbeing KPIs, such as absenteeism rates, mental health claims, or employee engagement scores
- Providing education that explicitly connects posture, movement, stress management, and pain resilience in one accessible programme
- Offering targeted support for high-pain, high-stress employee groups, with seamless pathways to both mental health and MSK interventions

The pay-off is clear: faster pain recovery, reduced absence, lower medical costs, and stronger engagement.

The next chapter explores how a complete musculoskeletal health pathway - from prevention to complex care - supports this integrated, sustainable approach.

# What Works - The Full Musculoskeletal Health Pathway

For too long, MSK pain management has focused on reactive care - waiting for issues to escalate, then intervening with expensive, complex solutions.

But the most effective employers are shifting their approach. By investing across the full musculoskeletal (MSK) health pathway - from prevention to complex care - they reduce costs, improve recovery rates, and protect workforce productivity.

**Balancing the Pathway:**

A resilient MSK strategy isn't about choosing between prevention and clinical care - it's about designing layered coverage across two critical dimensions as shown in Figure 8.1:

- **Reactive to Proactive:** Solving existing problems vs. preventing them
- **Difficult/Expensive to Scale vs. Low-Barrier/Scalable:** High-cost, specialist tools vs. solutions accessible to the entire workforce

The following sections break down what this looks like in practice - from cultural prevention to high-complexity care - helping employers build a complete, scalable MSK strategy.

## 8.1 Prevention First: Movement, Strength and Culture

The simplest, most scalable MSK intervention starts with prevention - embedding positive movement habits and reducing baseline risk factors.

**Common examples:**

- Office yoga, stretching, or guided mobility sessions
- Gym subsidies, movement challenges, or active commuting incentives
- Educational campaigns on posture, home workspace setup, or basic MSK literacy

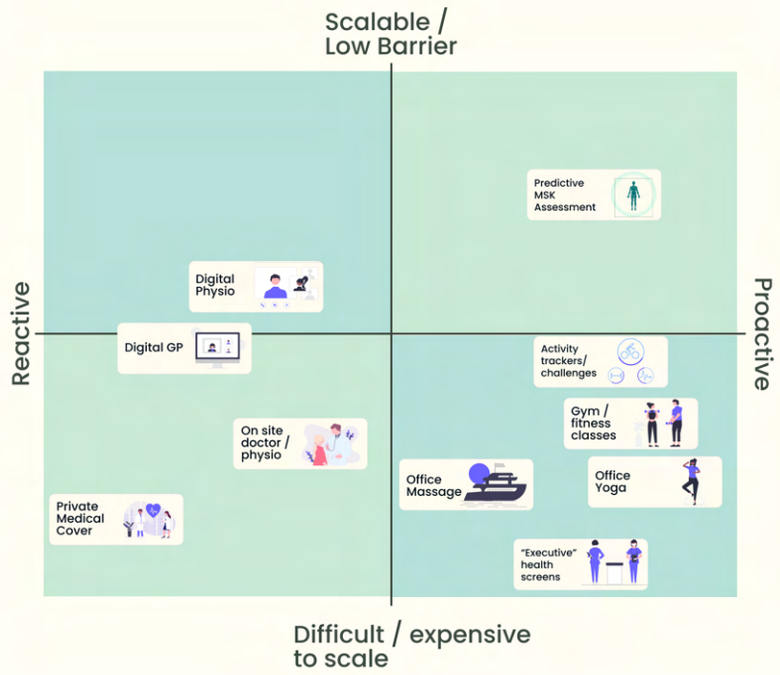


Figure 8.1: Effective MSK strategies blend reactive support, proactive prevention, and scalable tools to reach the whole workforce. *Source: Vitrue Health, 2024.*

| | |
|---|---|
| **Pros** | Low cost, wide reach, cultural impact, complements other wellbeing initiatives. |
| **Cons** | Hard to measure impact at individual level; limited effect for higher-risk groups. |
| **Cost** | £5–£30 per employee annually (typical employer-sponsored programme range).[1] |

Table 8.1: Summary – Prevention First Interventions.

## 8.2 1. Proactive Risk Prediction and Empowerment

Beyond general prevention, leading organisations are investing in targeted, early-stage risk detection - identifying employees with elevated MSK risk before pain escalates.

This approach uses digital assessments, AI-driven movement screening, and individualised self-management plans to empower employees early.

| | |
|---|---|
| **Pros** | Prevents escalation, data-driven targeting, empowers self-care, reduces reliance on reactive clinical pathways. |
| **Cons** | Requires employee engagement; perceived as new or unfamiliar by some teams. |
| **Cost** | £15–£50 per employee annually (depending on depth of assessment and support tools). |

Table 8.2: Summary - Proactive MSK Risk Prediction.

### 8.2.1 Dynamic Risk: Lessons from Elite Sports

Injury prevention strategies in professional sports are years ahead of most workplace health models. But the principles apply far beyond the sports field.

One of the clearest examples is the "Dynamic Model of Injury Etiology"[2] - a proven approach showing that injury risk isn't static. It evolves constantly, influenced by:

- Intrinsic factors like age, previous injuries, strength, and neuromuscular control
- Extrinsic factors like equipment, environment, workload, or stress levels
- How the body adapts - positively or negatively - after pain or injury

In elite sports, this model enables continuously evolving prevention strategies, because risk levels change every training session, every game, and every recovery period.

The same applies to workplace MSK health. Whether it's long hours at a desk, repetitive physical tasks, or hybrid working patterns, pain risk is a shifting landscape - not a one-time assessment.

[2] Meeuwisse et al., A Dynamic Model of Etiology in Sport Injury, *Clinical Journal of Sport Medicine*, 2007.

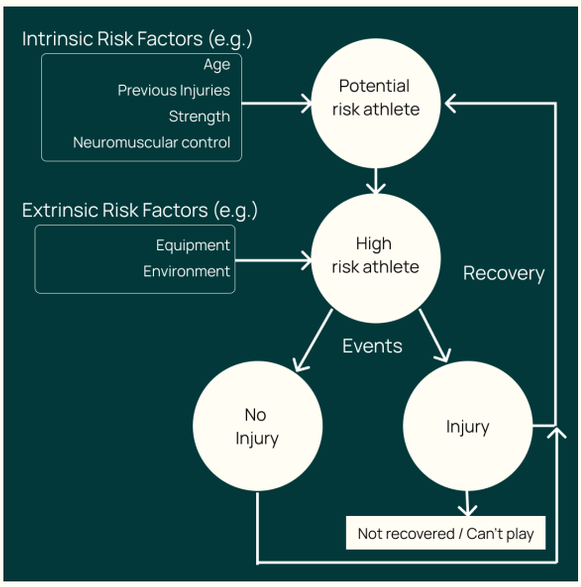


Figure 8.2: Dynamic injury risk cycle for elite athletes. Intrinsic and extrinsic factors determine whether an athlete stays injury-free or develops pain.

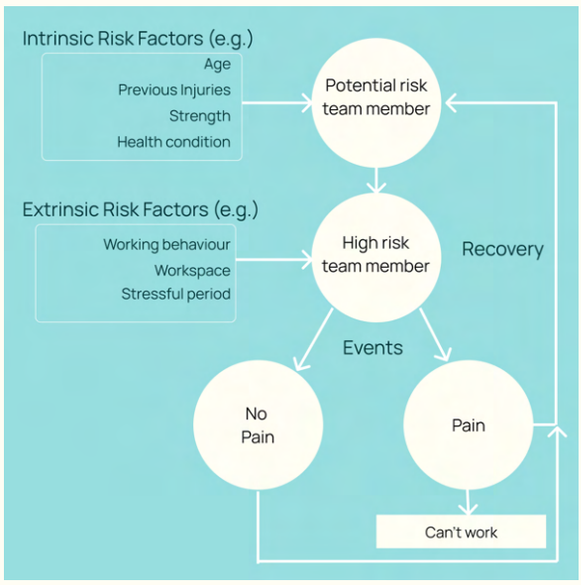


Figure 8.3: Dynamic MSK risk applied to the workplace. Risk fluctuates based on health status, environment, and behaviour.

Employees need proactive, evolving MSK support - not static, one-size-fits-all solutions. Modern technology now makes dynamic prevention scalable, enabling:

- Continuous assessment of individual and organisational MSK risks
- Personalised interventions that adapt to changing needs
- Early identification of high-risk individuals before pain disrupts work

In the workplace, applying dynamic prevention means continuously identifying emerging risks - not waiting for pain to surface before acting.

## 8.3 2. Digital Physiotherapy & Clinical Pathways

As MSK issues emerge, digital physiotherapy tools offer scalable, lower-cost alternatives to traditional in-person care.

These range from self-guided apps with exercise programmes to virtual physiotherapy platforms with remote clinician support - providing earlier, more accessible care than waiting for face-to-face appointments.

However, these tools still rely on the individual recognising their pain and actively seeking support. In that sense, they remain largely reactive - effective at managing issues once they surface, but not preventing them in the first place.

| | |
|---|---|
| **Pros** | Scalable, accessible, reduces reliance on costly in-person care, convenient for hybrid workforces. |
| **Cons** | Still reactive by design, relies on employee help-seeking, less effective for complex or high-severity cases. |
| **Cost** | £50–£200 per case (dependent on intervention length and clinical oversight). |

Table 8.3: Summary - Digital Physiotherapy & Clinical Pathways.

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## 8.4 3. Clinical Interventions, Physiotherapy and Complex Care

For higher-complexity MSK cases, hands-on physiotherapy, diagnostics (e.g., imaging), or surgical pathways remain vital parts of the care journey.

Physiotherapists play a crucial role in restoring function, preventing long-term disability, and supporting return-to-work. In fact, timely referral into specialist physiotherapy is often the difference between an employee regaining full capacity and drifting into chronic pain.

Well-designed approaches earlier in the pathway can make physiotherapy even more effective. Early detection, proactive screening, and structured data on pain patterns and risk factors give physiotherapists a head start — enabling faster diagnosis, more tailored treatment, and ultimately better recovery outcomes.

These interventions, however, do carry higher costs and may involve more employee downtime, which is why they are most effective when combined with proactive upstream support.

| | |
|---|---|
| **Pros** | Essential for complex or severe cases; gold-standard for rehabilitation and recovery; outcomes are strongest when supported by early intervention and good data. |
| **Cons** | Higher cost and downtime compared to early digital or workplace-based interventions; often accessed later in the pathway. |
| **Cost** | £1,200–£3,000 per episode of care (varies by country and condition severity). |

Table 8.4: Summary – Clinical Interventions, Physiotherapy and Complex MSK Care.

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[3] MyTribe Insurance. "What Is the Cost of Private Physiotherapy?" 2025.
[4] London Orthopedic Clinic. "Private Treatment Fees", accessed 2025.
[5] Integrated Benefits Institute. "Health and Productivity Impact of Chronic Conditions: Back Pain." 2019.

## 8.5 Smart Escalation Systems: Connecting the MSK Pathway

The best MSK strategies don't just offer isolated solutions - they connect the dots, ensuring the right employees access the right support at the right time.

Without smart escalation pathways, even well-designed MSK programmes risk:

- Delayed care for those who need more advanced support
- Over-medicalisation or unnecessary costs for low-risk individuals
- Fragmented employee experience, reducing engagement and impact

Smart escalation systems solve this by continuously assessing MSK risk and automatically guiding individuals through the appropriate stages of support - from self-management to digital physiotherapy to in-person care, based on need.

**Common examples include:**

- Digital assessments that trigger early intervention pathways for higher-risk employees
- Real-time symptom monitoring that flags when escalation to physiotherapy is needed
- Clinical oversight ensuring only complex cases progress to specialist care

An effective MSK pathway should make escalation the exception - not the norm. With robust prevention, risk detection, and early intervention, most employees can manage MSK health without ever progressing to higher-cost, complex care.

But for the minority who do require escalation, speed and accuracy are critical. Delays or misdirected support increase costs, prolong recovery, and risk preventable long-term disability.

In the workplace, managing escalation effectively is even more complex. Whether responsibility sits with HR, Health & Safety, or Occupational Health teams, it's unreasonable to expect administrators or line managers to accurately judge who requires clinical intervention and when.

As a result, many organisations default to one of two flawed approaches:

- Escalating everyone to clinical care to minimise risk - which drives over-medicalisation, unnecessary costs, and disengagement
- Relying on employees to self-identify - which often delays care, particularly for under-reporting groups or those normalising pain

Smart, data-driven escalation systems remove that guesswork - providing objective triggers that guide employees through the right support pathway, without overburdening internal teams or escalating unnecessarily.

In short, when MSK pathways work as intended, escalation is rare - but getting it right protects both workforce health and employer costs.

## 8.6 The Employer Payoff: Prevention and Early Action Reduce Total Cost

Early intervention is proven to reduce cost:

- MSK pain rates reduced by up to **39%** when early detection and empowerment tools are deployed [6]
- Reduction in healthcare visits by **61.5%**, cutting PMI and self-insured spend [7]
- Faster recovery and improved employee engagement where prevention and early support are embedded

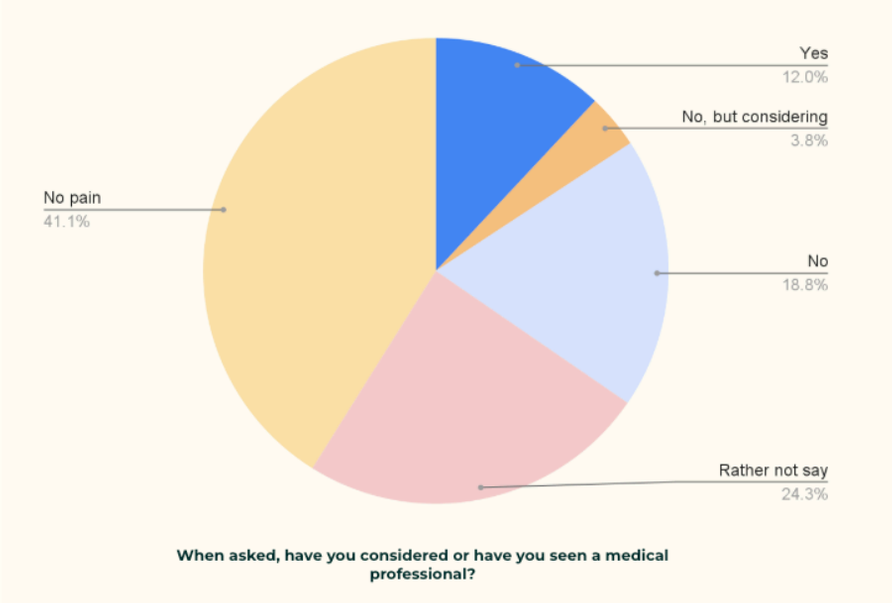


Figure 8.4: *

**Figure 15:** When asked, only 12% of those with pain report seeing a medical professional - highlighting gaps in early intervention pathways. *Source: Vitrue dataset, 2024.*

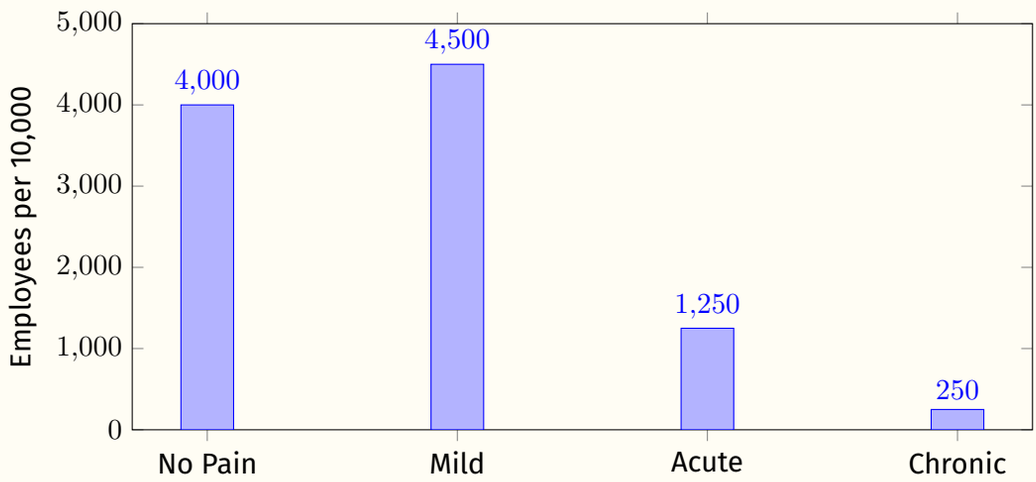


Figure 8.5: *

**Figure 16:** Vitrue MSK Pain Funnel - Distribution across a typical workforce. Chronic pain drives disproportionate cost.

[6] EU-OSHA. "Early Intervention for Musculoskeletal Disorders Among the Working Population",2022.

[7] Rogerson, M. D., et al. "A cost utility analysis of interdisciplinary early intervention versus treatment as usual for high-risk acute low back pain patients." *Pain Practice*, 2010.

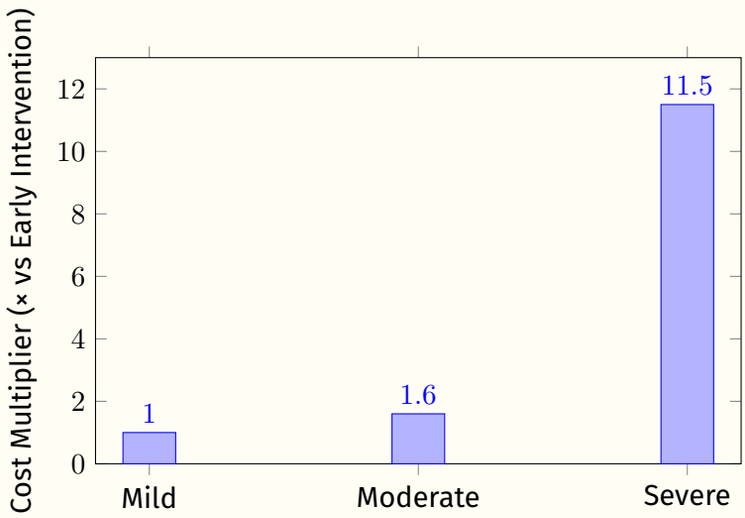


Figure 8.6: *

**Figure 17:** Relative cost escalation as MSK pain progresses. Early intervention significantly reduces total employer cost. *Source: Vargas, C., et al. "Costs and consequences of chronic pain due to musculoskeletal disorders from a health system perspective in Chile." Pain Reports, 2018*

## Looking Ahead

The next chapter explores how Benefits and H&S leaders can translate this pathway into a business case - with ROI modelling, decision frameworks, and vendor selection tools that drive action.

# Decision Framework - Building Your MSK Business Case

For many employers, musculoskeletal (MSK) pain remains a hidden cost - tolerated because it's poorly measured, normalised as inevitable, or managed reactively once issues escalate.

This stands in contrast to areas like mental health, where forward-thinking organisations increasingly reject the idea that poor mental wellbeing is an unavoidable cost of work. Instead, they've embraced early intervention, prevention, and cultural change to reduce both human and financial impact.

The same opportunity exists for MSK - but only if employers move beyond reactive models and start treating preventable pain as both a workforce wellbeing issue and a commercial risk.

Spiralling private medical insurance (PMI) claims are acting as a crisis catalyst. What was once accepted as background noise is now driving material, year-on-year budget increases - forcing organisations to reassess.

With the right framework, employers can quantify the true impact, identify prevention gaps, and make clear, commercially grounded decisions.

## 9.1 Calculating the Total Cost of MSK Pain for Your Organisation

A robust MSK business case includes:

- **Direct costs:** PMI claims, self-insured medical spend, physiotherapy, and surgery costs
- **Indirect costs:** Absence rates, presenteeism, rework, safety incidents, ill-health retirements
- **Cultural costs:** Employee engagement, retention, and DEI impacts linked to unmanaged pain

Vitrue's ROI modelling shows prevention and early intervention can:

- Reduce MSK claims by **20–50%**
- Lower complex care episodes by up to **40%**
- Improve productivity and reduce indirect costs significantly

Employers can estimate their own MSK cost exposure by combining workforce data (headcount, absence trends) with market benchmarks.

### High-Value Sectors and the Cost of Lost Billable Hours

In professional services - including legal, consulting, and financial sectors - the business case for proactive MSK management is particularly strong.

In these environments, employee time directly translates into revenue through billable hours, project delivery, or client-facing work. MSK-related absence, reduced productivity, or delayed recovery doesn't just impact wellbeing - it erodes profitability.

Yet, many organisations underestimate the hidden cost of presenteeism: employees working through pain, at reduced capacity, leading to lost output that rarely appears in traditional absence metrics.

To build a complete commercial case, employers in high-value sectors must:

- Quantify the revenue impact of lost billable hours linked to MSK pain
- Factor presenteeism and productivity drag into ROI calculations - not just medical claims
- Prioritise early detection and intervention to protect workforce capacity and revenue flow

When MSK risks are addressed proactively, the return isn't limited to health outcomes - it protects commercial performance, client delivery, and competitive advantage.

## 9.2 Approach Audit and Selection Checklist

Tackling MSK costs effectively isn't just about choosing new vendors - it starts with auditing what's already in place.

For many organisations, legacy benefits, reactive pathways, and siloed solutions create hidden gaps - driving cost and undermining prevention efforts.

### Audit Questions for Existing MSK Benefits

- Are current solutions focused on prevention, or only intervening after pain escalates?
- How easily can employees access support - especially those in higher-risk roles, from physically demanding to high-stress or sedentary jobs?
- Is there credible data showing impact on pain rates, claims, and productivity?
- Are demographic risks - such as the gender pain gap or life-stage triggers - actively addressed?
- Does the culture promote self-management and early action, or reinforce learned helplessness?

Auditing existing benefits through this lens often exposes reactive models disguised as comprehensive cover.

## Quantifying the Business Case - Simple ROI Formulas

Building a clear MSK business case means moving beyond anecdotes. Employers should quantify:

**Direct Cost Impact:**

$$\text{MSK Direct Cost per Employee} = \frac{\text{Total Claims} + \text{Absence Spend}}{\text{Total Employees}} \tag{9.1}$$

**Hidden Cost Estimate:**

$$\text{Estimated Indirect Cost} = \text{Direct Cost per Employee} \times 2.5 \tag{9.2}$$

Industry data suggests indirect MSK costs - lost productivity, presenteeism - often run 2–3× higher than direct medical spend.[1]

**Prevention Gap Exposure:**

$$\text{Gap} = \text{Total Employees} \times \text{\% with Mild Pain} \times \text{ Average Escalation Cost} \tag{9.3}$$

**Potential ROI on Early Intervention:**

$$\text{ROI} = \frac{\text{Estimated Avoided Costs} - \text{Intervention Cost}}{\text{Intervention Cost}} \tag{9.4}$$

These formulas are illustrative but help frame the conversation in commercially grounded, data-led terms.

### Worked Example: Calculating MSK Costs and ROI

*A UK professional services firm with 5,000 employees:*

- Total MSK-related claims and absence spend: £3.75 million per year
- MSK Direct Cost per Employee = £3,750,000 ÷ 5,000 = £750
- Estimated Indirect Cost = £750 × 2.5 = £1,875 per employee
- Total MSK Cost = £750 + £1,875 = £2,625 per employee, or £13.1 million annually

If an early intervention programme costing £500,000 prevents just 20% of these costs:

- Avoided Costs = £13.1 million × 20% = £2.62 million
- ROI = (£2.62m − £0.5m) ÷ £0.5m = **4.24× return**

*This simplified example illustrates how prevention delivers measurable financial impact.*

[1] Roomes, D. "Quantifying the Employer Burden of Persistent Musculoskeletal Pain at a Large Employer in the United Kingdom: A Non-interventional, Retrospective Study of Rolls-Royce Employee Data." *Journal of Occupational and Environmental Medicine*, 2022.

### Selecting New Solutions

When evaluating new approaches, smart employers apply the same logic:

- Is the solution prevention-focused and data-backed?
- Does it integrate with existing wellbeing, H&S, and benefits platforms?
- Can it demonstrate measurable impact on pain reduction, productivity, and claims control?
- How inclusive and culturally aligned is the approach?

In short, modern MSK strategies aren't bought - they're designed by auditing, measuring, and selecting interventions that address both costs and culture.

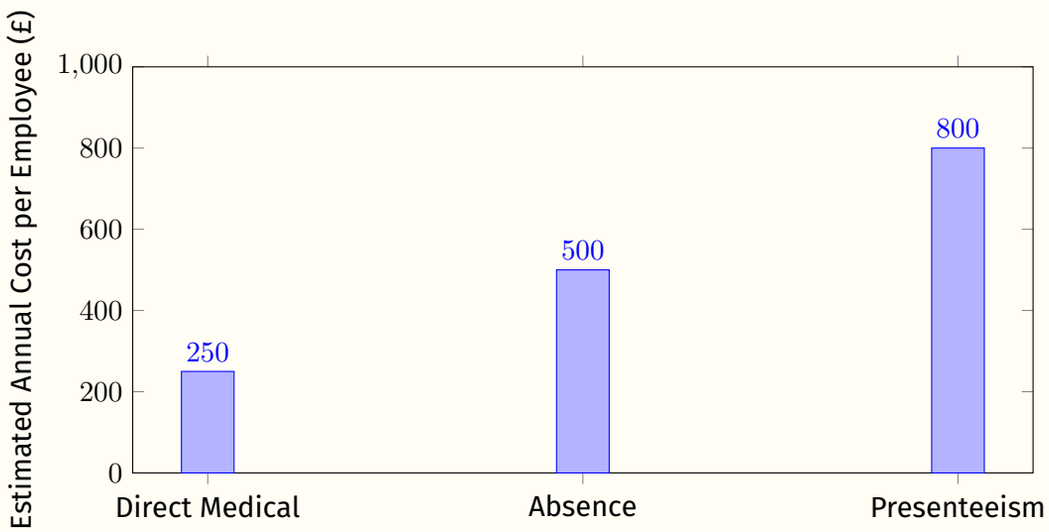


Figure 9.1: *

**Figure 18:** MSK cost breakdown per employee. Prevention strategies typically deliver £2.50 return for every £1 invested.

## Looking Ahead

The next chapter explores future MSK trends - from AI and predictive tools to global health policy shifts - shaping employer strategies through 2030.

# Future Outlook 2026–2030 - From Reactive to Proactive MSK Strategies

For proactive employers, the next five years will fundamentally reshape how musculoskeletal (MSK) health is managed at scale. The science of prevention and personalisation - once limited to academic research and elite sports - is becoming commercially viable for broader populations.

The challenge is no longer proving these approaches work. It's scaling them.

## 10.1 From Elite Practice to Everyday Prevention

For decades, elite athletes and academic labs have leveraged predictive tools to reduce injury risk and optimise movement:

- Functional movement screens to identify biomechanical weaknesses
- Precision medicine targeting individual health risks following the whole person/"biopsychosocial" model
- Sophisticated predictive models combining lifestyle, physical, and psychosocial data

These tools deliver proven results in controlled environments - but until recently, the complexity, cost, and manual interpretation required made them impractical for the general workforce.

That's changing. Advances in digital health, wearable technology, and AI are bridging the gap - bringing personalised prevention and risk management to scale.

In elite sport, the priority is always to predict and prevent issues before they disrupt performance - recovery is a last resort. That same philosophy is becoming possible for broader workforces, as shown below. [1]

[1] Sands, W., et al., "Recommendations for Measurement and Management of an Elite Athlete." *Sports*, 2019.


Figure 10.1: *
Predict - Prevent - Recover. Scalable MSK strategies mirror elite prevention models, reducing pain before it impacts work.

## 10.2 AI, Data Integration, and Predictive Risk Tools

Artificial Intelligence is accelerating the shift from reactive care to proactive risk detection:

- AI-powered movement assessments enabling large-scale MSK screening
- Predictive analytics identifying high-risk individuals before pain escalates
- Data integration across physical, mental, and social health for true whole-person risk profiles

Used responsibly, these tools won't replace clinicians - but they can dramatically improve how organisations target interventions, empower employees, and control costs.

## 10.3 The Rise of Integrated, Whole-Person Wellbeing

Leading employers are moving away from siloed benefits, recognising that MSK health, mental well-being, and productivity are inseparable.

Expect to see:

- Unified wellbeing platforms combining MSK, mental, and lifestyle health
- MSK literacy embedded into health & safety, leadership, and benefits strategies
- More nuanced risk assessments considering gender, lifestyle, life stage, and job role

Leading solutions bring this concept to life by combining movement data, life stage factors, work environment, and health history into personalised MSK risk profiles.

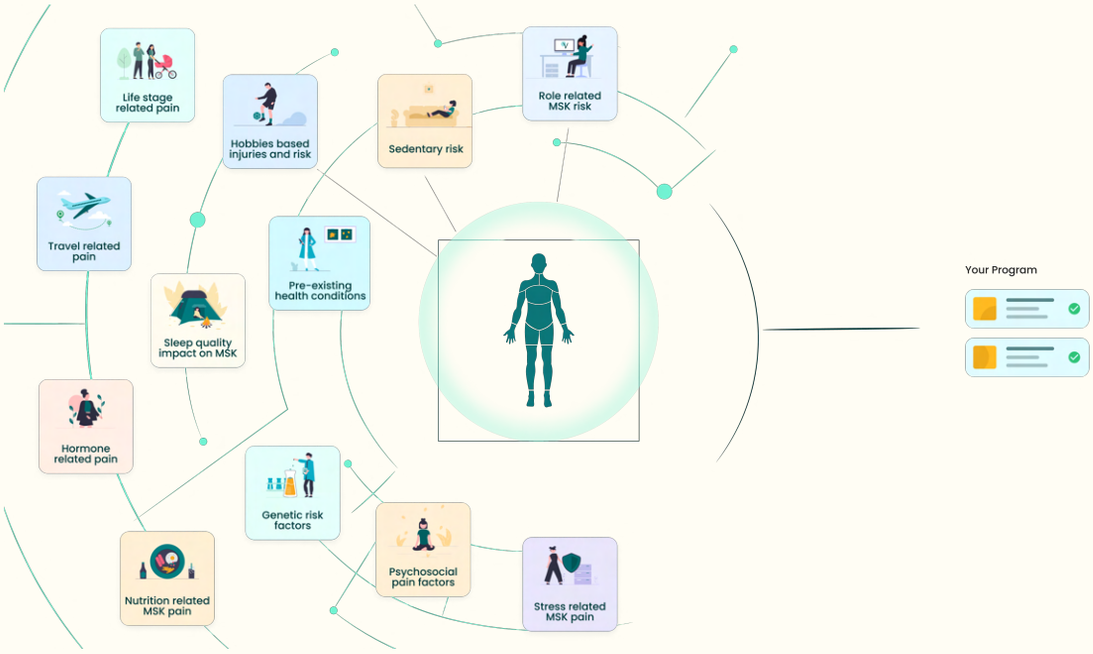


Figure 10.2: *
Whole-person MSK modelling combines lifestyle, environmental, and health factors to generate personalised risk profiles.

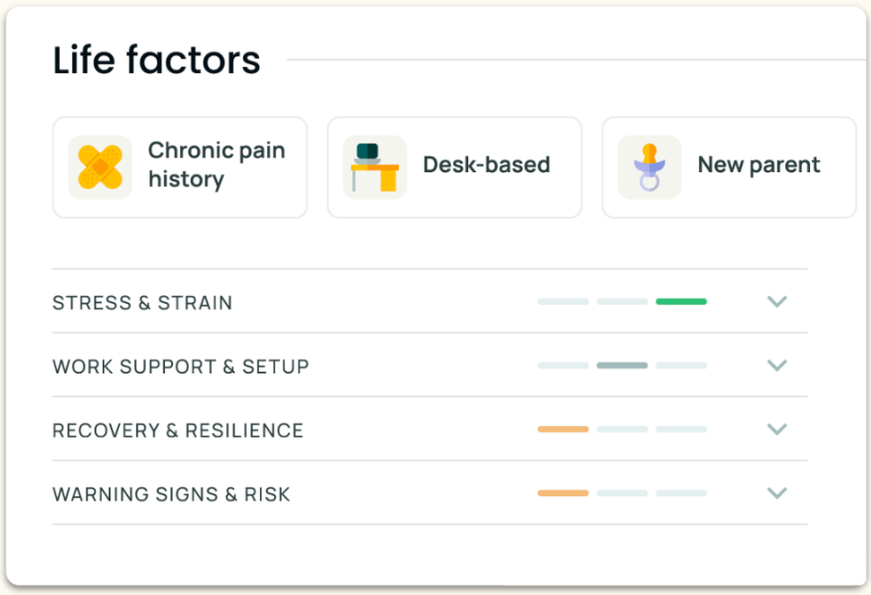


Figure 10.3: *
Personalised MSK dashboards help employees understand their unique pain risks and intervention priorities.

The future isn't one-size-fits-all - it's targeted, data-driven, and tailored to the individual.

## 10.4 Regulatory, ESG, and Workforce Pressures

The global shift toward employer health accountability is gaining pace:

- Duty of care regulations expanding across the EU, UK, APAC, and beyond
- ESG frameworks increasingly including physical wellbeing metrics [2]
- Public healthcare under strain, pushing more responsibility onto employers

Organisations that fail to adapt risk spiralling costs, compliance gaps, and reputational damage.

## The Opportunity - A New Model for MSK Prevention

The future of workplace MSK isn't inevitable pain and rising premiums. With scalable prevention technologies, AI-driven risk detection, and whole-person health strategies, employers can redesign how MSK pain is managed - reducing both cost and human impact.

The next wave of solutions will move beyond reactive care. Employers investing early will not only control spend but help shape healthier, more resilient workforces.

[2] McKinsey Health Institute. "Thriving Workplaces: How Employers Can Improve Productivity and Change Lives", 2025.

# Conclusion - Three Practical Next Steps

Musculoskeletal pain is a solvable problem. The tools exist. The business case is clear. The only question is whether employers will stay reactive - or get ahead.

**Three things to do now:**

- **Quantify your MSK burden** - use workforce data to calculate the true direct and indirect costs using the formulas outlined in this report
- **Pilot prevention-first interventions** - from early risk detection to employee empowerment tools
- **Use ROI modelling to engage stakeholders** - demonstrate how proactive MSK strategies reduce costs and protect performance

The companies who act now will avoid escalating costs, support workforce resilience, and lead the next phase of integrated employee wellbeing.

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### Vitrue Internal Data

Aggregated workforce data drawn from over 112,000 employees globally (2024) across diverse industries including finance, healthcare, transport, and professional services.

Benchmark statistics presented throughout based on anonymised, real-world data from Vitrue Health employer partnerships.

### Methodological Notes

- All figures rounded to nearest whole percentage or relevant currency unit.
- Vitrue modelling applies actuarial assumptions based on market-standard absence costs, productivity loss factors, and medical spend patterns.
- Some datasets reflect UK trends, with extrapolated global relevance noted where applicable.

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