# Artificial Intelligence in Physiotherapy: A Cross-National Analysis of Professional Guidance and Good Clinical Practice

## Executive Summary

The integration of artificial intelligence (AI) into healthcare is rapidly moving from a theoretical possibility to a clinical reality, presenting both profound opportunities and significant challenges for the physiotherapy profession. This report provides an exhaustive, cross-national analysis of good practice AI in physiotherapy, focusing on the United Kingdom, the United States, Finland, Australia, Sweden, and the Netherlands. Drawing exclusively from the official publications of professional physiotherapy associations and the documented practices of clinical providers, this analysis examines the dual role of AI in enhancing both administrative efficiency and direct clinical care. The findings reveal a landscape of accelerating adoption, guided by emerging professional frameworks that seek to harness AI's potential while safeguarding patient welfare and professional standards.

In the United Kingdom, the National Health Service (NHS) is leveraging AI at a population level to address systemic challenges, with initiatives like the Flok Health digital clinic demonstrating a capacity to dramatically reduce waiting lists for common musculoskeletal conditions through AI-driven triage and treatment. In Australia, a primary focus has been on alleviating clinician burnout through the widespread adoption of AI scribes, which not only reclaim significant administrative time but also enhance the therapeutic alliance by allowing physiotherapists to be more present with their patients. The United States showcases a diverse, market-driven approach, with private clinics implementing AI for sophisticated biomechanical analysis, remote patient monitoring, and comprehensive practice management.

The Nordic countries and the Netherlands illustrate a more integrated approach. In Finland, AI is being used for high-precision, personalized exercise therapy in clinical settings and to improve public access to health information through municipal chatbots. Sweden is pioneering deep administrative automation, with specialized clinics exploring advanced Natural Language Processing to move beyond simple transcription to the automated execution of clinical workflows. In the Netherlands, the emphasis is on systemic integration and professional development, with AI tools being designed for interoperability with electronic patient records and used to train the next generation of physiotherapists in clinical reasoning.

Across all nations, professional bodies such as the Chartered Society of Physiotherapy (CSP), the American Physical Therapy Association (APTA), and the Australian Physiotherapy Association (APA) are playing a critical role. They are proactively developing policies, ethical guidelines, and practical resources to navigate the complexities of AI adoption. This report synthesizes these efforts, identifying a set of core principles that define good practice: prioritizing human oversight, ensuring data privacy and informed consent, augmenting rather than replacing clinical judgment, and actively mitigating the risk of professional deskilling. The analysis concludes that the responsible, ethical, and strategic implementation of AI is not merely a technological challenge but a professional imperative that will define the future of physiotherapy practice.

## Introduction - The Digital Transformation of Physiotherapy

The physiotherapy profession is situated at a critical juncture, navigating a landscape of increasing demand, systemic healthcare pressures, and the transformative potential of digital technology. The rise of artificial intelligence represents not just an incremental change but a paradigm shift, offering novel solutions to long-standing challenges while simultaneously introducing new complexities that require careful professional governance. The strategic imperative for integrating AI is driven by a confluence of factors, including the need to manage escalating patient loads, address workforce shortages, enhance the precision of clinical interventions, and meet the evolving expectations of a digitally literate patient population.1 The global COVID-19 pandemic served as a powerful catalyst, compelling a rapid and widespread pivot to remote and digital service delivery models, which accelerated the adoption of technologies and underscored the necessity for a workforce that is both adaptable and comfortable with change and uncertainty.4

This digital transformation is not a monolithic event but a multifaceted process involving a range of sophisticated technologies. Understanding the specific capabilities of these technologies is essential for appreciating their application in clinical practice and for formulating effective professional guidance.

### Defining AI in the Physiotherapy Context

Within the domain of physiotherapy, "artificial intelligence" is an umbrella term for a suite of technologies, each with distinct functions and applications. A clear taxonomy is crucial for moving beyond generalized discussions to a nuanced understanding of how these tools are being deployed.

* **Machine Learning (ML):** This is a subfield of AI where computer systems are given the ability to "learn" from data without being explicitly programmed.5 In physiotherapy, ML algorithms can analyze large datasets, such as electronic health records, to identify previously unknown patterns. This capability is being used for predictive modeling—for instance, to forecast a patient's likelihood of developing a future disease or to predict their treatment outcome based on initial characteristics.5 One prominent form, deep learning, uses complex neural networks to process information in a manner analogous to the human brain and has been used to develop decision-support tools that help direct patients with back pain to the most appropriate management pathway.5 This technology holds the potential to reduce unwarranted variation in clinical practice and optimize the application of healthcare resources.5
* **Natural Language Processing (NLP):** NLP is a branch of AI that enables computers to understand, interpret, and generate human language. Its most significant impact in physiotherapy to date has been in the automation of clinical documentation. AI-powered scribes use NLP to listen to the natural conversation between a physiotherapist and a patient, transcribing it and then structuring the information into coherent clinical notes, summaries, and referral letters.6 This technology directly addresses the significant administrative burden faced by clinicians. Furthermore, NLP is the core technology behind chatbots, which are being used to automate responses to frequently asked questions and assist patients with appointment scheduling.7
* **Computer Vision:** This field of AI trains computers to interpret and understand information from digital images and videos. In physiotherapy, computer vision is revolutionizing movement analysis. Using standard cameras or depth-sensing technology, AI systems can analyze a patient's movements in real-time, measuring joint angles, assessing posture, and identifying asymmetries or compensatory patterns that might be missed by the human eye.9 This enables highly objective assessments and provides immediate, data-driven feedback to both the patient and the therapist, whether in the clinic or during remote home exercise programs.10

### The Strategic Imperative for Digital Integration

The adoption of these AI technologies is not being driven by novelty alone, but by a clear strategic need to create a more efficient, effective, and sustainable healthcare system. Professional bodies and healthcare organizations recognize that digital transformation is a critical engine for modernizing services and meeting public expectations in an era of immense pressure.12 The NHS in the UK, for example, has articulated a "digital first" ambition, aiming to empower patients to manage their own health with the guidance of digital tools, thereby freeing up clinical resources for those with the most complex needs.13

However, the integration of AI is a complex undertaking, presenting a fundamental tension that this report seeks to explore. On one hand, AI offers immense potential to enhance care, streamline workflows, and generate new clinical insights. On the other hand, its unguided implementation poses significant risks to patient privacy, data security, and the very nature of clinical expertise. The observation that professional bodies in the UK, USA, and Australia are not simply encouraging AI adoption but are simultaneously building robust ethical and practical guardrails around its use reveals a mature understanding of this duality.14 It suggests that the core of "good practice" lies not in the technology itself, but in the professional, ethical, and clinical frameworks established to govern its use. The impact of AI will be determined by the context into which it is placed and the diligence with which it is managed. Therefore, this report will focus as much on the

*how* and *why* of AI adoption—the governance, ethics, and strategic thinking—as it does on the *what* of specific technological applications.

## Professional Governance and Strategic Frameworks for AI

The responsible integration of artificial intelligence into physiotherapy is critically dependent on the leadership and guidance of the profession's national governing bodies. These organizations play a pivotal role in establishing the ethical boundaries, professional standards, and strategic direction for AI adoption. A comparative analysis of the approaches taken in the United Kingdom, the United States, Australia, Finland, Sweden, and the Netherlands reveals distinct models of governance, each shaped by the unique healthcare systems, regulatory environments, and technological maturity of their respective regions. These frameworks collectively underscore a global consensus: AI must be implemented in a manner that augments clinical expertise, prioritizes patient safety, and upholds the core values of the physiotherapy profession.

### The UK's Chartered Society of Physiotherapy (CSP): A Proactive Framework for Digital Transformation

The Chartered Society of Physiotherapy (CSP), as the United Kingdom's professional, educational, and trade union body for over 65,000 members, has taken a proactive and structured approach to governing the use of AI.17 Recognizing the profound implications of digital technologies, the CSP has moved beyond general statements to establish formal, actionable principles designed to guide the profession through this transformation.

In March 2025, the CSP Council ratified a set of principles specifically for the use of AI in physiotherapy.14 Developed with input from experts in clinical practice and education, these principles are comprehensive in scope, covering the application of AI in clinical practice, professional education, research, and as a method of service delivery.14 Crucially, the principles address the most pressing concerns associated with AI, including

**accountability, safety, and scope of practice**.14 This forward-thinking governance reflects a position of cautious optimism. The CSP acknowledges AI's immense potential to drive significant advancements, reduce clinical inefficiencies, and remove unnecessary stressors from the work of physiotherapists.5 At the same time, it explicitly recognizes the potential risks to patient safety, confidentiality, and the professional development of its members.14

The CSP's guidance consistently frames AI as a tool to *assist* and *facilitate* better patient care, rather than to replace the clinician. The stated goal is to leverage technology in a way that allows physiotherapists to spend more time engaged in direct patient care.14 This philosophy is embedded within the CSP's broader digital strategy, which aligns with the UK's National Health Service (NHS) 'digital first' ambition.12 The society is actively working to support its members in this transition through initiatives like the Physiotherapy Health Informatics Strategy (PHIS), which aims to equip all members, regardless of career stage or specialty, with the skills to use informatics effectively.12 Given the rapid pace of technological change, the CSP has also committed to reviewing its AI principles every six months for the next two years, ensuring they remain relevant and effective in a dynamic environment.14

### The American Physical Therapy Association (APTA): Policy and Practice Advisories for Ethical Integration

In the United States, the American Physical Therapy Association (APTA), representing a membership of over 100,000 physical therapists, physical therapist assistants, and students, has established a clear policy framework prioritizing the ethical and effective integration of AI.20 The APTA's formal policy, designated P07-24-10-09, explicitly supports the ethical development and use of AI with the stated goals of reducing administrative burden while enhancing physical therapist practice, education, and research.15 The overarching aim is to ensure that these technological advancements serve the best interests of patients, the profession, and society at large.15

Beyond high-level policy, the APTA provides its members with a suite of practical resources to navigate the complexities of digital health. A key example is the practice advisory on "AI-Enabled Ambient Scribe Technology," which outlines documentation responsibilities and critical legal and regulatory considerations for this emerging technology.15 This demonstrates a commitment to providing tangible guidance on specific applications. Further supporting its members, the APTA has developed the "APTA Digital Health App Formulary." This initiative, powered by the Organization for the Review of Care and Health Apps (ORCHA), offers a curated collection of digital health tools that have been independently assessed for safety and effectiveness, helping clinicians make informed choices for their patients.22

The APTA's strategic approach is encapsulated in its foundational paper on the "Digitally Enabled Physical Therapist".22 This concept frames digital technologies not as a replacement for the clinician, but as tools that can enable practitioners to expand their reach, deliver care more efficiently, and gather critical data on patient progress and outcomes. To safeguard the profession's role in this evolving landscape, the APTA has also launched a Digital Health Transparency campaign, which calls on digital health providers to commit that any service labeled as "physical therapy" is performed or directed by a licensed physical therapist, reinforcing term and title protection in the digital realm.22

### The Australian Physiotherapy Association (APA): Navigating the 'AI Divide' and Championing Digital Literacy

The Australian Physiotherapy Association (APA), the peak body for over 31,000 members, has adopted a particularly pragmatic and insightful approach to AI, focusing on the real-world challenges and nuances of clinical implementation.24 The APA's publications highlight the emergence of a significant "AI divide" within the profession.16 On one side are clinicians who are effectively leveraging AI to save time and improve care, while on the other are those who are being left behind due to a lack of training, misinformation, or institutional inertia.16

A central concern articulated by the APA is the critical issue of legal and ethical compliance. The association warns that clinicians unknowingly risk violating Australian data privacy laws, such as the Privacy Act 1988, and the professional Code of Conduct by entering sensitive patient health information into free, non-secure AI tools like public versions of ChatGPT.16 This highlights a crucial gap in digital literacy that the APA is actively working to address.

Furthermore, the APA has engaged deeply with the "upskilling versus deskilling" debate. While acknowledging AI's power to enhance diagnostics and personalize treatment, the association cautions that an over-reliance on AI for core tasks like clinical note-taking could lead to the atrophy of essential clinical reasoning and manual assessment skills.26 To counter this, the APA advocates for a "hybrid approach," where clinicians blend the efficiency of AI tools with regular manual practice. This involves treating AI-generated notes as a first draft that must be actively reviewed, edited, and validated with the clinician's own judgment, thereby maintaining professional competency while benefiting from technological assistance.26 The APA's recommended path forward is clear: it calls for comprehensive digital literacy education at all career stages, the development of clear and practical compliance guidelines, and the promotion of purpose-built, secure AI tools designed specifically for the healthcare environment.16

### Perspectives from Finland, Sweden, and the Netherlands: Integrating AI into National Health Ecosystems

The approach to AI governance in Finland, Sweden, and the Netherlands is characterized by a strong integration with national e-health strategies and a focus on embedding digital practice within broader professional standards.

* **Finland:** The Finnish Association of Physiotherapists (Suomen Fysioterapeutit) has proactively integrated AI into its foundational professional documents.27 The association's Ethical Guidelines explicitly require physiotherapists to understand and adhere to the core ethical principles of AI, including accountability, privacy, fairness, reliability, and transparency.28 This approach treats AI ethics not as a separate issue but as an integral component of modern professional conduct in all environments, both physical and digital.
* **Sweden:** The Swedish Association of Physiotherapists (Fysioterapeuterna) operates within a national context defined by "Vision 2025," an ambitious government-led initiative to make Sweden a world leader in utilizing digitization and e-health.29 While the association has not published standalone AI policies as detailed as its Anglosphere counterparts, its activities are aligned with this national digital-first strategy. Research indicates that Swedish physiotherapists are generally positive about the potential of AI but recognize a significant need for further training and education to implement it effectively.31
* **The Netherlands:** The Royal Dutch Society for Physiotherapy (KNGF) has formally incorporated "e-health" into its Code of Conduct, signaling that the use of digital tools is now considered a standard component of professional practice.32 The professional discourse in the Netherlands, particularly from institutions like Amsterdam UMC, emphasizes the critical importance of co-creation and collaboration.2 There is a strong focus on bridging the gap between the promise of AI and its practical application by ensuring that AI models are trustworthy, robust, and developed through close partnerships between AI scientists and clinical practitioners.35

A comparative analysis of these national approaches reveals distinct patterns in how professional bodies are shaping AI governance, which appear to be influenced by the broader healthcare and policy environments in which they operate. This leads to the emergence of several governance models. In nations with more decentralized, market-driven healthcare systems like the UK, USA, and Australia, where innovation may be driven by a diverse array of private clinics and technology companies, the professional associations have adopted a **"Guidance and Guardrails" model**. This approach is characterized by proactive, detailed, and practical guidance designed to manage the risks of a fast-moving and fragmented market, with a strong focus on compliance, ethics, and mitigating negative consequences like professional deskilling.

In contrast, nations with more integrated public health systems and ambitious, top-down national e-health strategies, such as Sweden and Finland, demonstrate a **"National Strategy Alignment" model**. Here, the role of professional bodies is less about creating standalone rules and more about aligning their members with the national digital vision, contributing to a cohesive national ecosystem, and ensuring the profession is prepared to participate effectively.

Finally, the discourse in the Netherlands points to an **"Integrated Research and Practice" model**. This approach, exemplified by the collaborations at Amsterdam UMC, is characterized by a strong emphasis on co-creation, evidence-building, and ensuring the foundational robustness and trustworthiness of AI tools before widespread clinical implementation. This model prioritizes building a strong, evidence-based foundation through partnerships between academia, clinical practice, and technology developers.

| Country | Professional Body | Stated Position/Policy | Key Principles | Member Resources |
| --- | --- | --- | --- | --- |
| **United Kingdom** | Chartered Society of Physiotherapy (CSP) | Published formal principles to guide the responsible and beneficial use of AI in physiotherapy.14 | Accountability, Safety, Scope of Practice, Patient Confidentiality, Augmenting Clinicians.14 | Physiotherapy Health Informatics Strategy (PHIS), Guidance on Remote Consultations, Digital Innovations Hub.12 |
| **United States** | American Physical Therapy Association (APTA) | Policy (P07-24-10-09) supports the ethical development and integration of AI to reduce administrative burden and enhance care.15 | Ethical Integration, Patient Benefit, Professional Enhancement, Transparency.15 | Practice Advisory on AI Scribes, Digital Health App Formulary (powered by ORCHA), Telehealth Certificate Series.15 |
| **Australia** | Australian Physiotherapy Association (APA) | Focus on navigating the "AI divide," promoting digital literacy, and mitigating risks of deskilling and non-compliance.16 | Data Privacy (Privacy Act 1988), Informed Consent, Maintaining Core Skills, Professional Compliance.16 | *InMotion* Magazine Articles on AI Implementation, Advocacy for Purpose-Built Tools.16 |
| **Finland** | Finnish Association of Physiotherapists (Suomen Fysioterapeutit) | AI principles are integrated directly into the association's official Ethical Guidelines.28 | Accountability, Privacy, Fairness, Reliability, Transparency in both physical and digital environments.28 | Core Competencies Framework, Ethical Guidelines.28 |
| **Sweden** | Swedish Association of Physiotherapists (Fysioterapeuterna) | Aligned with the national "Vision 2025" for world leadership in e-health.31 | (Implicit) Support for Digitalization, Efficiency, and Modernization of Healthcare.29 | Professional Body and Trade Union Support within the National E-Health Framework.30 |
| **Netherlands** | Royal Dutch Society for Physiotherapy (KNGF) | "E-health" is formally included as a component of the professional Code of Conduct.34 | Good Care, Data Security (Reporting Data Breaches), Professionalism in Digital Interactions.34 | Code of Conduct, Kennisplatform Fysiotherapie (Knowledge Platform) with resources on remote care.34 |

## Case Studies in AI-Powered Physiotherapy: A Cross-National Analysis

The theoretical promise of artificial intelligence is being translated into tangible clinical applications across the globe. An examination of specific use cases in physiotherapy reveals how different healthcare systems are leveraging AI to solve distinct problems, from managing public health backlogs in the UK to enhancing administrative efficiency in Australia and delivering high-precision assessments in the US. These examples of good practice demonstrate the versatility of AI technologies—including Natural Language Processing, computer vision, and machine learning—and provide a grounded view of how they are being integrated into real-world clinical workflows.

| Country | Clinic/Initiative | AI Technology Type | Clinical Application | Key Reported Outcomes |
| --- | --- | --- | --- | --- |
| **United Kingdom** | Flok Health (NHS Pilot) | Machine Learning, Interactive Video | Triage, Treatment, and Management of MSK Back Pain | 55% reduction in back pain waiting lists; 856 clinician hours saved per month; >98% of patients managed digitally.38 |
| **United States** | Park North Physical Therapy | Computer Vision, Machine Learning | Biomechanical Gait and Movement Analysis | Objective, data-driven assessments to inform personalized treatment plans; measures data invisible to the naked eye.9 |
| **Finland** | Nordic Health Clinic | Machine Learning, Robotics | Personalized Exercise Therapy | AI-driven devices provide adaptive resistance and biomechanical tracking to optimize effectiveness and minimize injury risk.40 |
| **Australia** | Healthia (and other clinics) | Natural Language Processing (NLP) | AI Scribe for Clinical Documentation | Significant reduction in time spent on notes; improved clinician-patient engagement and therapeutic alliance.6 |
| **Sweden** | Capio Artro Clinic | NLP, Machine Learning | Advanced Administrative Automation ("Voice-to-Invoice") | (In development) Aims to automatically process spoken consultations into billing codes, referrals, and bookings.8 |
| **Netherlands** | Fontys University Project | Natural Language Processing (NLP) | AI Chatbot for Professional Education | Improved clinical reasoning competencies in physiotherapy students who used the AI coaching tool.41 |

### United Kingdom: The Flok Health Model - AI-Driven Triage and Treatment for MSK Conditions within the NHS

In the UK, the National Health Service (NHS) has been grappling with unprecedented waiting lists for elective care, with musculoskeletal (MSK) services being particularly affected. In regions like Cambridgeshire, patients faced waits of up to 18 weeks for an initial physiotherapy appointment.42 In response to this systemic challenge, NHS Trusts in both Cambridgeshire and Lothian, Scotland, have piloted an innovative AI-powered digital clinic called Flok Health, representing a significant example of using AI for population-level service redesign.42

The technology is delivered via a smartphone app that provides patients with same-day access to care for low back pain.38 It utilizes a sophisticated system of interactive, pre-recorded video footage of a human physiotherapist, creating an experience that feels like a responsive, structured video call.44 The AI engine triages patients by evaluating their symptoms through a guided consultation. If deemed appropriate for digital treatment, the system delivers a personalized rehabilitation program, prescribing exercises and pain management techniques, and adapting the plan in real-time based on patient feedback.44 This model is notable for being the first digital MSK service to be registered as a provider with the Care Quality Commission (CQC) and to achieve medical device certification under MHRA regulations, ensuring it meets high standards for safety and quality.38

The outcomes of the pilot deployments have been extraordinary and demonstrate several facets of good practice:

* **Improved Access and System Efficiency:** The most dramatic impact was on waiting times. The 12-week pilot in Cambridgeshire reduced the waiting list specifically for back pain by 55%.38 This was achieved by diverting a high volume of suitable patients to the digital pathway, which in turn was estimated to have saved 856 hours of clinician time per month within the Trust, freeing up physiotherapists to focus on patients with more complex conditions.39
* **Effective and Safe Clinical Triage:** The AI proved highly effective at identifying appropriate candidates for digital care. Of the more than 2,500 patients who used the service, over 98% were successfully triaged, treated, and discharged entirely within the digital pathway. Fewer than 2% required or requested an onward referral to a traditional face-to-face service, indicating the AI's high accuracy in its clinical decision-making.38
* **High Patient Acceptance and Satisfaction:** Despite potential skepticism about receiving care from an AI, patient reception was overwhelmingly positive. A remarkable 80% of users rated their experience with Flok as "equivalent or better" than traditional in-person physiotherapy, surpassing the Trust's own expectations for patient satisfaction.39 This case study serves as a powerful example of how AI can be thoughtfully and safely integrated into public health pathways to dramatically improve access, outcomes, and patient experience at scale.42

### United States: Diverse AI Applications in a Market-Driven System

The healthcare landscape in the United States, characterized by a mix of large hospital systems and independent private practices, fosters a different pattern of AI adoption. Here, innovation is often driven by the need for clinics to enhance efficiency, offer specialized services, and gain a competitive advantage. This has led to a diverse array of AI applications, from high-precision diagnostic tools to comprehensive practice management platforms.

A prime example of AI in clinical assessment can be found at **Park North Physical Therapy in New York**. This clinic utilizes **Digitsole Pro**, a technology that embeds connected chips—miniature Inertial Measurement Units—into insoles to capture objective biomechanical data as a patient moves.9 This data, which includes subtle parameters of gait and movement that are impossible for the human eye to detect, is then processed by an exclusive AI algorithm. The algorithm translates the raw data into clinically relevant insights, which helps the physiotherapist to identify the root cause of an issue and formulate the most appropriate and precise treatment plan.9 This represents a good practice in using AI to augment the therapist's diagnostic capabilities with highly accurate, objective data.

Beyond in-clinic assessment, US practices are also adopting AI to extend care into the patient's home and to streamline operations. Platforms such as **Exer Health** use the camera on a patient's mobile device to power a computer vision AI that monitors their home exercise program.11 The AI analyzes the patient's movements to ensure correct form and tracks adherence, providing real-time feedback to the patient and sharing progress data with the therapist. This enhances patient engagement and accountability. Simultaneously, a suite of AI-powered practice management systems like

**SPRY** and **Empower EMR** are automating administrative workflows.11 These platforms use AI for intelligent scheduling, automated billing and coding, and generating clinical documentation. Clinics using these tools report that therapists can save up to 10 hours per week on administrative tasks, allowing them to dedicate more time to direct patient care and reducing burnout.11

### Finland: Precision Rehabilitation and Public Sector Engagement

In Finland, examples of good practice in AI showcase its application in both highly specialized clinical treatment and broad public service delivery, reflecting a health ecosystem that values both technological innovation and civic accessibility.

At the clinical level, **Nordic Health in Helsinki** provides a compelling example of AI-powered exercise therapy.40 The clinic uses

**DAVID AI-driven exercise devices**, which represent a significant step beyond standard gym equipment. These machines employ advanced biomechanical tracking to ensure that every repetition of an exercise is precisely tailored to the individual's unique body mechanics, which optimizes the therapeutic effect while minimizing the risk of injury.40 The system's AI also provides adaptive resistance, intelligently adjusting the load in real-time to challenge muscles appropriately as they fatigue and grow stronger. Furthermore, the equipment offers personalized progress tracking and virtual coaching guided by AI algorithms, providing instant feedback on form and performance. This use of AI exemplifies good practice in delivering highly precise, safe, and personalized treatment protocols.

At the municipal level, the **City of Helsinki** has deployed an AI system to improve the efficiency and accessibility of its public services. The **"Sotebotti Hester"** is a rule-based chatbot that serves the city's social services, health care, and rescue services division.7 For residents seeking physiotherapy services, the chatbot can provide advice, answer frequently asked questions about visiting health stations, and give guidance on how to book an appointment. By automating responses to common inquiries, the chatbot streamlines the patient journey and reduces the administrative load on healthcare staff. This is a clear example of how AI can be used as a public utility to improve system navigation and enhance citizen self-service capabilities.7

### Australia: The AI Scribe Revolution - Enhancing Documentation and the Therapeutic Alliance

One of the most significant and rapidly adopted applications of AI in Australian physiotherapy is the use of AI scribes. This trend is a direct response to the high levels of administrative burden and burnout experienced by clinicians, who often spend a substantial portion of their day on documentation.16 A growing number of Australian clinics are implementing AI scribe platforms—such as

**Lyrebird Health, PatientNotes, and CliniScribe**—which are often developed by physiotherapists specifically for the needs of allied health professionals.6

These platforms use Natural Language Processing to securely record the conversation between a physiotherapist and a patient. The AI then transcribes and intelligently structures this conversation into accurate and compliant clinical documentation, including SOAP notes, patient summaries, and referral letters.6 The implementation of this technology at

**Healthia**, a large allied healthcare organization, was the subject of a formal study that highlighted several key aspects of good practice.6

The study's outcomes were overwhelmingly positive. Clinically, it found a **significant reduction in the time clinicians spent completing administrative tasks** and, importantly, a decrease in the frequency of clinicians doing this work outside of office hours.6 At the conclusion of the study, 95% of the participating clinicians stated they would recommend the AI scribe, indicating high user acceptance and perceived value.6

Perhaps the most crucial finding related to the quality of care. Both clinicians and patients reported that the use of the AI scribe **positively affected the therapeutic alliance**. By freeing the physiotherapist from the need to type or write notes during the consultation, the technology allowed them to be more present, maintain better eye contact, and engage more deeply with the patient.6 This demonstrates that, when implemented thoughtfully, AI can enhance rather than detract from the human element of care. Patients expressed trust in their clinicians to use the technology safely and ethically. This case study from Australia provides powerful evidence that AI can be a tool not only for efficiency but also for improving the fundamental clinician-patient relationship.6

### Sweden: Automating the Clinic with Advanced NLP

Sweden's approach to AI in physiotherapy is aligned with its broader national ambition for digital leadership in healthcare. A forward-looking example of this is found at **Capio Artro Clinic in Stockholm**, a specialized center for orthopedics and sports medicine that performs over 46,000 physiotherapy visits annually.8 The clinic is actively exploring the next generation of AI-powered administrative automation through a project described as "voice-to-invoice".8

This initiative aims to move far beyond the simple voice-to-text transcription offered by current AI scribes. The goal is to develop a more sophisticated system that combines speech recognition, Natural Language Processing, and machine learning to not only capture the text of a clinical consultation but to *understand and process the information* contained within it.8 The ambition is for the AI to be able to automatically identify and generate correct diagnosis codes and billing codes, populate data into registries, and automate the creation and sending of referrals, certificates, and future appointment bookings directly from the spoken interaction.8

While this project is still in an exploratory phase, it represents a good practice in strategic, forward-thinking innovation. It envisions a future where AI handles not just the documentation of a clinical encounter but the execution of the administrative workflows that follow. This would represent a profound leap in efficiency, freeing up both clinical and administrative staff to focus on higher-value tasks and patient care. This case study highlights a vision for the deep integration of AI into the core operational fabric of a clinical practice.8

### The Netherlands: Building an Integrated Digital Ecosystem

In the Netherlands, good practices in AI are characterized by a strong focus on systemic integration and the use of technology for professional development. The Dutch approach appears to prioritize ensuring that new AI tools can communicate seamlessly with existing healthcare infrastructure and that the future workforce is trained to use them effectively.

An excellent example of this focus on integration is **Fysio.AI**, a tool promoted by Fys'Optima, a network of physiotherapy practices.50 Fysio.AI is an intelligent solution designed to convert the verbal intake conversation with a patient into a structured, relevant, and accurate digital patient record.52 A key feature that distinguishes this as a good practice is that the AI model has been specifically trained on Dutch fysiotherapeutisch jargon (physiotherapeutic terminology), ensuring a high degree of precision and relevance.52 Crucially, the system is designed for

**interoperability**, with direct integration into major Electronic Patient Dossier (EPD) systems used in the country, such as Intramed.50 This ensures that the AI tool is not a standalone product creating another data silo, but rather a seamless component of the central clinical workflow.

The second notable example comes from the educational sector. At **Fontys University of Applied Sciences**, lecturer-researchers are developing an **AI-chatbot** designed for a dual purpose: to assist in patient treatment processes and to train physiotherapy students.41 In the educational context, the chatbot functions as a digital assistant that coaches students through clinical reasoning exercises. A student can present a case to the chatbot, which then guides them through the decision-making process, prompting them to consider different factors and justify their conclusions. An initial experiment conducted at the university found a discernible improvement in the clinical competencies of students who used the AI-powered tool compared to those who did not.41 This represents a novel and important good practice: using AI not just to deliver care, but to build the skills and critical thinking capabilities of the next generation of physiotherapists.

## Synthesis of Good Practices and Emerging Challenges

The cross-national analysis of AI in physiotherapy reveals a consistent set of principles and challenges that define the landscape of responsible innovation. While the specific applications vary according to local healthcare needs and technological maturity, the underlying elements of good practice are universal. They revolve around a clear-eyed understanding of AI's capabilities and limitations, a steadfast commitment to augmenting rather than replacing the clinician, rigorous adherence to ethical standards, and a proactive approach to managing the implementation process. Synthesizing the case studies and professional guidance provides a clear framework for navigating this complex and rapidly evolving field.

### A Spectrum of Application: From Administrative Augmentation to Clinical Delivery

A foundational element of good practice is the strategic application of AI based on a clear assessment of clinical risk and return on investment. The evidence shows a clear spectrum of AI use, ranging from low-risk administrative tasks to high-risk clinical functions. The most mature, widely accepted, and demonstrably successful examples of good practice are currently clustered in the domain of **administrative augmentation**. The use of AI scribes in Australia is a primary example; it addresses a well-defined problem (clinician burnout from documentation), offers a clear benefit (significant time savings), and carries a relatively low clinical risk, as the final output remains under the complete control and validation of the physiotherapist.6 Similarly, the "voice-to-invoice" project in Sweden and the EPD-integrated documentation tools in the Netherlands target administrative workflows, where the goal is efficiency and the risk to patient safety is indirect and manageable.8

At the other end of the spectrum is **AI in direct clinical delivery**, such as diagnosis, triage, and treatment. The UK's Flok Health model is a pioneering example in this area.42 While its outcomes are highly promising, its implementation as a good practice is contingent on a much higher level of scrutiny. This includes rigorous clinical validation to prove its safety and efficacy, formal regulatory approval from bodies like the CQC and MHRA, and careful, phased integration into established clinical pathways to ensure patient safety and appropriate escalation to human clinicians when necessary.38 A key principle of good practice, therefore, is to match the level of AI autonomy to the level of clinical risk, starting with applications that support clinicians before moving to those that perform clinical functions more independently.

### The Human-AI Symbiosis: Augmenting, Not Replacing, the Physiotherapist

A core principle that unites all examples of good practice is the philosophy that AI should function as a symbiotic partner to the physiotherapist, augmenting their skills and capabilities rather than attempting to replace them. The most effective AI implementations are those that empower clinicians to perform their roles better. This concept is explicitly endorsed by professional bodies like the CSP, which states that AI is a tool "that humans can use to facilitate better patient care" but "cannot work alone".5

This symbiotic relationship manifests in several ways. The AI scribes used in Australia do not just save time; they free up the clinician's cognitive load and attention, allowing for deeper, more empathetic engagement with the patient, thereby strengthening the therapeutic alliance.6 The AI-powered biomechanical analysis tools used in the US provide objective data streams that are beyond the perceptual limits of a human observer, giving the therapist a more complete picture to inform their clinical reasoning.9 AI-driven remote monitoring platforms extend the therapist's oversight and guidance beyond the limited time of an in-clinic appointment, creating a continuous loop of care.11 In each case, the AI handles tasks at which machines excel—data processing, pattern recognition, automation—while the human clinician retains control over the tasks that require uniquely human skills: empathy, complex clinical judgment, and building a therapeutic relationship.

### Data Privacy, Patient Consent, and Ethical Imperatives

Good practice in AI is fundamentally inseparable from ethical practice. The power of AI is built on data, and the use of sensitive patient health information necessitates an unwavering commitment to privacy, security, and transparency. The analysis reveals several non-negotiable ethical imperatives:

* **Data Security and Compliance:** As highlighted by the Australian Physiotherapy Association, a critical failure of practice occurs when clinicians use generic, consumer-grade AI tools that do not comply with national data privacy legislation, such as Australia's Privacy Act 1988.16 Good practice requires the exclusive use of purpose-built, healthcare-compliant platforms that guarantee data encryption and are hosted on secure servers, preferably within the nation's legal jurisdiction, to protect patient confidentiality.16
* **Informed Consent:** A recurring theme, and a significant potential blind spot, is the need for explicit and informed patient consent. It is not sufficient for a patient to consent to treatment; they must be specifically informed that an AI system will be used in their care, particularly if their consultation is being recorded or their personal data is being processed by an algorithm. This is a fundamental requirement for ethical transparency.16
* **Transparency and Trustworthiness:** For clinicians to responsibly use AI as a decision-support tool, they must have a degree of trust in its outputs. As articulated by clinicians at Amsterdam UMC, it is imperative that AI models are trustworthy, robust, and offer some level of explainability so that the professional can understand *why* a certain recommendation is being made.2 This "black box" problem is a significant challenge, and good practice trends toward using AI systems that are transparent and can be validated against established clinical guidelines.

### Bridging the Implementation Gap: Overcoming Barriers and Preventing Deskilling

The final component of good practice relates to the successful implementation of AI within a clinical setting, which involves overcoming human barriers and mitigating long-term professional risks. The APA's research identifies common barriers to adoption, including clinicians feeling they lack the time to learn new technologies, not feeling "tech-savvy" enough, and having valid concerns about the risks involved.16 Good practice involves addressing these barriers directly through targeted education, providing access to intuitive and well-designed tools, and clear guidance from professional bodies on safe and compliant use.

Perhaps the most profound long-term challenge is the risk of **professional deskilling**. The concern, voiced most clearly by the APA, is that over-reliance on AI for core professional tasks—such as performing a movement analysis or synthesizing information for clinical notes—could lead to an erosion of these fundamental skills over time.26 Good practice actively works to prevent this. The APA's advocacy for a "hybrid approach" is a key strategy: clinicians should regularly engage in manual assessments and documentation to maintain their skills, and they must treat AI outputs not as infallible truths but as suggestions to be critically evaluated against their own clinical judgment.26 The educational chatbot at Fontys University in the Netherlands offers another proactive model, using AI not to bypass clinical reasoning but to actively train and strengthen it in the next generation of professionals.41 Ultimately, good practice requires a culture of mindful, critical engagement with technology, where AI is leveraged as a powerful assistant but never as a substitute for professional expertise.

## Conclusion and Strategic Recommendations

The integration of artificial intelligence is irrevocably reshaping the practice of physiotherapy, transitioning from a futuristic concept to a set of practical tools that are already delivering value in clinical settings across the developed world. This analysis has demonstrated that "good practice" in AI is not defined by the sophistication of the technology alone, but by the thoughtfulness of its application, the robustness of its ethical governance, and its capacity to augment, rather than supplant, the essential role of the physiotherapist. The leading edge of innovation is characterized by a symbiotic relationship between human and machine, where AI handles the burdens of data processing and administrative repetition, freeing the clinician to focus on complex reasoning, empathetic communication, and the hands-on delivery of care.

From the systemic efficiency gains seen in the UK's NHS to the enhancement of the therapeutic alliance in Australia and the precision of AI-driven assessments in the US, a clear framework for responsible adoption emerges. This framework is built on the pillars of starting with low-risk applications, prioritizing patient safety and data privacy above all else, and actively fostering a culture of critical engagement and continuous learning to mitigate professional risks such as deskilling. The future trajectory points toward increasingly integrated and predictive AI, including the development of "digital twins" and advanced robotics.53 This evolution will only amplify the need for the strong professional governance and principled clinical practices identified in this report.

### A Framework for the Responsible Adoption of AI in Clinical Practice

Based on the synthesis of successful implementations and professional guidance, a core framework for the responsible adoption of AI in any physiotherapy practice can be summarized as follows:

1. **Start with Administrative Augmentation:** Begin integration with low-risk, high-reward applications like AI scribes or intelligent scheduling to build confidence and demonstrate immediate value in time savings and reduced administrative burden.
2. **Prioritize the Therapeutic Alliance:** Select and implement tools that enhance, rather than hinder, the clinician-patient relationship. Technology should remove distractions and facilitate deeper engagement.
3. **Ensure Rigorous Compliance:** Mandate the use of healthcare-specific, compliant AI platforms. Prohibit the use of consumer-grade tools for handling patient data. Establish clear protocols for data security, privacy, and, critically, for obtaining explicit informed consent from patients regarding the use of AI in their care.
4. **Maintain Human Oversight:** At all stages, ensure that a qualified physiotherapist retains ultimate accountability for clinical decisions. AI outputs should be treated as decision-support, subject to verification and validation by professional judgment.

### Priorities for Professional Bodies and Educators

To guide the profession effectively through this transition, national associations and educational institutions should prioritize the following strategic actions:

* **Develop Clear and Practical Guidelines:** All national physiotherapy associations should follow the lead of the CSP, APTA, and APA by developing and disseminating clear, AI-specific guidance. This should include practical advice on legal compliance (e.g., data privacy laws), ethical obligations (e.g., informed consent), and best practices for safe clinical use.
* **Promote and Standardize Digital Literacy:** AI and digital health competencies must be formally integrated into entry-level physiotherapy curricula. The educational model from Fontys University, which uses AI to actively teach clinical reasoning, serves as an excellent example.41 Furthermore, robust and accessible Continuing Professional Development (CPD) opportunities must be created to upskill the existing workforce.
* **Facilitate Access to Vetted Tools:** Professional bodies can play a crucial role in helping members navigate a crowded and confusing technology market. Initiatives like the APTA's Digital Health App Formulary, which provides an independent assessment of digital tools for safety and effectiveness, are invaluable and should be replicated.22

### Future Outlook: The Trajectory of AI in Global Physiotherapy

The current applications of AI, while impressive, represent only the initial phase of a deeper technological integration. The ongoing research into more advanced applications, such as the creation of patient "digital twins" for simulating treatment outcomes 53 and the use of intelligent robotic systems for rehabilitation 54, signals a future where AI will become a core component of diagnostics, prognostics, and the delivery of highly personalized care. This evolution will further elevate the importance of the physiotherapist's role as an expert clinical reasoner, an empathetic communicator, and the ultimate arbiter of a patient's care plan. The challenge and opportunity for the global physiotherapy profession is to continue to lead this transformation, ensuring that as machines become more intelligent, our practice becomes more human.

#### Works cited

1. Healthcare | AI Sweden, accessed on September 22, 2025, <https://www.ai.se/en/sector-initiatives/healthcare>
2. AI in healthcare: from promise to practice - Vrije Universiteit Amsterdam, accessed on September 22, 2025, <https://vu.nl/en/news/2025/ai-in-healthcare-from-promise-to-practice>
3. KNGF Physical Therapist Professional Profile, accessed on September 22, 2025, <https://www.kngf.nl/app/uploads/2024/07/kngf-physical-therapist-professional-profile_2021.pdf>
4. Physiotherapist education framework - World Physiotherapy, accessed on September 22, 2025, <https://world.physio/sites/default/files/2021-07/Physiotherapist-education-framework-FINAL.pdf>
5. Artificial intelligence and machine learning - The Chartered Society of Physiotherapy, accessed on September 22, 2025, <https://www.csp.org.uk/professional-clinical/digital-physiotherapy/artificial-intelligence-machine-learning>
6. Implementing AI in the clinic - Australian Physiotherapy Association, accessed on September 22, 2025, <https://australian.physio/inmotion/implementing-ai-clinic>
7. City of Helsinki AI Register, accessed on September 22, 2025, <https://ai.hel.fi/en/ai-register/>
8. Capio Artro Clinic, Stockholm, Sweden | Ramsay Santé EU, accessed on September 22, 2025, <https://www.ramsaysante.eu/group-group-innovation-partnership-hub-living-labs/capio-artro-clinic-stockholm-sweden>
9. Park North Physical Therapy: Physical Therapy Clinic Upper ..., accessed on September 22, 2025, <https://www.parknorthpt.com/>
10. 3 Ways Clinics Are Using AI to Personalize Physical Therapy - VerityXR, accessed on September 22, 2025, <https://verityxr.com/3-ways-clinics-are-using-ai-to-personalize-physical-therapy/>
11. The Future of Physical Therapy: How AI Tools are Shaping Patient Interactions and Clinic Operations | Simbo AI - Blogs, accessed on September 22, 2025, <https://www.simbo.ai/blog/the-future-of-physical-therapy-how-ai-tools-are-shaping-patient-interactions-and-clinic-operations-922214/>
12. Digital transformation in health and care | The Chartered Society of Physiotherapy, accessed on September 22, 2025, <https://www.csp.org.uk/blog/2022/07/digital-transformation-health-care>
13. Digital innovations - The Chartered Society of Physiotherapy, accessed on September 22, 2025, <https://www.csp.org.uk/professional-clinical/digital-physiotherapy/digital-innovations>
14. New AI in physio principles provide a 'guideline for the future' | The ..., accessed on September 22, 2025, <https://www.csp.org.uk/news/2025-03-31-new-ai-physio-principles-provide-guideline-future>
15. Ethical And Effective Integration of Artificial Intelligence | APTA, accessed on September 22, 2025, <https://www.apta.org/apta-and-you/leadership-and-governance/policies/ethical-and-effective-integration-of-artificial-intelligence-across-physical-therapist-practice-education-and-research>
16. Bridging the AI divide in physiotherapy - APA, accessed on September 22, 2025, <https://australian.physio/inmotion/bridging-ai-divide-physiotherapy>
17. Chartered Society of Physiotherapy - Wikipedia, accessed on September 22, 2025, <https://en.wikipedia.org/wiki/Chartered_Society_of_Physiotherapy>
18. Physiotherapists | The HCPC, accessed on September 22, 2025, <https://www.hcpc-uk.org/about-us/who-we-work-with/professional-bodies/physiotherapists/>
19. Physiotherapy Governing Bodies | Physio4Life, accessed on September 22, 2025, <https://www.physio4life.co.uk/the-governing-bodies-that-monitor-physiotherapy/>
20. About APTA, accessed on September 22, 2025, <https://www.apta.org/apta-and-you/about-us>
21. American Physical Therapy Association - Wikipedia, accessed on September 22, 2025, <https://en.wikipedia.org/wiki/American_Physical_Therapy_Association>
22. Digital Health in Practice - APTA, accessed on September 22, 2025, <https://www.apta.org/your-practice/practice-models-and-settings/digital-health-in-practice>
23. Value of Virtual Musculoskeletal Solutions - APTA, accessed on September 22, 2025, <https://www.apta.org/apta-and-you/news-publications/videos/2024/value-of-virtual-musculoskeletal-solutions>
24. Australian Physiotherapy Association - Healthdirect, accessed on September 22, 2025, <https://www.healthdirect.gov.au/partners/australian-physiotherapy-association>
25. Australian Physiotherapy Association, accessed on September 22, 2025, <https://world.physio/membership/australia>
26. Navigating the AI tide - APA, accessed on September 22, 2025, <https://australian.physio/inmotion/navigating-ai-tide>
27. Finnish Association of Physiotherapists - Suomen Fysioterapeutit, accessed on September 22, 2025, <https://www.suomenfysioterapeutit.fi/physiotherapy/>
28. ETHICAL GUIDELINES - Suomen Fysioterapeutit, accessed on September 22, 2025, <https://www.suomenfysioterapeutit.fi/wp-content/uploads/2025/03/Ethical_Guidelines_2024.pdf>
29. Swedish Association of Physiotherapists | Sveriges akademikers centralorganisation - Saco, accessed on September 22, 2025, <https://www.saco.se/en/worklife/our-unions/swedish-association-of-physiotherapists/>
30. About us - Fysioterapeuterna, accessed on September 22, 2025, <https://www.fysioterapeuterna.se/in-english/about-us/>
31. Usage and experience of digital health tools among physiotherapists in Sweden: A survey study - DiVA portal, accessed on September 22, 2025, <http://www.diva-portal.org/smash/get/diva2:1975193/FULLTEXT01.pdf>
32. Netherlands - IPTOP Physio, accessed on September 22, 2025, <https://www.iptop-physio.org/membership/iptop-current-member-countries-and-representatives/netherlands/>
33. Royal Dutch Society for Physiotherapy | Member Organisation Europe Region of World Physiotherapy, accessed on September 22, 2025, <https://www.erwcpt.eu/member-organisations/royal-dutch-society-for-physiotherapy>
34. KNGF Code of Conduct for Physical Therapists, accessed on September 22, 2025, <https://www.kngf.nl/app/uploads/2024/07/KNGF-Code-of-Conduct-for-Physical-Therapists-2023.pdf>
35. AI in healthcare: from promise to practice | Amsterdam UMC, accessed on September 22, 2025, <https://www.amsterdamumc.org/en/research/institutes/amsterdam-public-health/news/ai-in-healthcare-from-promise-to-practice.htm>
36. The core competences of a physiotherapist - Suomen Fysioterapeutit, accessed on September 22, 2025, <https://www.suomenfysioterapeutit.fi/wp-content/uploads/2018/04/CoreCompetencies.pdf>
37. Zorg op afstand | Kennisplatform Fysiotherapie, accessed on September 22, 2025, <https://www.kennisplatformfysiotherapie.nl/themas/zorg-op-afstand/>
38. UK's first AI-powered physio more than halves back pain waiting lists, accessed on September 22, 2025, <https://integratedcarejournal.com/uks-first-ai-powered-physio-more-than-halves-back-pain-waiting-lists/>
39. AI Advances Transform NHS Physiotherapy Services - AI Magazine, accessed on September 22, 2025, <https://aimagazine.com/news/how-the-nhs-embraces-ai-to-slash-back-pain-waiting-times>
40. Recharge Your Health - Nordic Clinic - Physiotherapy Clinic, accessed on September 22, 2025, <https://nordichealth.fi/us/>
41. AI-chatbot assisteert fysiotherapeut bij behandelproces - Fontys, accessed on September 22, 2025, <https://www.fontys.nl/nieuws/ai-chatbot-assisteert-fysiotherapeut-bij-behandelproces/>
42. AI physio clinic more than halves NHS back pain waiting list - Digital Health, accessed on September 22, 2025, <https://www.digitalhealth.net/2025/08/ai-physio-clinic-more-than-halves-nhs-back-pain-waiting-list/>
43. AI-powered physiotherapy clinic given thumbs-up by MSK patients who would have languished on NHS waiting lists - physioupdate, accessed on September 22, 2025, <https://physioupdate.co.uk/ai-powered-physiotherapy-clinic-given-thumbs-up-by-msk-patients-who-would-have-languished-on-nhs-waiting-lists/>
44. NHS Lothian gives patients access to AI physiotherapy in UK-first - East Region Innovation, accessed on September 22, 2025, <https://hises.edinburghbioquarter.com/nhs-lothian-gives-patients-access-to-ai-physiotherapy-in-uk-first/>
45. Flok Health, accessed on September 22, 2025, <https://flok.health/>
46. Best Physiotherapy Clinic Software in USA | Digital Rehab Solutions - VirtueLife, accessed on September 22, 2025, <https://virtuelife.ai/blog/physiotherapy-clinic-software-usa>
47. The Physio Experience Is Broken. CliniScribe AI Is Fixing It., accessed on September 22, 2025, <https://www.cliniscribe.com.au/post/the-physio-experience-is-broken-cliniscribe-ai-is-fixing-it>
48. CliniScribe AI: Home, accessed on September 22, 2025, <https://www.cliniscribe.com.au/>
49. Use Cases | Allied Health Physiotherapists - Heidi Health, accessed on September 22, 2025, <https://www.heidihealth.com/use-case/physio>
50. Fysio.ai | Fys'Optima, accessed on September 22, 2025, <https://www.fysoptima.nl/diensten/fysio-ai/>
51. AI in de fysiotherapie - Siri Adviesbureau, accessed on September 22, 2025, <https://siri.nl/ai-in-de-fysiotherapie/>
52. Fysio AI: de toekomst van intakegesprekken - Intramed, accessed on September 22, 2025, <https://www.intramed.nl/nieuws/fysio-ai/>
53. Applications of Artificial Intelligence-Based Patient Digital Twins in Decision Support in Rehabilitation and Physical Therapy - MDPI, accessed on September 22, 2025, <https://www.mdpi.com/2079-9292/13/24/4994>
54. Intelligent systems for rehabilitation and physiotherapy, accessed on September 22, 2025, <https://www.chalmers.se/en/current/news/e2-intelligent-systems-for-rehabilitation-and-physiotherapy/>