

Research Agenda for Physical Therapy From the American Physical Therapy Association



Purpose Statement

The purposes of the Research Agenda for Physical Therapy are to:

1. Promote research in physical therapy.
2. Stimulate study designs that advance movement of individuals with impairments, activity limitations, and participation restrictions.
3. Identify physical therapy research priorities critical to APTA initiatives.
4. Influence funding agencies' support for practice and research efforts.
5. Provide a framework on which APTA components and rehabilitation-focused organizations can build their research priorities.

Population Health Research

This type of investigation seeks to characterize, explain, and/or influence the levels and distributions of health within and across populations, such as among individuals and groups, as well as across time and generations. It includes health disparities, social determinants of health, global health, etc.

- Investigate the impact of physical therapy on population health and wellness outcomes across the lifespan.
- Examine the incidence, prevalence, and natural history of impairments of body functions and structures, activity limitations, and participation restrictions associated with health conditions managed by physical therapists.
- Measure and assess disparities in physical therapy outcomes.
- Explore disparities in access to physical therapist services and impact on patient outcomes.
- Examine the impact of social determinants of health on physical therapy outcomes.
- Develop and test the effectiveness and efficacy of interventions designed to reduce disparities among health conditions commonly managed by physical therapists.
- Develop strategies to promote adherence, sustainability, and successful outcomes for population-level mobility and physical activity interventions.
- Explore how the positive and negative stressors and challenges of care partners and significant others influence patient outcomes.
- Explore the characteristics of care partners and communities that positively influence patient activity, participation, and quality of life.
- Evaluate outcomes attributed to utilization of physical therapist services across different health care systems within the United States and abroad.
- Evaluate physical therapy practice models for different populations to optimize transitions across the lifespan in persons with disabilities, diseases, and conditions.
- Examine the impact of health prevention and promotion interventions that include physical therapist services on activity and participation of individuals.

Mechanistic Research

Mechanistic studies are designed to understand a biological or behavioral process, the pathophysiology of a disease, or the mechanism of action of an intervention.

- Investigate mechanisms of age-related changes in cellular biology and physiology and their impact on physical therapist interventions.
- Explore peripheral and central nervous system pathways and mechanisms contributing to acute and chronic pain.
- Understand the genetic, molecular, and cellular mechanisms that make aging a driver of common chronic conditions (e.g., sarcopenia, arthritis, frailty, and stroke) to prevent or slow the progression of age-related activity limitations and participation restrictions.
- Examine the effect of physical therapy services (including frequency, duration, intensity, and timing) on cellular and physiological adaptation in clinical populations.
- Examine mechanisms by which physical therapist interventions modify disease and age-related or injury-induced changes in cellular structure and physiology, and their impact on physical and cognitive function.
- Study short- and long-term neuroplastic changes that occur in response to physical therapist interventions.
- Identify and study treatment modifiers and/or biomarkers (e.g., cellular, molecular, genetic, epigenetic, immunologic, metabolic, and physiological) that influence responses to physical therapist interventions.
- Determine the mechanisms by which regenerative rehabilitation (e.g., stem cell treatments) impacts physical therapist interventions to optimize patient outcomes.
- Explore treatment modifiers and/or biomarkers to guide personalized rehabilitation approaches for optimizing patient outcomes.

Clinical Research

This type of research investigates the safety, effectiveness, and efficacy of diagnosis and diagnostic procedures, interventions and protocols, devices, and technology intended for human use.

- Evaluate factors (e.g., genetic, cellular, physiological, psychological, and socio-behavioral) that influence impairments, activity limitations, and participation restrictions across the lifespan and in chronic conditions.
- Identify risk factors and protective factors that influence health status and impact response to rehabilitation across various health conditions.
- Explore the effects of using epigenetics and epigenomics on interventions, prognosis, outcomes, and long-term health in acute and chronic conditions relevant to physical therapy.
- Establish methods for effectively improving patient self-efficacy to optimize physical therapy outcomes.
- Assess the impact of sleep health and nutrition on recovery from injury or illness, in response to physical therapist interventions, and on the experience of pain in chronic conditions treated by physical therapy.
- Identify contextual factors (e.g., individual and environmental) that affect prognosis.
- Identify tests and measures with robust psychometric properties for use in research and clinical practice.
- Examine the effects of physical therapy services (including frequency, duration, intensity, and timing) to address a multitude of conditions, disabilities, injuries, or diseases.
- Explore use and training of patient-centered care practices (e.g., reflective conversations, understanding individual preferences, and shared goal and decision making) in physical therapy.
- Develop patient care temporal frameworks for physical therapist management and transitions across various diagnoses and disease timelines (e.g., pre-clinical/high risk, acute, sub-acute, and chronic).
- Determine predictors of recovery of physical function associated with medical or surgical treatment.

- Understand the diverse causes and develop physical therapist management plans to reduce pain and negative sequelae that limit activity and restrict participation.
- Develop and/or determine the effects, usability, and affordability of novel assistive technologies (e.g., wearable technology and virtual reality) on physical function and other patient outcomes.
- Examine the effectiveness of digital health (e.g., mobile health, health IT, remote monitoring such as wearables, telehealth, and telemedicine) for physical therapist evaluation and intervention, including increasing patient engagement and access.
- Explore the role and value of artificial intelligence (e.g., machine learning, natural language processing, and deep learning) in improving and customizing patient care.
- Develop and evaluate innovative study methodologies (e.g., pragmatic and adaptive) to explore mechanisms and encourage rapid translation of evidence-based physical therapist interventions across diverse clinical populations.
- Evaluate methodological approaches to identify and reduce unwarranted variation in practice.
- Develop and enhance implementation science methods targeted to physical therapy practice
- Explore dissemination and implementation strategies for faster translation of evidence-based approaches.
- Evaluate the impact of clinical practice guideline implementation on the patient care experience, population health, and economic outcomes (e.g., cost and quality of life).

Education and Professional Development Research

This type of investigation examines education and learning processes and the human attributes, interactions, organizations, and institutions that shape educational outcomes. This may include evidence to support current and future education models across the learning continuum from pre-entry level to retirement.

(Multiple research items listed below refer to the Jensen, et al. article “National Study of Excellence and Innovation in Physical Therapist Education: Part 2 — A Call to Reform” published in the September 2017 issue of PTJ: Journal of Physical Therapy and Rehabilitation.)

- Explore theories, frameworks, and models of education (e.g., admissions processes, curricular standards, and program performance) that foster excellence in physical therapy education, clinical performance, and behavior.
- Explore admissions and program-level practices that could enhance or detract from recruitment and graduation of diverse candidates in PT and PTA education.
- Develop and evaluate essential competencies necessary for excellence in patient care.
- Investigate educational approaches that promote learner development and life-long learning to optimize physical therapist practice.
- Investigate uses of technology that enhance learning and the learner experience.
- Assess clinical education models for physical therapy education that foster clinical reasoning and patient-centered care.
- Evaluate education models that maximize training for the health care environment of the future and improve the debt burden for PT and PTA students.

Health Services Research

This type of research investigates how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and total cost of health care, and ultimately health and well-being. Its research domains are individuals, care partners and significant others, organizations, institutions, communities, and populations.

- Determine the role and value of physical therapists as movement specialists at the primary entry point of care and identify the associated privileges (e.g., direct access and prescriptive authority) on patient outcomes.
- Examine access and payment barriers to physical therapy as a primary care service.
- Evaluate physical therapy delivered via different care models (e.g., concurrent treatments, group therapy, and one-on-one) on clinical outcomes and cost-effectiveness.
- Examine value (e.g., cost-effectiveness, impact on longer-term clinical outcomes, and quality of life) of physical therapy compared with non-rehabilitation treatments.
- Explore the impact of various payment models and insurance payment policies on access to care, patient and clinical outcomes, and downstream costs and utilization.
- Examine costs and benefits of various technologies to improve health care delivery and decrease administrative burden.
- Examine the impact of physical therapist services on downstream health care utilization.
- Examine effective ways to organize, finance, and deliver high-quality physical therapy care in underserved rural and urban population settings.
- Explore methods for increasing access to physical therapist services within different socioeconomic and racial groups.
- Explore how the attitudes and beliefs of patients, care partners, and significant others about physical therapy affect patient utilization, participation, and outcomes.
- Evaluate what types of marketing and outreach impact consumer choice to engage in physical therapy (e.g., social media, wellness fairs, and public relations campaigns).

Workforce Research

This type of research investigates the health professionals labor force, including examination of the inflow and outflow of workforce, provider demographics and characteristics, organizational structure and practice environment, geographical distribution of providers, and utilization of services.

- Identify facilitators and barriers to improve workforce diversity.
- Examine workforce distribution by practice settings and geographic locations (e.g., urban, rural, and socioeconomically disadvantaged).
- Evaluate the impact and key factors contributing to clinician burnout in the physical therapy profession across practice settings and geographical locations.
- Examine the impact of administrative burden and productivity requirements on patient outcomes, total cost of care, and physical therapy providers' job satisfaction.
- Examine the impact of interprofessional collaboration on patient outcomes, total cost of care and physical therapy providers' job satisfaction.
- Explore staffing patterns (e.g., PT-to-PTA ratio and use of support personnel) and physical therapy team (PT-PTA) dynamics on physical therapy outcomes and provider well-being.
- Evaluate workforce retention across practice and location settings.
- Explore the components and impact of financial literacy and debt burden on the physical therapy workforce.
- Explore the value and benefits (e.g., job satisfaction, salary, and patient outcomes) of clinical specialization, residencies, fellowships, and post-professional doctorates.
- Examine barriers to pursuing and obtaining post-professional doctorates to meet academic faculty demands.
- Develop and evaluate mentoring and training models that maximize productivity and diversity in researchers and clinical scientists at all career stages.