

# Preoperative Exercise: Benefits & Common Beliefs

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December 4, 2025

## RECOMMENDED CITATION

mohammed loot (2025). *Preoperative Exercise: Benefits & Common Beliefs*. Psychepedia.  
Retrieved from <https://psychepedia.arabpsychology.com/?p=29061>

## Introduction to Beliefs About Preoperative Exercise

The field of surgical preparation has increasingly emphasized the concept of prehabilitation, defined as the optimization of a patient's functional capacity before major surgery. While the physiological benefits of preoperative exercise regimens are well-documented in reducing postoperative complications and accelerating recovery times, the successful implementation of these programs hinges critically upon the patient's underlying **belief systems**. These beliefs encompass a complex interplay of perceived self-efficacy, anticipated outcomes, subjective norms, and perceived barriers, all of which dictate adherence to the prescribed exercise protocol. Understanding and effectively managing these psychological constructs is paramount, as even the most scientifically robust prehabilitation plan will fail if the patient does not believe in its efficacy or their own ability to execute it, transforming a clinical necessity into a psychological hurdle that requires expert navigation and motivational support.

Beliefs about preoperative exercise are not monolithic; they are highly individualized and fluctuate based on prior experiences with exercise, the perceived severity of the upcoming surgery, and the quality of communication received from the healthcare team. A patient's existing health literacy and their locus of control--whether internal or external--significantly influence their engagement. For instance, a patient with a strong internal locus of control is more likely to believe that their personal efforts (e.g., consistent exercise) will directly influence their recovery outcome, leading to higher commitment. Conversely, patients who view outcomes as being determined primarily by fate or the skill of the surgeon may discount the value of their own preparatory efforts, perceiving the exercise regimen as superfluous or unduly burdensome. Therefore, addressing these core psychological orientations is a foundational step in any successful prehabilitation strategy, moving beyond simply prescribing activity to truly fostering psychological readiness.

This encyclopedia entry explores the psychological dimensions of preoperative exercise adherence, analyzing the theoretical models used to predict behavioral intent, examining the specific barriers and facilitators patients encounter, and detailing strategies clinicians can employ to positively modify these crucial beliefs. The ultimate goal of this investigation is to highlight that preoperative exercise is not merely a physical intervention but a multifaceted psychological endeavor requiring the careful alignment of patient expectations, perceived capabilities, and the medical team's instructional guidance. Effective communication, tailored to address specific anxieties and misconceptions about physical activity in the context of impending surgery, is the key mechanism for transforming skepticism or apathy into proactive engagement and robust adherence, thereby maximizing both the physical and psychological benefits of prehabilitation.

## Theoretical Frameworks Governing Adherence

To systematically analyze beliefs about preoperative exercise, researchers frequently employ

established psychological models, primarily the **Health Belief Model (HBM)** and the **Theory of Planned Behavior (TPB)**. The HBM posits that health behavior is determined by the patient's perception of four key factors related to the threat of illness and the efficacy of the preventive action. In the context of prehabilitation, this translates to the patient's perceived susceptibility to complications (e.g., believing they are personally at high risk of prolonged hospitalization), the perceived severity of those complications, the perceived benefits of the exercise (e.g., believing exercise will significantly reduce their recovery time), and the perceived barriers to action (e.g., believing the exercise is too painful or time-consuming). A strong belief in the overall benefit, coupled with manageable perceived barriers, is essential for translating intent into consistent action, confirming the model's utility in predicting adherence.

The Theory of Planned Behavior (TPB), conversely, focuses heavily on the construct of behavioral intention, which is predicted by attitudes toward the behavior, subjective norms, and perceived behavioral control. Attitude refers to the patient's overall positive or negative evaluation of performing preoperative exercise; if they view it as helpful and enjoyable, their intention is stronger. **Subjective norms** are particularly crucial in the medical setting, representing the perceived social pressure to engage in the behavior--what the patient believes important others (spouse, children, surgeon) think they should do. If the patient believes their surgical team strongly endorses the exercise, adherence is significantly bolstered. Finally, perceived behavioral control relates directly to **self-efficacy**, reflecting the patient's confidence in their ability to successfully perform the exercise routine despite obstacles like pain or fatigue, a factor often found to be the strongest predictor of actual exercise participation.

Furthermore, the Transtheoretical Model (TTM), or Stages of Change Model, provides a dynamic perspective, recognizing that patients move through distinct stages--precontemplation, contemplation, preparation, action, and maintenance--in adopting a new health behavior like preoperative exercise. A patient in the precontemplation stage may not even recognize the value of exercise preparation, requiring foundational educational interventions to raise awareness. Conversely, a patient in the preparation stage already possesses a positive belief system and requires specific planning and logistical support. Clinicians must tailor their motivational interviewing and educational materials to the patient's current stage, ensuring that interventions designed to modify beliefs are timely and appropriate. Attempting to enforce rigorous action on a patient still in the contemplation phase often results in resistance and the reinforcement of negative beliefs about the program's feasibility, underscoring the necessity of staged psychological support.

## Patient Perception of Risk and Benefit

A patient's willingness to engage in preoperative exercise is fundamentally driven by their subjective cost-benefit analysis, which is often highly susceptible to psychological biases. The perceived benefit is typically framed around the promise of a quicker recovery, reduced pain, and a

lower risk of serious complications such as pneumonia or deep vein thrombosis. However, these benefits are often abstract and future-oriented, making them less compelling than immediate, tangible perceived costs. These costs frequently include the perceived risk of injury during exercise, the immediate discomfort of physical exertion when feeling unwell, and the time commitment required, which may conflict with other necessary preparations for surgery. The patient must possess a strong, positive belief that the future gain significantly outweighs the current effort and discomfort, necessitating clear, personalized communication about expected outcomes.

The perception of risk related to exercise itself is a significant psychological barrier, particularly among sedentary or frail patients who may harbor deep-seated fears about physical exertion. They may believe that pushing their body before surgery will deplete their reserves, increase fatigue, or even exacerbate the underlying condition necessitating the operation. Addressing this requires careful deconstruction of the misconception that all exercise is high-intensity or risky. Clinicians must emphasize that prehabilitation often involves low-impact, tailored activities--such as walking, specific breathing exercises, or light resistance training--designed to be safe and manageable within the patient's current physical limitations. Validating the patient's fear while providing concrete evidence of the safety profile is essential for replacing anxiety-driven beliefs with facts-based confidence.

Furthermore, the concept of **optimism bias** plays a complex role. Some patients may exhibit unrealistic optimism, believing that because they are receiving care from a highly skilled surgical team, they are inherently protected from complications regardless of their own preparatory actions. This belief minimizes the perceived severity and susceptibility components of the HBM, leading to poor adherence. Conversely, patients with high preoperative anxiety may catastrophize, believing that no amount of preparation will prevent a negative outcome, leading to feelings of learned helplessness and resignation. Effective belief modification strategies must recognize these cognitive distortions, utilizing personalized risk assessments and outcome data to ground expectations in reality, ensuring the patient understands that prehabilitation is a crucial, modifiable factor within the surgical outcome equation.

## The Influence of Healthcare Providers on Beliefs

The credibility and consistency of the healthcare providers are arguably the most powerful external influences on a patient's beliefs regarding preoperative exercise. When the recommendation for exercise comes directly from the surgeon or anesthesiologist--figures perceived as having ultimate authority over the surgical outcome--the patient is far more likely to internalize the importance of the regimen. However, this positive influence can be quickly eroded if the messaging is inconsistent across the care team. If the surgeon emphasizes exercise but the nurse or primary care physician expresses skepticism or provides conflicting instructions, the patient's belief in the program's necessity and practical feasibility is undermined, leading to confusion and lower

commitment.

The manner in which the information is delivered is as important as the content itself. A formal, prescriptive instruction delivered without empathy or personalization tends to reinforce an external locus of control, positioning the patient as a passive recipient of orders rather than an active participant in their recovery. Conversely, utilizing techniques derived from **motivational interviewing**--such as expressing empathy, developing discrepancy between current behavior and goals, and supporting self-efficacy--fosters a collaborative relationship. When the provider takes time to understand the patient's existing beliefs, acknowledging their concerns about pain or fatigue, and framing the exercise as a personalized tool for empowerment, the patient's intrinsic motivation and belief in their own capability (self-efficacy) soar.

Crucially, healthcare providers shape beliefs by providing tangible, understandable explanations of the physiological mechanisms at work. Rather than simply stating, "You must exercise to recover faster," effective communication links the behavior directly to the outcome: "By strengthening your leg muscles now, we are improving your circulation, which dramatically reduces your risk of blood clots after surgery, allowing you to get out of bed sooner." This specificity transforms the exercise from a vague chore into a purposeful, therapeutic intervention. Furthermore, the provision of practical support, such as connecting the patient with a physical therapist who can supervise the initial sessions and provide reassurance, reinforces the belief that the program is manageable and professionally supported, countering the perception of isolation and burden.

### Barriers to Adoption and Negative Belief Reinforcement

Despite recognizing the potential benefits, patients often face substantial barriers that reinforce negative beliefs about the feasibility of preoperative exercise. One of the most significant internal barriers is the presence of physical symptoms related to the underlying disease, such as chronic pain, shortness of breath, or profound fatigue. These symptoms can lead to the belief that exercise is counterproductive or harmful, activating a powerful negative feedback loop: the patient feels pain, avoids exercise, interprets the avoidance as necessary self-protection, and consequently reinforces the belief that they are too frail or sick to participate. Clinicians must actively break this cycle by offering highly modified, pain-contingent exercise plans and clearly distinguishing between safe discomfort and harmful pain.

External barriers frequently involve logistical and socioeconomic challenges that undermine adherence. These include lack of access to suitable exercise facilities, prohibitive travel time or cost, and the inability to afford specialized equipment or professional coaching. For patients facing complex medical and social challenges, the belief that they "do not have time" or that the program is "only for wealthy people" becomes deeply entrenched. Addressing these beliefs requires systems-level interventions, such as offering home-based exercise protocols, providing remote

monitoring tools, or ensuring that exercise instruction is integrated seamlessly into existing clinic appointments, thereby reducing the perceived logistical burden and confirming that the program is accessible to all demographics, regardless of economic status.

Emotional barriers, particularly high levels of preoperative anxiety and depression, also act as powerful deterrents. Anxiety can manifest as hyper-focus on bodily sensations, leading the patient to misinterpret normal exercise-related muscle soreness as a sign of impending medical catastrophe, thus reinforcing the belief that the activity is dangerous. Depression often leads to apathy, low motivation, and a diminished belief in one's capacity to influence future outcomes. In these cases, purely didactic education about the benefits of exercise is insufficient. The intervention must be integrated with psychological support, acknowledging that the patient's mental state fundamentally dictates their belief in their ability to perform and sustain the exercise regimen, requiring simultaneous treatment of the emotional distress and the physical preparation.

## Facilitators and Motivational Factors

Facilitators are elements that strengthen the patient's positive beliefs and enhance their motivation for preoperative exercise. One of the most potent facilitators is the establishment of **clear, achievable short-term goals**. Rather than focusing solely on the distant surgical date, success is reinforced when patients meet small, tangible milestones, such as walking for five additional minutes or completing a set of repetitions without excessive fatigue. Achieving these micro-successes directly boosts self-efficacy, transforming the abstract belief in "faster recovery" into a concrete, immediate sense of accomplishment and control. This positive reinforcement loop is critical for sustained engagement throughout the prehabilitation period.

Social support acts as a crucial facilitator by reinforcing positive subjective norms. When family members, friends, or caregivers actively participate in the exercise routine, provide logistical support (e.g., transportation to appointments), or offer verbal encouragement, the patient's belief in the importance and viability of the program is significantly strengthened. Group-based prehabilitation programs, where patients preparing for similar surgeries exercise together, capitalize on this effect by creating a sense of shared experience and mutual accountability. Seeing others successfully manage the routine helps to normalize the effort and directly counters beliefs related to isolation or unique frailty, establishing a powerful normative expectation for participation.

Furthermore, the use of technology, such as wearable fitness trackers or mobile applications, can facilitate adherence by providing immediate, objective feedback. When patients can visually track their progress--seeing their heart rate improve or their step count increase--it provides concrete evidence that their efforts are yielding results. This objective data serves as a powerful counterpoint to subjective feelings of fatigue or low motivation, reinforcing the belief that the

exercise is effective and worthwhile. Personalization, where the exercise program is tailored not only to physical capacity but also to lifestyle preferences and personal motivators (e.g., framing exercise as necessary preparation to play with grandchildren sooner), ensures that the patient views the regimen as relevant and personally valuable, maximizing intrinsic motivational beliefs.

## Measuring and Modifying Beliefs

Effective clinical practice necessitates systematic methods for measuring and modifying beliefs about preoperative exercise. Measurement typically involves validated psychological instruments, often questionnaires based on the HBM or TPB, designed to quantify a patient's perceived self-efficacy, benefits, barriers, and subjective norms regarding physical activity. Qualitative interviews are also invaluable, allowing clinicians to uncover deep-seated fears, cultural biases, or misconceptions that standardized scales might miss, providing the necessary context for targeted interventions. Accurate measurement allows the healthcare team to identify specific psychological deficits--for example, a patient with high perceived benefit but critically low self-efficacy--and tailor the intervention accordingly.

Modification strategies must be multifaceted and tailored to the identified belief deficits. For patients struggling with low self-efficacy, the focus should be on **mastery experiences**. This involves breaking down the exercise regimen into very small, easily accomplished steps, ensuring the patient experiences success early and often. Providers should use verbal persuasion, highlighting the patient's past successes and expressing genuine confidence in their ability to meet the current challenge. For patients struggling with high perceived barriers, cognitive restructuring techniques are employed to challenge and reframe negative thoughts, such as changing the belief "Exercise will exhaust me" to "Exercise will build my stamina gradually and safely."

Advanced modification techniques often involve structured psychoeducational interventions delivered through multimedia formats, which can reach a broad audience while ensuring message consistency. These materials should utilize powerful testimonials from successful surgical patients who adhered to prehabilitation, serving as vicarious learning models that positively influence subjective norms and perceived control. Ultimately, the modification of beliefs is an iterative process requiring ongoing assessment and adjustment. It moves beyond simple instruction to become a therapeutic alliance, where the clinician acts as a facilitator, guiding the patient to internalize the belief that they possess the agency and capacity to positively influence their own surgical outcome through proactive physical engagement.

## Conclusion and Future Directions

Beliefs about preoperative exercise represent a critical psychological determinant of adherence and, subsequently, of surgical outcomes. The transition from being a passive recipient of medical

treatment to an active participant in one's preparation requires a fundamental shift in the patient's mindset, driven by robust self-efficacy, positive outcome expectations, and supportive subjective norms. Successful prehabilitation programs must therefore integrate high-quality physical instruction with sophisticated psychological strategies rooted in validated behavioral science models like the HBM and TPB. Ignoring the patient's belief system renders even the best physiological prescription ineffective, confirming that mind and body optimization are inextricably linked in the perioperative journey.

Future research must focus on developing and validating highly personalized, technology-driven interventions capable of measuring and modifying beliefs in real-time. This includes leveraging artificial intelligence and machine learning to predict which patients are most likely to face specific psychological barriers, allowing for pre-emptive, tailored motivational support. Furthermore, there is a need for greater exploration into the beliefs of diverse and marginalized populations, ensuring that prehabilitation programs are culturally sensitive and logistically equitable, thereby maximizing the reach and impact of preoperative exercise across all segments of the population.

In conclusion, the efficacy of preoperative exercise hinges not just on the prescription of physical activity, but on the patient's firm, internalized belief in its value and their own capacity to execute it. By treating belief modification as a core component of surgical preparation, healthcare providers can empower patients, transforming anxiety and skepticism into proactive engagement, ultimately leading to superior clinical outcomes and a more resilient recovery trajectory. This psychological readiness is the silent, yet essential, foundation upon which successful surgical preparation is built.