

THE ROLE OF KINESIOTHERAPY IN COMBATING OBESITY AND SEDENTARY LIFESTYLES IN AMERICAN SOCIETY

Viktoryia Vasiltsova

Physical Therapist, Ergotherapist, 3532 Annette st LA CA 90065, USA
e-mail: viktoryia_vasiltsova@ukr.net, orcid.org/0009-0000-7954-7057

Summary

This research confirms the pivotal role of kinesiotherapy in combating obesity and sedentary lifestyles and provides a foundational framework for future interventions and studies in this field. It underscores the importance of an integrated approach that combines physical therapy with lifestyle changes, paving the way for healthier and more active communities. The aim of this research is to gather and group the main methods of kinesiotherapy that are used to combat obesity and the problems associated with a sedentary lifestyle. This research underlines the efficacy of kinesiotherapy in combating obesity and sedentary lifestyles, highlighting various forms like Morning Hygiene Gymnastics (MHG) and Therapeutic Gymnastics (TG). MHG, ideal for starting the day with increased energy, focuses on general wellness, while TG is tailored to reduce body fat and improve cardiovascular health. Individualized exercises are emphasized for their role in addressing specific obesity and sedentarism needs. Additionally, therapeutic walking and aquatic exercises stand out for their low-impact, high-calorie-burn benefits, essential in obesity management. The study also stresses the importance of systematic, regular, and progressive exercise routines that are accessible and tailored to individual needs. By adhering to these principles, kinesiotherapy serves as a versatile and effective tool in promoting physical activity and countering the challenges of obesity and a sedentary lifestyle.

Key words: kinesiotherapy, obesity management, sedentary lifestyle, therapeutic exercises, individualized exercise programs.

DOI <https://doi.org/10.23856/6123>

1. Introduction

In contemporary American society, the twin challenges of obesity and sedentary lifestyles loom large, casting a shadow over public health. These pervasive issues are major contributors to an array of health complications, including a spectrum of chronic physical diseases and profound mental health disorders. The rising tide of these conditions underscores an urgent need for effective, accessible, and sustainable health interventions.

While policy measures at various governmental levels are pivotal, the onus of maintaining personal health ultimately rests with the individual. In cases where obesity and inactivity cross the threshold into medical concerns, the role of rehabilitation specialists, particularly in the field of kinesiotherapy, becomes paramount. Kinesiotherapy, which lies at the intersection of movement science and therapeutic exercise, is increasingly recognized as a vital weapon in this ongoing battle.

This research delves deep into the capabilities of kinesiotherapy as an instrumental tool to counteract obesity and sedentarism across the diverse landscape of the United States. It is an exploration into how custom-fit exercise programs, grounded in the tenets of kinesiology, can do more than just facilitate weight loss; they can be the catalyst for a seismic shift towards more active, healthier living.

By scrutinizing the role of kinesiotherapy, this research contributes to a growing body of knowledge on non-pharmacological strategies in public health. It draws on a rich tapestry of scientific literature, presenting an array of rehabilitation approaches for individuals grappling with obesity, utilizing diverse kinesiotherapeutic exercises. This research not only aims to enrich the academic discourse but also seeks to provide practical, evidence-based insights for healthcare professionals, decision-makers, and individuals alike, charting a course towards more holistic, inclusive, and efficacious health strategies in American society.

2. Main part

The aim of this research is to gather and group the main methods of kinesiotherapy that are used to combat obesity and the problems associated with a sedentary lifestyle. To achieve this goal, the following tasks will be undertaken:

- consider the problem of obesity and a sedentary lifestyle in the USA, analyzing the extent and impact of these issues in American society.
- study the scientific literature on this topic to identify the main methods of combating this problem, reviewing various research findings and expert opinions in the field of kinesiotherapy.
- investigate the primary approaches to combat obesity, examining different therapeutic exercises, lifestyle adjustments, and preventive strategies.
- systematize a set of exercises that are suitable for fighting obesity and sedentary living, creating a comprehensive compilation of effective kinesiotherapy practices.

3. Research results

Obesity and a sedentary lifestyle are significant health concerns in the United States, with roots tracing back several decades. The problem began to escalate in the late 20th century, largely due to changes in lifestyle and food consumption patterns. Increased reliance on fast food, high-calorie diets, and a shift towards more sedentary jobs and recreational activities have all contributed to this growing issue (*Chaput & Tremblay, 2009*).

Obesity and sedentary lifestyles affect a broad spectrum of the population, but certain groups are more susceptible. In the United States, obesity rates vary significantly by age. For children, 13.9% of those aged 2-4 are considered obese, and nearly 1 in 8 preschoolers are obese. Among high school students, 14.8% are obese. This problem is not limited to youth; obesity affects adults as well, with 42.4% of the adult population being obese. This rate has increased from 30.5% in 1999, and predictions suggest that over 50% of adults might be obese in the next 10 years.

Statistically, lower-income communities and certain ethnic groups, such as African Americans and Hispanics, show higher rates of obesity.

This disparity is often attributed to socioeconomic factors that limit access to healthy food options and safe environments for physical activity. Additionally, children and adolescents are increasingly affected, leading to long-term health implications.

In turn, a sedentary lifestyle, characterized by prolonged periods of sitting and minimal physical activity, poses several health risks. It can lead to:

- *weight gain and obesity*. Sedentary behavior often leads to weight gain due to a lower rate of calorie burning. Over time, this can contribute to obesity, which is a risk factor for numerous health conditions;

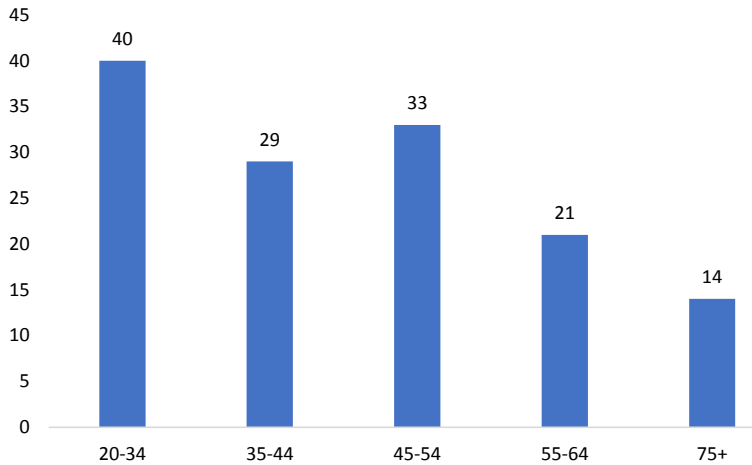


Fig. 1. Obesity in the US population by age (The Barbecue Lab; 2023)

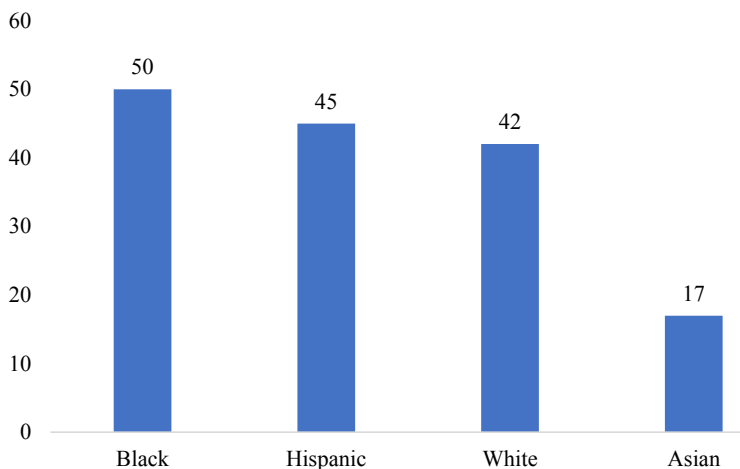


Fig. 2. Obesity in the United States by race (The Barbecue Lab; 2023)

- *increased risk of cardiovascular diseases.* Lack of physical activity is associated with an increased risk of heart diseases like coronary artery disease, heart attack, and stroke;
- *musculoskeletal problems.* Prolonged sitting can cause back pain and deteriorate posture. It also weakens the muscles, particularly in the lower body, and can lead to musculoskeletal disorders;
- *metabolic issues.* A sedentary lifestyle can lead to metabolic syndrome, characterized by a cluster of conditions like increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol levels;

- *mental health concerns.* Physical inactivity can negatively impact mental health, leading to an increased risk of depression, anxiety, and decreased emotional well-being;
- *increased risk of type 2 diabetes.* Sedentarism is linked with a higher risk of developing type 2 diabetes due to its association with obesity, insulin resistance, and glucose intolerance;
- *poor circulation/ sitting for long periods can lead to poor circulation, especially in the legs, increasing the risk of thrombosis;*
- *decreased life expectancy.* Studies suggest that a sedentary lifestyle can shorten life expectancy due to the increased risk of various chronic diseases.

The issues of obesity and a sedentary lifestyle are interrelated, and to a large extent, addressing these problems requires similar solutions – primarily, physical activity.

Recognizing the escalating crisis of obesity and sedentary lifestyles, the government has embarked on implementing various countermeasures. These initiatives aim to tackle and mitigate the growing health concerns associated with these issues (Tinning, 2014). Let's explore these strategies in more detail.

- *Public awareness campaigns.* The U.S. government has launched various campaigns to raise awareness about the risks of obesity and the importance of physical activity. These campaigns aim to educate the public on healthy eating habits and the benefits of regular exercise.
- *Nutritional guidelines.* Federal agencies have developed and regularly update nutritional guidelines to help Americans make healthier food choices. These guidelines are used to shape school lunch programs and inform public health policies.
- *School-based programs.* The government has implemented programs in schools to promote physical activity and healthy eating among children. This includes revising school lunch menus and incorporating more physical education into the curriculum.
- *Support for physical activity.* Efforts are made to create and maintain public spaces like parks and recreational facilities that encourage physical activity. There are also initiatives to improve urban planning to make cities more walkable and bike-friendly.
- *Healthcare interventions.* The healthcare system plays a crucial role in managing obesity. This includes screening, counseling, and providing resources for weight management and lifestyle changes (Kletskova & Rudenko, 2023).

Despite these efforts, tackling obesity and sedentary lifestyles remains a complex challenge due to factors like food industry lobbying, cultural preferences, and socioeconomic barriers. Future strategies will need to address these multifaceted issues through a combination of policy, community engagement, and individualized healthcare approaches. There's a growing recognition of the need for more comprehensive and inclusive strategies that consider the diverse needs and circumstances of the American population.

While the government continues to search for effective ways to prevent obesity, the field of medicine has already gathered substantial evidence supporting the effectiveness of therapeutic physical activity, also known as kinesiotherapy. *Kinesiotherapy*, a scientifically-based exercise program, is designed to improve physical strength, endurance, flexibility, and motor skills. It's particularly beneficial in treating and managing obesity and related health issues (Dunn, 2009). This approach focuses on customized exercise routines that not only aid in weight reduction but also enhance overall physical health, offering a proactive solution in the battle against obesity-related conditions.

In the United States, there are numerous centers and professionals specializing in kinesiotherapy. These centers are spread across various states, with the highest concentrations found in California (61 centers), Texas (56), Virginia (50), Florida (47), and Illinois (42). Other states

like Ohio, New York, Alabama, Pennsylvania, and Mississippi also have notable numbers of kinesiotherapy centers and practitioners (*SingleCare Team, 2023*).

Kinesiotherapy, a pivotal approach in addressing obesity and sedentary lifestyles, is comprehensively explored in various scientific studies. These studies delve into different aspects of obesity, ranging from psychological factors to physical activity patterns and broader socio-cultural influences. For instance, the work by Chaput and Tremblay (2009) reevaluates the concept of sedentariness in obesity, suggesting a need for a more nuanced understanding. Dunn (2009) looks at the evolving role of kinesiology in the face of changing health landscapes. Kim and Welk (2015) analyze the lifestyles leading to sedentary behavior. Kletskova and Rudenko (2023) focus on motivational factors in the rehabilitation of obese women. Matthews et al. (2021) discuss sedentary behaviors in U.S. adults. Shephard's 2018 book offers a kinesiology perspective on obesity. Tinning (2014) examines the obesity crisis from a kinesiological and cultural perspective. Vasileva and Marchenkova (2022) explore kinesiotherapy's impact on metabolic aspects in sarcopenic obesity. These diverse sources collectively underscore the multifaceted nature of obesity and the significant role kinesiotherapy can play in its management and prevention.

Within kinesiotherapy, various forms have been identified as effective in combating obesity and sedentary lifestyles:

- Morning hygiene gymnastics (MHG). Primarily focused on general wellness, MHG is effective for starting the day with increased energy and improved metabolism.
- Therapeutic gymnastics (TG). Particularly beneficial for obesity, TG involves exercises tailored to reduce body fat and improve cardiovascular health.
- Individual tasks. These are customized exercises, crucial for addressing specific needs in obesity and sedentary lifestyles.
- Other forms. These include therapeutic walking, correction methods, terrain therapy, walking tours, near tourism, aquatic exercises (hydrokinesiotherapy), health running, autogenic training, various sports-related exercises, and active or sports games. Aquatic exercises and therapeutic walking are particularly effective for obesity due to their low-impact, high-calorie-burn nature. For sedentary lifestyles, activities like active games and sports-related exercises are beneficial as they encourage more movement and can be easily integrated into daily life.

Morning hygienic gymnastics, a self-administered routine suitable for home conditions that primes the body for active work. This routine involves simple exercises affecting different muscle groups and internal organs, considering one's health status, physical development, and occupational workload. These exercises are particularly vital in a society grappling with sedentary habits and rising obesity rates (*Kim & Welk, 2015*).

In the context of obesity, static exercises that cause intense strain and breath holding are not recommended, aligning with the need for safe and sustainable physical activity for individuals with varying fitness levels. Each session, lasting between 10-30 minutes, employs a calm tempo with gradually increasing amplitude, incorporating no more than 10-15 exercises. This approach is essential in gradually introducing the body to physical activity, especially for individuals who lead predominantly sedentary lifestyles.

Therapeutic gymnastics, a core aspect of kinesiotherapy, plays a crucial role in the functional recovery of impaired organs and overall physical health. This method requires careful consideration of physiological load, monitored through indicators like pulse rate, blood pressure, and respiratory rate. These exercises can be conducted individually, following an instructor's demonstration, or in a continuous flow, combining action with guidance. This adaptability makes therapeutic gymnastics an inclusive tool for diverse populations, including those battling obesity or leading inactive lives.

Prescribed therapeutic walking is another kinesiotherapy strategy beneficial for post-injury rehabilitation and for those with nervous system, musculoskeletal, or metabolic disorders. This walking is tailored in speed, distance, and terrain, making it an accessible exercise for improving cardiovascular and respiratory health, crucial for combating obesity and sedentary lifestyles.

Terrain therapy (*terrenkur*), involving prescribed walking with gradual ascents and descents on specialized routes, addresses cardiovascular, respiratory, metabolic, and musculoskeletal conditions. The physical load during *terrenkur* varies based on route length, terrain, incline angle, walking pace, and rest stops. The varying degrees of incline – from 4 to over 20 degrees – offer scalable challenges, accommodating individuals at different fitness levels.

Such activities like walking, skiing, boating, or cycling, conducted on specially designed paths, form an integral part of kinesiotherapy. These activities, prescribed in duration and intensity, progressively train the cardiovascular and respiratory systems to handle increasing physical demands, a key component in addressing obesity and sedentary habits (*Matthews et al., 2021*)

Kinesiotherapy, an interdisciplinary approach within rehabilitative medicine, encompasses two primary modalities: general and specific training. General training is primarily concerned with holistic health enhancement, fortification of the body, and fostering overall physical development in patients. This modality integrates a spectrum of physical exercises designed for general strengthening and developmental purposes (*Shephard, 2018*). Contrarily, specific training is tailored to rehabilitate functions impaired due to pathological conditions or trauma. It employs exercises directly influencing the afflicted area or the dysfunctional aspects of a particular system compromised by the ailment (e.g., respiratory exercises for patients with pleural adhesions, joint-focused exercises for cases of polyarthritis, etc.).

When contextualized in the realm of obesity management and counteracting sedentary lifestyles, these kinesiotherapy methodologies offer significant implications:

- **General Training in Obesity and Sedentary Lifestyle Mitigation.** This facet of kinesiotherapy is instrumental in combating obesity and sedentary life patterns. Engaging in a diverse array of physical activities, which encompasses both aerobic and anaerobic exercises, can elicit substantial improvements in overall physical fitness, facilitate adipose tissue reduction, and enhance metabolic functions. Such activities are pivotal in augmenting muscle mass and optimizing cardiovascular health, both of which are vital in obesity management and the prevention of associated comorbidities.

- **Specific Training for Targeted Intervention.** In addressing the direct sequelae of obesity and a sedentary lifestyle, specific training in kinesiotherapy can offer targeted therapeutic interventions. For instance, custom exercises can be designed to enhance mobility and alleviate joint discomfort, common afflictions in individuals with excessive body weight. Additionally, this training can concentrate on improving postural dynamics and reducing the risk of musculoskeletal disorders, frequently exacerbated by prolonged sedentariness and inadequate physical activity. This personalized approach in kinesiotherapy aids in addressing specific health challenges linked to obesity and sedentary behaviors, thereby offering a nuanced therapeutic strategy.

Let's explore the fundamental principles of kinesiotherapeutic exercises aimed at combating obesity:

- *Systematic.* Regular and consistent use of kinesiotherapy methods throughout the treatment course is essential for effective results.

- *Progression.* Gradual progression in exercise intensity is crucial, with increased demands introduced as the patient adapts to previous levels of activity.

- *Accessibility.* All therapeutic exercises should be accessible to patients in terms of structure and execution to ensure participation.
- *Duration.* The duration of physical activity directly correlates with its effectiveness. Post-treatment exercises should be continued in outpatient and home settings.
- *Individualization.* Tailoring exercise programs to account for individual physiological and psychological characteristics is vital for personalized care.
- *Visibility.* Instructors should provide clear guidance and corrections during exercises to ensure proper form and technique.
- *Effectiveness Assessment.* Regularly assessing the impact of exercises on improving the patient's functional indicators allows for necessary adjustments to the treatment plan.

These exercises serve as effective components of kinesiotherapy for individuals with a sedentary lifestyle aiming for weight loss. They offer a range of benefits, including calorie burning, muscle strengthening, and improved overall health. Incorporating these exercises into a daily routine can contribute to a healthier and more active lifestyle, even in the context of limited physical activity.

Table 1

Kinesiological exercises for combating obesity and a sedentary lifestyle

Exercise Type	Description	Benefits
Walking	Brisk walking in a steady pace	Cardiovascular health, leg muscle strengthening
Cycling	Stationary or outdoor bike riding	Lower body strength, endurance
Swimming	Full-body workout in water	Cardio, low-impact, full-body toning
Pilates	Low-impact exercises focusing on core strength	Core strength, flexibility
Yoga	Various poses and stretches	Flexibility, balance, stress reduction
Resistance Training	Use of weights or resistance bands	Muscle building, metabolism boost
High-Intensity Interval Training (HIIT)	Short bursts of intense activity followed by rest	Fat burning, stamina improvement
Stretching	Stretching exercises to improve flexibility	Flexibility, posture improvement

Note: systematized by the author (Vasileva, & Marchenkova, 2022)

The effectiveness and suitability of the kinesiological exercises listed in Table 1 for combating obesity and a sedentary lifestyle are highly dependent on the individual's condition who is suffering from obesity. It is crucial that the duration and intensity of these exercises are tailored to the person's health status, fitness level, and specific needs. The exercises need to be performed in accordance with the fundamental principles outlined above.

Incorporating these exercises into a regular routine can significantly aid in weight reduction and mitigate the effects of a sedentary lifestyle. It's important to remember that consistency and a balanced approach are key to achieving and maintaining results. Additionally, combining these exercises with a healthy diet and proper hydration enhances their effectiveness.

4. Conclusions

In concluding this research, it becomes evident that kinesiotherapy holds significant potential in addressing the intertwined issues of obesity and sedentary lifestyles, particularly within the context of American society. The investigation into the prevalence and impacts of these health challenges in the USA has highlighted the necessity for proactive and effective strategies, where kinesiotherapy emerges as a key player.

The comprehensive review of scientific literature on the subject has been instrumental in identifying and validating various kinesiotherapeutic methods as effective tools in the battle against obesity and sedentary habits. These methods, rooted in exercise science and therapeutic movement, are not only beneficial in mitigating the physical ramifications of obesity but also in fostering a more active and healthier lifestyle.

Furthermore, the exploration of primary approaches to combat obesity, which includes an array of therapeutic exercises and lifestyle modifications, has reinforced the versatility and adaptability of kinesiotherapy.

Systematizing exercises suitable for addressing these health concerns has led to the creation of a comprehensive set of kinesiotherapy practices. This collection stands as a testament to the practical applicability of kinesiotherapy in everyday life, offering a valuable resource for individuals, healthcare professionals, and policymakers alike.

References

1. Chaput, J.P., Tremblay, A. (2009). *Obesity and physical inactivity: the relevance of reconsidering the notion of sedentariness*. *Obes Facts*.2(4):249–54. doi: 10.1159/000227287. Epub 2009 Jul 20. PMID: 20054231; PMCID: PMC6515935.
2. Dunn, J. (2009). *The times are a changing: Implications for Kinesiology*. *Quest*, 61(3): 268–278.
3. Kim, Y., Welk, G.J. (2015). *Characterizing the context of sedentary lifestyles in a representative sample of adults: a cross-sectional study from the physical activity measurement study project*. *BMC Public Health*. 15:1218. doi: 10.1186/s12889-015-2558-8. PMID: 26646428; PMCID: PMC4673841.
4. Kletsikova, O. M., & Rudenko, A. M. (2023). *Assessment and determination of motivational factors for weight loss and indicators of the functional state of obese women in the rehabilitation process*. *Art of Medicine*, 55-59. <https://doi.org/10.21802/artm.2023.3.27.55>.
5. Matthews, C.E., Carlson, S.A., Saint-Maurice, P.F., Patel, S., Salerno, E.A., Loftfield, E., Troiano, R.P., Fulton, J.E., Sampson, J.N., (2021), =. *Sedentary Behavior in U.S. Adults*. *Med Sci Sports Exerc*. 1;53(12):2512–2519. doi: 10.1249/MSS.0000000000002751. PMID: 34310489; PMCID: PMC8595506.
6. Shephard, R. (2018). *Obesity: A Kinesiology Perspective (1st ed.)*. Routledge. <https://doi.org/10.4324/9780429465550>
7. SingleCare Team. (2023). *Weight loss statistics 2023*. Retrieved from <https://www.singlecare.com/blog/news/weight-loss-statistics>.
8. The Barbecue Lab. (2023). *Obesity Statistics*. Retrieved from <https://thebarbecueclub.com/obesity-statistics/>
9. Tinning, R. (2014) *The Obesity Crisis and the Field of Kinesiology: A Discursive and Memetic Consideration*, *Quest*, 66:1, 27–38, DOI: 10.1080/00336297.2013.821416
10. Vasileva, V., & Marchenkova, L. (2022). *AB1587-PARE Influence of complex kinesiotherapy on metabolism in cases of sarcopenic obesity*. *Annals of the Rheumatic Diseases*, 81, 1892–1892. <https://doi.org/10.1136/annrheumdis-2022-eular.586>.