



The Role of Healthy Environment for Effective Physical Activities for Healthier Living

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Abstract

Physical activity is a key health-seeking behavior that improves and promotes the well-being of individuals. The environment serves as the arena for physical activity participation, and it must be healthy and free from hazards. This paper explored the role of healthy environment for effective physical activity for promoting healthier living. The paper revealed that physical activity includes all forms of movement during leisure, transport, work, or domestic activities and those both moderate and vigorous activities enhance healthy outcomes. Regular participation is linked to improved physical fitness, cardio-metabolic and bone health, cognitive and mental outcomes, and reduced body fat across age groups. It also lowers the risk of mortality, cardiovascular diseases, cancers, diabetes, and pregnancy-related complications. A healthy environment supports positive physical activity behaviors, contributing to physical, mental, and social well-being. It was concluded, among others, that governments should design and maintain conducive environments for physical activity and recreation to improve public health and wellness.

Keywords: Healthy Environment, Physical Activity, Health Promotion, Built Environment, Well-being

Introduction

Physical activity is a major health behavior that enhances individual health and quality of life. The environment where such activities occur must be safe and free from hazards that threaten health and safety. According to Monsur et al. (2024), the environment plays a crucial role in promoting physical activity, health, and well-being. The built environment the human-made surroundings that provide settings for human activity has continued to receive considerable attention in recent research because of its influence on physical activity and health outcomes (Zhang et al., 2024; Høyer-Kruse et al., 2024). Encouraging daily activities such as walking and cycling can help individuals achieve recommended physical activity levels, especially in environments designed to support such behavior. While personal and social factors influence physical activity levels, the design, accessibility, and quality of the built environment are also recognized as critical determinants of physical activity participation (Nigg et al., 2024; Wang et al., 2023; Zhang et al., 2024). A well-planned built environment comprising homes, schools, workplaces, parks, trails, and transportation systems can promote active living by providing safe, accessible, and supportive spaces for physical activity (Hernández et al., 2023; Zhang et al.,



2024). However, interventions to encourage physical activity are less effective when the environment is not supportive due to hazards and other factors that are available in the surrounding that are detrimental health and well-being. One of the major factors influencing participation in physical activity is the quality of the environment in which people live. A healthy environment is characterized by safe neighbourhoods, clean air, adequate parks and recreational facilities, walkable streets, cycling paths, proper lighting, and low levels of pollution and crime. Such environments encourage individuals to engage in activities such as walking, jogging, cycling, sports, and other forms of exercise. Conversely, unhealthy environments marked by poor infrastructure, environmental pollution, insecurity, heavy traffic, inadequate recreational spaces, and poor urban planning discourage physical activity and promote sedentary lifestyles.

In many developing countries, including Nigeria, rapid urbanization, overcrowding, poor waste management, inadequate public recreational facilities, and increasing concerns about personal safety have reduced opportunities for regular physical activity. Many communities lack accessible parks, pedestrian walkways, sports facilities, and other supportive infrastructure that encourage active living. Consequently, individuals may spend more time in sedentary behaviours, contributing to the growing prevalence of obesity, hypertension, diabetes, and other lifestyle-related diseases.

Although previous studies have established that physical activity improves physical, mental, and social well-being, there remains a need to better understand how environmental conditions influence people's willingness and ability to participate in regular physical activity. This paper therefore examines the role of a healthy environment for effective physical activity for healthier living.

Concept of Physical Activity

Physical activity is any movement that uses energy and is brought about by skeletal muscles (Emersen et al., 2025). The term "physical activity" encompasses any kind of movement, whether it's for recreation, transportation, business, or household chores (World Health Organization 2022). Health benefits from both moderate and intensive physical activity. Some common forms of physical activity that anybody may enjoy include walking, cycling, wheeling, sports, and active recreation and play.

Being physically active has many positive effects on health, whereas being inactive raises the risk of NCDs and other negative health consequences (WHO 2022). Sedentary lifestyles and lack of physical activity are plaguing healthcare systems and adding to the growing number of non communicable diseases. Anything that uses energy and is generated by skeletal muscles is considered physical activity. The World Health Organisation classifies people's level of physical activity as falling into one of four broad categories: work, transportation, home, and recreation or leisure. Reducing the risk of chronic illnesses, boosting mental health, and enhancing general quality of life are all major benefits of participating in all four areas of healthy living.

Occupational physical activity refers to movement performed as part of one's job or employment. Examples include lifting, carrying, walking, climbing stairs, construction work, farming, and other physically demanding tasks. This domain contributes to daily energy expenditure and may improve muscular endurance and cardiovascular fitness when performed safely. However, recent



evidence suggests that occupational physical activity may not provide the same health benefits as leisure-time physical activity because work-related activities are often repetitive, prolonged, and performed without adequate recovery periods (Emersen et al., 2025). Therefore, workers are encouraged to complement occupational activity with recreational exercise for optimal health benefits.

Transport physical activity involves walking, cycling, wheeling, or using other active means to travel from one place to another instead of relying solely on motorized transport. Active transportation helps individuals accumulate recommended levels of moderate-intensity physical activity during daily routines. Regular active commuting reduces the risk of obesity, cardiovascular diseases, hypertension, and type 2 diabetes while improving cardiorespiratory fitness and environmental sustainability (World Health Organization, 2024). Incorporating walking or cycling into daily travel also promotes independence and supports healthy weight management.

Household physical activity includes activities performed in and around the home, such as sweeping, mopping, gardening, washing clothes, cooking, carrying groceries, and caring for children or older adults. Although these activities are often overlooked, they contribute meaningfully to daily physical activity levels and energy expenditure. Engaging regularly in household tasks improves mobility, muscular strength, flexibility, and functional independence, particularly among older adults. Household activities also reduce sedentary behaviour, which is associated with improved physical and mental well-being (World Health Organization, 2024).

Leisure-time physical activity refers to exercise, sports, games, fitness training, dancing, swimming, jogging, and other recreational activities performed during free time. This domain is considered the most beneficial for overall health because individuals can choose the intensity, duration, and type of activity according to their fitness level and preferences. Research shows that leisure-time physical activity is strongly associated with reduced risks of cardiovascular disease, diabetes, several cancers, anxiety, depression, and premature mortality. It also improves sleep quality, cognitive function, social interaction, and overall quality of life (Emersen et al., 2025; World Health Organization, 2024).

The built environment is both a driver of and an influence on recreational and transportation-related physical activity. Parks, pools, playgrounds, and sports clubs are all examples of recreational and sporting infrastructure that encourage physical activity in the built environment. Other features that contribute to this goal include bike lanes, walkways, and walkable neighbourhoods.

Benefits of Physical Activity and Risks of Sedentary Behaviour and Inactivity

One of the main causes of death from non-communicable illnesses is a lack of physical exercise. According to the World Health Organisation (2022), compared to those who are adequately active, those who are not physically active have a 20% to 31% higher risk of mortality. According to the World Health Organisation, engaging in regular physical activity has numerous positive effects on one's health. These include the following: improved physical fitness, cardiometabolic health, bone health, cognitive outcomes, mental health, and reduced body fat in children and adolescents; decreased risk of mortality from all causes, cardiovascular disease



mortality, hypertension, site-specific cancers, type 2 diabetes, and falls in adults and older adults; and improved mental health, cognitive health, sleep, and measures of body fat in pregnant and postpartum women (WHO 2022). The World Health Organisation (WHO) estimated in 2024 that 31% of adults, or almost 1.8 billion people, were not active. If current trends continue, this number is expected to climb to 35% by 2030, putting the world 15 percentage points behind its goal of reducing inactivity. According to the CDC (2023), persons who engage in regular physical exercise had a lower risk of death from any cause, death from cardiovascular disease, hypertension, site-specific malignancies, type 2 diabetes, and falls. Physical exercise lowers critical risk variables for chronic illness, according to recent research by Guthold et al. (2024): For every 600 MET-min/week, blood pressure drops 6%, the risk of diabetes drops 14-28% compared to inactivity, LDL-cholesterol drops 3.2%, and low bone mineral density is a result of not moving about enough.

Whether you're sitting, reclining, or lying down, you're engaging in sedentary activity when you're awake. Motorised transportation and the proliferation of electronic displays for many aspects of daily life are contributing to a decline in physical activity. Adults are more likely to die from cardiovascular disease, cancer, and all causes combined, as well as from cardiovascular disease, cancer, and type 2 diabetes; children and adolescents are more likely to be overweight, have worse cardiometabolic health, fitness, and behavioural conduct/pro-social behaviour, and get less sleep (CDC, 2023) due to their sedentary lifestyles.

Built Environment and Physical Activity Participation

Offices, homes, parks, and ancillary infrastructure like water systems and transportation networks are all part of the built environment, which is defined as the man-made surrounds that provide the stage for human activity. According to the CDC (2023), the built environment includes all man-made elements that are utilized by people in their everyday lives, including buildings, transportation networks, parks, and other infrastructure. The study uncovered three key factors that influence the likelihood of physical activity, availability of nutritious food, and health outcomes: transportation networks, buildings and amenities, and land use and community design. According to CDC (2023), the most important factors are the following: land use and design, which includes zoning, mixed-use developments, parks, walkability transportation (roads, walkways, bike lanes, public transportation), and buildings (houses, schools, businesses, and leisure centres). There are several benefits of intervening in the built environment to increase physical activity. Building a supportive environment, as opposed to focusing on individuals, may have the greatest impact on increasing physical activity levels across populations and helping people stick to their new habits (Kwansnicka et al., 2016). Additionally, it is typically more cost efficient to reach a large number of people over an extended period of time with a physical activity intervention rather than to target individuals.

Features of Built Environment for physical activity participation

- Built environment elements considered to be connected with recreational and transportation activities have been grouped into four categories:
- Recreational resources include walking and bike routes, parks, and open areas.
- Land use features include residential and employment density, building mix, street connection, and closeness to attractions such as stores and services.



- Neighborhood features, like sidewalks and street lights.
- CDC (2023) defines community environment as contextual elements such as beauty, cleanliness, traffic, crime safety, and community support/cohesion.

Buildings, infrastructure, and public spaces are all part of the built environment, which consists of the artificial settings in which people reside, work, and play. Both the emotional and physical well-being of humans are profoundly affected by it. High levels of stress, more pollution, and restricted access to basic services like education and recreation are some of the negative health impacts that can result from poorly planned or disorganized built environments (Campbell 2020). Higher rates of physical activity were linked to certain features of built environments, including residential density, mixed-use land use, and street connectivity (Ding et al., 2011). All of these things could change the way people walk for fun and for getting about town. For instance, it's possible that recreational opportunities might increase if sidewalks and lamps were there. Walking or bicycling may be more convenient or enjoyable depending on factors like the layout of the streets and how close they are to various locations.

The walkability of a place is defined as the degree to which its built environment facilitates pedestrian movement, whether that be residents, visitors, shoppers, or leisure seekers. A walkable area is one with a high population density, plenty of shops and services, and well-connected streets that make it simple to get around on foot or bike. Sidewalks, crosswalks, and bike lanes are all features that make a community more walkable and bikeable. Low land use density, low residential density, a lack of a central business district, and less street connection are characteristics of excessive urban sprawl, on the other hand.

More walkable environments are those that are densely populated, have stores and services located next to each other, have excellent connection, and have other desirable qualities like good aesthetics and a low crime rate (Giles et al. 2021). A study carried out by Nigg et al. (2024) found that adults living in neighbourhoods with greater walkability, better access to recreational facilities, parks, sidewalks, and connected street networks engaged in higher levels of physical activity. Conversely, neighbourhoods with poor pedestrian infrastructure and limited recreational spaces were associated with lower physical activity and greater sedentary behaviour. Zhang et al. (2024) found that built environment significantly influenced leisure-time physical activity through residents' perceptions of neighbourhood safety, accessibility, and walkability. Individuals living in supportive built environments were more likely to participate in regular physical activity than those in less supportive environments. A study Althoff et al. (2024) analysed smartphone-based physical activity data from more than two million Americans who relocated between neighbourhoods. The natural experiment showed that moving to more walkable neighbourhoods produced sustained increases in moderate-to-vigorous physical activity, while relocating to less walkable areas reduced activity levels. Hernández et al. (2023) systematically reviewed structural environmental interventions and found that modifications to urban environments including improved cycling lanes, pedestrian infrastructure, green spaces, and public transport systems consistently increased physical activity among adults. These interventions also contributed to reductions in sedentary lifestyles by encouraging active transportation and outdoor recreation. Park et al. (2024) conducted a systematic review and meta-analysis using accelerometer-measured data and reported that working adults spend a substantial proportion of their day in sedentary behaviour. Higher sedentary time was associated



with lower physical activity levels, highlighting the importance of environmental and workplace designs that facilitate movement throughout the day. A study of Müller et al. (2024) found that access to trails, parks, attractive natural environments, and safe walking routes positively influenced physical activity participation. Limited infrastructure and long travel distances, however, contributed to physical inactivity and sedentary lifestyles. Klinker et al. (2024) concluded that the built environment and social environment jointly influence physical activity. People from better socioeconomic backgrounds were more likely to engage in physical activity and less likely to be sedentary in neighborhoods that had easy access to parks, playgrounds, and other recreational facilities, as well as safe public places and welcoming community surroundings. Chronic illness incidence and health inequities are correlated with built environment and infrastructure features such as transportation networks and greenness (Smith et al. 2017, Christine et al. 2016). Since one's physical environment may promote or inhibit activity levels, physical exercise is thought to be the basis of this link (Moore et al., 2015). Heat and air pollution are two examples of less obvious physical environmental factors that impact health and, indirectly, physical activity. Høyer-Kruse et al. (2024) found that neighbourhood social cohesion, trust, social support, and community engagement significantly increased physical activity participation. Gao et al. (2024) demonstrated that higher levels of social capital including interpersonal trust, peer support, social participation, and connectedness were consistently associated with greater participation in physical activity. Residents with stronger social networks were more likely to engage in regular exercise and maintain active lifestyles. Magro-Montañés et al. (2024) found that neighbourhoods characterized by trust, reciprocity, social participation, and community support promoted healthier behaviours, including increased physical activity. Residents in socially cohesive communities were more likely to participate in leisure-time and recreational physical activity than those living in socially fragmented neighbourhoods. Molaeiet al. (2024) reported that neighbourhood social cohesion, perceived safety, social interaction, and supportive community relationships were positively associated with walking, recreational physical activity, and overall physical functioning. Older adults living in supportive social environments demonstrated higher participation in physical activity than those in socially disadvantaged communities. Kepper et al. (2019) demonstrated that neighbourhood social cohesion, social support, community attachment, and perceived safety consistently predict higher physical activity participation across children, adults, and older populations.

The Influence of Environment on Physical Activity Participation

Residents' levels of physical activity are greatly influenced by their surroundings. According to Magro-Montañés et al. (2024), the constructed, social, and policy conditions, among others, can either encourage or discourage participation in physical activities like walking, cycling, running, leisure sports, and so on. The Centers for Disease Control and Prevention (2024) reaffirmed that physical activity (PA) is an important part of a healthy lifestyle that benefits one's emotional, psychological, and social health. Environmental influences have a significant impact on people's levels of physical activity, which is in turn affected by factors such as personal motivation and health state. A person's capacity and desire to exercise can be influenced by their surrounding environment (Sallis et al., 2016).

Social Environment and Physical Activity Participation



The term built environment encompasses all human-made surroundings that provide the setting for human activity; from offices, houses and parks to supporting infrastructure, such as water supplies and travel networks (Campbell 2020).. The social component of the environment is equally a place for participation in social and physical activities. Social support from family, friends, neighbors, and community organizations encourages individuals to engage in regular exercise. Group activities, community fitness programs, and neighborhood sports clubs increase motivation and accountability. Saelens and Handy (2021) emphasized that socially supportive neighborhoods or environment create positive norms that encourage residents to adopt physically active lifestyles. Communities with strong social cohesion also report higher levels of recreational walking and outdoor exercise. The social environment includes social norms, cultural expectations, support systems, and the perceived safety of a community. These can have both direct and indirect influences on physical activity: Social support from family, peers, or community members increases the likelihood of sustained engagement in physical activity, especially among youth and women (Bauman et al., 2012). Perceived safety: High levels of crime or poor lighting may deter people especially women and the elderly from outdoor physical activity (Carver et al., 2014). Cultural norms: In some societies, cultural expectations around gender roles or modesty may restrict physical activity participation, particularly for girls and women (Joseph et al., 2022).

Physical Environment and Physical Activity Participation

Environmental quality, including air pollution, noise levels, and climatic conditions, can either promote or discourage physical activity. Poor air quality exposes individuals to harmful pollutants during exercise, discouraging outdoor activities and increasing health risks. Similarly, extremely hot, cold, or rainy weather reduces participation in outdoor physical activity. Kahlmeier et al. (2024) observed that favorable environmental conditions such as clean air, green spaces, and comfortable weather enhance outdoor physical activity, while polluted or harsh environments reduce participation. The natural environment such as climate, weather, and geography also plays a major role: Climate and weather: Extreme temperatures, rainfall, or seasonal changes can significantly limit outdoor physical activity. Geographical barriers: Hilly terrains or lack of green spaces in densely populated cities may reduce opportunities for physical activity, particularly for individuals with mobility challenges (Giles-Corti et al., 2016).

Green spaces have been recognized as important environmental assets that promote physical activity and mental well-being. Parks, urban forests, gardens, and natural landscapes provide attractive settings for walking, jogging, cycling, and recreational sports. Exposure to green environments also reduces stress and increases motivation for regular exercise. Schmid et al. (2023) reported that residents living near well-maintained green spaces are significantly more likely to engage in moderate and vigorous physical activity than those living in highly urbanized areas with limited natural environments.

Government policies and urban planning strategies further shape environmental opportunities for physical activity. Investments in active transportation infrastructure, public parks, pedestrian-friendly neighborhoods, and community recreation programs create environments that support healthy lifestyles. Sallis et al. (2025) argued that public health policies integrating physical activity into urban planning can substantially increase population-wide physical activity participation and reduce the burden of non-communicable diseases.



Environmental Inequities

Access to supportive environments for physical activity is not equally distributed: low-income neighborhoods often lack quality parks, safe sidewalks, or recreational facilities. Cohen et al. (2023) emphasized that reducing environmental inequalities is essential for promoting equitable access to opportunities for physical activity. These inequities contribute to health disparities, with marginalized populations being more at risk of physical inactivity and related chronic diseases (Sallis et al., 2016).

Relationship between Physical Activity and Built Environment

People live, work, learn, and play in the built environment, which is a term that refers to the surroundings that have been created by humans. Buildings, roads, sidewalks, bicycle lanes, parks, playgrounds, recreational facilities, public transit systems, and the design of neighbourhoods are all features that are included in this category. The built environment and physical activity is a rising subject of research in the field of public health. This is due to the fact that the architecture of communities has a significant impact on people's capabilities to engage in physical activity and their desire to do so. In order to encourage healthy lives and reduce the prevalence of non-communicable diseases such as obesity, cardiovascular disease, diabetes, and hypertension, a well-designed built environment should encourage physical activity and discourage inactivity. A well-designed built environment should also encourage healthy lifestyles.

Depending on the type of physical exercise, the association could be different. The majority of the impact on physical activity comes from man-made structures, particularly in the areas of transportation and recreation. On various areas of physical exercise, it can potentially have an opposite effect. Take a well-connected street as an example. It may be great for people walking to their destinations, but kids playing outside may not enjoy it as much. People are more likely to engage in physical activities like walking, running, cycling, and recreational sports if they live in neighbourhoods that promote these activities through their built surroundings, according to research. Interconnected streets, diverse land use, pedestrian-friendly walkways, and proximity to recreational amenities all work together to make neighbourhoods more active, according to Sallis et al. (2024). In such settings, people are more likely to walk or bike to work and less likely to rely on cars for mobility.

The aspect of the built environment known as street connection has the potential to have a direct influence on several forms of physical exercise, particularly walking. Walking is made easier with well-connected street networks because shorter paths to destinations are created. Two features of grid street designs that facilitate pedestrian flow include orthogonal geometry and numerous crossings.

Neighbourhoods that have sidewalks and bike lanes encourage people to get around on two wheels. With these qualities, people feel safer and have more fun while they are active. The combination of residential and business sectors in close proximity promotes active mobility and decreases the need for vehicles. Bicycling and walking should be encouraged along the routes that connect various places. It has been observed that more people ride bikes when there are dedicated bike lanes that keep bikes off the road. Regular physical activity is an essential part of



everyday life, and when bus and train terminals are close by, individuals are more likely to walk to and from these modes of transportation (Sallis et al., 2024).

In their spare time, people are more likely to go moving in public parks and other open areas. In addition to providing areas for sports, exercise, and other physically demanding pursuits, they also serve as destinations for people to stroll to. They need to be conveniently placed, easily accessible, and equipped with high-quality facilities for inhabitants. When individuals have a positive impression of parks and playgrounds, they are more likely to use them for physical exercise. Attractive locations are more popular with families, groups, and children when planning trips.

Walkability is an important feature of the built environment. The term "walkability" describes a neighborhood's conduciveness to walking, taking into account things like walkways, street connections, traffic safety, destination accessibility, and aesthetic appeal. In communities that are designed to be highly walkable, people may easily and safely get to their places of employment, schools, grocery stores, parks, and other locations. Individuals residing in neighbourhoods dependent on automobiles engage in far less daily physical activity compared to those residing in highly walkable regions (Frank et al., 2023). By making exercise a natural part of people's daily lives, walkability helps combat sedentary lifestyles. Another crucial feature of the built environment that encourages healthy lifestyles is the accessibility to green areas and parks. You may go strolling, running, cycling, playing outdoor sports, or just hanging out with your family at one of several public parks, gardens, or open recreational areas. In addition to promoting physical exercise, being in a green environment can help alleviate mental health issues including stress, anxiety, and sadness. According to research by Cohen et al. (2023), people who reside in areas with plenty of beautiful parks are more inclined to exercise moderately to vigorously than those who live farther away.

Sports complexes, swimming pools, fitness centres, playgrounds, and community recreation centres are all examples of recreational amenities that might impact physical activity participation. Opportunities for organised sports and structured exercise are expanded across age groups when these facilities are easily accessible. Adults and teenagers in particular are more likely to engage in physical exercise during leisure time if they live in close proximity to recreational amenities, according to research by Owen et al. (2022). People in communities that have a lot of parks and other recreational facilities tend to be healthier and more active.

Recreational walking is also linked to the attractiveness of the local environment. Attractive landscape and vistas, as well as a clean and well-kept neighbourhood, encourage people to take leisurely strolls. For those who live in aesthetically pleasing surroundings, walking is a joy. A healthy lifestyle can be more easily adopted in a constructed environment that is safe, aesthetically pleasing, and encourages simple access to nutritious food and a range of chances to be physically active every day.

The level of physical activity is significantly impacted by how safe the built environment is. Residents are encouraged to exercise outdoors when there are safe sidewalks, pedestrian crossings, bike lanes, sufficient street lighting, traffic-calming measures, and low crime rates. Poor infrastructure, excessive traffic, dangerous intersections, and a generalised dread of crime, on the other hand, make people less likely to exercise. Perceived and real neighbourhood safety



are crucial factors that citizens consider when deciding whether or not to engage in outdoor physical activities (Cohen et al., 2023). There is a stronger connection between physical activity and the built environment when mixed land use is included. Locating residential neighbourhoods near schools, workplaces, retail centres, healthcare facilities, and recreational activities is an example of mixed land use. Instead of depending just on cars, inhabitants may now go about town on foot or two wheels. Overall, people are more active and have better cardiovascular health when they live in mixed-use neighbourhoods, according to Sallis et al. (2024), because of the substantial rise in active transportation.

Conclusion

The environment both physical and social plays a critical role in shaping physical activity behaviours. It is necessary to build a safe and secured environment that would promote active lifestyles, particularly in urban populations, it is essential to design inclusive, safe, and accessible environments.

Recommendations

Based on the forgoing, the following recommendations are made:

1. Individuals should prioritize their health status by developing physical activity behaviours as a lifestyle in maintain and promote good health and well-being.
2. In order to enhance and preserve one's health, the government should establish an appropriate environment for recreational events and physical activities.
3. In order to promote healthful community design, public health professionals must establish partnerships with professionals from a variety of fields, including transportation, urban planning, architecture, and public health law.
4. Evidence-based data influences policies that advocate for modifying the built environment to enhance population-level physical activity. Therefore, there is a necessity for high-quality data regarding the more extensive effects of the built environment on physical activity.
5. Physiotherapists incorporate exercise, a subcategory of physical activity, into their rehabilitation therapy. PTs should strive to inform their patients about the potential of the built environment for physical activity.
6. In order to guarantee that environmental supports for physical activity are sustainable and equitable, urban planning, public policy, and community engagement must be coordinated.

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