

**THE EFFECTIVENESS OF SPECIAL PHYSICAL EXERCISES IN FORMING A  
HEALTHY LIFESTYLE AMONG SCHOOL-AGE CHILDREN WITH EXCESSIVE  
BODY WEIGHT**

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**Abstract:** This article examines the effectiveness of specially designed physical activity programs in developing and maintaining healthy lifestyle habits among overweight school-aged children. The study draws on existing experimental, longitudinal, and review-based evidence to assess the measurable effects of targeted motor activity interventions on physiological parameters, behavioral health patterns, and psychological well-being in this population. The findings suggest that tailored exercise programs, when tailored to the developmental and medical profiles of overweight children, can provide significant and long-term improvements in multiple health aspects. The dissertation also argues that integrating such programs into the school curriculum, supported by appropriate pedagogical methods and family involvement, is the most effective way to promote sustainable healthy lifestyles in this high-risk group.

**Keywords:** healthy lifestyle formation, special physical exercises, school-age children, excessive body weight, childhood obesity, motor activity, adaptive physical culture, behavioral health, exercise effectiveness, school health intervention.

## INTRODUCTION

The formation of a healthy lifestyle during childhood and adolescence is widely recognized as a foundational determinant of lifelong health. Among the various factors that shape health behaviors in this critical developmental window, structured physical activity occupies a position of particular importance, given its demonstrated influence on body composition, metabolic function, cardiovascular health, cognitive performance, and psychological well-being. For children of normative body weight and physical development, standard physical education programs typically provide an adequate stimulus for maintaining basic fitness levels and fostering positive attitudes toward active living. However, for the growing proportion of school-age children who present with excessive body weight, this assumption breaks down in multiple significant ways.

Overweight school-age children face a distinctive and compounding set of challenges when engaging with conventional physical education formats. Physiologically, excess adipose tissue elevates the metabolic cost of movement, reduces cardiorespiratory efficiency, and places disproportionate mechanical stress on the musculoskeletal system, rendering standard exercise norms not only unsuitable but potentially counterproductive for this group. Psychologically, repeated negative experiences in competitive or norm-referenced physical activity settings contribute to diminished self-efficacy, exercise avoidance, and social withdrawal, all of which undermine the very behavioral foundations that healthy lifestyle formation requires. The result is a reinforcing cycle in which physical inactivity, poor dietary habits, and psychological disengagement accumulate over time, producing health trajectories that are increasingly difficult to reverse.



Against this background, the question of how special physical exercises can be designed, implemented, and evaluated so as to effectively promote healthy lifestyle formation in overweight school-age children emerges as a matter of genuine scientific and practical urgency. The present thesis addresses this question by systematically reviewing and synthesizing available evidence on the physiological, behavioral, and psychological outcomes of targeted exercise interventions in this population, and by drawing conclusions regarding the conditions under which such interventions demonstrate maximum effectiveness. The central argument advanced is that appropriately structured special physical exercises represent not merely a corrective tool for managing excessive body weight, but a transformative mechanism for instilling the habits, competencies, and motivational orientations that constitute a healthy lifestyle in its broadest sense.

## METHODOLOGY

The present thesis employs a theoretical-empirical research methodology integrating systematic literature review, comparative analysis, and conceptual synthesis. The methodological framework was constructed to allow a rigorous, multidimensional assessment of the available evidence base pertaining to the effectiveness of special physical exercise programs for overweight school-age children. The principal methodological components are as follows:

— systematic review of peer-reviewed experimental, longitudinal, and quasi-experimental studies published between 2008 and 2024 examining the effects of targeted physical exercise programs on body composition, fitness, and behavioral health outcomes in overweight school-age populations

— comparative analysis of the structural and content characteristics of special physical exercise programs reported in the reviewed literature, including modality, frequency, intensity, duration, and progression protocols

— critical evaluation of outcome measurement instruments employed across studies, including anthropometric indices, cardiorespiratory fitness tests, psychological self-report scales, and behavioral health questionnaires

— theoretical synthesis of evidence-based principles governing the design of exercise programs for overweight pediatric populations, drawing on exercise physiology, adaptive physical culture, developmental psychology, and behavior change theory

— analysis of contextual and implementation factors associated with program effectiveness, including school setting variables, instructor competency, family involvement, and program duration

Source selection was governed by criteria of methodological rigor, direct relevance to the study population and research question, and representativeness across geographic and institutional contexts. Meta-analyses and systematic reviews were accorded particular weight as providing the highest level of aggregated evidence, while individual experimental studies were examined to illuminate specific mechanisms and contextual conditions. The integrated synthesis derived from this process forms the analytical foundation of the thesis findings and discussion.

## RESULTS



The synthesis of available evidence yielded a coherent and well-supported set of findings pertaining to the physiological, psychological, and behavioral effectiveness of special physical exercises in promoting healthy lifestyle formation among overweight school-age children.

With respect to physiological outcomes, the reviewed literature consistently demonstrates that structured special exercise programs produce statistically significant and clinically meaningful improvements in the following parameters among overweight school-age participants:

- reduction in body mass index z-score and waist circumference, reflecting favorable changes in body composition and central adiposity
- improvements in cardiorespiratory fitness, as indexed by maximal oxygen uptake and submaximal exercise heart rate, indicating enhanced aerobic capacity
- reductions in resting blood pressure and fasting insulin levels, suggesting beneficial effects on cardiovascular and metabolic risk profiles
- increased muscular strength and endurance, particularly in functional movement patterns relevant to daily physical activity
- improvements in postural alignment and reduction of musculoskeletal pain complaints, attributable to targeted core stability and flexibility training components

Regarding psychological and behavioral outcomes, the evidence base reveals equally compelling findings. Overweight children who participated in specially designed exercise programs demonstrated:

- significant increases in physical activity self-efficacy and exercise motivation, as measured by validated psychometric instruments
- reductions in exercise-related anxiety and social physique concerns, enabling greater voluntary engagement in physical activity settings
- improvements in general self-esteem and body image satisfaction, which constitute important psychological preconditions for healthy lifestyle adoption
- measurable increases in habitual daily physical activity levels, extending beyond the structured exercise sessions into leisure and recreational contexts
- positive shifts in dietary behavior and nutritional awareness, particularly in programs that integrated health education components alongside physical training

A comparative analysis of program characteristics revealed that the following structural features were most strongly associated with favorable outcomes across both physiological and behavioral dimensions: programs of at least twelve weeks duration; sessions of forty-five to sixty minutes conducted three or more times per week; progressive intensity protocols calibrated to individual functional capacity; multimodal content combining aerobic conditioning, strength training, and flexibility work; and the presence of explicit motivational support and positive reinforcement strategies. Programs delivered within school settings demonstrated comparable or superior outcomes relative to clinic-based interventions, with the additional advantage of reaching children who would not otherwise access specialist services.



## DISCUSSION

The findings reported above warrant careful interpretation in light of their implications for both scientific understanding and practical program development. Several interconnected themes emerge from the evidence synthesis that merit focused discussion.

The first and most fundamental theme concerns the mechanism by which special physical exercises produce their effects on healthy lifestyle formation. The evidence makes clear that the physiological benefits of targeted exercise programs, while important in their own right, do not fully account for the broader healthy lifestyle changes observed in program participants. Rather, the data suggest that well-designed special exercise programs operate through a dual pathway: directly improving the biological determinants of health such as fitness, body composition, and metabolic function, while simultaneously fostering the psychological and behavioral competencies that enable children to sustain health-promoting habits independently over time. This dual mechanism has critical implications for program design, indicating that motivational, educational, and behavioral components are not supplementary additions but essential structural elements of effective interventions.

The second major theme concerns the comparative advantages of school-based delivery for special physical exercise programs targeting overweight children. The school context offers a combination of attributes that are difficult to replicate in clinical or community settings, including daily access to children during a time of high developmental plasticity, the presence of trained educators who can implement and monitor programs over extended periods, and the capacity to integrate physical activity promotion with complementary health education curricular components. The evidence reviewed suggests that these structural advantages translate into measurable differences in program reach, adherence, and sustained behavioral impact, reinforcing the case for embedding special exercise interventions within the existing school physical education framework rather than treating them as parallel or supplementary activities.

A third important theme pertains to the role of individualization in determining program effectiveness. Across the reviewed literature, a consistent pattern emerges in which programs that incorporate individualized exercise prescription based on objective fitness assessment demonstrate superior outcomes compared with programs applying uniform group-level protocols. This finding is theoretically consistent with the established principles of adaptive physical culture and exercise physiology, which predict that exercise stimuli must be appropriately matched to the individual's current capacity in order to elicit optimal adaptive responses without incurring disproportionate injury or psychological burden. For overweight school-age children, whose physiological and psychological profiles may differ substantially even within a seemingly homogeneous group, individualization thus represents a non-negotiable design principle rather than an optional refinement.

The discussion also draws attention to several important limitations of the available evidence base. Many studies in this field rely on short follow-up periods that do not allow assessment of the durability of program effects beyond the intervention window. The measurement of healthy lifestyle formation as a composite outcome — encompassing behavioral, psychological, and physiological dimensions — remains methodologically heterogeneous across studies, complicating direct comparisons. Moreover, the mechanisms by which program-induced changes in self-efficacy and motivation translate into sustained behavioral change in naturalistic, post-program environments remain incompletely understood. These gaps point to priority areas for future research, including longer-term follow-up studies, standardized outcome measurement



frameworks, and investigations of the environmental and social factors that mediate the transfer of program-acquired competencies to everyday life contexts.

## CONCLUSION

The present thesis has provided a systematic and analytically grounded evaluation of the effectiveness of special physical exercises in forming a healthy lifestyle among school-age children with excessive body weight. The principal conclusions are as follows:

— the available scientific evidence robustly supports the effectiveness of specially designed physical exercise programs in producing significant improvements in body composition, cardiorespiratory fitness, metabolic risk markers, psychological well-being, and habitual physical activity levels among overweight school-age children

— the effectiveness of special exercise programs in promoting healthy lifestyle formation operates through a dual physiological and behavioral-psychological mechanism, requiring program designs that address both the biological and motivational dimensions of health behavior change simultaneously

— structural program features most strongly associated with effectiveness include a minimum duration of twelve weeks, multimodal exercise content, progressive individualized intensity protocols, integrated health education components, and explicit motivational support strategies

— school-based delivery of special physical exercise programs offers distinct and practically significant advantages over alternative settings in terms of reach, sustained engagement, and integration with complementary educational approaches to healthy lifestyle promotion

— individualized exercise prescription based on objective fitness and health assessment is a non-negotiable design principle for special exercise programs serving overweight school-age children, given the heterogeneity of physiological and psychological profiles within this population

— significant gaps remain in the evidence base regarding long-term program effects, standardized outcome measurement, and the environmental mediators of sustained healthy lifestyle adoption, defining priority directions for future research

In sum, special physical exercises, when designed and implemented in accordance with evidence-based principles of adaptive physical culture, developmental appropriateness, and behavioral health promotion, represent a highly effective and scalable mechanism for fostering healthy lifestyle formation in overweight school-age children. Realizing this potential requires coordinated investment from educational authorities, public health institutions, teacher training programs, and families, united by a shared commitment to the health and developmental well-being of this vulnerable population.

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