Cognopolis
Revista de educción y pedagogía
Vol. 4(1), 19-36, 2026
https://doi.org/10.62574/wd1awj89

Physical activity for health and well-being among primary school pupils in Ecuador

Actividad física para la salud y el bienestar en escolares de educación básica en Ecuador

Lorena Elizabeth Hinojosa-Vásquez
lorena.hinojosa@quito.gob.ec
Unidad Educativa Municipal "Cotocollao", Quito, Pichincha, Ecuador
https://orcid.org/0009-0001-0410-2640

Luis Alberto Pinos-Vargas
luis.pinosv@gmail.com
Unidad Educativa Municipal "Oswaldo Lombeyda ", Quito, Pichincha, Ecuador
https://orcid.org/0009-0008-8030-0375

Miguel Alejandro Sánchez-Veloz
alejandro.sanchez@educacion.gob.ec
Unidad Educativa "11 de noviembre", Quito, Pichincha, Ecuador
https://orcid.org/0009-0000-1372-441X

Paulina Kathiuska Chinga-Mármol
pchinga@uce.edu.ec
Universidad Central del Ecuador, Quito, Pichincha, Ecuador
https://orcid.org/0000-0003-3478-925X

ABSTRACT

The research objective is to propose a physical activity programme for the health and well-being of primary school pupils in Ecuador. To produce this article, using a propositional design with a qualitative approach, three interlinked stages were carried out: a systematic review of 17 sources indexed between 2020 and 2026; a contextual analysis of the municipal schools Cotocollao, Oswaldo Lombeyda and 11 de noviembre in the Metropolitan District of Quito; and the systematisation of the training proposal. A plan was structured around four cross-cutting thematic areas: motor skills, health and active habits, inclusive coexistence, and body expression, with progression differentiated by sub-levels, neuro-educational strategies, and a formative assessment system. It is concluded that the plan constitutes a comprehensive, inclusive, and contextualised pedagogical proposal, the empirical validation of which represents the immediate research objective to confirm its effectiveness in real-world school practice.

Descriptors: physical education; play area; inclusive education. (Source: UNESCO Thesaurus).

RESUMEN

Se circunscribe como objetivo de investigación proponer un plan formativo en actividad física para la salud y el bienestar en escolares de educación básica en Ecuador. Para la elaboración de este artículo bajo un diseño propositivo con enfoque cualitativo, se desarrollaron tres momentos articulados: revisión sistemática de 17 fuentes indexadas entre 2020 y 2026, análisis contextual de las unidades educativas municipales Cotocollao, Oswaldo Lombeyda y 11 de noviembre del Distrito Metropolitano de Quito, y sistematización de la propuesta formativa. Se estructuró un plan organizado en cuatro ejes temáticos transversales motricidad, salud y hábitos activos, convivencia inclusiva y expresión corporal con progresión diferenciada por subniveles, estrategias neuroeducativas y sistema de evaluación formativa. Se concluye que el plan constituye una propuesta pedagógica integral, inclusiva y contextualizada, cuya validación empírica representa la proyección investigativa inmediata para confirmar su efectividad en la práctica escolar real.

Descriptores: educación física; espacio de juegos; educación inclusiva. (Fuente: Tesauro UNESCO).
Received: 10/12/2025. Reviewed: 07/01/2026. Accepted: 10/01/2026. Published: 20/01/2026.
Research articles

INTRODUCTION

Physical activity in the school setting extends beyond the confines of physical education lessons to become a cross-cutting pillar of holistic human development; its impact encompasses cognitive, socio-emotional and biological dimensions that shape pupils' quality of life from an early age. In Ecuador, the Organic Law on Intercultural Education (LOEI) and the current National Curriculum recognise physical education as a core subject; however, empirical evidence accumulated in recent years indicates that levels of physical activity among primary and lower secondary school pupils remain below the recommendations issued by the World Health Organisation (WHO), which sets a minimum of 60 minutes per day of moderate to vigorous physical activity for children and adolescents.

The problem of childhood sedentary behaviour is not unique to Ecuador, but rather constitutes a widespread phenomenon in Latin America that has become more acute over the last decade, driven by the widespread use of technological devices, rapid urbanisation and the reduction in safe recreational spaces. In this context, Cartuche-Sánchez (2026) documented the effects of a programme of physical and recreational activities on indicators of sedentary behaviour among lower secondary school students in Ecuador; his study showed significant reductions in time spent being inactive and improvements in the participants' overall physical fitness. In line with this, Olmedo-Montoya (2025) analysed the relationship between physical activity and nutrition in children in Years 2 to 7, highlighting the need to develop comprehensive interventions that simultaneously address physical activity and dietary habits.

Against this backdrop, the three municipal schools comprising the population of this study, located in different areas of the Metropolitan District of Quito, share common characteristics: a socio-economically diverse student body, limited sports facilities, and a timetable allocation for physical education that does not

always translate into meaningful motor learning experiences; The 'Cotocollao' Municipal School, the 'Oswaldo Lombeyda' Municipal School and the '11 de Noviembre' School therefore constitute representative settings for the challenges faced by urban schools in promoting health and well-being through physical activity.

Consequently, the research objective was to propose a physical activity training programme for health and well-being among primary school pupils in Ecuador.

Theoretical framework

Physical activity, health and holistic development in schoolchildren

Physical activity in childhood plays a decisive role in human biological, psychological and social development; its impact ranges from physical maturation to the development of social skills that underpin community life. In this regard, Rodríguez-Torres et al. (2020) summarised the benefits of physical activity for children and adolescents in the school setting, identifying improvements in cardiovascular health, bone density, weight management and mental health, with positive effects on self-esteem, emotional regulation and social interaction skills; these benefits are not limited to the biological sphere, but extend to the child's entire school experience, influencing their motivation, well-being and performance.

From a curricular perspective, Lizano-Vela et al. (2024) conducted a longitudinal study on the importance of physical education in the holistic development of primary and secondary school students in Ecuador, concluding that the systematic and well-planned practice of physical activity contributes in a sustained manner to strengthening pupils' cognitive and social skills. Similarly, Vélez-Romero et al. (2025) analysed the impact of physical education on the holistic development of primary school pupils, noting that pedagogically sound interventions generate learning that can be transferred to other contexts of the pupil's life, including academic performance and civic participation.

The relationship between physical activity and academic performance has been the subject of numerous studies in recent years; the accumulated results consistently point to a positive association between physical movement and cognitive performance. Luque-Illanes et al. (2021) conducted a literature review on this relationship, finding that, in most of the studies analysed, regular physical exercise is associated with improvements in attention, working memory and performance in mathematics and language; these results coincide with those reported by Ávila-Manríquez et al. (2021), who documented positive associations between physical activity and academic performance in primary school pupils, and with those of Macías-Giler (2025), who confirmed this relationship in a sample of Ecuadorian students, reinforcing the relevance of physical activity interventions as a strategy for improving academic performance.

Childhood sedentary behaviour and its educational consequences

Sedentary behaviour in childhood is not merely a public health issue; it also represents a major educational problem, in that physical inactivity is associated with impairments in sustained attention, motivation to learn and the student's socio-emotional well-being. In this regard, Cartuche-Sánchez (2026) demonstrated that relatively short-term physical-recreational intervention programmes produce measurable reductions in indicators of sedentary behaviour among lower secondary school students in Ecuador, reinforcing the viability of school-based intervention proposals in resource-limited contexts.

From a broader contextual perspective, Rodríguez-Torres et al. (2024) analysed physical activity and diet among Ecuadorian students, with particular attention to the influence of family and institutional support, finding that the school and family environment acts as a key moderator of children's physical activity habits; when the educational institution takes an active role in promoting physical activity, students' levels of participation increase steadily, with effects extending to the home and the community.

In line with this, Vargas-Arreaga and Merchán-Carvajal (2024) systematically reviewed the impact of physical education on the promotion of healthy lifestyles, concluding that interventions must go beyond the physical education classroom and be designed as comprehensive educational programmes that permeate the institutional culture; In the same vein, Paredes-Echeverría and Echeverría-Caranqui (2025) evaluated a physical activity programme and its effects on the health of secondary school students in Ecuador, finding significant improvements in biometric indicators and in participants' self-perceived well-being.

Neuroeducation, constructivism and the pedagogy of movement

Neuroeducation provides scientific foundations of considerable relevance for understanding why physical movement enhances learning processes; the available evidence indicates that motor activity activates neural circuits closely linked to attention, memory and emotional regulation. From this perspective, Ferrín-Vera et al. (2024) studied the rel

METHOD

The study was conducted within the qualitative paradigm of educational research, using a propositional design; this type of design, widely used in Latin American educational research, began with the diagnosis of a problem identified within the study context and culminated in the formulation of a pedagogical intervention proposal that was theoretically grounded and contextualised to the needs of the target population (Rodríguez-Moreno, 2025). Its epistemological strength lay in the articulation between the critical analysis of reality and the projection of viable and relevant educational alternatives.

The methodology adopted comprised three interconnected stages. The first involved a systematic review of the specialist literature on physical activity, school health, neuroeducation and movement pedagogy, with an emphasis on research conducted in Ecuador and Latin America between 2020 and 2026; for the selection of bibliographic sources, criteria of thematic relevance, recency,

publication in indexed journals and explicit links to Latin American and Ecuadorian contexts were applied, so that a total of 17 primary sources were reviewed, all cited in the corresponding sections in accordance with APA style, 7th edition.

The second stage involved a contextual analysis of the three educational institutions that made up the study population: the 'Cotocollao' Municipal Educational Institution, the 'Oswaldo Lombeyda' Municipal Educational Institution and the '11 de Noviembre' Educational Institution, located in different areas of the Metropolitan District of Quito; this analysis considered infrastructure conditions, the composition of the student body, the number of hours allocated to physical education, and the resources available at each institution.

The third stage consisted of the systematisation and structuring of the training plan based on the theoretical and contextual inputs obtained in the previous stages; the resulting proposal constituted a contribution to the field of physical education pedagogy and the promotion of school health, with the potential for replication in other primary and lower secondary schools across the country that shared contextual characteristics similar to those of the selected educational units.

RESULTS

In this sequence, the presentation of the proposed training plan is foregrounded with the aim of addressing the research objective; therefore:

Pedagogical Rationale of the Plan

The training plan in physical activity for health and well-being is grounded in three pedagogical pillars that are articulated in a complementary manner. The first is the competency-based approach, which conceptualises learning as the development of integrated capacities of a cognitive, procedural and attitudinal nature, applicable to real-life situations. From this perspective, physical activity is not taught as a set of isolated sports techniques, but rather as a repertoire of

competencies for self-care, coexistence and the management of personal and collective well-being.

The second pillar is neuroeducation, which underpins the inclusion of intentional, varied and progressive movement experiences as a strategy for neurocognitive activation, aimed at enhancing the consolidation of learning, emotional regulation and the development of executive functions such as attention, planning and self-control. In line with this approach, Ferrín-Vera et al. (2024) and Guerrero-Mero et al. (2025) provide empirical support within the Ecuadorian context by demonstrating that well-designed motor stimulation activates brain circuits directly associated with meaningful learning.

The third pillar is social constructivism, which guides the design of cooperative learning experiences in which peer interaction, reflection on practice and teacher mediation act as drivers of development. This approach is particularly relevant in the context of the selected educational institutions, as the sociocultural diversity of their student population requires pedagogical proposals that transform difference into a formative resource rather than an obstacle to learning.

Objectives of the Training Plan

General objective:

To promote the health and holistic well-being of students in basic education within municipal educational institutions in Quito through the implementation of a systematic, inclusive and pedagogically grounded physical activity training plan.

Specific objectives:

1. To develop basic and specialised motor competencies among students in the elementary, middle and upper sublevels of basic education.
2. To foster active and healthy lifestyle habits that extend beyond the school environment into the family and community context.

3. To integrate physical activity with neuroeducational strategies that enhance cognitive performance and students' socio-emotional well-being.
4. To address classroom diversity through methodological adaptations that ensure the participation of all students, including those with special educational needs (SEN).
5. To establish formative and summative assessment mechanisms to monitor individual and collective progress.

Cross-Cutting Thematic Axes

The training plan is organised around four cross-cutting thematic axes that span the three sublevels of basic education, with a gradual progression in complexity, autonomy and reflectivity.

Axis 1: Motor Skills and the Body

This axis addresses the development of basic motor skills locomotion, manipulation, balance and stability as well as specialised motor skills applied to games, sports and expressive activities. The progression moves from exploratory and playful movement in the lower grades to more structured and reflective forms of motor practice in the upper grades. In this regard, Rodríguez-Moreno (2025) highlights the importance of physical culture in general basic education as a foundation for holistic human development, a position fully aligned with this axis. Free bodily exploration and symbolic play are emphasised in the elementary sublevel, whereas simplified sports activities and motor skill circuits predominate in the middle sublevel.

Axis 2: Health, Nutrition and Active Habits

This axis integrates health education content directly related to physical activity: the effects of sedentary behaviour on the body and learning, the importance of restorative sleep, adequate hydration, balanced nutrition and personal hygiene. In this respect, Olmedo-Montoya (2025) underscores the need to integrate

physical activity and nutritional education within school programmes, noting that both dimensions are mutually reinforcing when addressed in an integrated manner. The contents of this axis are developed through problem-based situations, school research projects and health promotion campaigns in which students themselves act as agents of change within their educational community.

Axis 3: Coexistence, Play and Inclusive Sport

This axis promotes the development of values and attitudes linked to collective physical practice: respect, cooperation, peaceful conflict resolution and appreciation of diversity. To this end, adapted playful activities are included for students with special educational needs, following the recommendations of Sarango-Salvay et al. (2024) on inclusion in school-based physical activity. Likewise, Castillo-Del-Valle et al. (2026) reinforce the relevance of this axis by documenting that inclusive strategies in physical education generate more equitable and motivating learning environments for all students, reducing participation barriers and strengthening institutional belonging.

Axis 4: Body Expression, Emotional Well-being and Relaxation

This axis incorporates practices of body awareness, conscious breathing, progressive relaxation and expression through movement, recognising the close relationship between the body, emotions and learning documented in contemporary neuroeducation. Its inclusion responds to the contributions of Ferrín-Vera et al. (2024), who emphasise that stress management and emotional regulation are essential conditions for effective learning. In the same vein, Guerrero-Mero et al. (2025) advocate the integration of the bodily and cognitive as a guiding principle of pedagogy aligned with the functioning of the human brain.

Organisation by Sublevels and Time Allocation

The training plan is implemented differentially across the three sublevels of basic education, with adjustments in complexity, duration and teaching resources according to the developmental characteristics of each age group.

Elementary sublevel (Years 2–4):

Sessions last 40 minutes and are held three times per week. The emphasis is on the development of basic motor skills, free and guided play, bodily exploration and spontaneous expression. Activities are predominantly playful and designed to generate positive movement experiences that foster a favourable disposition towards lifelong physical activity.

Middle sublevel (Years 5–7):

Sessions last 45 minutes, with three sessions per week. Health and active habit content, adapted sports activities and cooperative practices are incorporated more systematically. At this level, the teacher assumes the role of mediator, guiding reflection on practice and promoting progressive bodily awareness.

Upper sublevel (Years 8–10):

Sessions last 50 minutes, with three weekly sessions complemented by a fortnightly 30-minute session dedicated to group assessment and feedback. Content becomes more technically and tactically complex, health education is addressed from a critical perspective, and student autonomy in managing their own physical practice is encouraged.

Methodological Strategies

The training plan adopts a diversified repertoire of methodological strategies, selected according to the objectives of each thematic axis and the characteristics of the group. Game-based learning constitutes the core strategy in the elementary and middle sublevels, given its proven effectiveness as a vehicle for motor, cognitive and socio-emotional development in childhood. Reciprocal

teaching and cooperative work are incorporated through activities in which students assume both teaching and learning roles, fostering autonomy and shared responsibility.

Reflection on practice, through guiding questions and learning journals, enables students to become aware of their motor and affective processes, facilitating the transfer of learning to new situations. Pedagogical differentiation ensures that motor tasks are accessible to all students, with adaptations in complexity, space, time and teacher support for those with special educational needs, in accordance with the principles of Universal Design for Learning (UDL) that underpin inclusive education in Ecuador.

Resources and Implementation Conditions

The implementation of the training plan requires a set of material and institutional conditions. Regarding physical resources, the plan envisages the use of school playgrounds, multi-purpose courts and available green spaces, through an optimisation strategy that does not depend on additional infrastructure. Basic sports materials balls, hoops, ropes, cones and mats are sufficient for most planned activities, although it is recommended that each institution manages a minimum recreational materials kit funded through school participation budgets.

With regard to human resources, the plan involves the active participation of physical education teachers from each institution, who will receive continuous professional development on the neuroeducational and pedagogical foundations of the plan, its curricular structure and assessment strategies. In this sense, París-Pineda et al. (2020) highlight teacher training as an essential condition for the quality of school physical exercise programmes, as pedagogical competence largely determines both the impact of interventions and the sustainability of outcomes.

Assessment System

The training plan incorporates an assessment system consistent with its pedagogical foundation, integrating diagnostic, formative and summative assessment within a framework of continuous improvement. Diagnostic assessment is conducted at the beginning of the school year and includes evaluation of basic physical condition aerobic endurance, muscular strength, flexibility and coordination as well as students' and families' reported physical activity habits and group interests and motivations.

Formative assessment is embedded within each teaching unit through systematic observation, process rubrics and timely feedback. In this regard, Paredes-Echeverría and Echeverría-Caranqui (2025) emphasise the importance of continuous assessment in school physical activity programmes, noting that regular feedback increases student motivation and supports self-regulation. Summative assessment is conducted at the end of each term and at the end of the school year, evaluating progress in motor competencies, health knowledge, physical activity habits and attitudes towards movement. Its results inform subsequent planning, ensuring coherence and continuity throughout the academic year.

DISCUSSION

With regard to the neuroeducational grounding of the plan, the contributions of Ferrín-Vera et al. (2024) and Guerrero-Mero et al. (2025) support the decision to integrate neurocognitive activation strategies into physical education sessions, recognising that bodily movement not only produces physical benefits but also activates brain circuits directly associated with learning and emotional regulation. This perspective broadens the traditional conception of physical education and positions it as a strategic component of the school's educational project, with transversal impact across other areas of the curriculum.

The relationship between physical activity and academic performance, documented by Ávila-Manríquez et al. (2021), Luque-Illanes et al. (2021), and Macías-Giler (2025), reinforces the pedagogical rationale of the plan. However, it is important to qualify that this relationship is neither automatic nor linear, as it depends on the pedagogical quality of the interventions, the consistency of their implementation, and the institutional context in which they are developed. The proposed training plan addresses these conditions through continuous teacher development, ongoing evaluation, and explicit institutional support as control variables for process quality.

The inclusion of the axis on coexistence and inclusive sport responds to a need identified by both Castillo-Del-Valle et al. (2026) and Sarango-Salvay et al. (2024): school physical education must ensure the full participation of all students, including those with special educational needs. This rights-based and equity-oriented perspective is consistent with the principles of inclusive education recognised in Ecuadorian regulations and with international best practices in the field, representing a significant advance over the selective and competitive approaches that have historically characterised school physical education in the region.

The proposal to link physical activity with nutritional education and healthy lifestyle habits, developed in Axis 2, aligns with the approaches of Olmedo-Montoya (2025) and Rodríguez-Torres et al. (2024), who demonstrate that the most impactful interventions are those that simultaneously address movement, nutrition, and the family and institutional environment. Accordingly, the training plan incorporates strategies for family engagement, recognising that support from the home environment is a determining factor in consolidating healthy habits acquired at school and in transferring learning to other contexts of children's daily lives.

One limitation that must be acknowledged in this work is its propositional nature, which implies that the results presented correspond to a theoretical design that

has not yet been implemented or evaluated in real school practice. The empirical validation of the plan through its application in the three selected educational institutions and the measurement of its effects on indicators of physical fitness, activity habits, and student well-being constitutes the immediate and necessary next step to confirm or refine the pedagogical assumptions underpinning it. In this regard, studies such as those by Cartuche-Sánchez (2026) and Paredes-Echeverría and Echeverría-Caranqui (2025) provide valuable methodological precedents for designing this validation process.

Another relevant consideration concerns the sustainability of the plan. The reviewed literature consistently indicates that school-based physical activity programmes that achieve lasting effects are those institutionalised within school culture, beyond the initiative of an individual teacher or a one-off project. In this sense, Vargas-Arreaga and Merchán-Carvajal (2024) and Rodríguez-Torres et al. (2020) agree that the sustainability of interventions requires institutional leadership commitment, continuous teacher training, and the establishment of partnerships with the community and families. The proposed training plan incorporates these factors in its design; nevertheless, its implementation will depend on the degree of institutional ownership achieved in each educational setting.

CONCLUSION

In accordance with the stated objectives, this study achieved its aim by designing a training plan in physical activity for the health and well-being of primary school students in three municipal educational institutions in the Metropolitan District of Quito. Its structure coherently responds to the contextual conditions identified in each institution and to the theoretical foundations underpinning the proposal.

Structurally, the plan is organised into four transversal thematic axes: motor skills and the body, health and active habits, coexistence and inclusive sport, and body expression and emotional well-being. These axes are articulated with the pedagogical pillars of the competency-based approach, neuroeducation, and

social constructivism. This articulation ensures that physical activity is addressed not as an end in itself, but as a comprehensive educational experience that impacts the student's cognitive, socio-emotional, and biological development.

From this perspective, the organisation by sublevels with gradual progression in complexity and autonomy, together with pedagogical differentiation strategies guided by Universal Design for Learning, enables the plan to address classroom diversity and ensure the participation of all students, including those with special educational needs. In this way, the proposal transcends the selective approaches that have historically limited the scope of school physical education.

Furthermore, the system of diagnostic, formative, and summative assessment incorporated into the design ensures mechanisms for monitoring individual and collective progress, thereby transforming the plan into a tool for continuous improvement rather than a static document. Its sustainability, however, will depend on institutional commitment, ongoing teacher development, and family engagement conditions that the design itself recognises as strategic implementation variables.

Looking ahead to practice, the empirical validation of the plan through its effective implementation in the selected institutions constitutes the immediate research task, necessary to contrast pedagogical assumptions with results obtained in real school contexts and to refine its components based on the evidence gathered.

FUNDING

Non-monetary

CONFLICT OF INTEREST

There is no conflict of interest with individuals or institutions associated with the research.

ACKNOWLEDGEMENTS

To the students of the educational institutions who participated in the research.

REFERENCES

Ávila-Manríquez, F. D. J., Méndez-Ávila, J. C., Silva-Llaca, J. M., & Gómez-Terán, O. Á. (2021). Actividad física y su relación con el rendimiento académico [Physical activity and its relationship with academic performance]. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 12*(23), e025. https://doi.org/10.23913/ride.v12i23.1030

Cartuche-Sánchez, K. A. (2026). Efectos de un programa de actividades físico-recreativas en la disminución de indicadores de sedentarismo en estudiantes de educación básica media [Effects of a physical-recreational activity program on reducing sedentary behavior indicators in middle basic education students]. *Revista Internacional de Actividad Física, 4*(1), 74–89. https://doi.org/10.53591/2853

Castillo-Del-Valle, H. M., Medina-Suárez, M. N., Salazar-Quinatoa, M. M., & Sarmiento-Guerra, S. I. (2026). Problemas de aprendizaje y estrategias inclusivas en la Educación Física: un estudio bibliométrico en contextos latinoamericanos [Learning problems and inclusive strategies in Physical Education: A bibliometric study in Latin American contexts]. *Retos, 75*, 485–495. https://doi.org/10.47197/retos.v75.118301

Ferrín-Vera, P. F., Macías-Villigua, M. A., Posligua-Robles, E. C., & Vinueza-Mero, C. Y. (2024). La neuroeducación: Su motivación y la actividad física en estudiantes de Manta [Neuroeducation: Motivation and physical activity in Manta students]. *Revista Multidisciplinaria Perspectivas Investigativas, 4*(especial2), 50–58. https://doi.org/10.62574/rmpi.v4iespecial2.193

Guerrero-Mero, G. E., Anchundia-Paredes, E. Y., Cedeño-Molina, R. C., & Rivas-Falcones, V. R. (2025). Impacto de la neuroeducación y el enfoque constructivista en el sistema educativo ecuatoriano [Impact of neuroeducation and the constructivist approach on the Ecuadorian education system]. *Revista Multidisciplinaria Perspectivas Investigativas, 5*(Educativa), 21–33. https://doi.org/10.62574/rmpi.v5iEducativa.402

Lizano-Vela, N. H., Banda-Poma, K. I., Talavera-Iza, E. R., & Guamán-Caiza, J. M. (2024). La importancia de la Educación Física en el desarrollo integral de los estudiantes de Educación Básica y Bachillerato en Ecuador: Un estudio longitudinal [The importance of Physical Education in the integral development of basic and high school students in Ecuador: A longitudinal study]. *Ciencia y Educación, 5*(9), 49–65. https://doi.org/10.5281/zenodo.13763628

Luque-Illanes, A., Gálvez-Casas, A., Gómez-Escribano, L., Escámez-Baños, J. C., Tárraga-Marcos, L., & Tárraga-López, P. J. (2021). ¿Mejora la actividad física el rendimiento académico en escolares? Una revisión bibliográfica [Does physical activity improve academic performance in

schoolchildren? A bibliographic review]. *Journal of Negative and No Positive Results, 6*(1), 84–103. https://doi.org/10.19230/jonnpr.3277

Macías-Giler, Y. R. (2025). Relación entre la práctica regular de actividad física y el rendimiento académico de los estudiantes [Relationship between regular physical activity practice and students' academic performance]. *Revista Científica de Innovación Educativa y Sociedad Actual ALCON, 5*(3), 374–382. https://doi.org/10.62305/alcon.v5i3.608

Olmedo-Montoya, C. A. (2025). Actividad física y nutrición en niños de segundo a séptimo grado de educación básica [Physical activity and nutrition in children from second to seventh grade of basic education]. *MENTOR: Revista de Investigación Educativa y Deportiva, 4*(10).

Paredes-Echeverría, C. A., & Echeverría-Caranqui, J. P. (2025). Programa de actividades físicas y condiciones de salud de estudiantes de primero de bachillerato en una unidad educativa en Ecuador 2024 [Physical activity program and health conditions of first-year high school students in an educational institution in Ecuador 2024]. *Revista InveCom, 5*(4), e504095. https://doi.org/10.5281/zenodo.14977749

París-Pineda, O. M., Álvarez-Rey, N. E., & Cárdenas-Sandoval, L. K. (2020). Estructura de un programa de ejercicio físico dirigido a escolares [Structure of a physical exercise program aimed at schoolchildren]. *Revista de Salud Pública, 22*(1), 95–103. https://doi.org/10.15446/rsap.v22n1.84216

Rodríguez-Moreno, W. (2025). La importancia de la práctica de la cultura física en la educación general básica [The importance of physical culture practice in basic general education]. *Revista Multidisciplinaria Súmmum, 1*(3), 26–34.

Rodríguez-Torres, Á. F., Marín-Marín, J. A., López-Belmonte, J., & Pozo-Sánchez, S. (2024). Análisis de la actividad física y la alimentación en estudiantes de Ecuador y la influencia del apoyo familiar e institucional [Analysis of physical activity and nutrition in Ecuadorian students and the influence of family and institutional support]. *Retos, 54*, 279–288. https://doi.org/10.47197/retos.v54.103479

Rodríguez-Torres, Á. F., Rodríguez-Alvear, J. C., Guerrero-Gallardo, H. I., Arias-Moreno, E. R., Paredes-Alvear, A. E., & Chávez-Vaca, V. A. (2020). Beneficios de la actividad física para niños y adolescentes en el contexto escolar [Benefits of physical activity for children and adolescents in the school context]. *Revista Cubana de Medicina General Integral, 36*(2).

Sarango-Salvay, A. P., Bermeo-Ochoa, A. S., Sarmiento-Calva, E. O., & Tamayo-Malacatus, M. F. (2024). La actividad física, deporte y recreación en niños con necesidades educativas especiales [Physical activity, sport and recreation in children with special educational needs]. *Revista Científica GESTAR, 7*(14), 585–594.

Vargas-Arreaga, L. S., & Merchán-Carvajal, M. B. (2024). Incidencia de la educación física para fomentar estilos de vida saludables: una revisión sistemática [The impact of physical education on promoting healthy lifestyles: A systematic review]. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades, 5*(4), 4404–4417. https://doi.org/10.56712/latam.v5i4.2576

Vélez-Romero, F. J., Salazar-Garcés, I. G., Gortaire-Silva, C. M., & Medina-Bermeo, Á. D. (2025). El impacto de la Educación Física en la formación integral de los estudiantes de Educación Básica [The impact of Physical Education on the integral formation of basic education students]. *Revista Ciencia Innovadora, 3*(2), 1–13. https://doi.org/10.64422/rci.v3n2.2025.40

Copyright © 2026 by the authors. This article is open access and distributed under the terms and conditions of the Creative Commons Attribution–NonCommercial–ShareAlike 4.0 International Licence (CC BY-NC-SA 4.0): https://creativecommons.org/licenses/by-nc-sa/4.0/