

## Connection Between Physical Inactivity and the Emergence of Chronic Illness Among Athletes

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### Abstract:

This narrative review's main goal was to assess the state of the field and shed more light on the connection between physical inactivity and the emergence of chronic illness and early mortality. We reaffirm the overwhelming scientific evidence supporting the main and secondary prevention of several chronic illnesses (such as cardiovascular disease, diabetes, cancer, hypertension, obesity, depression, and osteoporosis) as well as early mortality by engaging in regular physical exercise. We also demonstrate that the current Health Canada physical activity recommendations are enough to produce positive health effects, particularly in previously sedentary individuals. Physical activity and health status tend to be correlated linearly, meaning that increasing physical activity and fitness will result in greater gains in health status.

**Keywords:** Activity education, motor properties, activity education with coordination program

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### Introduction

The physical education that is taught in elementary schools has been updated as part of the newly revamped educational system and is now known as a Game and Physical Exercises Lesson. The age groups that formerly attended preschool classes began learning this lesson in Grade 1 under the new system. Today, it is believed that skills like growing self-confidence, self-realization, social acceptability, and belonging to a group may be taught in a more pleasurable manner in the physical education and sports courses in the first grades of primary schools. Because planning is ingrained in the core concept of education, activity education must be carried out on a regular basis and according to a planned schedule in order to have a

lasting impression on pupils and prepare individuals for acquiring. "An person actively participates in the process of changing their behavior via education. Children's physical development, improvement of movement abilities, and improvement of nerve-muscle coordination all benefit greatly from physical education, which is a complementary and integral aspect of education (Bucher & Koenig, 1983; Harmandar, 2004). Children who participate in activity education have better locomotor, balance, and movement skills, and this fundamental education also improves their physical comfort, perceptive-motor skills, social-emotional skills, learning capacity, and habit of making good use of downtime (Amlyer,

1999). It takes extensive motor skills to coordinate.

This ability is crucial for learning new strategies and methods and improving existing ones, as well as for learning new strategies and techniques in novel settings. In sport pedagogics, adjectives like "skill" and "agility" are sometimes employed to describe this circumstance (Asci, Gokmen, & Karagul, 1995). The coordination quality in the delicate motor behavior of the components of the movement devices is explained by skill. However, the conditional and coordinated nature of all motor activities is emphasized by the word "agility" (Muratl, 1998). Most complicated talents include fundamental movement components that have been adopted from games and movement elements. The youngsters will be in a better position to master the athletic abilities that will be taught in the next years thanks to these key motions. It is believed that it is simpler and more successful to help youngsters whose primary movements have been supported develop motor skills and to teach them more complicated skills in an appropriate manner (Kasap 1999).

Hirtz carried out a research and looked at the significance of the variables that made up the coordination skill, and according to the 20 factor analyses, he identified 5 factors as the fundamental factors. the Kinesthetic Segmentation Skill, the Direction Determination Skill Based on Location, the Balance Skill, the Reaction Skill, and the Rhythm Skill (Hirtz, 1988). Physical education, sports, and games are claimed to be the acquisitions that are seen, experienced, found, and understood by structuring as psychomotor behaviors in the current physical education curriculum, which has evolved. As much as a youngster is able to learn, psychomotor behavior acquisition takes place. The question of how the knowledge, abilities, and habits to be imparted to the kid take place in an educational organization is one crucial component of educational programs.

This covers both the instructors' teaching activities and the students' learning activities. In order to make this procedure more efficient, trainers have employed a variety of training techniques. The preparation of the kid's education program must take into account not only the child's interests and requirements, but also the educational possibilities and techniques that are made available to the child. In this context, activity education with coordination is one of the most successful approaches because it enables kids to engage in activities in a more enjoyable way, creates a more enjoyable learning environment, and ensures that they permanently understand the learning and education goals. In this research, we sought to identify the impact of coordination-based activity instruction in physical education classes on the growth of 6-year-old primary school students' balance and arm strength.

### Literature Review

**L. Henning (2022)** According to sport and exercise psychology, children's desire to engage in physical activity and persistence in that activity begin to depend on both their real and perceived physical fitness no later than middle childhood (Stodden et al., 2008). A variable-centered strategy has so far been used to explore the impacts of both real and perceived physical fitness (Jekauc et al., 2017). The accuracy of the perceived physical fitness, however, is not taken into account in this technique. The accuracy of perceived physical fitness should be taken into account since real and perceived levels of physical fitness might differ, particularly in children owing to increased egocentricity and therefore less comparison processes (Harter, 2006). A total of 462 third graders and, about nine months later, fourth graders (Mage = 8.79 years) participated in this research. Students in the third grade had their actual, perceived, and physical activity levels evaluated. pupils were given questionnaires to complete in fourth grade that measured pupils' levels of physical activity and motivation. To examine the

main effects and accuracy effects of real and perceived physical fitness on motivation and physical activity, polynomial regressions with response surface analyses were used. Studies have shown that kids with higher levels of real and perceived physical fitness exhibit more self-motivation, more current physical activity, and more physical activity nine months later. Children who more appropriately judge their level of fitness also engage in more recent physical exercise. According to the findings, the interaction between real and perceived physical fitness affects not only physical activity but also autonomous motivation, which is a predictor of long-term physical activity. Therefore, the enhancement of both real and perceived physical fitness should be the main goal of intervention. Additionally, this age group has to be encouraged to appropriately measure fitness.

Narelle Eather (2023) Sport is a kind of physical exercise that may be especially good for adults' social results, short- and long-term physical and mental health. The findings of an updated systematic review on the social and mental health benefits of adult engagement in amateur and professional sports are presented in this article. The adult "Mental Health via Sport" conceptual model was developed using the data. Studies published between 2012 and March 2020 were included after nine internet databases were examined. The association between sport involvement and mental health and/or social consequences in adult populations was covered in the relevant qualitative and quantitative research. The Quality Assessment Tool (for quantitative research) or the Critical Appraisal Skills Programme (for qualitative studies) were used to calculate the risk of bias (ROB). The search approach turned up 8528 articles, 29 of which included people aged 18 to 84 and were used for analysis. Data concerning demographics, methods, and research outcomes were retrieved, and the findings were presented in accordance

with the study's design. The research shows that both amateur and professional sports participation are linked to better mental health, including higher levels of psychological well-being (such as self-esteem and life satisfaction) and lower levels of psychological ill-being (such as reduced levels of depression, anxiety, and stress), as well as better social outcomes (such as increased self-control, pro-social behavior, interpersonal communication, and fostering a sense of belonging). Overall, adults who played team sports had better health outcomes than adults who played individual sports, and those who played sports more frequently typically report the greatest benefits. However, some research indicates that adults who play elite sports may be more likely to experience psychological distress. Qualitative research showed low ROB, whereas quantitative studies showed inconsistent methodological quality. The results of this study demonstrate that adult engagement in sports, whether team or individual, is good for enhancing mental health and social outcomes. However, team sports may provide more significant and extra advantages for social and mental outcomes into adulthood. Although further experimental and longitudinal research is required to pinpoint the precise mechanisms behind sports' beneficial impacts on mental health as well as the moderators of intervention effects, this review also offers preliminary support for the Mental Health via Sport paradigm. To further comprehend the connection between certain aspects of the athletic environment and the mental health and social results in adult participants, more qualitative research is also necessary.

Yan Qiu (2023) Exercise has long been recognized for its vital contribution to maintaining health and enhancing physical fitness. All facets of human health are improved by regular moderate-intensity exercise, which is also frequently used as a prophylactic and treatment method for a number of disorders. Exercise has been

shown to maintain and restore homeostasis at the organismal, tissue, cellular, and molecular levels in order to promote favorable physiological changes that afterwards defend against a range of clinical illnesses. Here, we focus primarily on the effects of moderate-intensity exercise on the key indicators of health, such as barrier integrity, local perturbation containment, recycling and turnover, circuitry integration, rhythmic oscillations, homeostasis resilience, hormetic regulation, as well as repair and regeneration. Additionally, we provide a summary of our current knowledge of the processes behind the advantageous changes that occur in response to exercise. The objective of this analysis was to provide a thorough account of the fundamental biological processes by which moderate-intensity exercise preserves health and creates a pathway for its incorporation into other health therapies. We anticipate that more research in this area will deepen our knowledge of the mechanisms behind moderate-intensity exercise's beneficial effects and get us one step closer to discovering novel treatments that enhance quality of life.

Thomas Haugen (2019) Despite a large amount of research on sprint training, we still know very little about how to prepare for a world-class sprint performance. This review's goal is to bring together academic and best practice material on the development of elite sprint performance via training. Sprint performance is highly influenced by hereditary features, and the yearly changes in performance between athletes are less than the normal variance, the lowest meaningful change, and the impact of outside factors like wind, monitoring techniques, etc. But important underlying factors, including power, technique, and sprint-specific endurance, may be developed. The application of several training techniques (such as sprinting/running, technical training, strength/power, and plyometric training) and well-known training concepts

(progression, specificity, variation/periodization, and individualization) in a sprint training environment is discussed in this article. In fact, how training ideas and approaches are used differs significantly between science and best practice. Elite sprinters undertake sprinting/running across a wide variety of distances and with various intensities and recovery times, in contrast to the great majority of sprint-related research, which are conducted on young team sport athletes and concentrate on fast sprints with peak intensity and short recoveries. In best practice, as opposed to the "one-size-fits-all" approach in scientific literature, there is a greater correlation between the choice of training component (i.e., modality, length, intensity, recuperation, and session rate) and the intended objective of the training session. This review offers a starting point for researchers and practitioners to discuss how to train for and develop elite sprint performance. It can also be used as a position statement to outline current sprint training recommendations and to generate new hypotheses that will be tested in future studies.

David D. Peterson (2018) Periodic fitness testing is a proven training method utilized by sports and conditioning specialists, personal trainers, and competitive athletes. But neither the general public nor new exercisers often use this idea. Additionally, the majority of the fitness tests used today only evaluate a small portion of the fitness spectrum. The suggested evaluation analyzes 10 of the several components of fitness, unlike existing fitness exams, giving consumers a more thorough picture of their present fitness. Additionally, the suggested examination offers detailed training suggestions for development if users are judged to be lacking in a particular component(s) of fitness.

## Methods

The investigator follows a methodical process from the time the issue is first identified until it has been solved in their

method and technique. It offers the methods and resources needed to tackle the issue. The whole research process has been prepared in terms of technique and procedure in accordance with the study's goals. The researcher must discuss the data collection method in order to understand the study. As they provide a framework within which the objectives are to be accomplished, the methodology and process of a research study are directly related to its aim. The primary goal of the current analysis is to ascertain the variations in the physical fitness components and socioeconomic status (SES) of weightlifting and powerlifting athletes. As a result, it took many phases to finish this inquiry. The study's subsequent design has been meticulously prepared.

### Sample

A total of 120 (61 weight lifters + 59 power lifters) were chosen based on their finishes in first, second, and third place in the 2012–2013 Haryana Senior State, MDU, and KUK weight lifting and power lifting championships.

### Tool Used

This research focuses on the socioeconomic situation of weightlifting and powerlifting athletes as well as their level of physical fitness, including their speed, strength, agility, power, and endurance. To assess these components, the investigator used a number of assays. The investigator used the following resources to gather data for this investigation:-

1. Socio-Economic Status Scale (Rajbir Singh, Radhey Shyam and Satish Kumar 2005)
2. AAPHER youth Fitness Test (1958)
3. The weightlifters and powerlifters were chosen based on their finishes in the first, second, and third places in the 2012–2013 Haryana Senior State, MDU, and KUK weightlifting and powerlifting competitions.

The performance of numerous test battery items has been measured for the current

research using a variety of slandered tests. The following factors were taken into account by the investigator while choosing testing. 1. In order to execute the test simply, the investigator considered the many weightlifting and powerlifting competitors who took first, second, and third place in the aforementioned competitions.

### Description of Physical Fitness Test

#### Physical fitness test

This test is applied through AAPHER Youth fitness Test battery described below:

#### Shot-Put Test

□ **Purpose:** To assess the weightlifters' and powerlifters' strength abilities

□ **Equipments:** a designated throwing area for the shot put event that follows the regulations, It is necessary to have a shot put that weighs sixteen pounds and a measuring steel tape.

□ **Descriptions:** Prior to the testing, the Shot-Put event was described and shown. This occasion is forcing the Shot not toss. With only one hand, the shot was fired from the shoulder. Each participant chooses a spot in the circle to place the shot; it should touch or be near to the chin. The hand should not droop below this level throughout the movement of the shoulders, and it should fall in the area between the throwing sector's lines. Each subject should get three tries, but if any of the trials end in a foul, the subject is still given three opportunities to complete a fair putt.

□ **Scoring:** Each shot opportunity was measured in meters from the closest mark of the shot's ground contact to the inside of the circle's perimeter. For the final score, the best distance was selected and measured to the closest centimeter. Because human error often leads to incorrect conclusions about problems, the recorded record has to be very neat and tidy. The testing environment should be absolutely perfect in every way. Each athlete's health should be monitored by keeping an eye on them or speaking with them about how they seem..

### The test to measure the strength in terms of Shot Put



Figure 1:

### The test to measure the strength in terms of Shot Put



Figure 2:

### Shuttle Run Test

□ **Purpose:** To measure the Agility of subject.

□ **Equipments:** A stopwatch, two blocks of wood measuring 2 inches by 2 inches by 4 inches. All players have the option of running barefoot or in any shoes of their choosing.

□ **Description:** A 30 foot distance between each of the two parallel lines was drawn on the floor. Each player will begin at the back of the other line once you place the two

wood blocks behind one of the lines. On the signal "ready and go," he will begin to run. The player sprints to the blocks, selects one, and then sprints back across the starting line to put the block beyond the line before sprinting back to pick up the second block and placing it. From beginning to end, this period of time is measured in seconds. Each patient was given two trials, separated by some downtime.

□ **Scoring:** Each subject's best time from his two attempts was reported to the nearest tenth of a second.

## Conclusions

The young of our nation are its most valuable resources and the foundation of its future. This generation must be in excellent physical and mental health. The majority of sports and fitness professionals place a strong emphasis on this demographic group. Unfortunately, this group of people in our nation is physically inactive and suffering from unemployment. There are various causes, including a lack of resources, interest, direction, and drive. Some of them are prone to chronic illness from an early age. This is conclusively evidence that physical activity in infancy or adolescence lays a strong basis for lifelong health. An individual's quality of life is evaluated not only by how long they live, but also by how well they are physically and mentally able to protect themselves and their community. Through engagement in a variety of physical activities, this physiological and motor fitness, which is tied to health and is seen to be an important aspect of a person's life, is developed and safeguarded. Direct participation in numerous activities or an active lifestyle may both contribute to this physical activity. Although there is no universal agreement on the definition of an active lifestyle, physical educators from all over the globe are working to identify diverse ways to safeguard people's health via a variety of physical activities, including varying degrees of training. Obesity in children and excess body weight have lately been linked to urban youth.

## Reference

1. L. Henning, D. Dreiskämper, M. Tietjens, The interplay of actual and perceived physical fitness in children: Effects on motivation and physical activity, *Psychology of Sport and Exercise*, Volume 58, 2022, 102055, ISSN 1469-0292, <https://doi.org/10.1016/j.psychsport.2021.102055>.
2. Eather, N., Wade, L., Pankowiak, A. et al. The impact of sports participation on mental health and social outcomes in adults: a systematic review and the 'Mental Health through Sport' conceptual model. *Syst Rev* 12, 102 (2023). <https://doi.org/10.1186/s13643-023-02264-8>
3. Yan Qiu, Benjamin Fernández-García, H. Immo Lehmann, Guoping Li, Guido Kroemer, Carlos López-Otín, Junjie Xiao, Exercise sustains the hallmarks of health, *Journal of Sport and Health Science*, Volume 12, Issue 1, 2023, Pages 8-35, ISSN 2095-2546, <https://doi.org/10.1016/j.jshs.2022.10.03>.
4. Haugen, T., Seiler, S., Sandbakk, Ø. et al. The Training and Development of Elite Sprint Performance: an Integration of Scientific and Best Practice Literature. *Sports Med - Open* 5, 44 (2019). <https://doi.org/10.1186/s40798-019-0221-0>
5. Peterson, David. (2018). Fitness Testing: Not Just For Athletes Anymore. *Strength and Conditioning*. 40. 60-76. 10.1519/SSC.0000000000000393.
6. Topcu H, Arabaci R. Acute effect of different warm up protocols on athlete's performance. *European Journal of Physical Education and Sport Science*. 2017 Jul 22.
7. Ricotti, L. (2011). Static and dynamic balance in young athletes. *Journal of human sport and exercise*, 6(4), 616-628.
8. Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee IM, Nieman DC, Swain DP. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Medicine & Science in Sports & Exercise*. 2011 Jul 1;43(7):1334-59.
9. Trecroci A, Cavaggioni L, Caccia R, Alberti G. Jump rope training: Balance and motor coordination in preadolescent soccer players. *Journal of*

- sports science & medicine. 2015 Dec;14(4):792.
10. Harre D, Harre D, Barsch J. Principles of sports training: Introduction to the theory and methods of training. Ultimate Athlete Concepts; 2012.
  11. Sarıtaş N, Yıldız K, Hayta Ü. İlkokul Öğrencilerinin Bazı Motorik ve Fizyolojik Özelliklerinin Karşılaştırılması. CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi. 2017;12(2):117- 27.
  12. Kim J, Son J, Ko N, Yoon B. Unsupervised virtual reality-based exercise program improves hip muscle strength and balance control in older adults: a pilot study. Archives of physical medicine and rehabilitation. 2013 May 1;94(5):937-43.
  13. Seco J, Abecia LC, Echevarría E, Barbero I, Torres-Unda J, Rodriguez V, Calvo JI. A long-term physical activity training program increases strength and flexibility, and improves balance in older adults. Rehabilitation Nursing. 2013 Jan;38(1):37-47.
  14. Niemann C, Godde B, Voelcker-Rehage C. Not only cardiovascular, but also coordinative exercise increases hippocampal volume in older adults. Frontiers in aging neuroscience. 2014 Aug 4;6:170.
  15. Gryga M, Taubert M, Dukart J, Vollmann H, Conde V, Sehm B, Villringer A, Ragert P. Bidirectional gray matter changes after complex motor skill learning. Frontiers in systems neuroscience. 2012 May 16;6:37.