



# Report of Published Scientific Research

1. Cancela-Carral, J. M., Bezerra, P., Lopez-Rodriguez, A., & Silva, B. (2023). Degree of association between the body mass index (BMI), waist-hip ratio (WHR), waist-height ratio (WHtR), body adiposity index (BAI) and conicity index (CI) in physically active older adults. *Clinical Nutrition ESPEN*. <https://doi.org/10.1016/j.clnesp.2023.10.007>

This study focused on assessing cardiovascular disease risk indicators in part of the participant sample. It was considered some anthropometric measurements like body mass index (BMI), waist to hip ratio (WHR), waist to height ratio (WHtR), body adiposity index (BAI), and conicity index (CI).

The findings revealed that BMI is the most reliable indicator of body fat in this age group, followed by BAI and WHtR. The study also highlighted that the relationships between these indices and body fat vary by gender.

In summary, for active individuals aged 65 and over, BMI is the best indicator of body fat and cardiovascular disease risk.

2. Bezerra, P., Silva, B., Silva, A. F., Rodriguez, A. L., & Carral, J. M. C. (2023). May The Exercise Type Influence The Blood Pressure Improvements', In Older Adults? *Medicine & Science in Sports & Exercise*, 55(9S), 763–764. <https://doi.org/10.1249/01.mss.0000987008.67094.d1>

This study examines the impact of exercise on cardiovascular health of some of the sample to determine if the type of exercise, aerobic-based program (ABP) or strength-based program (SBP), influences blood pressure and cardiovascular risk.

Over four years, SBP consistently and significantly improved both systolic and diastolic blood pressure, while ABP showed initial improvement not sustained over subsequent years. Notably, there were no significant differences between the groups.

In summary, for individuals aged over 65 years, strength-based exercise (SBP) appears more effective at improving blood pressure and reducing cardiovascular risk compared to aerobic exercise (ABP). This finding is particularly important as no notable differences were observed between the two groups throughout the study.





3. Cancela-Carral, J. M., Silva, B., Silva, A. F., Lopez-Rodriguez, A., & Bezerra, P. (2023). Association Between The Body Mass Index, Waist-to-hip Ratio And Waist-to-height Ratio, In Active Older Adults. *Medicine & Science in Sports & Exercise*, 55(9S), 458–459. <https://doi.org/10.1249/01.mss.0000984092.47877.f2>

This study explores how anthropometric indices, such as body mass index (BMI), waist-to-hip ratio (WHR), and waist-to-height ratio (WHtR) are related to cardiovascular disease risk in physically active individuals participant in the project. Among the indices, BMI showed the strongest correlation with body fat ( $r = 0.612$ ), followed by WHtR ( $r = 0.521$ ). BMI and WHtR had the highest correlation ( $r = 0.789$ ). Gender influenced these correlations, with variations for females ( $r = 0.731$ ) and males ( $r = 0.568$ ).

In summary, active individuals over 65 years, can considered BMI is the most useful anthropometric index for assessing body fat, followed by WHtR. Gender plays a role in these associations.

4. Silva, B., Bezerra, P., Rodriguez, A. L., Silva, A. F., & Cancela-Carral, J. M. (2023). Sport For The Older Adults. An Adaptation Proposal Through The Project In Common Sports. *Medicine & Science in Sports & Exercise*, 55(9S), 764–764. <https://doi.org/10.1249/01.mss.0000987012.82905.6e>

This study examines the acceptance of rule adaptations in team sports (basketball, indoor soccer, handball, and volleyball) implemented in the project. The satisfaction with rule adaptations was assessed through a Likert scale in response to a questionnaire. The acceptance of the adapted rules varied by sport and country. Basketball and indoor soccer saw lower acceptance rates (34.5% and 46.7% agreed). In contrast, volleyball and handball adaptations were well-received (53.6% and 61.9% agreed). Participants from Bulgaria, Italy, and Slovenia overwhelmingly supported the new rules, while those from Portugal expressed dissatisfaction with the changes.

In summary, the rule adaptations for team sports were generally accepted, except in Portugal. This variation may be influenced by past sports experience, intrinsic motivation, and physical capabilities. The study highlights the potential for making team sports more suitable for older individuals through rule modifications.

5. Bezerra, P., Cancela, JM, Silva, B., Lopez Rodriguez, Adriana, Silva, Ana (2023) Autoperceção da qualidade de vida e indicadores de risco para a saúde em idosos, que relação? In livro resumos XIX Congresso de Ciências do Desporto e Educação Física dos Países de Língua Portuguesa (<https://xixccdeflplp.seuescritorio.com/wp/wp-content/uploads/2023/01/Livro-CO-e-PO.pdf>)

This study investigates how education, body mass index BMI, and Waist-to-Hip Ratio (WHR) relate to self-perceived quality of life and health in the participants in the project to understand how education affects the connection between health indicators and self-perceived health in the elderly. Education has a role in the relationship between health indicators and self-perceived health. BMI is particularly sensitive and negatively associated with "health status today" across countries and educational levels.





In summary, it appears that BMI is more responsive to quality of life dimensions than WHR. Surprisingly, as education levels rise, the link between health indicators and self-perceived health weakens.

6. Silva, A., Cancela, J., Silva, B., Camões, M, Bezerra, P. (2021) Maior Prática de atividade física implica melhores resultados no Sénior Fitness Test?, In livro de resumos 3o Fórum REDESP – Escola Superior de Educação do Instituto Politécnico de Coimbra – Portugal ([http://redepolitecnicosdesporto.com/wp-content/uploads/2022/03/2021\\_III-Forum-REDESPP-Desporto\\_livro-resumos\\_Coimbra.pdf](http://redepolitecnicosdesporto.com/wp-content/uploads/2022/03/2021_III-Forum-REDESPP-Desporto_livro-resumos_Coimbra.pdf))

This study examines whether recommended physical activity (PA) influences the physical fitness of the participants from Hungary, Italy, and Portugal, assessing the impact of PA on various aspects of physical fitness. The results indicated that individuals engaging in more weekly PA demonstrated better grip strength, more agility, greater flexibility of the upper and lower limbs, and covered a longer distance in the 6-minute walk test. Furthermore, a clear threshold was observed, as individuals who reached or exceeded 150 minutes of PA per week exhibited notably improved physical fitness.

In summary, it was observed that increased engagement in PA, particularly meeting or exceeding the 150-minute per week threshold, significantly enhances physical fitness in seniors across different fitness parameters and countries.