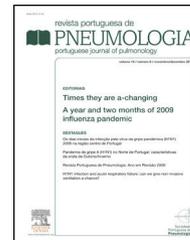


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EDITORIAL

Run for your life!

Corra pela sua vida!



Most people are aware of the health benefits of exercise, however quite often physicians themselves forget to stress the importance of adequate levels of physical activity for their own patients. Lots of money and effort are spent targeting bad cholesterol and high blood pressure after a cardiovascular event. National health services pays for bariatric surgery to effectively bypass the stomach in markedly obese subjects and also for their plastic surgery to remove the extra skin after losing the thick layers of fat. Indisputable medical evidence supports these actions, however they all fall into the category of secondary prevention. These people already have the disease and a key factor in all of these conditions is a sedentary lifestyle.

Physical activity is a key determinant of energy expenditure, and thus is fundamental to energy balance and weight control. Regular physical activity contributes to the primary and secondary prevention of cardiovascular disease and several other chronic conditions. For example, it reduces blood pressure, improves the level of the good cholesterol, improves control of blood glucose in overweight people, even without significant weight loss, and reduces the risk for colon cancer and breast cancer among women. Rapidly westernizing societies are particularly helpful for us to understand where we are (not) moving. Following the World Health Organization stepwise approach to chronic disease risk factor surveillance, it was recently shown that adults living in urban areas of Mozambique exercise daily on average for 11 min compared with 3 h for those living in rural areas.¹ A similar trend is observed in Portugal. Results made available by the Eurobarometer Surveys show the country to be number one for the highest percent of citizens who have never performed regular physical activity (36% compared with 14% for EU). Moreover, only 33% of Portuguese exercise at least once a week, compared with the mean value for the EU top-5 of 64%.²

In this issue of the *Revista Portuguesa de Pneumologia*, Rita Santos-Silva and co-workers report their study on asthmatic children where no differences in levels of physical activity were found compared with healthy peers. This is in line with previously reported data from the Portuguese

National Asthma Survey that showed that adult asthmatics, independent of asthma control, do not seem to have a more sedentary lifestyle.³ In fact, more vigorous physical activity was found among controlled men and uncontrolled women asthmatics than among healthy respondents. These are particularly important observations because they challenge the belief that despite the availability of effective anti-asthmatic therapies, a majority of asthmatics experience a restriction in their physical activity due to asthma. Although exercise is a powerful trigger of bronchoconstriction and symptoms in asthmatic patients and may result in avoidance of physical activity, these observations indicate that both children and adults do as much as their healthy peers which, however, do very little! Therefore, physical activity should be encouraged, as, in the case of adults, only about half of them reached recommended activity levels.⁴

On the basis of the current knowledge, evidence based prescription of physical activity in asthma seems to be restricted to improvements in the physical fitness of the subjects.⁵ Although there is no sufficient data to draw clear conclusions, it seems that physical training may also have positive effects on health-related quality of life. In the few clinical trials assessing inflammatory outcomes, regular training had an anti-IgE effect, decreasing both total and allergen specific IgE levels in asthmatic children.⁶ Additionally physical training is safe, and if the disease is under control, does not cause exacerbations.⁶ Contrary to what was expected, the extra burden caused by changes in daily routine or anxiety driven by fear of exacerbations due to the engagement in the training program do not have a negative impact on caregiver's quality of life.⁷ In fact, children and caregiver's quality of life improve side-by-side, supporting the argument that the asthmatic child should be given appropriate guidance and encouragement to exercise particularly when anxiety or depressive symptoms occur in the family.

Recently the European Academy of Allergy and Clinical Immunology (EAACI) published the first chapter of the Evidence Based Clinical Guidelines on Lifestyle and Asthma.⁸ It was shown that gaining the required amount of weight to

become obese almost doubled the odds of incident asthma. The evidence about disease related outcomes supported by randomized controlled trials showed the benefits of losing weight for asthma control and lung function. The data are conflicting from the several observational studies, which provided limited and low quality evidence of the beneficial effects of losing weight on asthma related outcomes. Nevertheless, taken together, these observations support the recommendation of tackling obesity and weight management as part of asthma treatment, that is to say, increase your overall physical activity levels!

To conclude, it is recommended that children and adolescents participate in at least 60 min of moderate intensity physical activity most days of the week and preferably daily.⁴ Engagement in physical activity promotes the child's normal psychosocial development, neuromuscular coordination and self-confidence. It also increases the chance of greater interplay between the environmental genome and the human microbial genome. Metagenomic and other studies of healthy and diseased individuals reveal that reduced biodiversity and alterations in the composition of the gut and skin microbiota are associated with various inflammatory conditions, including asthma, allergic and inflammatory bowel diseases, type1 diabetes, and obesity in what has been recently called the Biodiversity Hypothesis.⁹ Urbanization and sedentarism leads to loss of biodiversity (poor macrobiota/microbiota), poor human microbiota (dysbiosis), immune dysfunction (poor tolerance), inappropriate inflammatory responses, and finally symptoms and clinical disease.¹⁰ If people with asthma or allergies are able to maintain proper physical activity levels, particularly in a natural biodiverse environment, they will be less likely to suffer adverse health events associated with sedentary lifestyle, such as heart attack, stroke or diabetes and they will improve their asthma. It has never been so true: Run for your Life!

References

1. Padrão P, Damasceno A, Silva-Matos C, Prista A, Lunet N. Physical activity patterns in Mozambique: urban/rural differences

during epidemiological transition. *Prev Med.* 2012;55:444–9.

2. Sport and Physical Activity [Internet]. Eurobarom. *Surv. Sport Phys. Act.*; 2010. Available from: http://ec.europa.eu/sport/library/documents/ebs_334_en.pdf
3. Verlaet A, Moreira A, Sá-Sousa A, Barros R, Santos R, Moreira P, et al. Physical activity in adults with controlled and uncontrolled asthma as compared to healthy adults: a cross-sectional study. *Clin Transl Allergy.* 2013;3:1.
4. Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee I-M, et al. American College of Sports Medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Med Sci Sports Exerc.* 2011;43:1334–59.
5. Carson KV, Chandratilleke MG, Picot J, Brinn MP, Esterman AJ, Smith BJ. Physical training for asthma. *Cochrane database Syst Rev [Internet].* 2013;9:CD001116 [cited 12.03.14].
6. Moreira A, Delgado L, Haahtela T, Fonseca J, Moreira P, Lopes C, et al. Physical training does not increase allergic inflammation in asthmatic children. *Eur Respir J.* 2008;32:1570–5.
7. Silva D, Couto M, Moreira P, Padrão P, Santos P, Delgado L, et al. Physical training improves quality of life both in asthmatic children and their caregivers. *Ann Allergy Asthma Immunol.* 2013;111:427–8.
8. Moreira A, Bonini M, Garcia-Larsen V, Bonini S, Del Giacco SR, Agache I, et al. Weight loss interventions in asthma: EAAI evidence-based clinical practice guideline (part I). *Allergy.* 2013;68:425–39.
9. Haahtela T, Holgate S, Pawankar R, Akdis CA, Benjaponpitak S, Caraballo L, et al. The biodiversity hypothesis and allergic disease: world allergy organization position statement. *World Allergy Organ J.* 2013;6:3.
10. Haahtela T. What is needed for allergic children? *Pediatr Allergy Immunol.* 2014;25:21–4.

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