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## EPIDEMIOLOGIC PATTERN AND DISEASOME EXPLORATION FOR PHYSICAL PERFORMANCE: A NEW HORIZON FOR GENETIC AND ENVIRONMENTAL CROSS-TALK IN HEALTH AND DISEASE

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Both genetic and environmental factors contribute to human diseases. Though genetic contributions are relatively well characterized for some monogenetic diseases, there has been no effort at curating the extensive list of environmental etiological factors. However, considering the interaction between the factors, a network of associates and clustering would explain the influencing factors on health and disease. In this study, we evaluated the association of factors on physical performance. From a comprehensive search of the MeSH annotation of MEDLINE articles, etiological factors associated with physical performance were identified. Clustering of etiological factors puts genes in the context of environment in a quantitative manner. After extraction of genetic factors, associated diseases with those genes were searched. Finally a matrix of association was formed. The degrees of associations were determined by pooling the published data and the network of "etiome" was constructed by Gephi. A 22 by 22 gene-gene interaction showed ACE gene with the highest centrality. Also 600 cells, gene-disease matrixes were illustrated, including the degree of associations and 95% CIs. The disease of physical performance demonstrated interesting clusters of diseases and risk factors with an average degree of 7.4 and average clustering coefficient of 0.60. The network principally included two main clusters around diabetes and neoplastic diseases, while diabetes had the highest strength and centrality. The diseasome helps a better understanding of genetic and environmental factors attributed to physical performance in order to find effective treatments for linking factors. Diabetes and ACE gene polymorphism should take a paramount attention in this regard.

### Biography

Mohammad Reza Hashempour has completed his Doctorate at the age of 25 years from AJA University of medical sciences and postdoctoral studies from Golestan University School of Medicine. He has published papers in internal (Iranian) journals and has interest for evidence based and analytical research.

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