Identification of thromboembolic genetic risk factors in young athletes and the development individual-specific prevention of thrombosis

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The blood clotting system is a very complex, multifactorial system that is controlled by several mechanisms. The role of physiological coagulation – in addition to vasomotor activity - is to avoid the blood loss and prevent the entrance of different pathogens into the organism. If, for any reason, the system is disturbed, blood clots can be formed in the blood vessels, at inappropriate place and time, which can cause serious problems in the circulation and thus tissue blood supply. From the factors, which can result in pathological blood clotting, the inherited mutations represent significant predisposition for thrombosis. Thus early detection of these factors could be an important first step to design patient-specific prevention of thrombosis and its consequences. Although, predisposition for thromboembolic diseases affects all humans, it is likely that athletes are particularly having higher risk factor for thrombosis, due to the various traumatic exposures during competition. For these reasons, it is utmost important to identify in young ages, the genetic predisposition for thrombosis, especially in young athletes, which can help the development of personal prevention (sport selection, dietary modulation, etc.) of thrombotic diseases, including changing sport types and/or stop competitive sport.¹⁻³

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LITERATURE

1. Clouse LH, Comp PC. The regulation of hemostasis: the protein C system. *N Engl J Med*. 1986;314(20):1298-304.
DOI: <http://dx.doi.org/10.1056/NEJM198605153142006>
2. Mannucci PM, Franchini M. Classic thrombophilic gene variants. *Thromb Haemost*. 2015;114(4). [Epub ahead of print]
DOI: <http://dx.doi.org/10.1160/TH15-02-0141>
3. Magyar Angiológiai és Érsebészeti Társaság: Érbetegségek gyermekkorban-irányelvek. 2009.