SPORT AND GENOMICS – ETHICAL IMPLICATIONS OF THE APPLICATION OF GENOMICS IN THE FIELD OF SPORT.

Müller Arno¹, Vos Rein¹, de Wert Guido¹, van Hilvoorde Ivo²
(Maastricht University¹, Vrije Universiteit Amsterdam², Netherlands)

Genetic knowledge of predisposition and health risks raises new questions with regard to freedom of choice for sports and possibilities for prevention and selection. Consequently, the use of ‘sportgenetic passports’ can be on tenuous feet with the current policy of ‘sports for all’. Furthermore, several large research programs all over the world are searching for the location of crucial genes that are related to (elite) sport performance. Several candidate genes are under scrutiny that might have a critical influence on specific sport talents. Genes that regulate muscle tissue and blood flow for example are associated with elite endurance athletes. More complex than establishing the relative contribution of genes as opposed to non-genetic factors, is the search for specific genes, their location and their specific influence on athletic performance. Many genes are involved in athletic performance, especially in those sports that involve complex motor skills and do not just measure force or speed. There are complex interactions among different genes, and there are complex interactions among genes and the environment. There is not one crucial gene for sport talent, which can be identified, inserted or modified at will. Notwithstanding these diverging interpretations of future scenarios, there is no doubt that developments within genomics will raise and stimulate a broad spectrum of ethical and social-political question.

We will investigate how physicians, sports men and women and organizations in sport and medicine frame ethical and societal issues and questions that are being raised by preventive and selective applications of genomics in sports and sport medicine. More particularly, the aim is to study the way stakeholders in sports and sport medicine, operating in an international context, bring in lessons from national contexts to the European level on the one side and to other countries at the other side. This will help us to ethically reflect upon this process of transferal and translation and to stimulate the learning process of stakeholders in framing normative issues and their public responsibility with respect to genetics and sports.

The focus of the proposed study is on two possible applications of genomics in sport: prevention and selection. A choice of three case studies will be made in order to follow and study some of the new connections that are made between genomics, sport and society. These cases primarily concern the prevention of risks that are related to sports, but will be supplemented by a case on genetic screening to enhance selection processes in elite sport.

Keywords: Genetics, Ethics, Sport Philosophy