

[Genetic influences and involvement in physical activity, fitness and health: the study of Madeira families.](#)

(Ref. POCI/DES/56834/2004)

Cientific Responsible:

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Caracterization:

The project aims to study possible genetic influences and involvement in somatic growth, biological maturation, physical fitness and activity in the Portuguese population. Thus, it is intended to ascertain the genetic determinants of involvement and responsible for the variation in previous sections, based on three generations of the same family - including twins, make the typing of specific genes that have been given as influencing or associated with obesity, bone dimensions and aerobic performance and study the pattern of aging and external morphology of the less young. The estimation sample consists of 120 pairs of twins (240 subjects), more brothers / sisters, aged 6 to 18 years, 240 parents and 480 grandparents (n = 1080). Somatic characteristics include height, weight, sitting height, diameters, perimeters and folds of subcutaneous fat. The assessment of body composition (fat percentage, fat mass and lean mass) is made from folds of fat and the 'Dual X-ray absorbtometry'. The mineral content and bone density are also estimated.

Objectives:

- Understanding genetic influences and involvement in the change in somatic growth, sexual maturation, physical fitness and activity in the Portuguese population, based on three generations of the same family - including twins;
- Typify four genes, including VDR, RAS, DRD2, Apolipoproteins that have been given as influencing or associated with obesity, bone dimensions and aerobic performance (VO2max). Additionally are typified by 16 STRs distributed chromosomes 2, 7, 13 and 17 known to be associated with phenotypic characteristics involved in the study;
- Studying the standard schedule of aging and external morphology of elderly people.

Partners:

School of Sport Sciences and Physical Education (FCDEF/UP)