**BODY FAT PREDICTION**

A person's body fat percentage is defined as the percentage of their total body fat. There is a wide range of applications ranging from one of the diagnostic criteria for certain deficiencies in the public health and medical system, to guiding athletes to their physical training to enhance their performance in sports, to selecting candidates for recruitment in the Armed Forces. .

Attempts have been made to develop convenient and inexpensive methods for estimating body fat using simple body measurements such as height, weight, and girth of different body parts. The U.S. Navy is known to use such a method, but it is controversial due to its inaccuracy.

In this project, we will try to approach this problem from the perspective of machine learning - in particular, using the linear regression approach (LASO) and the non-linear regression approach (Random Forest). The database contains 14 numerical features of physical characteristics such as height, weight and circumference of the hips and thighs. For each sample, it also contains the percentage of body fat determined by the formula of Siri. A machine learning model that achieves this goal would be very useful for conveniently and inexpensively measuring the percentage of body fat in a large population, and would have a wide range of applications in the various fields discussed above.