MEASURING ELECTRO-CARDIAC ACTIVITY, PHYSICAL ACTIVITY AND BLOOD PRESSURE WITH A PORTABLE DEVICE IN ORDER TO ASSESS THE BENEFITS OF PHYSICAL ACTIVITY

INYU: A PORTABLE SYSTEM FOR ANALYZING A PERSON’S OVERALL STATE OF HEALTH

How can physical activity, in addition to healthy eating, enable individuals to be in the best shape possible? To find out, EPFL’s Embedded Systems Laboratory (ESL) has worked with startup SmartCardia SA to develop a portable electrocardiogram system together with analysis algorithms to measure the cardiovascular signal (ECG delineation and noise filter), activity levels and stress levels.

By monitoring the day-to-day physical activities of people with different profiles, the project made a connection between overall health and physical activity, nutrition and the level of stress caused by the activity.

• The project looked at athletes, quantifying their level of physical activity and defining the stress generated when they do not hit their performance targets.

• People with average levels of activity showed a clear reduction in stress when taking part in regular physical activity.

• For obese people, the project showed that although regular physical activity is required to reduce excess weight, it can also be a source of stress.