EXERCISE, MITOCHONDRIA... & US

The European University Games 2018 have arrived in Coimbra, and the city is ready to embrace this sports festival.

As enjoyable as it is, entertainment is not the only positive aspect of sports.

Exercising is very important, because it is fun.

Yes, certainly, but also because it is a motor of healthy living.

Physical inactivity is a risk factor for:
- Cardiovascular diseases
- Fatty liver
- Cancer
- Diabetes

In fact, the lack of physical activity has serious consequences on our body.

>80% of adolescents
25% of adults
...are not active enough

Insufficient physical activity causes:
- 3.2 million deaths/year
- 6.5 million deaths/year

Physical activity helps preserve a healthy energy balance. By consuming the energy provided by food, if our daily activity (calories out) doesn't compensate for the energy intake (calories in), our body stores fat, which in excess might cause disease.

Exercise improves our fitness and the function of all organs and systems in the body, including the brain.

Mitochondria, an essential organelle in our cells, uses oxygen to convert sugars and fats into ATP, the energy currency we use to move and exercise.
In a way similar to rowing, the muscles contract and relax in sequence, to move our body.

This is how our body burns energy when moving.

The ATP produced by mitochondria is needed for the myosin heads to “row” against the actin filaments and contract the muscle.

This is too hard. I can barely breathe.

It is funny how, even though I am spending a lot of energy, I feel much more active now.

It takes a while to notice the beneficial effects that periodic exercise has on our well-being.

It is only over time that our body adapts and the same routine feels less intense and tiring.

The continuous practice of aerobic exercise, like running, cycling or swimming, promotes the formation of more mitochondria in the muscles...

...which allows for a more efficient energy production.

Different age groups have different needs of moderate-intensity physical activity to stay healthy:

- Children and adolescents: 60 minutes daily
- Adults and seniors: 150 minutes weekly