

## **University of Naples Federico II: preliminary studies show the ability of the pomegranate extract to relieve fatigue in the short term.**

**In the coming months, the randomized, placebo-controlled, double-blind clinical study to measure the efficacy index of pomegranate extract combined with vitamins of the group b and vitamin c.**

**The virtuous supply chain of Esserre Pharma to give value to the immunonutrition of a typical fruit of the Mediterranean, the pomegranate.**

A new preliminary study, carried out by the University of Naples Federico II in collaboration with Esserre Pharma, highlights the **role of pomegranate extract, a typical Mediterranean fruit, in combination with vitamins of the B group and vitamin C in effectively combating prolonged or short-term fatigue - SF**. A natural aid to overcome periods of exhaustion that interfere with normal activities and negatively affect the quality of life.

The survey was carried out on consumers of food supplements and aimed at reducing fatigue: 78 subjects (21 men and 57 women) were recruited for a month to evaluate the efficacy and tolerability of this dietary supplement through internationally validated questionnaires for assessment of the level of fatigue and quality of life. Consumers have reported a significant improvement in their condition with no adverse effects over this period of time. Although more studies are needed, these preliminary data suggest the ability of a combination of pomegranate extract and water-soluble vitamins to relieve short-term fatigue (SF). The publication is available at <https://www.mdpi.com/2227-9717/10/2/208>.

“We started with the results of various scientific researches, which attribute to pomegranate properties of “superfood”, and then we turned to people who had asked their pharmacist for a food supplement that would relieve them from the feeling of prolonged fatigue. This survey among consumers, conducted with a robust scientific approach, highlighted very positive elements in favor of pomegranate in combating the feeling of fatigue "says **Professor Maria Daglia**, *Professor of Food Chemistry, Department of Pharmacy of the University of Naples Federico II*, among the authors of the survey. “Pomegranate, in combination with B vitamins and vitamin C, has provided promising results as it appears to help in situations of non-pathological fatigue. Therefore, in collaboration with General Practitioners, the research will continue in the coming months, with a randomized, placebo-controlled, double-blind interventional clinical study, which can confirm the efficacy of pomegranate extract combined with water-soluble vitamins, against prolonged fatigue or short-term fatigue, highlighted by this first survey ”.

“For the first time, we tested the effectiveness of an ingredient typical of the Mediterranean basin as a support for the immune system, unlike others often used which are instead of extra-Mediterranean origin. And it is also the first time that we look up at the pomegranate in relation to the immune system, especially today that our system is under attack not only for external agents, but also for the pandemic stress to which we have been subjected for months" underlines **Costanza Riccioni** , *Chief Scientific Officer Esserre Pharma*. “The feeling of tiredness and fatigue is one of the

typical manifestations of an impaired immune system and which can often present itself in the form of infections, inflammation or other types of stress. We are talking about immunonutrition, a concept for which some nutrients, thanks to their anti-inflammatory activity, can help the immune system. In the case of pomegranate, this is possible thanks

to its contribution of polyphenols. In fact, the activity of pomegranate extract, in preclinical studies, has been shown to reduce some biochemical markers of inflammation such as pro-inflammatory cytokines, interleukin-6 or hs-CRP - high-sensitivity C reactive protein " .

“When we talk about the **circular economy**, authentic directive for our research on raw materials from the Mediterranean basin, in the case of the pomegranate we mean that the juice goes away entirely”, concludes **Riccioni**. “Instead, we use the peel but also other parts traditionally considered **waste** from the food industry. **We are also planning other structured studies in order to understand, also with the use of biochemical markers of oxidative stress and inflammation, how the effect of pomegranate extract can reduce the values expressed by biochemical markers** ”.

### Short-term fatigue - SF short-term fatigue

Fatigue can be defined as a state resulting from physiological and psychological stress that leads to a transient reduction in physical or mental performance (i.e. mental fatigue or physical fatigue). In turn, **fatigue can be classified as prolonged fatigue** (or short-term fatigue, short-term fatigue **SF**) or **chronic fatigue (CFS)**. **SF is a non-pathological condition of fatigue, however recognizable by the subject himself, which consists in the persistent or repeated incidence of clinically unexplained fatigue events. Brief episodes of fatigue occur in 10-33% of the total population and SF, whose duration can vary from 30 days to six months, is also widespread, occurring in about 5-8% of the general population, and can thus be considered a universal symptom expressed by the majority of the population.**

Fatigue can derive from one or more pathological conditions, but it can also be a completely physiological condition linked to lifestyle, lack of sleep or bad sleep, stress, family and professional worries and environmental factors, which make it difficult the identification of the true cause. One of the most common causes of fatigue is increased physical work. **Many studies have reported that the fatigue caused by physical training results in a deterioration in sports performance.** For example, cross-country skiers had reduced double-poling performance after an exercise sequence of 25 minutes of trunk fatigue, compared to 25 minutes of rest. Interestingly, **the reduced performance appeared to be associated not only with muscle work, but also with mental factors.** For example, ping-pong players hit the ball with less attention and speed after completing a 90-minute cognitive activity.

Fatigue is debilitating and often has significant economic consequences. A Dutch study found that 21.5% of adult workers reported prolonged fatigue, which can lead to lower productivity at work. Furthermore, many studies show that fatigue at the wheel is the leading cause of death on the roads in Europe and that accidents related to sleepiness are more serious and fatal than those in which sleepiness is not the cause of the accident.

Esserre Pharma is an Italian research and development company of Mediterranean nutraceuticals that has received three important awards: from the Financial Times it has entered the ranking of

European companies with the highest growth rate, and from Il Sole 24 Ore it is that of Leader in growth than that of Export Champions.

Esserre Pharma is a company that operates in the nutraceutical sector with the aim of improving the quality of life of people, proposing innovative solutions to optimize the state of health. To achieve this goal, we constantly carry out a scientific research program, with an important focus on the potential of our territory, which offers products of primary utility for the well-being of the organism. We study typical raw materials of the Mediterranean basin capable of supporting the nutrition specialist. This is how we create and have patented Mediterranean nutraceuticals of 100% Italian supply chain, enhancing the land we come from and making it known all over the world

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