



## **“Education Health Project during COVID-19 pandemic: ASL of Benevento experience with students.”**

Stefania Pellino, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Margherita Luciano, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Rosamaria Luciano, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

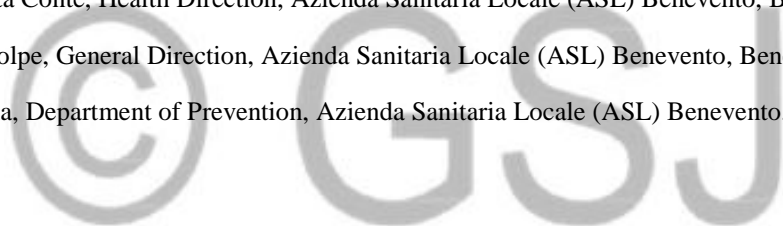
Erika Mancini, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Mary Antoinette Menechella, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Maria Concetta Conte, Health Direction, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Gennaro Volpe, General Direction, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.

Tommaso Zerella, Department of Prevention, Azienda Sanitaria Locale (ASL) Benevento, Benevento, Italy.



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### **Abstract**

Health Education represents the educational process through which individuals learn to consciously make decisions that are useful for maintaining and improving their health. It is a process that continues through all stages of life, improving skills for daily life. The school is a reference for students because it represents the main place where they develop skills, knowledge and abilities to be spent consciously and with autonomy of judgment for the protection of their health and in the adoption of correct lifestyles. The Prevention Department of the Benevento Local Health Authority wanted to analyze, through interactive meetings with a doctor, a nutritionist and a psychologist, the clinical, nutritional and psychological aspects of children between 14 and 18 years of age during the covid-19 pandemic. The objective is to provide knowledge on the new pathology, promote a healthy lifestyle in the pupil, in the social context, create a positive relational climate, understand the link

between personal behavior and health such as physical, mental and social well-being, eliminate or reduce risky behaviors.

## **Introduction**

Health Education represents the educational process through which individuals learn to consciously make decisions that are useful for maintaining and improving their health. It is a process that continues through all stages of life, improving skills for daily life. The school is a reference for students because it represents the main place where they develop skills, knowledge and abilities to be spent consciously and with autonomy of judgment for the protection of their health and in the adoption of correct lifestyles. For this reason, school is the privileged place to learn to feel good. Due to the Covid-19 pandemic, the right attention has no longer been paid to these aspects. Furthermore, schools alone are unable to solve health problems, but a multidisciplinary and multi-level approach is required. Other components are also needed, such as pre-school education, social services, parental support, clinical health, stimulating and safe environments. The schools have the potentials to develop an important role in improving the instruction, the health and the wellness of all young people and in reducing the health inequalities in the population.

## **Material and Methods**

The Prevention Department of the Benevento Local Health Authority wanted to analyze, through interactive meetings with a doctor, a nutritionist and a psychologist, the clinical, nutritional and psychological aspects of children between 14 and 18 years of age during the covid-19 pandemic. The project was conducted in 3 main high schools in the province of Benevento with about 30 classes for each meeting. The objective is to provide knowledge on the new pathology, promote a healthy lifestyle in the pupil, in the social context, create a positive relational climate, understand the link between personal behavior and health such as physical, mental and social well-being, eliminate or reduce risky behaviors.

## **Discussion**

The Covid-19 pandemic and the restrictions applied by the government have upset the social and private dynamics, work and study, bringing both economic and above all psychological inconveniences.

The concept of "health" was first introduced in 1948 by the World Health Organization (WHO) and defined as "a state of complete physical, mental and social well-being, and to achieve it the individual or group must be able to identify and realize their aspirations, satisfy their needs, modify the environment or adapt to it ". Precisely in the face of such a devastating global problem, it becomes important to maintain and reformulate the concept of health.

Therefore, Health Education becomes fundamental, the educational process through which people learn to consciously make decisions that are useful for maintaining and improving their health. It is a process that continues in all phases of life, starting with the family but for which the school is a reference because it represents the main place where knowledge and judgment skills are developed relating to the importance of protecting one's health and, consequence of adopting a correct lifestyle.

Hence the importance of promoting training-information courses among citizens, entrusting an increasingly active role to the education system. The School is, in fact, the privileged place because it contributes to the formation of the person understood as an active citizen capable of understanding the social, environmental and economic influences that affect health and gives the possibility to involve families and all school staff in various activities focused, for example, on the topics of prevention and promotion of a correct lifestyle with particular regard to the importance of physical activity and nutrition.

However, due to the Covid-19 pandemic, the right attention has no longer been paid to these aspects and, precisely to emphasize the importance of health and in particular of the food aspect, in primary and secondary schools of first and second grade the teaching activity of the day of October 16, 2021 was dedicated to the theme of World Food Day.

In fact, informing and making known the principles of healthy and proper nutrition in schools represents the main objective of these projects, making young people aware of the importance of prevention not only of acute diseases such as infectious ones, but also and above all of some chronic diseases that they are prevalent in recent years such as diabetes, obesity, metabolic syndrome and cardiovascular disease.

What correlation exists between Covid-19 infection and nutrition? The answer is in the gut microbiota. The human microbiota (also called intestinal flora) is the set of symbiotic microorganisms that coexist with the human body without damaging it. About 70% of the immune system resides in our intestines.

A real defense barrier against external pathogens and toxins resides in the intestine, mainly consisting of the GALT system, gut-associated lymphoid tissue.

The intestinal microbiota influences the absorption of nutrients but also has a fundamental role in immunomodulation, that is, it regulates the activity of the immune system by promoting its correct maturation, preventing it from being activated abnormally as in the case of allergies or autoimmune diseases or in deficient manner as in infections.

A state of equilibrium called "eubiosis" can be contrasted with a state of imbalance called "dysbiosis" and the latter is responsible for the increased incidence of metabolic, cardiovascular, inflammatory, neurological, psychic and even oncological pathologies.

An unhealthy diet can cause an alteration of the intestinal bacterial flora with a reduction of "protective" bacteria (dysbiosis) and a greater risk of getting sick. The inflammatory state of the intestine can alter intestinal permeability allowing the passage of pathogens and toxins, which are harmful to the body.

Otherwise, a healthy intestine allows you to prevent inflammation and ensure an effective immune response.

To strengthen our immune defenses, it is essential to eliminate foods that "inflammate" the body such as: excess saturated fats and simple sugars.

Instead, we must take, through our diet, antioxidant substances, vitamins and probiotics useful for reducing the state of inflammation caused by incorrect eating habits.

The **vitamins** effective for strengthening the immune defenses are mainly C, A, E, D, B6, B9 and B12; among the microelements are mostly indicated zinc, selenium, iron and copper.

**Antioxidant** principles such as vitamins C and E, selenium, copper and zinc counteract the harmful action of free radicals.

The foods that should never be missing in a healthy and balanced diet are:

**seasonal fruit and vegetables** ensure the right amount of minerals, vitamins and antioxidants, as well as being a source of soluble and insoluble fiber, useful for good digestion and to protect the health of the intestine.

**Leafy vegetables** are rich not only in fiber but also in micronutrients.

**Cereals**, especially integrated such as pasta, bread, spelled, barley because they are rich in fiber and provide B vitamins.

**Fish** such as salmon, mackerel or anchovies are a source of noble proteins but above all of vitamin D and  $\omega$ -3 fatty acids which reduce inflammation.

**White meat** such as chicken and turkey rich in essential amino acids useful for building immunoglobulins (antibodies).

**Legumes** are an excellent source of proteins and minerals such as zinc, magnesium, phosphorus and copper. Rich in fiber and support the function of the intestine.

**Nuts** are rich in minerals (zinc and selenium) and vitamin E (antioxidant).

**Fermented foods** such as yogurt are rich in probiotics (which help the intestine function properly) and vitamin D.

**Herbs and spices** such as chilli, an extraordinary source of vitamin C and vitamin A and with antiviral and antibacterial properties), rosemary and basil (rich in vitamins C, A and iron), pepper (containing iron and copper) are very useful in our food. To strengthen the immune system, saffron and turmeric are also excellent. Ginger, in addition to being a good source of iron, manganese, zinc, copper, selenium and vitamin B6, has antioxidant, anti-inflammatory and antipyretic properties that are beneficial in case of colds and colds.



Adolescents have not paid a high price in terms of human lives, compared to other segments of the population but have been deprived of the relational dimension, central to the transition from the infantile to the adult world.

With our project, we have tried to offer a space for discussion and listening between specialized figures involved in the first person during the pandemic, and high school students and teachers. The professional figures who interfaced with the children were a Usca doctor, that is a territorial medicine doctor involved in the clinical management of COVID positive patients, a nutritionist and

a psychologist, in order to analyze the physical, mental and social well-being of children as defined in the concept of "health".

The main purpose was to develop critical thinking in the children, however, giving them the opportunity to have correct information, not always provided by the media and social networks used by the children. The meeting was held interactively, answering their questions and needs.

## **Results**

Students who participated in our project showed interest about the topics exposed. A questionnaire in online form was administered to the students and they expressed their satisfaction.

The analysis of the questionnaires is highlighted that students don't know the microbiota and the correlation between microbiota and immune system; many students are unfamiliar with the micronutrients contained in food and they don't know the role of vitamins for health.

However the Health Education Project is still ongoing and the analysis of the questionnaires is still partial.



## **Conclusion**

An immune system is essential to defend ourselves from diseases and infections, especially in debilitating viral diseases such as that from Covid-19. To strengthen our immune system, it is important to keep our intestines healthy: it has long been known that there is a direct relationship between the effectiveness of the immune response and the health of the intestinal microbiota. By following a healthy and balanced diet, it is possible to reduce the risk of infections by strengthening our immune system. Informing and making known the principles of healthy and proper nutrition in schools represents the main objective for preventing and treating not only acute diseases such as infectious ones, but also and above all the main chronic diseases that have taken over in recent years: diabetes, obesity, metabolic syndrome and cardiovascular diseases.

In consideration of the enthusiasm and desire of the students to learn more about the subject, we have created a brochure that will be distributed in all schools in the province.

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