

Supporting Fondazione IEO-Monzino Ets's project for a prevention model in oncology

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Website: fondazioneieomonzino.it/

Fondazione IEO-Monzino Ets is a non-profit Italian organization established in 1994 to support the scientific research of the European Institute of Oncology and the Centro Cardiologico Monzino. Both institutions are scientific institutes dedicated to research, hospitalization and healthcare in the fields of oncology and cardiovascular medicine, respectively. Today, cancer remains a leading cause of death worldwide, largely because screening is unavailable for most life-threatening cancers. As a result, many cancers are detected too late, when outcomes are often fatal. IEO was founded in 1994 by Umberto Veronesi with the goal of creating an innovative model of healthcare and advanced oncology research on an international scale. Through the integration of activities such as prevention, diagnosis, research and training, IEO has achieved high levels of specialization and received numerous awards worldwide. Cancer prevention has become a significant focus in medical research in recent years, addressing different levels of prevention and recognizing the unique characteristics of each individual. Through effective prevention and screening initiatives, the incidence of cancer can be reduced, and early diagnosis facilitated, leading to shorter and less intensive treatment courses. An individual's risk of developing cancer is influenced by a complex interplay of factors, including physical, chemical, and biological elements in their living and occupational environments, as well as behavioural and socio-cultural factors such as diet, smoking, alcohol consumption, fertility, and psychological disposition. This understanding has led to the development of sophisticated

mathematical prediction models that assess cancer risk based on the presence or absence of specific individual factors. These models can also support the evaluation of treatments and interventions. However, a calculated "high risk for cancer" does not necessarily mean cancer will develop, and conversely, cancer can occur in individuals deemed "low risk". As such, no single model is sufficient to provide indications for the entire population. A multitude of factors must be carefully evaluated for each individual to guide effective prevention and intervention strategies.

Over the years, the **Nando and Elsa Peretti Foundation** (NaEPF) has supported several health promotion and scientific research projects to enhance community well-being. Funding medical research contributes to the global pool of knowledge about diseases, treatments and health systems, and creates educational and training opportunities for students and young scientists, helping to build the next generation of researchers and healthcare professionals. NaEPF's commitment continues today with the support to European Institute of Oncology and the Centro Cardiologico Monzino for a project of medical and scientific research with the aim to draw a model for early diagnosis and prevention in cancer, which last until 2026. Through adequate evaluation of personal and familiar medical history and through genetic analysis, the project is addressed to identify the "risk for cancer" and early detection of cancer at a molecular level on blood sample. With the increasing understanding of the model of carcinogenesis and availability of modifiable risk factors, the paradigm shift in approach to cancer

management is increasingly from cancer treatment to cancer prevention. The innovative approach of the IEO project stands in the evaluation of genetic factors to personalize prevention. Genetic testing can offer prevention, but it has an important psychological impact on the patient and family. Psycho-oncology is an interdisciplinary field at the intersection of physical, psychological, social, and behavioral aspects of the cancer experience for both patients and caregivers. Cancer can result in relevant changes not only in the individual, but also in the whole family system. Thus, the presence of the psychologist is indispensable in the oncology clinic helping the patient in his self-understanding, in understanding his pathology and in prolonging his healthy life or approaching the end-of-life.

Overall, this is a transversal prevention project that takes full care of healthy people and cancer patient starting from lifestyle habits, diagnosis, genetic testing, surgery, psychological counseling, and checks. Modifying the current management of cancer from conceptual medicine to precision medicine, which is clinical management tailored to the individual patient using predictive nomograms, genetics and genomics, would treat the patients more effectively.