

## ECNIS

### Dietary impacts on risk of cancer

#### *How diet and hereditary factors can influence the risk of cancer from environmental factors*

Explore the risk of cancer associate to environmental factors exposures and how dietary elements and individual genetic makeup can have a protective or harmful influence on this disease killing 1.8 millions Europeans annually. These are some goals of the EC funded project "ECNIS", a network of excellence, which brings together experts in different scientific disciplines (molecular biology, medicine, epidemiology...). The project has been supported with 11 million euro by the European Sixth Research Framework Programme and it will ended by October 2010.

Life style factors including diet, smoking habits, alcohol drinking and environmental exposure are some very well know factors having an influence on the development of cancer. ECNIS aims to create a dynamic network of research institutions which will work to decrease cancer incidence by identifying chemicals or other factors in the environment and food which cause cancer, but also elucidating mechanisms by which dietary and lifestyle patterns increase or decrease cancer. Biomarker-based methods for the study of the role of environmental and food-related carcinogens were developed, validated and applied in population studies. Examples are: PAHs and nitroso compounds found in contaminated, smoked and/or grilled food, alcohol/acetaldehyde.

It aspire also to help facilitating the development of new foods with cancer-preventive properties, discovering hereditary factors which make individuals more o less susceptible to cancer and formulating improved approaches to the risk assessment of carcinogens.

To improve the scientific basis for the creation of health-promoting foods, for example, within the project relevant biomarkers have been developed and validated in humans. They can be used for population screening in the assessment of the effects of various foods or in development of functional foods (therapeutic food, designer or nutraceuticals). In this case the project offers an opportunity to have better basis for dietary advice formulation.

Researchers carried out by ECNIS researchers analysed, for instance the role of fruit consumption on cancer prevention, stressing that it can be eating some fruits, vegetables and plants has a clearly preventive role on cancer development; or the effects of smoking cannabis on human health discovering that this can damage human DNA in ways that could potentially increase the risk of cancer development.

The project has also provided scientific support to regulators and other stakeholders, at European and national level, in connection with the formulation of policies to protect the public from environmental carcinogens.

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