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HEAL fact sheet

Chronic disease: How do environmental factors play a role?

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Non-communicable disease

Worldwide, almost 60% of deaths and 43% of years of life lost (DALYS) are due to non-communicable conditions. (1)

In the WHO European Region, non-communicable diseases cause 86% of deaths and 77% of the disease burden (DALYS). (2)

Cancer and the environment

About 60% of cancers have causes other than lifestyle factors; these include environmental exposures.

A WHO European Region conference in Asturias, Spain in March 2011 unanimously adopted a declaration which stated: "A substantial percentage of all cancer is caused by environmental and occupational exposures". (3)

Expert scientific reviews have linked endocrine-disrupting chemicals to breast and prostate cancer. (4)

A European Commission assessment of REACH prior to its introduction stated that if this legislation succeeds in reducing chemical-related diseases by only 10%, the health benefits are estimated at 50 billion Euros over 30 years. This corresponds with 2,200 to 4,300 fewer cancer cases in the workplace annually. (5)

Children are especially vulnerable

The Asturias declaration says: "Pregnant women, fetuses, infants, children and workers are especially vulnerable." (3)

Childhood cancer is increasing at a rate of more than 1% per year in Europe. (6) Cancer is diagnosed in one child in every 500 before the age of 15 years. (7)

In the US, the growing burden from environment-related ill-health in children is reflected in health care costs. A recent review in the US estimated health costs of children's environmental illness at 3.5% of the nation's total budget, up from 2.8% in a similar study in 1997. (8)

Chemicals causing other chronic conditions

Various studies have shown that endocrine-disrupting chemicals (the so-called "gender bending chemicals") are linked to the following conditions:

Male and female reproduction, breast development and cancer, prostate cancer, neuroendocrinology, thyroid, metabolism and obesity, and cardiovascular endocrinology. (4)

"Environmental epigenomics" suggests that chronic conditions in children and adults may be associated with pre-natal and early post-natal exposure to environmental contaminants. The theory is supported by human epidemiological studies which provide evidence that prenatal and early postnatal environmental factors influence the subsequent risk of developing various chronic diseases, such as cancer, cardiovascular disease, diabetes, or obesity. (9)

Respiratory disease and the environment

An estimated 450,000 people in the EU die prematurely each year as a direct result of exposure to air pollutants. (10)

During summer heat waves, air pollution increases and older people and those suffering from respiratory problems suffer more. (11)

Premature deaths associated with air pollution have been estimated at the equivalent of 1.5-4% of EU Gross Domestic Product. (12)

One in every five children are suffering from a chronic respiratory condition or allergy. (13)

In the UK, one in every seven children aged 2-15 years have asthma symptoms requiring treatment. (14)

Noise and heart disease

Traffic noise is the second biggest environmental problem affecting health after air pollution in EU countries and Norway. (15)

Noise from rail and road transport is linked to 50,000 fatal heart attacks every year in Europe and 200,000 cases of cardio-vascular disease. As many as one in 55 heart attacks may be caused by exposure to traffic noise. (16)

Recent studies have also linked noise pollution to a significant increase in stroke risk. A Danish study showed that for every 10 decibel increase in noise, the risk of stroke risk increased by 14%. (17)

Health co-benefits of climate mitigation policy

A proportion of chronic disease can be prevented as a "by product" or "co-benefit" of climate mitigation policy.

For example, if the EU were to move promptly from the current 20% target on greenhouse gas emissions reduction to a 30% target for climate change, the public health benefits in terms of reduced respiratory and heart disease (associated with improved outdoor air quality) could reach 30.5 billion Euro per year in 2020. (18)

Transport policy aimed at reducing carbon emissions (by encouraging more walking and cycling, restriction of car travel, lower-carbon-emission motor vehicles) could prevent a substantial proportion of the following chronic diseases: cardio-vascular, diabetes, breast and colon cancer, dementia and depression. (19)

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