

RED MEAT CONSUMPTION AND SELECTED GASTROINTESTINAL CANCERS MORBIDITY IN POLAND IN THE YEARS 1990–2012



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BACKGROUND

Red meat is a source of some compounds which could promote carcinogenesis. Red meat is rich in animal fat. It can be energy dense and high consumption of such products can lead to obesity. It is characterized by high haem content that increases levels of N-nitroso compounds in the body. Processed meat contains nitrite that can react with the degradation products of amino acids to form N-nitroso compounds. Moreover, during cooking at high temperature heterocyclic amines or polycyclic aromatic hydrocarbons can be formed.

Data from the literature suggest that high consumption of red meat may increase the risk of some cancers, among others: colorectal, esophageal and pancreatic.

AIM OF THE STUDY

The aim of the study was to examine the relationship between trends in red meat consumption after the economic transformation and mentioned cancers morbidity in Poland.

METHODS

The study was based on colorectal, pancreatic and esophageal cancer incidence rates derived from the National Cancer Registry in 1990–2012. Data on red meat consumption (in kg/person/year) were derived from the national food balance sheets. Analysis includes the consumption of pork, beef, lamb and goat from domesticated animals.

Spearman correlation coefficients were used to estimate the relationship between the examined variables.

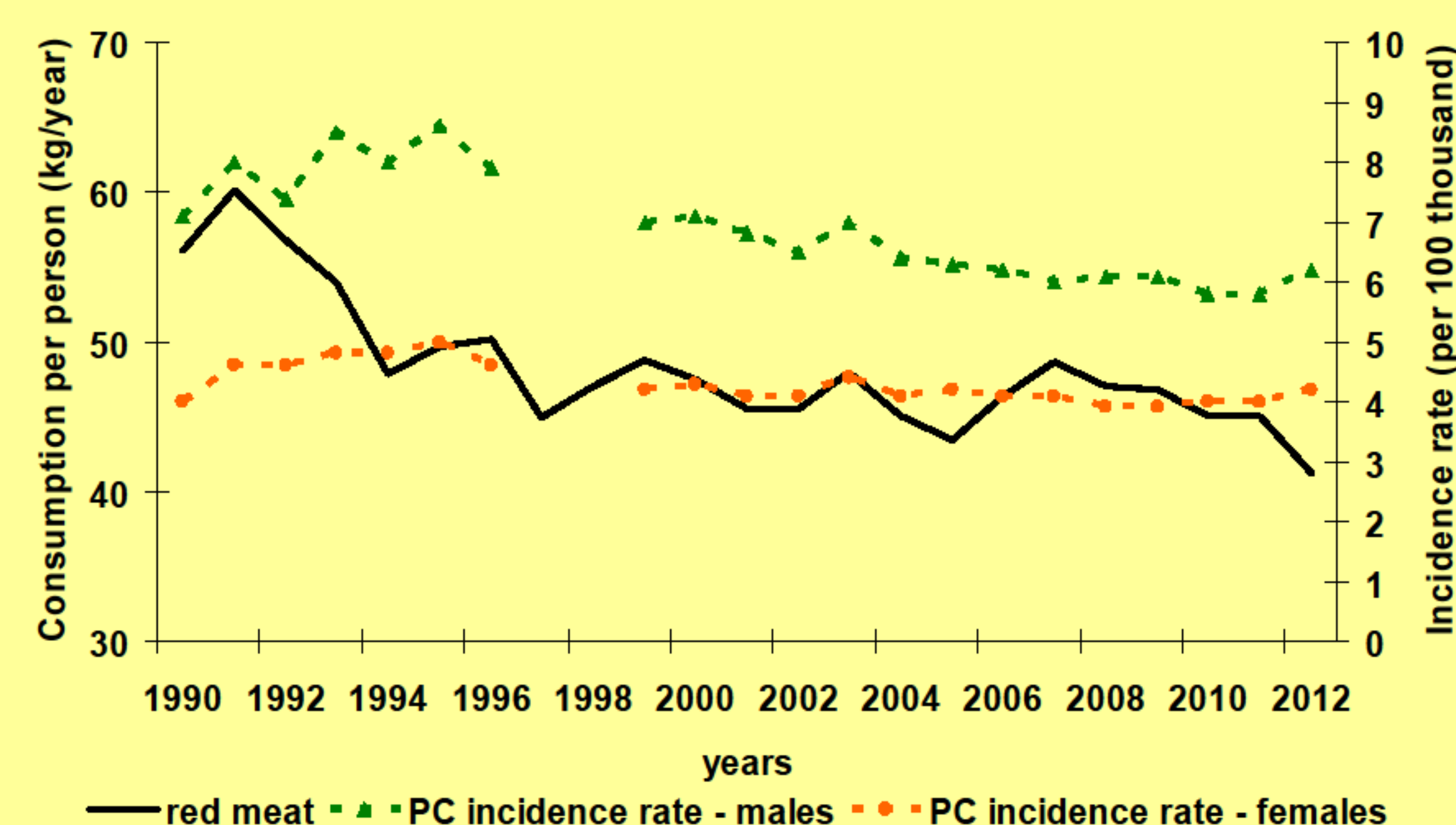
RESULTS

In 1990–2012 red meat consumption in Poland decreased from 56.1 to 41.2 kg/person/year. It was highest in 1991 – 60.1 kg/person/year. The change in the pattern of meat consumption in favour of poultry was the reason for decline in red meat consumption.

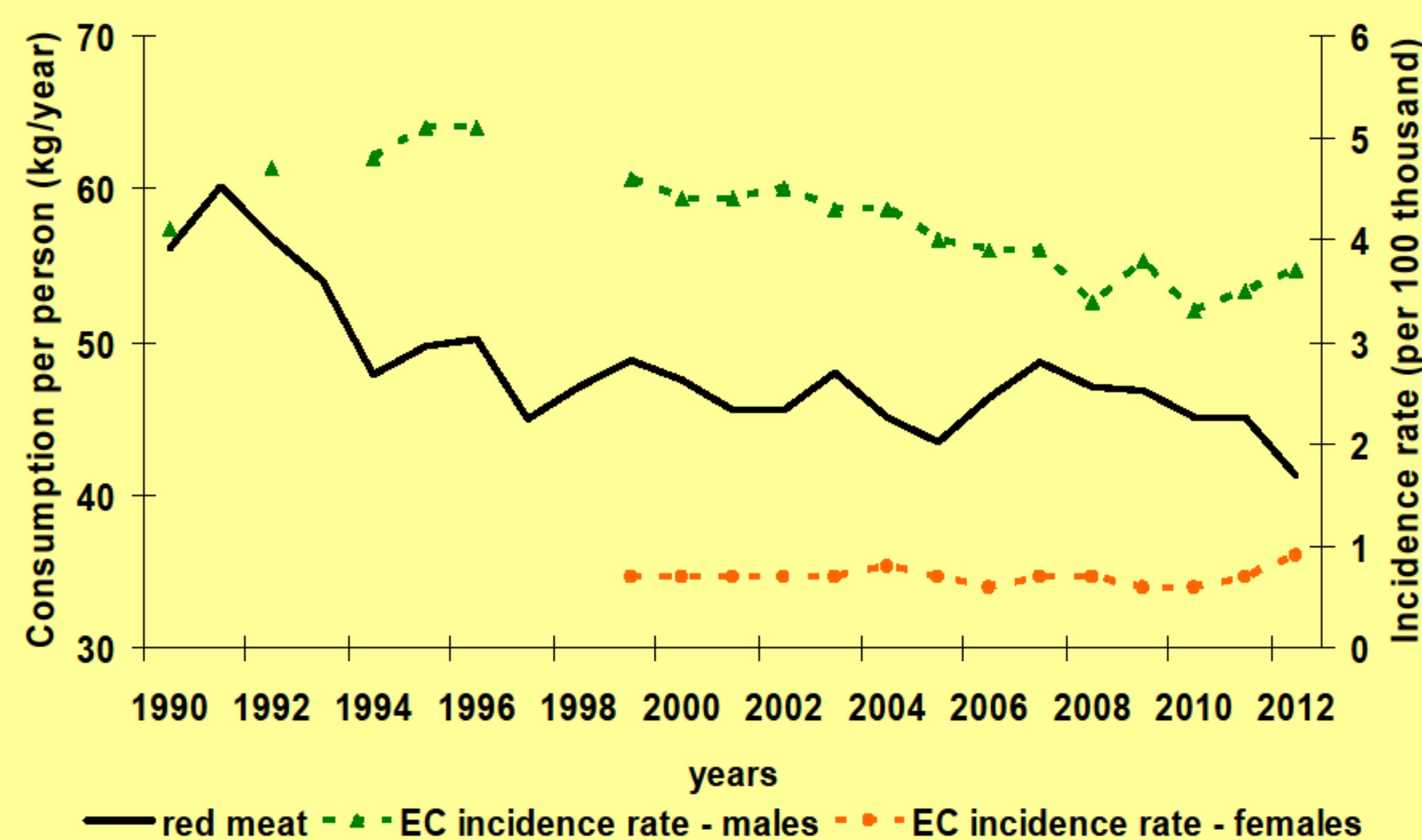
In the analyzed period the incidence of pancreatic (PC) and esophageal cancer (EC) increased initially, however since the mid-90s of the twentieth century a marked decline began to be observed. The colorectal cancer (CRC) morbidity continues to grow, but to a lesser degree than in previous years.

Positive correlations were found between red meat consumption and pancreatic (0.71 for males and 0.50 for females) and esophageal cancer (0.58 for males, correlation coefficient not statistically significant for females) incidence rates. There was no important correlation between red meat consumption and colorectal cancer morbidity during analyzed period.

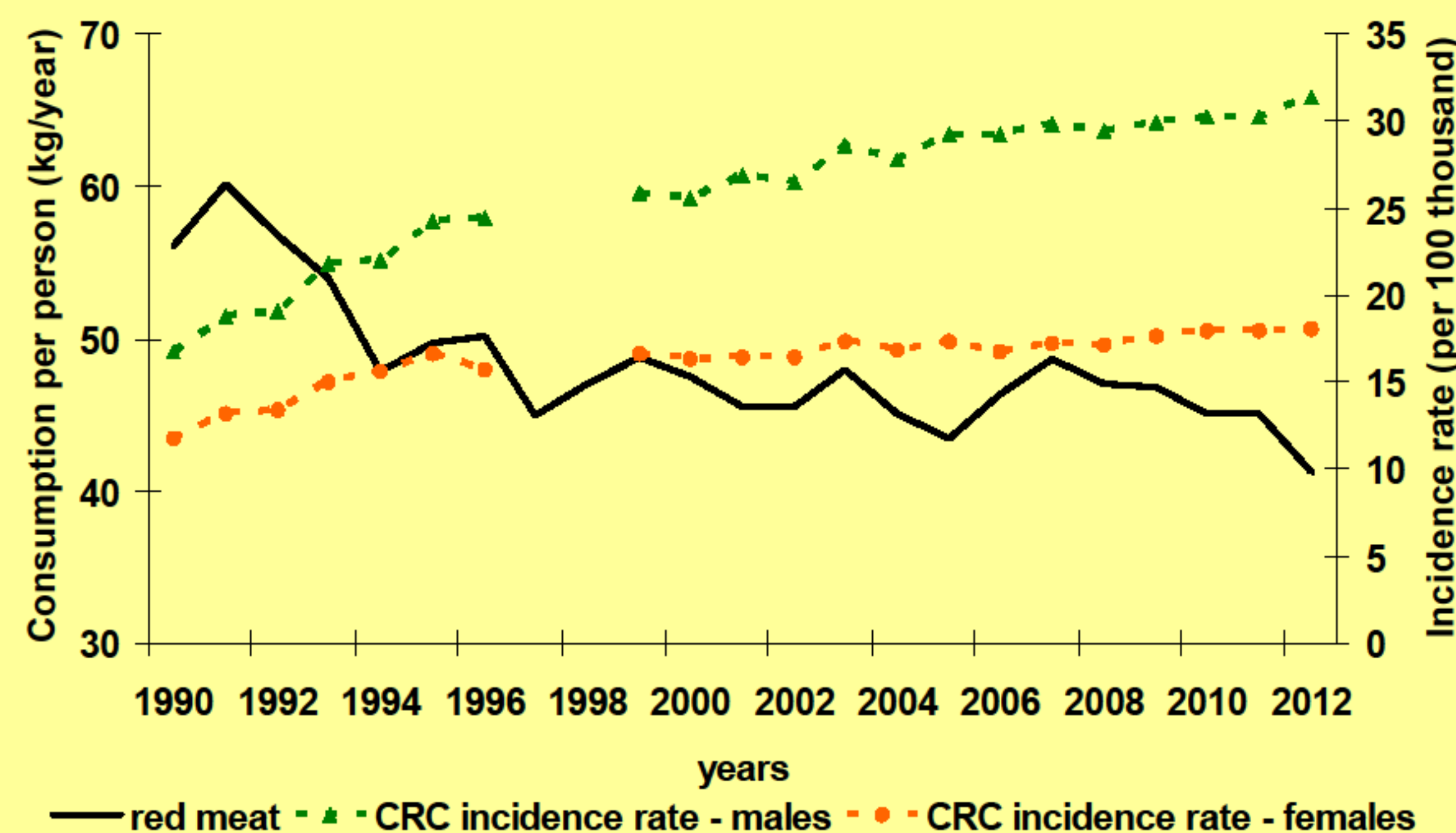
Red meat consumption and pancreatic cancer (PC) morbidity



Red meat consumption and esophageal cancer (EC) morbidity



Red meat consumption and colorectal cancer (CRC) morbidity



CONCLUSIONS

- ✓ The decrease in red meat consumption in Poland could favourably affect some gastrointestinal cancers such as pancreatic and esophageal cancer morbidity in Poland and probably was one of the reasons of the observed decline in these cancers incidence in recent years.
- ✓ Furthermore smaller proportion of red meat in the diet could influence on the reduction in the rate of increase of colorectal cancer incidence.

