
**Abstract**

In 1969, the prevalence of raised levels (5 ng/ml of serum) of carcinoembryonic antigen (CEA) was estimated in 2372 persons aged 40 years and over in Busselton, Western Australia. There were raised levels of CEA in 73 subjects (3%). The prevalence increased progressively with age in both non-smokers and smokers with a higher rate of prevalence at all ages in smokers, and a peak of 11% in smokers aged 65-74 years. Among non-smokers, the prevalence was similar in both men and women (1%), in smokers there was a stepwise rise in prevalence with increasing tobacco consumption. Subsequently, levels of CEA of 5 ng/ml or over tended to disappear from the sera in a greater proportion of the non/exsmokers than of smokers. In the following five years, "CEA-associated" cancer occurred in nine of 73 subjects (13%) with raised levels of CEA compared with 25 in 2299 (1%) in those with normal CEA levels. This association was independent of the confounding effects of age, sex, and smoking habit. The five year data on 2372 subjects have confirmed that CEA screening of healthy Busselton subjects has identified a group at future risk of developing "CEA-associated" cancers, in addition to drawing attention to the presence of existing cancers.