93-06-A
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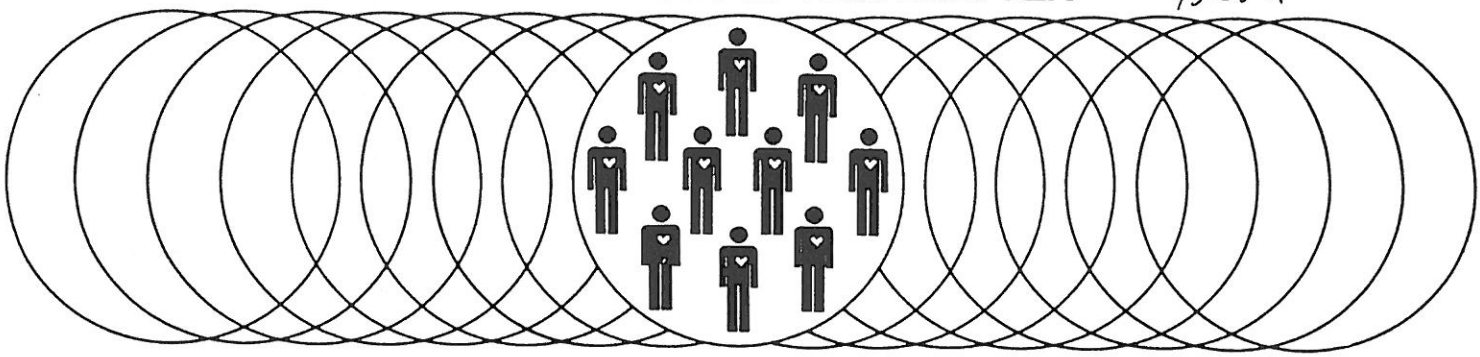
CVD EPIDEMIOLOGY NEWSLETTER



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93-06-A

Increase In Blood Pressure With Age and Body Mass Index Is Greater With Conventional Than With Ambulatory Sphygmomanometry

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Objective. To investigate whether the technique of blood pressure measurement (conventional versus ambulatory) affects the relation between blood pressure and both age and body mass index.

Methods. Two independent data sets were analyzed: 328 subjects (48% men, 52% women) drawn from the population of a town and 776 bank employees (51% men, 49% women).

Results. The findings were consistent in the two data sets. In men an increase in age from 20 to 60 years was associated with a systolic/diastolic blood pressure rise of 9.5/6.5 mm Hg on conventional measurement versus 0.7/6.9 mm Hg on ambulatory measurement; in women, the corresponding blood pressure rise averaged 16.5/5.2 versus 5.2/3.4 mm Hg. In men an increase in body mass index of 5 kg/m^2 was associated with a systolic/diastolic blood pressure rise of 7.4/5.0 mm Hg on conventional measurement versus 4.1/4.0 mm Hg on ambulatory measurement; the corresponding blood pressure rise in women was 8.4/3.6 versus 4.7/2.1 mm Hg. The differences between blood pressures measured by conventional and ambulatory techniques were significant with the exception of those observed for diastolic blood pressure in men.

Conclusion. The increase in blood pressure with age and body mass index is greater when measured by conventional techniques than with ambulatory techniques. Other relations that use conventionally measured blood pressure as the response variable may require revision in light of these findings.

93-07-A

Transfer of Cadmium From Sandy Acidic Soil to Humans: A Population Study

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This population study included 230 subjects aged 20--83 years who ate vegetables grown in kitchen gardens in sandy acidic soil (mean pH, 6.3). We investigated the association between the cadmium levels in the blood and urine of subjects and the cadmium concentration in the soil (range, 0.2--44 ppm).

Seventy-six subjects were smokers, and 122 lived in a district with known cadmium pollution. The level of cadmium in 24-hour urine samples from the 230 subjects averaged 8.7 nmol (range, 1.3--47 nmol) and after age adjustment was positively correlated with the cadmium level in the soil. A twofold difference of cadmium concentration in the soil was accompanied by a 7% difference in urinary cadmium in men (r^2=0.05; p=0.04) and by a 4% difference in women (r^2=0.02; p=0.05). The level of cadmium in the blood of subjects averaged 11.5 nmol/l (range, 1.8--41 nmol/l) and was negatively associated with the cadmium level in the soil. After adjustment for significant covariates (smoking and serum T-glutamyl transpeptidase in both genders and age and serum ferritin in women), a twofold difference in the cadmium concentration in the soil was accompanied by a 6% difference in cadmium in the blood of men (r^2=0.03; p=0.09) and by a 10% difference in women (r^2=0.06; p<0.01).

In conclusion, in a rural population that consumed vegetables grown in sandy acidic soil, 2--4% of the variance found in levels of cadmium in urine samples was directly related to the cadmium level in the soil. The negative correlation with levels of cadmium in blood samples, a measure of more recent exposure, was biased by implementation of preventive measures in the polluted district.