contributing to this effect, the higher blood COHb levels found in sedentary smokers are important.

I should like to acknowledge the participation of Dr P. V. Cole in the collection of the data reported here, and Dr J. Harris for help with the mathematical treatment.

References


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**Lead and criminality***

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In a previous study (Lob and Desbaumes, 1971), we compared the blood and urinary lead levels of two groups of prisoners living in areas which differed with regard to exposure to environmental lead. The analytical method (polarography) for lead determination used by the Laboratory of Industrial Toxicology was found later to give unduly high results. Unfortunately the blood lead concentrations published in that paper were taken by other authors (Bryce-Smith, 1972; Bryce-Smith and Waldron, 1974a) as supporting the hypothesis relating lead and criminality.

Numerous studies of the influence of lead on children's intelligence and behaviour (Kotok, 1972; David, Clark, and Voeller, 1972; Lin-Fu, 1973; Lansdown et al., 1974; Landrigan et al., 1975)
resulted in conflicting conclusions (Bryce-Smith and Waldron, 1974b; Needleman et al., 1975; McCabe, 1974, 1975).

These facts prompted us to carry out another investigation of prisoners, but using the method of atomic absorption spectrometry (AAS) (Mitchell, Ryan, and Aldous, 1972). The results were controlled by two reference laboratories which had participated with success in interlaboratory comparison studies (Hoschek and Schittke, 1973; Berlin and Smeets, 1974) and were highly correlated (P < 0.001).

Blood samples were taken from 51 prisoners living in one of the same buildings as those previously studied (building B).

**TABLE 1**

**Characteristics of 51 Prisoners Examined in 1975**

<table>
<thead>
<tr>
<th></th>
<th>Delinquents and criminals</th>
<th>Alcoholics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>39 ± 9</td>
<td>52 ± 10</td>
</tr>
<tr>
<td>Duration of detention (months)</td>
<td>15 ± 20</td>
<td>4.3 ± 3.7</td>
</tr>
</tbody>
</table>

It will be noted (Table 1) that in the present study 20 of the prisoners were alcoholics (39%), whereas in the previous study almost all were alcoholics.

**TABLE 2**

**Blood Lead Determination for 51 Prisoners in 1975**

<table>
<thead>
<tr>
<th>Categories of prisoners</th>
<th>N</th>
<th>Blood lead (μmol/l)</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholics</td>
<td>20</td>
<td>1.00</td>
<td>±0.35</td>
</tr>
<tr>
<td>Delinquents and criminals</td>
<td>31</td>
<td>0.93</td>
<td>±0.28</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>0.96</td>
<td>±0.30</td>
</tr>
</tbody>
</table>

**TABLE 3**

**Comparison of the Results Obtained for Alcoholics by the Polarographic Method in 1971 and the AAS Method in 1975**

<table>
<thead>
<tr>
<th></th>
<th>1971</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>55</td>
<td>52</td>
</tr>
<tr>
<td>Mean duration of detention (months)</td>
<td>15</td>
<td>4.3</td>
</tr>
<tr>
<td>Mean blood lead (μmol/l)</td>
<td>1.96 ± 0.60</td>
<td>1.00 ± 0.35</td>
</tr>
</tbody>
</table>

The mean blood lead concentrations obtained in the present study (Table 2, Figs 1 and 2) were compared with the mean blood lead concentration (1.06 ± 0.31 μmol/l = 22.4 ± 6.4 μg/100 ml) for a population living in Lausanne (Valloton, Guillemin, and Lob, 1973) and, using Student's t test, were not found to differ significantly from it. On the other hand, we do not think that the number of alcoholics in our population sample affect the lead body burden since there is no difference between alcoholics and non-alcoholics in this study and between alcoholics and non-alcoholics in the other population of prisoners (building A) studied previously.

Very few of the 51 prisoners studied in 1975 were the same as those studied in 1971. However, the only reasonable explanation for the difference between the results obtained in 1971 and 1975 (Table 3) lies in the method of analysis used.

In conclusion, this study shows that the blood lead levels obtained in 1971 by polarography were too high. The mean actual value determined by AAS for prisoners does not differ significantly from the value for the non-occupationally exposed population of Lausanne.

The confirmation of a relationship between blood
lead levels and criminality does not appear in our cases, at least for the group of prisoners studied here.

References


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Release of histamine from lung tissue in vitro by dimethylhydantoin-formaldehyde resin and polyvinylpyrrolidone

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A small but definite proportion of hairdressers suffer from symptoms such as dry throat, cough, and mild breathlessness usually towards the end of a busy day (C. S. Darke, personal communication, 1965). The symptoms appear to be associated with the use of aerosol hair lacquers. It is unlikely that concentrations of the lacquer are high enough to allow sufficient deposition of resin in the respiratory tract to produce mechanical
Lead and criminality.

M Lob and P Desbaumes

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