Table 2

Personal air samples, automobile and truck brake repair

	No. of samples	Peak fibre concentration (fibres per ml) Mean	Range
Automobile brake repair			
Blowing dust from brake drums:			
Distance 1–1.5 m	4	15.0	6.6–29.4
Distance 1.5–3 m	3	3.3	2.0–4.2
Distance 3–6 m	2	1.6	0.3–4.8
Background (5 min after air jet blowing, distance 3.6–16 m)	2	0.2	0.1–0.2
Background (7–14 min after air jet blowing, distance 19.6–22.6 m)	2	0.1	0.1
	13		
Truck brake repair			
Renewing used linings by grinding (distance 1–1.5 m)	10	4.8	1.7–7.0
Background to grinding used linings:			
Distance 3.3 m	2	1.5	1.2–1.7
Distance 8.3 m	2	0.8	0.6–1.0
Distance 20.0 m	1		0.2
Bevelling new linings	4	37.3	23.7–72.0
Background to bevelling new linings:			
Distance 2.4 m	1		0.6
Distance 3.6 m	2	0.4	0.3–0.5
Distance 9.1 m	1		0.3
	23		

away from the operator. From six to ten other mechanics work within an area up to 20 m from this operation are exposed to asbestos as well. Since a person breathes about one cubic metre of air an hour, multiplication of the fibre concentrations by one million gives the number of fibres inhaled during this period. Fibre concentrations measured during bevelling of truck linings were as high as 72 f/ml and averaged about 37 f/ml. Background counts were measured up to 9.1 m away from this operation (0.3 f/ml). Fibre concentrations measured during drilling holes for rivets and grinding ranged from 0.3 to 29.2 f/ml, as reported by Boillat & Lob (1973). Four of the nine values exceeded 5 f/ml.

Conclusions

The existence of significant exposure during brake servicing operations necessitates the following measures:

(1) Implementation of industrial hygiene procedures to control exposure.
(2) Clinical studies of garage mechanics to determine evidence of asbestos-related disease.
(3) Epidemiological studies of the mortality experience of exposed workers.

In addition, the entire variety of dusts and other materials present in brake repair work should be characterized in order to determine its disease potential, especially silica and lead compounds.

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