

Annex G. Patch Tests.

The survey does not cover patch tests in detail but they were so common (many thousands of volunteers took part in them) a brief summary is necessary. Patch tests involved pieces of rubber being placed on the skin and left for a period of time to find out if they irritated the skin. The tests were conducted to avoid using a mix of rubber in respirators which might induce dermatitis¹.

The first reference to patch tests in the period covered by the survey appears in May 1940². Samples of different rubber mixes, in the form of discs, were placed on the skin and left for 24 hours. Patch tests continued from this date. The number of different rubber mixes applied as patches varied. In February 1942 volunteers had 9 patches applied to their arms which were left for 24 hours or 48 hours³. In 1943 patches were worn for 48 hours and up to 4 patches were applied to the arms of a volunteer⁴. Skin reactions were recorded up to 72 hours after each patch had been removed.

A report was written in 1976 summarising the patch tests conducted from 1942 to 1975⁵. The report tabulates 184 rubber compounds from 21 manufacturers which were investigated in patch tests over this period. A summary is also given of the procedure which became standard practice.

- A 10 mm square rubber patch of 0.5 mm thickness was applied once only to the skin of the upper arm and kept in place with adhesive dressing for a maximum of 96 hours.
- Volunteers with a history of allergies, skin sensitivity or skin disease were excluded.
- If a volunteer complained of any discomfort or irritation before the 96 hours elapsed, the patch was removed. Otherwise, the area of the skin beneath the patch was examined at 24 hours, 48 hours and 96 hours.

The BC in 1962 noted that severe cases of dermatitis had arisen with the oxygen mask used by aircrew, and suggested that patch tests should be done on facial skin. This suggestion seems not to have been adopted by Porton: patch tests continued to use the upper arm.

Patch tests were discussed by COSHE in 1982 to consider if they were necessary⁶. An Army Consultant Dermatologist was consulted and pronounced the method used as acceptable. But COSHE remained concerned that this "fairly crude test of sensitivity" was being used to shape research programmes and might influence industry⁷. It transpired that the results of patch tests were made available to manufacturers and COSHE was worried that these simple tests might be used by industry as a yardstick of acceptability. Porton might, as a consequence, be placed in a vulnerable position if a manufacturer stopped working on a particular rubber mix solely because Porton's patch tests had revealed it irritated some volunteers⁸.

The chairman of COSHE undertook to talk to his colleagues about the future of patch tests. No further reference to this debate appears in COSHE minutes. Experimental records covering 1982 and 1984⁹ cite patch tests of rubber mixes, but those after 1984 do not.

¹ WO195/15477 BC 31st meeting 15 Nov 62.

² **Experimental Log MPG 27.**

³ **Experimental Log MPG 56.**

⁴ **Experimental Log MPG 57.**

⁵ **Technical Note 19. Elastomers and compounding ingredients for respirator rubber compositions in relation to their effect on skin Feb 76. [U]**

⁶ **COSHE 148th meeting 3 Mar 82. [C]**

⁷ **COSHE 149th meeting 19 Apr 82. [C]**

⁸ **COSHE 150th meeting 7 Jun 82. [C]**

⁹ **Experimental Logs MPG 79, MPG 80 and MPG 84.**