

## 262 (2785)

## Immunization against scarlet fever using sodium ricinoleate as a detoxifying agent.

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Scarlet toxin, the potency of which was 15,000 skin doses per cc., was treated with sodium ricinoleate so that the final dilution of the soap was 1 per cent and this mixture used to immunize against scarlet fever.

After a few preliminary tests it was found that the toxin had been completely neutralized by the soap, so that 1,000 skin test doses were perfectly safe for children. Early in our work we found that very much larger doses could be given. One hundred forty-eight children, ranging from one to sixteen years in age, with positive Dick tests, were treated with varying amounts of "neutralized" toxin. After having received one treatment of soap-toxin, they were given Dick retests in periods of time ranging from five to twenty-one days. The results are given in the accompanying table.

Dose	No. of Cases	Day of Retest	Percentage of Negative Skin Tests
1000	18	5th	48
1500	31	7th	66 $\frac{2}{3}$
2000	44	8th	68 $\frac{1}{2}$
3000	18	8th	87
4000	21	8th	90
Total	132	21st	96

As may be seen from the above table, 96 per cent of the cases gave a negative Dick reaction three weeks after having received a single injection.

The treatment was followed by a mild local reaction in 15 per cent of the cases. The reaction consisted of a slight reddening and swelling about the area injected, appearing about twelve hours after the injection, and disappearing after thirty-six hours. In no case was a general reaction observed.

A group of nurses who were treated with 2,000 skin test doses experienced no inconvenience whatever from the treatment. There were sixteen in this group. In seventeen days only 37.5 per cent were negative. We believe, therefore, that larger doses are indicated for older children and adults. Since large doses cause the patient no inconvenience, we recommend using 4,000 skin doses, as the larger doses apparently give a higher percentage of immunity than the smaller ones.

The soap-toxin should be allowed to stand at room temperature for four hours before using, to allow it to come to equilibrium. If cloudiness develops upon standing, it should not be used. The soap, as well as the soap-toxin mixtures, must be kept in hard glass containers.

### 263 (2786)

**The effect of concentration upon the neutralization of toxin by sodium ricinoleate.**

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It has previously been shown that sodium ricinoleate possesses the property of detoxifying bacterial toxins.<sup>1, 2</sup> In the present study an attempt has been made to show the effect of the concentration of both the toxin and the soap upon the efficiency of the detoxification.

One L+ diphtheritic toxin contained in a volume of 0.4 cc. was added to 1.0 cc. samples of a series of soap solutions ranging in concentration from 1 per cent to 9 per cent. After 15 minutes standing, these mixtures were injected into guinea pigs. The results of this experiment are given below :

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<sup>1</sup> Larson and Nelson, PROC. SOC. EXP. BIOL. AND MED., 1924, xxi, 278.

<sup>2</sup> Larson, Evans and Nelson. *Ibid.*, 1924, xxii, 194.