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Title pages

Privy Council

MEDICAL RESEARCH COUNCIL

IRRADIATION AND HEALTH

By DORA COLEBROOK

- A. Ultra-Violet Irradiation of School Children
- B. Irradiation of Varicose Ulcers



COMMITTEE UPON THE BIOLOGICAL ACTIONS OF LIGHT

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The Grouping.—Thirty parents expressed their wish that their children should not be treated. Of these three considered it 'unnecessary', four 'did not approve', the rest gave no reason. Of those who gave no reason subsequent investigation showed that many were simply distrustful of a new thing, while others were over-anxious, a state of mind which may conceivably have resulted in the child's receiving extra beneficial care or harmful coddling. Moreover, it appeared that the minds of those parents whose children were delicate or had a bad family history were divided between fear of ill-effects and hope of good ones; the child's attitude was possibly the factor which determined inclusion or exclusion in the end.

It seemed reasonable, therefore, to assume that the excluded children were a fair sample of the whole, and they were allotted to the control group.

Each of the seven school classes was then divided by drawing lots into three parts so that the three large groups should be composed of children of the same ages whose school life was influenced by similar conditions.

The light groups were deliberately kept a little larger than the control group in the early stages because it was obvious that for one reason or another children would fall out of them before the final results were attained, whereas so long as a control child remained in the school it remained a member of the group. Moreover, it was felt that in some ways the treated groups were better controls of each other than the control group was of either; since, during the treatment sessions they shared certain general experiences which the untreated missed; they were withdrawn from their lessons for similar periods; they were exposed to the same changes of temperature; they were expected to dress and undress themselves—a stimulating experience which many of them had apparently lacked hitherto; and lastly, evidence was not wanting to show that some of them received extra baths at home in preparation for the undressing at school.

The figures below show (a) the numbers in the groups at the time of the first treatment, and (b) the total numbers who had passed through the groups by the end of the inquiry.

<i>Light groups.</i>			
	<i>Unscreened lamp group.</i>	<i>Screened lamp group.</i>	<i>Control group.</i>
(a)	90	90	76
(b)	101	94	92

Throughout the period of the inquiry children entered and left the groups. Those who came in were new entrants to the school or children returning after a period of absence. They were added at random to the three groups. From all three groups children fell out when they left the school, and in the case of the controls no other factor interfered with membership of the group. In the case of the light groups from which children were liable to be withdrawn, some convention relating membership of the group to the actual period of irradiation was necessary. Though the benefit or harm which a child may receive from a course of treatment may be perceptible at any time after the start, it may not be confined to the actual period during which the course continues. It was therefore decided that, so far as the nature of the records allowed of the use of such a classification, a child should be considered to enter the group with its first and to remain a member of the group for six weeks after its last treatment; after that it belonged to no group and its records if used were classed independently. Children who received less than six treatments were not counted in any group.

Eighteen children were withdrawn from the unscreened and nineteen from the screened lamp group. They were fairly evenly distributed through the seven classes. An analysis of the reasons given for these withdrawals is shown in Table I.

It must be noted that the average standard of health of the light groups tended to be raised by these withdrawals as compared with the control group, from which no child could be withdrawn for health reasons. Further, if in any cases the treatment had been responsible in some way for the ill health, it was probable that in the weeks following its cessation a favourable change would show itself,

TABLE I. *Particulars of Children withdrawn from the Light Groups.*

Unscreened lamp group. (Total number 101).					Screened lamp group. (Total number 94.)						
Initial.	No. of exposures.	Reason for withdrawal.			Initial.	No. of exposures.	Reason for withdrawal.				
		More colds.	Fear of cold.	No reason.			Other reasons.	More colds.	Fear of cold.	No reason.	Other reasons.
A. S.	8				Bad appetite	E. J.	31	—			
G. W.	31				Sores.	M. S.	22				Debility.
F. S.	29	—			? Headaches.	K. J.	50	—			
V. B.	17					G. T.	9		—		
S. H.	20					J. A.	13				? Shivered after treatment.
M. C.	16		—		Sores.	R. S.	10				
G. H.	38					F. A.	30			—	
S. L.	52	—				H. G.	16			—	
A. L.	39		—			G. P.	16			—	
J. W.	16					C. G.	33	—			
J. S.	44					V. P.	39				Disturbed sleep. Debility.
D. G.	31					V. M.	23				
F. H.	6		—			J. N.	17		—		
E. J.	28					H. H.	32	—			
R. P.	29					B. H.	28	—			
W. P.	31				? Frontal sinusitis.	R. S.	34				Nervous. Disturbed sleep.
G. L.	18				Debility.	M. T.	31				
M. W.	16					N. G.	29	—			
						J. W.	15	—			
	18	9	3		6	19	7	2	3		7

so that the principle of 'six weeks' inclusion within the group after the end of treatment' would react not unfavourably on the standard of health of the group. In the case of the colds an attempt has been made to estimate the significance of this fact.

The *maximum number of treatments* given to any one child was 67. In the following table is shown the way in which the different numbers of exposures received were distributed throughout the groups.

<i>Number of Treatments</i>	6 and over	20 and over	30 and over	40 and over	50 and over	60 and over
<i>Number of children :</i>						
1. Unscreened lamp group	101	87	81	71	61	19
2. Screened lamp group	94	82	78	65	56	17