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Clinical results in cases of rickets treated with an active concentrate prepared from cod liver oil.

By LOUIS FISCHER.*

[From the Infantorium and Nursery of the Heckscher Foundation, New York City.]

The clinical observations extend over a period of more than one year. All cases were infants and children of the pre-school age. In the series under investigation 37 cases had rickets in a mild or severe form. The symptoms were confined to the head, thorax and the extremities. No case was diagnosed as rickets until the Roentgenologist called the case rickets. Our studies were continued and supervised by means of the x-ray. This showed where there was or where there was not improvement. Increase in weight and growth were symptoms that were stressed and metabolism was regarded as the most important result in a successful case. The blood examination was made in some cases and this was studied to determine an improvement if any existed.

Very many cases had eczema associated with rickets. In all, over 900 infants were examined and in the series 37 had backwardness in dentition, inability to walk or stand and rachitic manifestations confined to the bony system.

Constipation seemed present in 50 per cent of the cases. The other half had catarrhal, greenish and foul smelling stools. Atony of the gastrointestinal canal noted by loss of appetite, constipation or loose bowels was present in most cases. The urine showed acetone and traces of diacetic acid and indican.

In eight of the series an infection of the respiratory tract resulted in a bronchopneumonia and death.

The susceptibility of rachitic cases to the acute catarrhal diseases impressed us with the importance of avoiding unnecessary exposure at night and in the damp weather during our attempt to harden our infants and render them less susceptible to cold drafts and moisture. This susceptibility to colds and coughs and catarrhal infections seemed lessened after the first week, or two weeks at the most, of treatment with cod liver oil concentrate.

* Introduced by Harry E. Dubin.

In the series here presented, we were greatly impressed with the rapidity in which improvement was found. The cases were given the best hygienic supervision and the food was modified in quantity as well as in quality and cod liver oil concentrate was added as the vitamine and reconstructive factor. Progress was always noted, but it was slow progress.

Our observations were confined to two classes of cases. In the first series we depended on food, fresh air and cod liver oil, and in the second series, food, fresh air and sunshine. The influence of the sunshine was notable not only on the weight, sleep, metabolism and on the blood cells, but it also showed a marked healing tendency and influence on the calcium deposit in the bones. The influence of sunshine was apparent in every case. We have an excellent roof garden on which continuous sunshine is found.

The x-ray reports showed considerable difference in the healing process and the calcium deposit. Improvement was usual after two weeks of steady treatment and healed rickets was reported in most cases after one month's continuous treatment.

In the series of clinical observations here reported, we employed a cod liver oil concentrate similar to that used by Dr. Dubin in his studies on experimental rickets. His results are reported elsewhere in this issue.

The cod liver oil concentrate, as first employed by me, was mixed with syrup. Subsequently, it was found more convenient to give a 1 grain tablet in which the cod liver oil concentrate is mixed with sugar, each tablet being equivalent to a half teaspoon of fresh cod liver oil.

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The biological action of the beta rays of radium.

By ISAAC LEVIN.

[From the Cancer Division of the Montefiore Hospital, New York City.]

Methods of radium therapy commonly employed consist in the application of the radium over the surface of the area to be treated or in the insertion into the tissue to be influenced of