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Results Obtained By Tuberculin Testing a City's Retail Milk Supply

By GEORGE W. GOLER, M. D., and F. R. EILINGER, Phar. G.,
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TUBERCULOSIS FROM COW TO CHILD

"From five to seven per cent. of all human tuberculosis is ascribable to it. (Bovine Tuberculosis). Though it does not appear to play any part in tuberculosis of the lungs—the commonest type of this disease in man—yet it probably causes one-fifth of the tuberculosis of infancy and childhood."

*Theobald Smith, M. D.,
Professor of Comparative Pathology,
Harvard Medical School.*

Professor Smith was the first to discover the difference between human and bovine tubercle bacilli.

* Prepared for the First Annual Meeting of the American Association for Study and Prevention of Infant Mortality, Baltimore, November 10, 1910.

RESULTS OBTAINED BY TUBERCULIN TESTING A CITY'S RETAIL MILK SUPPLY

By **GEORGE W. GOLER, M. D.,** and **F. R. ELLINGER, Phar. G.,**
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Whatever views men may hold relating to the frequency with which bovine tuberculosis is conveyed to children through the medium of cow's milk, it is assumed that every one interested in the milk supply of cities, believes it to be desirable that all milk shall come from tuberculin tested cattle, and that all cattle shall be tested semi-annually, or at least annually. To secure this much-to-be-desired test and to compel its enforcement by law, it is necessary first, to show the frequency with which cattle supplying a locality are infected by tuberculosis before a law can be framed, passed and enforced for the protection of all people against the transmission of tuberculosis through milk. Because of the large number of cattle on many farms supplying even a small city with milk, a demonstration of the frequency of tuberculosis in a given locality is a long and arduous piece of work. If a city is compelled to resort to the method of testing cattle belonging to every herd in order to get evidence sufficient for the passage and enforcement of a law against the sale of milk from tuberculous cattle, with the small laboratory facilities and few workers in most cities, the task would be well-nigh impossible of accomplishment. The practical hopelessness of an attempt to secure the enforcement of a tuberculin test for all milk coming to a city by resort to the test of individual herds, leads us to propose that instead of attempting to test herds we test samples from retailers, and wherever a retailer's sample reacts we hold the retailer of the milk responsible for the goods he sells. If a sample of his milk is proven to make guinea pigs re-act to an injection of 2 c. c. of tuberculin two months after the animal has received a 5 c. c. injection of centrifugalized cream or sediment, then the retailer is to be prevented from selling that milk in the city until he has a clean bill of health for all his herds from the State Department of Agriculture. In this way the city not only helps to clean up its manifestly tuberculous herds, but secures the most positive kind of evidence with which to ask for a strong, immediate, well enforced ordinance requiring the testing of all cattle.¹

¹For the details of this plan, both the laboratory work and that of the New York State Department of Agriculture in testing cattle and reimbursing owners of tuberculous cattle, the reader is referred to my preliminary report in the Albany Medical Annals, Feb. 1910.

GEORGE W. GOLER, M. D., AND F. R. EILENGER, PH. G.

This brief note is only intended to record results obtained in the work of roughly testing the milk of 185 retailers supplying the city of Rochester with milk for the purpose of securing evidence upon which to base a demand for an annual tuberculin test of all the cattle supplying to the city.

In the beginning of our experimental work we depended upon naked eye evidence in the organs of those animals dying after acute infection had passed, or, who, living two months after the injection were upon autopsy found with marked lesions of tuberculous disease within their bodies. In the first hundred animals we depended upon these post-mortem naked eye lesions, but later, owing to the test suggested by Anderson,² we were able to determine more clearly and closely the animals reacting by injecting them with 2 c. c. of crude tuberculin after they had lived two months.

We have in all, in Rochester, 185 licensed retail dealers. Taking a sample from each one of these dealers, we injected one animal with centrifugalized cream, another with centrifugalized sediment from the same sample. Where both animals died of acute infection duplicate samples were obtained and injected other animals. All told we used 242 samples and 484 animals. Of these the first 100 animals used exclusive of those dying of acute infections, 5 or 5 per cent. were found with marked naked eye tuberculous lesions. Of the whole number of pigs injected 285 received injections of 5 c. c. of sediment in milk, and of these 61 or 21.4 per cent. died shortly after inoculation as a result of acute infections. Of the whole number of animals injected 199 received 5 c. c. of cream, of which number 86 or 43.2 per cent. died shortly after inoculation. 237 pigs were injected with 2 c. c. of crude tuberculin, of which 30 reacted or 12.6 per cent. Of these animals 18 reacted that had been injected with sediment or 7.59 per cent.; 12 that had been injected with cream or 5.06 per cent.

As a result of this work 41 retailers supplied by 28 producers had 757 cattle tested. 671 cattle were tested through the efforts of the Chief Milk Inspector, Mr. W. O. Marshall. 200 cattle were tested because the owners voluntarily asked for the test, and out of the total number tested 210 cattle were killed; thus out of approximately 8,000 cattle supplying Rochester with milk more than 20 per cent. of them were tested as a result of this work, and of those tested approximately 12 per cent. reacted and were killed.

²Journal Infectious Diseases, March, 1908.

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TUBERCULIN-TESTING A CITY'S RETAIL MILK SUPPLY

Results Obtained by Tuberculin Testing the Retail Milk Supply of Rochester, N. Y.

Number of retailer.....	185
Number of samples examined.....	242
Number of guinea pigs used.....	484
Died shortly after inoculation.....	147—35.95 per cent.
Injected with 5 c. c. of sediment.....	285
Injected with 5 c. c. sediment, died shortly afterward	61—21.40 per cent.
Injected with 5 c. c. cream.....	199
Injected with 5 c. c. cream and died shortly afterward	86—43.21 per cent.
Living at the end of two months and injected with 2 c. c. crude tuberculin.....	237
Reacted	30—12.65 per cent.
Sediment	18— 7.59 per cent.
Milk	12— 5.06 per cent.
No tuberculin used, evident tuberculous lesions found	100— 5 per cent.