

Here is how to make Coley's Toxins.

What is needed are some glassware and an incubator.

It is best to use as a broth Difco AOAC -- a product of Difco Laboratories in Detroit -- in Coley's day they started with a pound of ground beef and if you have an interest I will tell you about doing it that way also.

So start with 1,000 cc of distilled water. Add to it 10 % glucose. Then add 15 grams of Difco AOAC and 10 grams of Bacto peptone — another Difco product -- and 5 grams of sodium chloride. Stir well. Next get it to a pH of 7.1 to 7.2. This is greatly important. If there is no pH tester at hand, use litmus paper and get just on the alkaline side. It will most likely have a pH of about 6.8 in the beginning. The pH can be adjusted with a few drops of dilute sodium hydroxide.

Now take 100 cc of this in a small neck flask. Seed it with live streptococcus of erysipelas. Stopper it with sterile cotton -- these bacteria need air but not dust. Two labs out of the country make 500 cc at a time.

Put in an incubator at 36⁰ C grow for 10 days.

It is important that the solution gets to be very cloudy.

After 10 days take out of the incubator and get to 24⁰ to 35⁰ C -- an air-conditioned room -- and seed with live *S. marcescens*. The reason for 24⁰ to 25⁰ C is that the *S. marcescens* will not grow well at a higher temperature. Let the two grow together for 10 days at 24⁰ to 25⁰ C. The *S. marcescens* is red and the resulting solution should be pink. It is the *S. marcescens* that puts the punch in Coley's, so a pink solution is a good indicator.

Then heat kill by heating to 65⁰ C for two hours. Check to see that the solution is sterile. Add 0.03 cc of benzyl alcohol per cc of solution to prevent the growth of fungus.

Store at 2⁰ to 4⁰ C. This vaccine will last for months at this temperature.

The cost of materials to make 1000 cc of vaccine is about \$30.00 and this is enough to treat several hundred cancer patients.

In Coley's days, there were some very strong vaccines and some weak ones. In general a weak vaccine was just as good as a strong one. The dose just had to be greater.



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Editor

This to tell how to make Coley's Toxins. It is a very simple thing to do.

But first a bit of history on Coley's Toxins. Dr. William Coley was a young surgeon in New York City .in 1890, aged 28. The first 110 pages of Stephen Hall's book *A Commotion in the Blood*, Henry Holt and Company New York 1997 is about Coley and Coley's Toxins. The following story in part is from this book.

In 1890 a young late teen age woman named Bessie Dashiell came to Coley with a painful injury to one hand. She had taken a long trip by rail and had injured her hand in a Pullman car seat. In time the injury proved to be round cell sarcoma. Coley amputated her hand but the cancer spread throughout her body and she died a horrible death. Coley was shaken by her death and said there has to be a better way to treat cancer, He spent many hours of his spare time going through the records of New York Hospital and he found a clue. In 1885 a poor German immigrant named Stein had had surgery for round cell sarcoma four times and was considered as being hopeless. At this time he was infected with erysipelas. He nearly died from the infection but the cancer was gone.

Coley then spent many hours in the lower east side ghetto and at last he found Stein — in the best of good health six years later.

Coley then determined to infect late stage cancer patients with erysipelas, He did not have to wait long. The patient was another immigrant named Zola.. The case of Zola was almost the case of Stein. Coley had much trouble getting an infection started with Zola and when he did it was so severe that he feared Zola would die of the infection but as in the case of Stein, Zola went into remission that proved to be a cure.

Coley then began to treat twelve late stage cancer patients by infecting them with erysipelas. With two patients, they died from the infection. With one patient there was an infection with a fever of 105° F. In this case the patient's tumors disappeared but there was a recurrence that caused death. Of the other nine patients, he could not infect them,

Coley then turned to a killed vaccine of erysipelas, killed by heating to 66° C for two hours, This vaccine caused a mild fever reaction but not strong enough to be an anticancer treatment, Coley then added the newly discovered *Bacillus prodigiosus* now called *Serratia marcescens* to the vaccine. It was killed by heating to 66° C. This was and is Coley's Toxins. It was injected into a tumor or done as intradermal injections. First the patient was cold followed by a fever of 101° to 104° for a few hours.

The first patient to be treated with Coley's Toxins was a boy. His name was John Ficken. He had a large tumor of malignant sarcoma in the abdomen that had been like a bowling ball. It was considered that the patient was hopeless. On Jan. 24, 1893 an injection of the new Coley's Toxins was done in the tumor, The reactions to the injections were severe chills and fever. The injections were done every other day for .3.5 months. By this time the boy's tumor had decreased by 80 %. Coley stopped treatment then. The boy was gaining back lost weight. The boy was sent home at this time and was traced in 1907 still alive and well. So Coley had a success with his first cancer patient treated with Coley's Toxins..

Coley then started to treat cancer patients with Coley's Toxins with a degree of success. Other doctors were beginning to get Coley's Toxins from Coley. Here will be given a case of success in the treatment of breast cancer, The patient was a 42 year old woman in New Britain, Connecticut, in Oct. 1895. She had a tumor on one breast the size of an orange. She had lost 29 lbs in weight. Her doctor was M. Storrs of the Hartford Hospital.. She was considered

as being inoperable. On Dec. 16, 1895, injections were begun with Coley's Toxins.in the tumor. Injections were given every second day. Injections were then changed to one a day. It was thought that her temperature reached 104° degrees. The tumor began to shrink in size and there was much necrotic tissue to be removed from the tumor. By March of 1896 the tumor had disappeared. Most of the treatments had been done at her home. The patient had gained the 29 pounds she had lost. She remained well until her death in 1943 of heart disease at an age of 80.

In Dec. 15, 1894, there was an editorial in the AMA's publication *JAMA* saying that Coley's Toxins was useless in cancer treatment.

By the spring of 1896, Coley had treated 160 cancer patients with his Toxins. Nearly half of these 160 patients had shown a degree of benefit but with a few of them the results had been nothing short of remarkable.

In 1897 Coley took the post of head of the sarcoma ward at Memorial Hospital in New York City. Meanwhile the Mayo Brothers had come strong for Coley's Toxins in treating cancer.

Then we must consider Dr. Jam's Ewing. He was a pathologist who came to Memorial Hospital about the same time as Coley. In time he was known to the news media as Mr. Cancer and he developed for Coley and his toxins the most bitter animosity. He thought that the newly discovered radium and the X ray machine was the Utopian cure for cancer.

Ewing attracted the interest of James Douglas CEO of the Phelps — Dodge Corp. Douglas had a daughter with breast cancer. Ewing, Douglas and his daughter went to England where she could be treated with radium. The treatment failed and she died of breast cancer, this after the first breast cancer patient cured by Coley's Toxins as has been reported. in this letter.

Douglas was not swayed by the death of his daughter. He formed a firm for the mining of radium and made a gift of several hundred thousand dollars worth of radium to Memorial Hospital and in return for the gift, Ewing was made medical director of Memorial Hospital. Ewing became Coley's boss and Coley's worst enemy.

For many years Coley could not treat sarcoma patients with Coley's Toxins and he must treat them with radium. For several years Coley's sarcoma patients were treated with radium only and not one of them was helped in the least.

Meanwhile not far from Memorial Hospital one of the most dramatic cures of cancer by Coley's Toxins took place. The patient was an officer in the merchant marine, The time was 1926. The patient had reticulun cell sarcoma, His leg had been amputated at the hip. Three months later there was a metastasis above the umbilicus. One month later there was a fist sized tumor on the amputated stump. One month later the amputated stump was increasing in size.and there was another orange size tumor on the stump.

Coley's Toxins were injected into the stump. There were signs of regression but the reactions were severe and the patient asked for a respite. During the respite the cancer spread at an alarming rate. The stump had increased in size to 30 inches in circumference and the end of the stump had broken down to a great ulcer from which there was a foul smelling discharge. There were several more tumors, in the scalp, verterbrea, and cranial bones.

Injections were begun again in the stump. Large doses of Coley's Toxins were injected every day. The patient suffered from severe reactions but after 28 days the ulcer in the stump healed and the stump had returned to its normal size. All his other tumors had either vanished or were now very small in size. His doctors wanted to continue with the treatment but the patient said that he had had enough. Sixty days later there was no sign of cancer, The patient

lived free of cancer until 1959 when he died of a heart attack.

Dr. Ernest Codman of the Harvard Medical School had for a long time sided with Ewing as saying that Coley's Toxins were useless in the treatment of cancer but in 1935, one year before the death of Coley, he changed his position and said that the use of Coley's Toxins had produced from time to time miracles in cancer treatment. His observation did no good for in 1936 Coley died and for the time Coley's Toxins died with him. Pages could be written about the miracles in cancer cures by Coley's Toxins. Two of the miracles will be given here.

In 1912 in Kentville, Nova Scotia, there was a 26 year old woman with far advanced renal cell carcinoma. She was taken by auto the 40 miles to a hospital in Halifax. There a surgeon did surgery on her. He took one look and sewed her back up. He felt that she was so hopeless that she would not survive the trip back to Kentville. By then it was understood that an overdose of Coley's Toxins could cause death. Her doctor had some Coley's Toxins and he injected what he thought to be a lethal dose hoping to end her suffering. It was just the right dose to do wonders for her, she was given 18 injections in the buttocks of Coley's Toxins over the next 18 days. And six weeks later she was free from signs of cancer. She was traced 40 years later still free from cancer.

Coley's daughter Helen Coley Nauts founded in 1953 Cancer Research Institute and it has grown large and prestigious. 1956 she had Coley's Toxins made at the Memorial.

The American Cancer Society was founded in 1913 and has been a bitter enemy of Coley's Toxins. In June of 1962, an amendment to the Pure Food and Drug act was passed giving great power to our FDA. At this time the American Cancer Society had a list of unproven treatments of cancer and Coley's Toxins was on that list. The American Cancer Society held that Coley's Toxins had never helped a cancer patient. The act was called the Kefauver-Harris Amendment. It had a grandfather clause that made legal any drug or vaccine that had a record of success before 1962. Aspirin was at once made legal but with the American Cancer Society saying that Coley's Toxins had never helped a cancer patient, Coley's Toxins was declared to be illegal.

With that background will be told an astounding success of treating hopeless cancer with Coley's Toxins. The time was February of 1961. The patient was a retired contractor. The place was the Baptist Hospital in Oklahoma City. The patient had had surgery for colon cancer. There followed a massive recurrence. The liver was enlarged and there were metastases in the peritoneum and lungs. His doctor was tapping and removing two quarts of bloody fluid from the abdomen each day and one quart of fluid from the lungs every second day. The fluid from both the lungs and abdomen had cancer cells. Death was expected in a week or so.

Intradermal injections in the buttock was started with Coley's Toxins. There was aching and pain. There were shaking chills with fever of 102°. The injections were done for eight days only and then the miracle happened. There was no more fluid in the lungs after 24 hours. After three days, there was no more fluid to be removed from the abdomen. On day eight of the injections, the patient was feeling fine and the injections were stopped. A week later the patient was gaining lost weight and he was sent home. He was alive and well in 1970 nine years later.

Other cancer patients were being treated with Coley's Toxins and showing benefit but their treatment suddenly stopped. After June of 1962.

Now to tell how to make Coley's! Toxins. From 1894 until 1906 Coley's Toxins was made by Dr B.H. Buxton of Cornell University. He soaked one pound of ground beef over night in 1,000 cc of water. Then he boiled it for one hour and filtered through cotton

cloth. Then was added 10 grams of peptone and 5 grams of sodium chloride. Then it was tested with litmus to get the solution slightly alkaline. It was then boiled for one hour. It was filtered through filter paper. Then it was boiled for one half hour on three days in a row. It was then seeded with a live streptococcus solution and let stand for 10 days. The solution needs a cover but the growth needs air. It should be cloudy. Then a few cc of the live *Bacillus prodigiosus* was added to the solution and allowed to grow for ten days more. Then it was heated for two hours at 58° C. A bit of thymol was added. The vaccine was stored at 2 to 4 degrees C.

From 1906 until 1920 Dr Martha Tracy who had worked with Buxton changed the way she made the vaccine. She grew the two bacteria separately. Then she did a nitrogen determination on the *B. prodigiosus* and, depending on what she found, she added a certain amount of *Bacillus prodigiosus* to the streptococcus growth. I do not like this way of making the vaccine. If one makes a mistake in doing the nitrogen determination and one gets too much of the *B. prodigiosus*, the vaccine will turn very toxic. Making the vaccine as per Buxton, one will never get a toxic vaccine.

In 1990 I had a call from Don Carrow M.D. in Tampa. wanting to know how to make Coley's Toxins. I sent him the above information, rather than using beef broth, he used as a broth Difco AOAC, a product of Difco Laboratories in Detroit. In 1,000 cc of water he added 15 grams of Difco AOAC, 10 grams of Bacto peptone — another Difco product — 5 grams of sodium chloride and 100 grams of glucose. He got the pH to 7.1 to 7.2.

He then added a few cc of live streptococcus solution and let it stand at 36 degrees C for 10 days. Then he got the 1,000 cc to 25 degrees C and seeded it with live *Serratia marcescens* and let it grow for another ten days. It was heated to 65° C for two hours to get a killed vaccine. He then added 0.03 cc per cc of benzyl alcohol. It was stored at 2° to 4° C. The 1,000 cc was then filtered through a seven micron filter. Care must be taken not to remove the dead bacteria.

He had a cancer patient ready to treat with his Coley's Toxins. She was a 50 year old nurse with non-Hodgkin's lymphoma. She had a tumor under one arm that was the size of a football. He injected his Coley's Toxins into the center of that big tumor with a three inch long needle. Injections were done each day that produced first shaking chills and then a fever of 104° F. I do not know how many injections were given but the tumor was reduced to a flabby bag which was removed by surgery. The bag contained no cancer cells. Dr Carrow reported in 2002 that the patient was cancer free. Dr. Carrow died in that year. That is why his name is being used. In 1990 he had a problem with the Florida State Board of Medical Examiners. Coley's Toxins was not the problem. I know that he continued to treat cancer with Coley's Toxins but I was not told of the results.

I am now in contact with two doctors. Their names will not be given. One doctor, Doctor X in Ohio wanted to know how to make Coley's Toxins. I sent him the information given in this letter. He made a great lot of some very good vaccine and he sent me the way he made Coley's Toxins.

He got the live *Streptococcus pyogenes*, ATTC 19615 and the live *Serratia marcescens* ATTC # 13880 from Micro Biologics www.microbiologics.com in the form of Kwik-Stics. For a broth he used the Todd-Hewitt broth. It was obtained as a powder and is used as a 3 % solution. He used 500 cc of water. To it was added 15 grams of the Todd-Hewitt powder and 50 grams of glucose. The flask was plugged with a plastic foam stopper and autoclaved for 15 minutes at 121° C. The broth was allowed to cool and was stored at 4° C for 3 weeks.

The broth was then seeded with the live streptococcus and

allowed to grow at 36° C for seven days. The culture was then gotten to 25° C and was seeded with the live *Serratia marcescens* and allowed to grow for seven more days, The culture then was killed by heating to 65° C for two hours. Then 7.5 cc of benzyl alcohol was added. The 500 cc of the killed vaccine was then filtered with a 15 micron filter. It was stored at 4° C ready for use.

I have just talked to Dr.X. He had much to tell of success in treating cancer with the Coley's Toxins he made. He had had what he called two complete remissions of cancer. He has been giving his Coley's Toxins to a doctor friend in Arizona who is having even greater success with it. He reports a breast cancer patient with bone metastases who had great benefit in a very short time.

Now to tell of Dr. Y of Alabama. But first here is some background. As a student at Purdue University, in 1932, I had a professor of bacteriology who thought well of Coley's Toxins and he had exchanged letters with Coley. Coley had sent him the instructions for making Coley's Toxins. That is how I knew how to make Coley's Toxins.

In 1985 I went to Guatemala and found a bacteriologist and gave him \$200.00 to make 1,000 cc of Coley's Toxins. Then I found a doctor with a small hospital. He agreed to put American cancer patients in his hospital and to treat them with injections in the vein of Coley's Toxins. They could stay in his hospital for 30 days and get 20 IV injections of Coley's Toxins. The cost to the patient was \$1,000.00. Then I put the word out to several doctors. One patient from near Pittsburg came. She was aged 65 and had ovarian cancer. She was badly swollen in the abdomen and her CA 125 was over 6,000. She stayed in the hospital for 30 days, and had 20 IV injections of Coley's Toxins, She felt much better. The swelling had greatly decreased and her CA 125 had been reduced to just over 2,000. She needed more treatment but she returned to the USA.

Meanwhile a doctor in the government of Guatemala told the Minister of Health that the American Cancer Society had Coley's Toxins listed as an unproven remedy. Coley's Toxins was banned in Guatemala. I do not know what happened to the patient.

I had about 800 cc of my Coley's Toxins sent to me. About two years ago I gave the 800 cc of Coley's Toxins to Dr, Y in Alabama. He has added a new diminution to the treatment with Coley's Toxins. He will do an IV of Coley's Toxins in his office. He will then show the patients how to do the injections at home as self medication, and send them home with a 20 cc bottle of Coldy's Toxins. He will tell the patient to have rectal suppositories of Tylenol on hand which will terminate a reaction to Coley's Toxins quickly.. The patient is to do an injection at about 8:00 AM. For an hour the patient will feel cold and may shake. Then the fever will come on and the pulse will increase to about 125. The patient is told to check temperature and pulse every hour. If the fever exceeds 104° F or if the pulse exceeds 135, terminate the reaction with Tylenol. This will not happen often. The fever should end by 6:00 PM.

We should be able to do better than Coley did. He did not have Tylenol. He knew that an overdose of Coley's Toxins could cause death so he had to use lower doses than he would like to use. Having Tylenol on hand will permit the use of higher doses. Then, in Coley's time, it was a hard rule that nothing must be put in a vein. Now it is understood that injections of Coley's Toxins in the vein give greater reactions. The injections can be done every day or every second day. The injections are done for 30 days and then for one week there are no injections and then the injections are resumed.

All these instructions are given to the patient. Some times the treatment need be done for two or three months. By doing the injections at home, the patient can get two months of treatment that could not be had otherwise and the cost is kept down.

Dr Y has had two complete remissions of cancer and two failures.

In 1935 Coley gave a lecture at the University of Glasgow in which he told of treating several hundred cancer patients with sarcoma. Of them, about one third had remissions that left them free of cancer at 5 years.

His daughter Helen Coley Nauts found good records of just less than 1,000 cancer patients who had been treated with Coley's Toxins. Of them about half had remissions that left them free from cancer at 5 years.

Coley' daughter, Helen Coley Nauts, has told me that at Cancer Research Institute it is felt that the main anti-cancer effect of Coley's Toxins is the anti-cancer effect of fever and of interferon and tumor necrosis factor which are increased during the reaction. I sent a FAX to Professor Leo Zacharski M.D Dartmouth Medical School. He said that Coley's Toxins contains some streptokinase. He said he knew of a woman with endometrial cancer with metastases . She had a heart attack and was treated with an infusion of streptokinase. It terminated the heart attack and her tumors showed a marked regression which has persisted for several months. He was hoping to see a trial on treating cancer with an infusion of streptokinase but he suggested that streptokinase in Coley's Toxins was part of its anti-cancer effect.

I also mde contact with Dr. S. Moncada, Medical Director of the Wellcome Research Laboratories. He said that in the fever reaction to Coley's Toxins or in an infection of erysipelas., the arginine to nitric oxide pathway is activated for the production of nitric oxide which has a strong anti-cancer effect.

I have told in this letter of three doctors who are having some success in treating cancer with Coley's Toxins.

It is hoped that a few doctor readers of this letter will want to make Coley's Toxins and treat some cancer patients with it.

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