

Supplementary material 2.

Letter from Franklin Delano Roosevelt to Dr William Egleston (dated October 11, 1924), explaining the semiology of his 1921 acute ascending paralysis. Given the lack of original clinical records, this letter is of great help for understanding FDR's paralytic process. Again, in addition to paralysis, he described how "I felt thoroughly achy all over [...] but all the muscles from the hips down were extremely sensitive to the touch and I had to have the knees supported by pillows. This condition of extreme discomfort lasted about three weeks. I was then moved to a New York hospital, [...] but the leg muscles remained extremely sensitive and this sensitiveness disappeared gradually over a period of 6 months."

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Franklin D. Roosevelt
Hyde Park, Dutchess County
New York

at Warm Springs, Georgia
October 11, 1924

My dear Dr. Egleston:

Please excuse my delay in replying to your letter which has been forwarded to me down here in your neighboring state where I am spending a few weeks swimming and getting sunlight for my legs.

I am very glad to tell you what I can in regard to my case and as I have talked it over with a great many doctors can, I think, give you a history of the case which would be equal to theirs.

First symptoms of the illness appeared in August, 1921 when I was thoroughly tired from overwork. I first had a chill in the evening which lasted practically all night. The following morning the muscles of the right knee appeared weak and by afternoon I was unable to support my weight on my right leg. That evening the left knee began to weaken also and by the following morning I was unable to stand up. This was accompanied by a continuing temperature of about 102 and I felt thoroughly achy all over. By the end of the third day practically all muscles from the chest down were involved. Above the chest the only symptom was a weakening of the two large thumb muscles making it impossible to write. There was no special pain along the spine and no rigidity of the neck.

For the following two weeks I had to be catheterized and there was slight, though not severe, difficulty in controlling the bowels. The fever lasted for only 6 or 7 days, but all the muscles from the hips down were extremely sensitive to the touch and I had to have the knees supported by pillows. This condition of extreme discomfort lasted about three weeks. I was then moved to a New York hospital and finally moved home in November, being able by that time to sit up in a wheel chair, but the leg muscles remained extremely sensitive and this sensitiveness disappeared gradually over a period of 6 months, the last remaining point being the calf muscles.

As to treatment--the mistake was made for the first 10 days of giving my feet and lower legs rather heavy massage. This was stopped by Dr. Lovett of Boston who was, without doubt, the greatest specialist on infantile paralysis. In January, 1922, 5 months after the attack he found that the muscles behind the knees had contracted and that there was a tendency to foot-drop in the right foot. These were corrected by the use of plaster casts during 2 weeks. In February, 1922, braces were fitted on each leg from the hips to the shoes, and I was able to stand up and learned gradually to walk with crutches. At the same time gentle exercises were begun, first every other day, then daily, exercising each muscle 10 times and seeking to avoid any undue strain by giving each muscle the correct movement with gravity. These exercises I did on a board placed on the bed.

The recovery of muscle paralysis began at this time, though for many months it seemed to make little progress. In the summer of

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1922 I began swimming and found that this exercise seemed better adapted than any other because all weight was removed from the legs and I was able to move the legs in the water far better than I had expected. Since that time, i.e. for the last two years, I have as far as possible in connection with my work and other duties, carried out practically the same treatment with the result that the muscles have increased in power to a remarkable extent and the improvement in the past six months has been even more rapid than at any previous time.

I still wear braces, of course, because the quadriceps are not yet strong enough to bear my weight. One year ago I was able to stand in fresh water without braces when the water was up to my chin. Six months ago I could stand in water up to the top of my shoulders and today can stand in water just level with my armpits. This is a very simple method for me of determining how fast the quadriceps are coming back. Aside from these muscles the waist muscles on the right side are still weak and the outside muscles on the right leg have strengthened so much more than the inside muscles that they pull my right foot outward. I continue corrective exercise for all the muscles.

To sum up I would give you the following "Don'ts."

Don't use heavy massage but use light massage rubbing always towards the heart.

Don't let the patient over-exercise any muscle or get tired.

Don't let the patient feel cold, especially the legs, feet or any other part affected. Progress stops entirely when the legs or feet are cold.

Don't let the patient get too fat.

The following treatment is so far the best judging from my own experience and that of hundreds of other cases which I have studied.

1. Gentle exercises especially for the muscles which seem to be worst affected.
2. Gentle skin rubbing--not muscle kneading--bearing in mind that good circulation is a prime requisite.
3. Swimming in warm water--lots of it.
4. Sunlight--all the patient can get, especially direct sunlight on the affected parts. It would be ideal to lie in the sun all day with nothing on. This is difficult to accomplish but the nearest approach to it is a bathing suit.
5. Belief on the patient's part that the muscles are coming back and will eventually regain recovery of the affected parts. There are cases known in Norway where adults have taken the disease and not been able to walk until after a lapse of 10 or even 12 years.

I hope that your patient has not got a very severe case. They all differ, of course, in the degree in which the parts are affected. If braces are necessary there is a man in New York whose name I will send you if you wish when I get back to New York, who makes remarkable light braces of duraluminum. My first braces of steel weighed 7 lbs. apiece--my new ones weigh only 4 lbs. apiece. Remember that braces are only for the convenience of the patient in getting around--a leg in a brace does not have a chance for muscle development. This muscle development must come through exercise when the brace is not on--such as swimming, etc.

I trust that your own daughter is wholly well again.

William Egleston, M. D.
Hartsville, S. C.

Very truly yours,
(Signed) Franklin D. Roosevelt