

COENZYME Q10 AND LIFE EXTENSION
“The Miracle Nutrient Coenzyme Q10” – Emile G. Bliznakov MD

Extending Life by Fifty Percent

“That CoQ plays a crucial role in aging is beyond doubt. The same applies to CoQ’s role in the immune system. And there is a vital connection between the immune system and aging that cannot be ignored. Out of our many studies at the New England Institute one stands out when other researchers look to illustrate the life extension benefits of coenzyme Q. Its result was inspiring.

Instant results cannot be expected in the study of human gerontology. With small animals as models, the whole story is much shorter on the time scale. It was with female white mice that a possible view of the Fountain of Youth was experienced.

It should first be explained that the study involved ‘old mice’. The term means that these mice are already at such an advanced age that all their body functions are declining. Old mice have already lost their thymuses, show dramatic CoQ deficiency, and their immune systems have lost the capability to produce antibodies.

A mouse is considered to have reached ‘old’ when it is approximately 16 to 18 months of age. In human terms this might be equivalent to being in ones sixties or seventies. It might make it easier to consider a week in the life of a mouse as roughly equivalent to 1 year in that of a human. A mouse living to 2 years would be like humans living well into their 90s.

For our study we took one hundred old mice, average age 16 to 18 months, and divided them into two groups of 50 each. Both groups were kept on optimally nutritious diets and, in mouse terms, their life-styles and living conditions could be considered comfortable or above average. Nothing had previously been done to extend their potential life spans beyond the expected norm.

At the start of the experiment, one group was selected as a control, and the remaining 50 mice were individually injected with CoQ each week. The CoQ was administered into the peritoneum in a harmless injectable emulsion. What soon became most apparent between the two groups was that the CoQ treated mice did not develop the normally expected signs of advanced age. For example, their coats remained lustrous and healthy. They were bright-eyed and active, and showed none of the immobility problems associated with old age in mice

The untreated mice lacked vigour and their fur grew sparse and patchy. They began to die at an expected rate. By week 16 of the experiment almost 30 percent of the control mice had succumbed to natural aging, while only 20 percent of the treated mice had died. From this point on the disparity between the two groups began to widen enormously.

By week 28 about 40 percent of the CoQ mice had died, compared to almost 70 percent of the control mice. At week 36 all members of the control group were dead—yet almost 40 percent of the CoQ-treated mice were alive and active, and most of them displayed no observable signs of aging at a time when they should have been severely geriatric.

The CoQ-treated mice continued their extraordinary odyssey of life. By week 56 (almost twice as long as they normally would be expected to survive beyond the start of the experiment) 10 percent were still thriving. As the study progressed toward its 80th week (remember, the last control mouse died at week 36), some 3 or 4 mice were still alive. The last CoQ treated mouse finally died of ‘old age’ at week 82—a life span which could be considered in human terms to be around 130 years!

The following table, Table 1, shows the average survival times of the untreated and CoQ treated mice.

Modification of Mean Survival Time in Old Mice by Coenzyme Q10

<u>Mean Survival Time After Treatment</u>		
<u>Treatment</u>	<u>Weeks</u>	<u>Percent</u>
Control	20.0	100.0
Coenzyme Q10	31.2	156.0

When these results were analyzed by computer they were found to be not just significant, but highly significant.

One of the most exciting facts about the CoQ treatment was that not only did it extend the average age expectancy of ordinary laboratory mice by at least half a lifetime, but the animals retained a more youthful appearance right up to the end of their lives.

In human terms these results could be interpreted as everybody having the potential to live to an average of 100 years instead of around 70 and some people could be expected to top 130 and even 150 years of age. Yet we must remember one important thing: no attempts were made in these experiments to counter any disease states that were not CoQ dependent and that may lead to death. Looking at that fact in a human situation, where disease states could be treated accordingly, the prospects of life extension could be even greater.

These experiments were repeated two more times to authenticate them with similar results. The preliminary CoQ and aging experiments were presented at the 4th International Congress of Immunology, in Paris, France, in 1980. The final detailed results were published in *Biochemical and Clinical Aspects of Coenzyme Q*, volume 3, in 1981.”