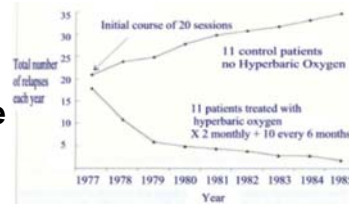


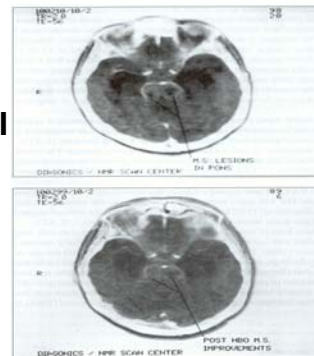
Multiple Sclerosis

Studies with thousands of Multiple Sclerosis patients have shown that not only can the disease be stopped, in some cases, it can reverse.



The chart above shows how 11 patients treated with Hyperbaric oxygen Therapy had fewer and fewer relapses each year. The 11 control subjects who did not receive Hyperbaric therapy had their disease progressively worsen.

While most authorities believe that MS is non-reversible, and the best that can be done is to slow the progression of the disease, these MRI pictures show how hyperbaric oxygen can actually reverse MS lesions.



A New Theory of the Causes of M.S.

The Gottlieb-Neubauer theory proposing that MS is caused by lack of oxygen, has been supported by research showing that HBOT, which overcomes a lack of oxygen, is an effective treatment method. Established medical circles have come to accept HBOT's effectiveness, although that acceptance was initially slow in coming.

Accepted by the Medical Community

The first sign of this acceptance came in January 1982

when a report on HBOT was published in the prestigious *New England Journal of Medicine* (NEJM). The wording of the report, which came after almost a year of extensive analysis, revision, and review, was cautious. But it did offer a good measure of hope: "These preliminary results [on HBOT] suggest a positive, though transient effect of hyperbaric oxygen on advanced multiple sclerosis (MS) warranting further study."² This report's impact on people with MS was electrifying, ... and their families went looking for hyperbaric chambers.³

Clinical Studies Show great Results

The NEJM report was based on a controlled clinical trial conducted between 1980 and 1982 by Dr. B. H. Fischer, Dr. M. Marks, and Dr. T. Reich at New York University Medical Center. Forty patients with chronic MS were divided randomly into two groups. The experimental group received pure oxygen, and the control group received a mixture of 10% oxygen and 90% nitrogen. Both groups were treated at a pressure of 2.0 atmospheres absolute, but at an effective pressure of 1.4 atmospheres absolute due to leakage from the masks. Sessions lasted for ninety minutes, once a day, for a total of twenty exposures.

The investigators discovered that 12 of the 17 patients (70 percent) who received HBOT saw their symptoms improve. (Three of the 20 patients in this group dropped out of the study before it was completed.) But in the control group of patients who inhaled the equivalent of room air under pressure, just 1 in 20 (5 percent) improved.

Of the persons in the study who benefited from HBOT, 7 had short-term relief and 5 had long lasting relief of MS symptoms. Those with less severe forms of the disease experienced more favorable and prolonged responses.

After one year of followup, deterioration was found in only 2 of the patients (12 percent) who had received pure oxygen, compared with 11 patients (55 percent) in the control group.⁴

A number of studies have criticized HBOT as a treatment for MS. In reviewing many of these studies, Dr. Neubauer (a well respected Hyperbaric physician) believes that there were a number of factors that were either not considered or inappropriate. For example, inappropriate pressures were used, patients had advanced MS, and not enough

treatments were given. Interestingly enough, one of the authors of a negative report went on to open a hyperbaric center in Great Britain specifically to treat MS.

In 1984, Dr. Neubauer learned that more than 10,000 MS patients in fourteen countries had been treated with HBOT. In discussions with his colleagues, he found that the majority of these patients (70 percent) showed improvement in brain and bowel-bladder function, and lessening of muscular spasticity and other systemic disorders brought on by the disease. Objective measurement, or improvement that could be measured, occurred in about 25 percent of the patients. Subjective improvement, or improvement that was noted by the doctor or the patient but is difficult to measure, occurred in about 45 percent of the patients. There was also a marked absence of deterioration and few relapses among patients who participated in a periodic HBOT booster program.

In a double blind, placebo-controlled 1986 study conducted by Dr. T Yamada and colleagues in Japan, it was reported that all MS patients treated with HBOT led to a very significant decrease in the number of relapses.⁵

The cases of another 600 MS patients who had been treated with HBOT were reported on by Dr. Neubauer at a hyperbaric medicine conference. Some of these patients stopped receiving HBOT because of cost considerations, or because travel to and from the hyperbaric facility was inconvenient. Others continued to receive treatment. There were significant objective improvements, as well as a reduction in the number of relapses, for those patients who continued HBOT compared with those who did not.

One group that funded extensive research into MS and HBOT was Action for Research into Multiple Sclerosis (ARMS). The result of one ARMS study were published in 1989. The two-year study, conducted by researchers from Ninewells Medical School at the University of Dundee in Scotland, involved 128 HBOT-treated MS patients who were compared with an equal number of untreated controls. Seventy percent of the treated patients did not deteriorate, had their conditions stabilize, or showed small improvements.⁶ Behind the studies and statistics are the improvements in daily life experienced by many MS patients who receive HBOT. One Massachusetts woman had been disabled by the disease, she could barely stand

and needed a battery powered cart to move around. After her third hour of treatment, she "felt absolutely wonderful and asked my son to get my crutches out of the closet where they were stored. I got up out of my cart and walked around and was astounded at my progress; it was happening that quickly."

When the patient returned to her home, she continued taking HBOT treatments at a hyperbaric center in Pennsylvania. "When I wake up in the morning, I have a very positive, energetic feeling," she said. "I don't in any way see this HBO Treatment as being a cure for MS, though. If I hold the line at this point, that's terrific. If I slow down the process of deterioration, that's terrific too, as far as I'm concerned."⁷

As we've seen, HBOT is not a cure for MS. But it has proven to be an effective therapy. It has shown an ability to favorably alter the outcome of the disease. HBOT should be continued in regular, long-term treatments, especially when MS has caused dysfunctions of the cerebellum, and loss of bowel and bladder control.

For best results, HBOT treatment of MS should be started as early as possible following diagnosis. As with any other illness, MS becomes more difficult to control as the disease process continues. Oxygen cannot and does not reverse plaque formation, and functions best before there has been a consolidation of plaque. Some patients may require as many as eighty exposures in the initial series before stabilization and maximum improvement are achieved. HBOT can also be used to maintain a remission through the use of from one to two sessions a week, to one or two sessions a month.

Many cutting edge doctors now believe that MS is essentially a circulation problem linked to a lack of oxygen in the body's tissues. HBOT can overcome this lack of oxygen to help halt the progress of this disease. Unfortunately, this belief is shared by neither a majority of American doctors nor by many MS organizations. Just as insulin injections do not cure diabetes, HBOT does not cure MS. Rather, HBOT provides a significant chance for control and stabilization of MS, as insulin does for diabetes.

1. Gottlieb S.F. and Neubauer R. A. Multiple Sclerosis: its etiology, pathogenesis, and therapeutic with emphasis on

the controversial use of HBO. *Journal of Hyperbaric Medicine* 3: 143-164, 1988.

2. Poulton G. A. Controversial MS treatment provides degree of help and hope for victims. *Fort Lauderdale News* 8/9/82, page 2B.

3. Haney D. Q. MS victims find hope i treatment. *The Philadelphia Inquirer* 9/25/83, pp1-c, 8-c.

4. Fischer B. H., Marks M., and Reich T. Hyperbaric oxygen treatment of multiple sclerosis. *New England Journal of Medicine* 308 (4):181-186, 1983.

5. Yamada T., Hirayama K., Saito H., and others. Hyperbaric oxygen treatment for multiple sclerosis: short term and long term therapy. *Journal of Hyperbaric Medicine* 21:215-219, 1986.

6. Davidson D. L. W. Hyperbaric oxygen therapy in the treatment of multiple sclerosis. Research from Action for Research into Multiple Sclerosis, London, England, 1989.

7. Haney D. Q. MS victims find hope in treatment. *The Philadelphia Inquirer* 9/25/83, pp 1-C, 8-C.

Much of the information in this report was found in the Textbook of Hyperbaric Medicine by K.K. Jain and Hyperbaric Oxygen Therapy by Neubauer and Walker.