

# The Pressure Point

## Reaching the Children of Denmark:

## The Hyperbaric Revolution



Pictured at left:

Our hosts, Matthew and Carol Newell and Family Hope Center Associates

A recent trip to Denmark by the International Hyperbarics Association proved to be a great boon to the children of The Family Hope Center. In a phrase, the visit inspired new life into this part of the world.

### The Purpose

The purpose of the visit was to bring Hyperbaric Therapy to a community which had not, up until then, been aware of the potential of hyperbarics. IHA member Dr. Harold Grams, who arranged the Denmark meeting, currently consults with The Family Hope Centers regarding Hyperbarics for the brain-injured.

### The Founders and Mission

The Family Hope Center, which has its home offices in Blue Bell Pennsylvania, is a non-profit organization dedicated to helping families and their children with special needs. At the Centers, parents facing the challenges of caring for their brain-injured children are helped through educational and therapeutic programs provided by the Centers.

Founders of the Family Hope Center, Carol and Matthew Newell, hosted the Association's visit. As Child Brain Developmentalists, for over 20 years, the Newells have lectured around the world on all phases of brain growth and development.

Through the Center, the Newells are proud to have helped over

15,000 parents and their children through the arduous journey from severe disability to improved motor function, vision, and learning ability.

### The Patients

During the Association's visit, Hyperbaric Therapy was provided to the Center's children, ranging in development disabilities from mild to severe.

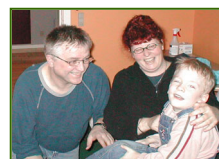
From the first few treatments, parents immediately noticed improvements in their children's behavior, demeanor and ability. Here are some shared stories:

*Sisse Juhl-Hansen*—We had 11 wonderful treatments with our daughter, Sisse. Sisse has big problems with sleeping and seizures, but during this week, she has been perfect.



Sisse and Mom

Sisse is normally hyperactive. She is more relaxed and calm. She is also happier and has a good appetite. Sisse has had much better sleep. In addition, her eye contact has improved as has her breathing. After 10 treatments she said one sentence, "I'm happy". —Biarke and Anita Juhl-Hansen, parents of Sisse



Frederik, and his parents

*Frederik Ahle*—Frederik has been in the hyperbaric chamber 6 times this week. He is relaxed and not spastic when he comes out. He likes it.

—Dorthe Ahle, mother of Frederik

*Sidsel Lodman*—After 4 treatments, Sidsel was better, singing all the way home. After 6 treatments, brighter, better control. Suddenly she can put Legos together.

—Niels Lodman, father of Sidsel

Sidsel and her Family



Sidsel (left) and younger sister

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## Hyperbaric Oxygen Therapy for Multiple Sclerosis Patients: Where are we now?

*By Philip James, MD, ChB, DIH,  
PhD, FFOM*

The first MS Therapy Centre opened in Dundee in August 1982 and now there are over 100 chambers in operation in 65 therapy centres distributed throughout the UK and the Republic of Ireland.

Many wonder why the “establishment” still has difficulty accepting that more oxygen can benefit patients with multiple sclerosis and other neurological diseases. It is particularly surprising in view of the brain’s large demand for oxygen, so it is worth reviewing what has happened.

The usual comment from doctors is that the controlled trials have shown that oxygen treatment under hyperbaric conditions is of no value in multiple sclerosis patients. This is incorrect, because the trials did show benefit, but not enough to persuade the specialists that it is worthwhile. The key question is whether or not it is sensible to base such a trial on patients with multiple sclerosis ‘scarring’ – often of ten or more years duration before using more oxygen. It is little wonder that the level of benefit shown was limited.

### Hyperbaric Oxygenation: The Controlled Studies

Reports of the value of more oxygen from four countries led to the funding of a double-blind controlled patient trial in 1978 at New York University by the National Multiple Sclerosis Society of America.

The Society had already funded two successful studies of hyperbaric oxygenation in the animal model, which has been the basis of research into MS since about 1948. The results of the human study that was undertaken in New York were presented at a meeting in Long Beach California in 1982 by Dr. Fischer and, clearly indicated, under the most stringent scientific conditions, that patients with established chronic MS could benefit from more oxygen.

The study was published on January 31st 1983 in the New England Journal of Medicine. The expression “more oxygen” emphasizes that the oxygen is the same as in air. We all breathe oxygen under pressure—atmospheric pressure.

The role of a pressure chamber in the delivery of oxygen is to allow more oxygen to be dissolved in the water component of the blood, that is, the plasma, in just the same way that carbon dioxide is dissolved in water to create fizzy drinks.

Strictly controlled studies of oxygen cannot be undertaken, because oxygen, that is the oxygen in air, cannot be withheld from the control patients as it would be fatal. The studies are then examining an adjustment of oxygen dosage.

Fischer and co-workers recommended that further studies should be aimed at patients with acute attacks and to determine long-term benefit, but these have not been undertaken. Two British studies were set up after the New York Study by Fischer and the results given in preliminary publications appeared to counter the positive results of the New York study.

However, neither study had been conducted properly. In the successful New York trial, patients had first been matched in pairs and then randomised to either the treated or the control groups. This is essential because of the wide variety of problems patients have, but the Newcastle and the London studies did not match patients. If a patient has been wheelchair bound for ten years there is obviously less chance of improvement than a patient affected for, say, 1 year.

*“[Hyperbaric Oxygenation] is not taught in Medical Schools in the UK, because the current generation of teachers do not themselves understand the importance of barometric pressure in oxygen delivery.”*

The authors of the Newcastle report admitted that the benefit to bladder and bowel function was demonstrated scientifically, but felt that as good an effect could be obtained from drugs. In their final report, they stated that the improvement in bladder function from the twenty sessions in the chamber had lasted for six months and that the oxygen therapy had reduced the rate of deterioration.

The preliminary report in the Lancet in 1985 concluded that hyperbaric oxygenation was of no benefit in the management of MS, but in the final report, in the Journal of Neurology, Neurosurgery and Psychiatry two years later, they called for more studies to be done. The

Lancet paper had been given great publicity by a release to Associated Press from the MS Societies in 1985, but the final report went without comment.

The London trial published in the British Medical Journal also found positive results in bladder function, but these were the only results given as the rest of the findings were expressed as a statistical table which is unique in this type of journal. Trials in other countries, for example Canada, deliberately chose stable patients with very long-term disease, which is nonsensical when the aim of giving the additional oxygen is to improve the level of remission. The papers from the Glasgow ARMS Centre and the painstaking follow-up of results from over fifteen years’ experience in the ARMS Centres by Dr. Perrins have shown beyond doubt that regular hyperbaric oxygenation can benefit the majority of patients by stabilising their condition, although it cannot, of course stop the effects of aging.

Despite the call for long-term studies, the publication of this study has been consistently resisted by journal referees.

### Oxygen: an Orphan Drug

Why is there such resistance to giving more oxygen under hyperbaric conditions, not only in MS, but also in a wide variety of diseases where it could save lives and improve the outcome of treatment?

The principle reason is that it is not marketed, because it cannot make money. Linked to this, it is not taught in Medical Schools in the UK, because the current generation of teachers do not themselves understand the importance of barometric pressure in oxygen delivery. If such fundamental concepts as pressure and tissue oxygenation are not grasped properly before a doctor qualifies, then it is almost impossible for them to be taught later.

Oxygen is piped to the bedside in most hospitals and it is a major professional confrontation to tell doctors that they are not using it properly. How many physicians can give the correct answer to the simple question why do veins appear blue? Most would reply, it is because blood is deoxygenated. This is wrong.

It only requires a moment’s thought to realize that if blood is withdrawn from a vein it is dark red, not blue. The origin of the error is simple. When medical textbooks illustrate the circulation, veins are outlined in blue and arteries in red.

In general medical students are taught little about oxygen and certainly remember that it

*“Although these activities have involved thousands of scientists and engineers, very few doctors have been involved, and so it is not surprising that most neurologists know very little about hyperbaric conditions and the need for the higher dosages of oxygen possible at increased atmospheric pressure.”*

can be toxic in excess. Oxygen is toxic when given in excessive amounts for too long, but this is only relevant to divers. We know more about the actions of oxygen and the safe limits than we do about any drug.

Millions of man hours of hyperbaric oxygen therapy have been safely administered over the last forty years and the MS Therapy centres in the UK themselves have accumulated over 1.5 million sessions without a significant incident. Over this period there will have been thousands of deaths from over the counter drugs such as aspirin.

Oxygen has been extensively used in military and commercial diving for over sixty years and again millions of hours of oxygen breathing have been completed underwater since the midjet submarine charioteers bravely attacked ships in the Second World War. Similarly pure oxygen breathing is necessary in military aircraft and for ‘extra vehicular activity’ in the space programme.

Although these activities have involved thousands of scientists and engineers, very few doctors have been involved, and so it is not surprising that most neurologists know very little about hyperbaric conditions and the need for the higher dosages of oxygen possible at increased atmospheric pressure.

It is often alleged that oxygen levels are measured routinely in clinical practice. This is not true. What is measured is the oxygenation of haemoglobin. This value gives no indication of the amount of oxygen reaching the tissues.

So in major conditions, as with heart attacks

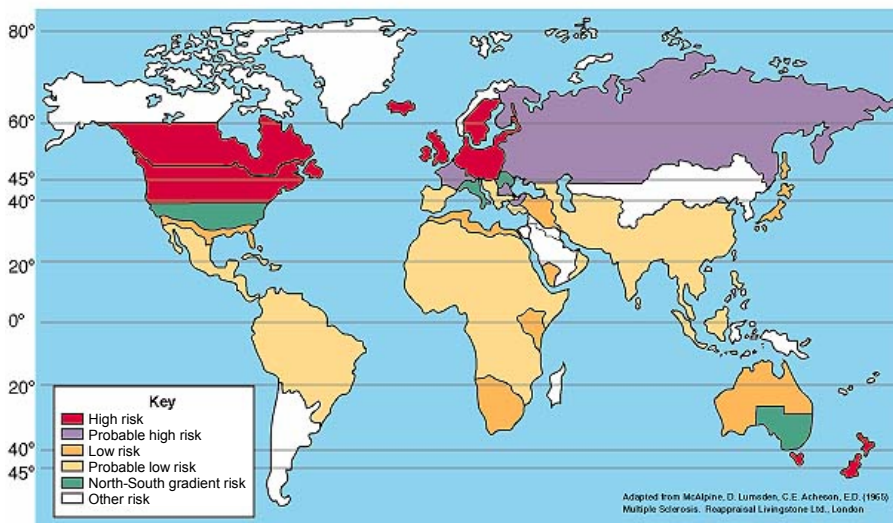
or strokes, the amount of oxygen being carried by the blood may be normal but the tissues of the heart or brain are dying of hypoxia — lack of oxygen.

Now a controlled trial in California has shown that when the latest clot busting drugs are given together with hyperbaric oxygenation the benefit is dramatic. (Am J Cardiol September 1998).

**MS and Magnetic Resonance Imaging**

New insights have been gained into MS over the last decade. Do they mean that we have been wrong to use more oxygen? No, quite the reverse, technology has brought magnetic resonance techniques (MRI) into common use.

**World Distribution of Multiple Sclerosis**



The MRI scanner donated by the MS Society to the National Hospital for Neurological Disease has been in the forefront of developments and many papers have been published on the appearance of the brain when the first symptoms develop. The problem, ignored over the years, is that multiple sclerosis is NOT a diagnosis, it is a description of more than one scar in the nervous system.

However it has been decided by a committee that the “diagnosis” cannot be made until the patient has had two attacks and there is clinical evidence of disability. MS is the only disease to which this ‘multiple’ rule is applied.

It has also been decided that the time interval between attacks must be a minimum of one month. Shorter than this and the patient may be given another “diagnosis.” However a first attack can be so severe that the disability can be permanent.

Take, for example, severe optic neuritis

where the patient has complete blindness, that is, not even the perception of light. Sight may never return, but what disease does the patient have? Is it multiple? The obvious answer is no and therefore a second attack must be awaited for the “diagnosis”.

It has been documented in one patient that the interval between attacks was 56 years but, of course, a second attack may NEVER take place. If, however, another attack does occur, then, by the neurologist’s definition, a “diagnosis” of MS can be made and the patient can then be included in trials of treatment.

Is it likely that treatment can influence blindness present in an eye after 56 years? The answer is unfortunately all too clear - “no!”

The use of MRI has made matters difficult for those who advocate the traditional approach to MS which requires evidence of two lesions.

At the National Hospital for Nervous Diseases in London they have scanned patients with just acute optic neuritis (eye nerve inflammation) causing blurring of vision and

pain in the eye and who have no other symptoms or signs. They found that almost all of the patients have multiple areas affected. In other words, in the majority of patients, the start of the multiple areas of sclerosis occurs at a single point in time.

However MRI has also demonstrated multiple areas affected in about 10-40% of the “normal” population (that is people volunteering as normal controls in a study) between the ages 20 and 50. So, why do they not have symptoms? It is simply because, as is already well-known, large areas of the brain can be damaged and the patient can appear normal and indeed function normally.

What matters is not necessarily how much of the nervous system is damaged, but the type of damage and especially where it is. A tiny volume of tissue damaged in the brain stem or the spinal cord will almost certainly give rise to symptoms.

Patients with “MS” therefore represent the

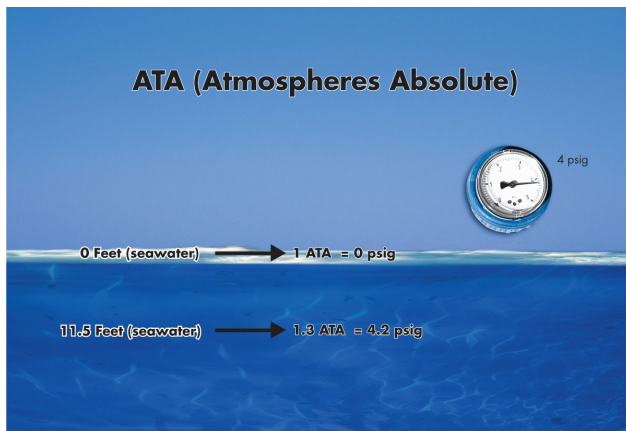
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*For Immediate Release*

**Plastic Surgery Patients find relief in a new oxygen therapy—Hyperbarics**

*Posted January 2004*

*Cosmetic surgery patients today have more options at their disposal than ever. As surgeries become increasingly more affordable, so too are new therapies that make the discomforts of plastic surgery a thing of the past. One new therapy, Hyperbaric Oxygen Therapy (HBOT) dramatically reduces healing time in half.*



At sea level, there is 1 ATA of pressure.

At 11.5 feet of sea water, there is a greater pressure of 1.3 ATA.

Similar to pressure changes experienced when ascending or descending altitude, hyperbaric chambers increase the pressure by simulating a descent to a lower depth.

Hyperbaric oxygenation is achieved when a patient breathes 100 percent oxygen in this environment of greater atmospheric pressure.

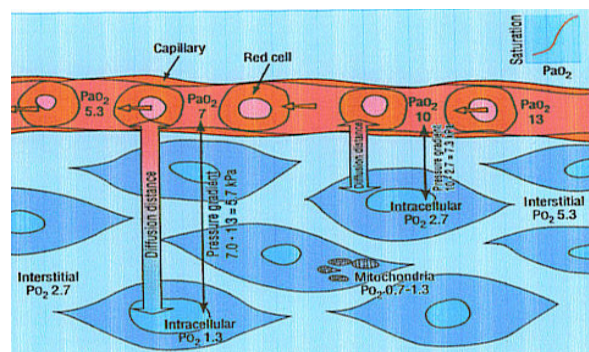
With hyperbaric oxygen, there is a greater exchange of oxygen inside the body. In a sense, oxygen is compressed into the blood cells and surrounding fluid (plasma) with the pressure chamber.

During surgery, the oxygen supply (capillaries and blood cells) to the injury site are cut. After surgery, hyperbaric oxygen reaches the wound—bypassing the recovery time of the damaged capillaries. In this way, the wound heals more quickly, cutting down-time and post operative expense.

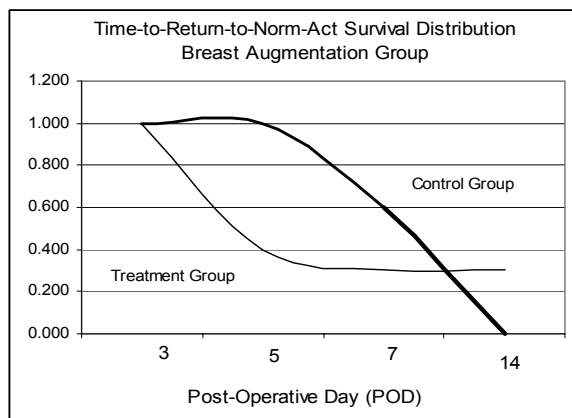
Patients report minimal scarring, less infection and reduced swelling. It improves or corrects certain medical and surgical conditions. These perks alone keep hyperbaric therapy upon the lips of patients.

**The Cosmetic Surgery Link**

Hyperbarics is increasingly becoming popular in cosmetic surgery centers as patients undergo HBOT after surgery. A current study by surgeon, **David N. Michelson, MD**, examines how the use of this new therapy speeds up wound healing and recovery period for patients undergoing augmentation mammoplasty (breast augmentation) and abdominoplasty (tummy tucks).



Hyperbaric oxygen is forced into the fluids and cells around the wound.

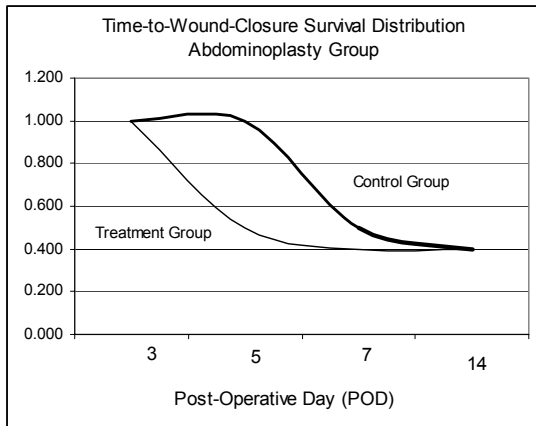


Dr. Michelson’s study reports that after examining his patients on the third, fifth, seventh and 14th days after their surgeries, patients reported extraordinary results. Rapid recovery. Faster healing.

Two groups were examined: the breast augmentation (BA) group and the abdominal tuck (AT) group.

In the BA group (left), 10 patients were given hyperbaric oxygen therapy and 10 were not (i.e. control group). *Note the reduction in time.*

*Plastic Surgery Patients Continued...*

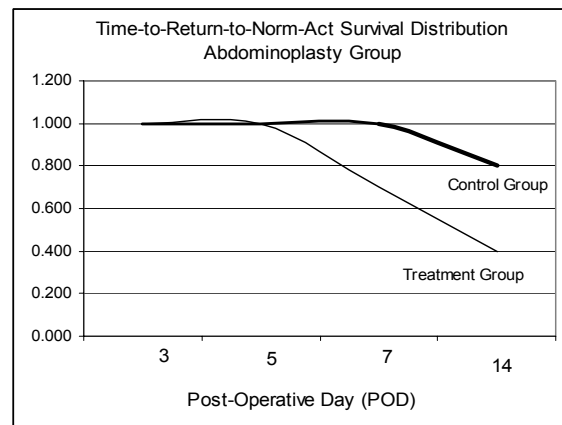


In the Abdominal Tuck group, 6 were treated with HBOT and 6 were not. *The wound closure time reduction (left) is most significant.* The ‘Return to Normal Activity’ results (below) also show improvement.

**Conclusion**

In both groups, the patients treated with hyperbaric oxygen experienced a significant loss of pain, a decrease in swelling and redness, and an increase in wound closure.

With these dramatic improvements, patients were able to return to normal activity at a quicker rate. As compared to patients treated without hyperbaric oxygen, that is a 50% improvement in healing!



**For more information on Hyperbaric Oxygen Therapy, these data, and this study, please contact:**

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*Dr. Michelson currently presented these data at the prestigious American Academy of Cosmetic Surgery.*

January 29-31, 2004

at the Westin Diplomat Resort and Spa

Hollywood, Florida

*Further Reading:*

Ketchum SA, Zubrin JR, Thomas AN, Hall AD. *Effect of hyperbaric oxygen on small first, second and third degree burns.* *Surg Forum* 1967; 18: 65-67.

Rubinstein I, Karem D, Melamed Y, et al.: *Hyperbaric Oxygen (HBO) and Mannitol (M) enhance recovery from muscular crush injury.* Proceedings of the XIXth Annual Meeting of EUBS 1993, Trondheim, Norway.

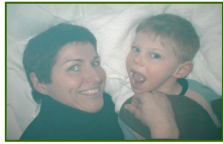
Radonic V, Baric D, Petricevic H, et al.: *Lipid peroxidation products in post-ischemic skeletal muscle and after treatment with hyperbaric ischemia.* *Scandinavian Journal of Plastic Reconstructive Surgery* 1989; 23: 97-103

Bouachour G, et al.: *Hyperbaric oxygen therapy in the management of crush injuries: a randomized double-blind, placebo controlled, clinical trial.* *Journal of Trauma* 1996; 41(2): 333-339

Sanchez REC, et al.: *Aplicaciones de la terapia con oxigenacion hiperbarica en cirugia plastica.* *Cirurgia Plastica* 2001; 11(1): 25-32

Reaching the Children of Denmark: The Hyperbaric Experience (continued)

(Continued from page 1)



Mikkel and mom inside chamber

*Mikkel Thorkilsen*—Mikkel got 8 treatments. He likes the treatments and seems happy and it seems that he has a better ability to concentrate. I got 3 treatments, have more energy, feel fine and happy.

—Bente Thorkilsen, mother of Mikkel

*Serena Desario*—Serena is 3 years old. She has epileptic seizures every day. After 5 treatments, she didn't have one seizure during the night. That is good.

—Bettina Desario, mother of Serena



Serena and her family

**The Treatments and Future Plans**

A total of 123 treatments were given on an average of one hour per session. Children were placed into the chambers without incident. Oftentimes, parents accompanied their children into the chamber, reading books and singing songs throughout their session.



Families at The Family Hope Center

Because many parents were very excited about the results they saw in just these few sessions, they expressed interest in future hyperbaric therapy programs to continue their progress.

**Family Hope Reputation and Testing**

The Family Hope Center currently keeps highly detailed files on each of their patients, documenting their progress through a series of tests developed to examine the total child.

Many parents, who have added hyperbaric therapy to their child's treatment protocol, will be tracked developmentally along these guidelines:

- |                     |            |                    |          |
|---------------------|------------|--------------------|----------|
| Brain Stage (1-7)   | Time Frame | Mobility           | Language |
| Visual Competence   |            | Tactile Competence |          |
| Auditory Competence |            | Manual Competence  |          |

As patients improve, they progressively strengthen their function through each Brain Stage—

- 1) Medula and Cord— Reflex reception
- 2) Pons— Vital perception
- 3) Midbrain— Meaningful Appreciation
- 4) Initial Cortex— Initial human understanding
- 5) Early Cortex— Early human understanding
- 6) Primitive Cortex— Primitive human understanding
- 7) Sophisticated Cortex— Sophisticated human understanding

For example, as patients move from Brain Stage 1 to Stage 7, the patient's response improves from 'Reflex reception' to

'Sophisticated human expression.' In other words, Visual Competence improves from the simple perception of light through reflex to reading with total understanding. Likewise, Language development improves from birth cry and crying (Stage 1) to complete vocabulary and proper sentence structure (Stage 7).

The results will be available to the Association at a later date.

**Misconceptions about Hyperbarics Dispelled**

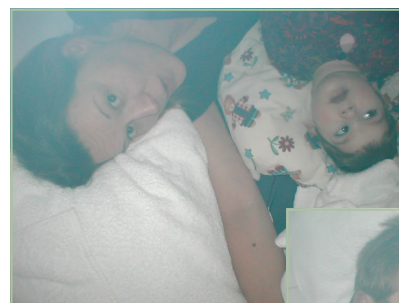
Notably, many parents at the Center in Denmark were initially reluctant to try hyperbaric therapy. Misconceptions about this modality had led many to fear the experience.

However, after receiving a basic education on safety and hyperbaric treatment, their fears were allayed and parents were thankful for the opportunity to receive hyperbarics. As a result, many parents are pursuing hyperbaric therapy options that will improve their children's progress.

Currently, there is a major Hyperbaric Center in Copenhagen, which treats pre-and-post-surgical wounds. Their focus, however is mainly the diagnosis and treatment of cancer and diabetic ulcers. Hyperbarics Oxygenation for brain injury is still being neglected by this and many hyperbaric centers around the world.



**A Room with a View**



Above: Simone Risiager and mom

Family Hope Center Children and their parents enjoy their hyperbaric sessions together



Right: Sarah Holm and her father

**Contact Information**

For more information about resources available at The Family Hope Center, please contact:



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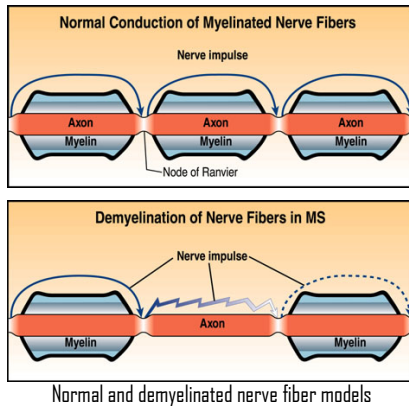
## Hyperbaric Oxygen Therapy for Multiple Sclerosis Patients:

Where are we now?

(Continued from page 3)

tip of a very large iceberg of “minor brain damage in the population. The lesions typical of MS are found in all patients of advanced years, that is over 80 years of age, and may also result from an injury at birth.

### MS and the Myelin Sheath



One myth perpetuated in MS is that it is simply the myelin sheath that is damaged and if a way of repairing the sheaths or regenerating the cells responsible for them could be found then we could restore MS patients to perfect health. This is not true and this is evident from the use of the word “sclerosis”.

When the myelin is damaged in a small area as is typical of MS, the nerve fibres are also damaged and in the spinal cord there is a loss of a minimum of 25% of the fibres. Pathologists have emphasized this for a long time, calling it “relative preservation” of the nerve fibres in the areas of damage, but this has been ignored by physicians.

What else has MR imaging shown? There is now a method which demonstrates leakage from blood vessels by injecting what is termed a contrast material, before the scan is taken.

The blood vessels of the nervous system are quite different from any other vessels in the body and are engineered to prevent leakage, because of the extreme sensitivity of the tissues of the brain and spinal cord. The blood contains many substances which can injure these tissues.

In an acute attack typical of those that lead to a “diagnosis” such as optic neuritis that start the process eventually leading to scarring, there is leakage from the blood vessels that can be shown on MR imaging. There is nothing new in finding that the blood vessels are the start of the problem, because the very first detailed account of MS by the

Swiss pathologist Rindfleisch working in Zurich published in 1863 gave an account of this finding.

What does it mean? Inescapably, that we must use a therapy successful in stopping this leakage right at the start of the disease, at the first symptom and this is also obvious from the fact that a patient may never recover from the attack.

However we are faced with a very large number of patients who already have multiple areas affected, so what relevance is all of this to them? Well, the three basic categories of MS are *relapsing/remitting*, *chronic stable* and *chronic progressive disease*.

MR imaging has shown that the blood vessel problem is occurring very regularly in *relapsing/remitting* patients and even in some patients who are regarded by the specialists as *stable*, but is not generally detectable in *chronic progressive* patients.

What does this mean? The objective for any therapy introduced in the established disease is to stabilize the patient or, in other words, to induce the best possible remission. The disease process must be limited before scarring takes place.

What is the most crucial substance to the induction of remission or healing?—OXYGEN. If we could prove that there was a deficiency of oxygen in patients with MS or a component of the disease that could benefit from more, then we would have a unequivocal case for giving extra oxygen. More, that is, than is in the air we all have to breathe.

Magnetic resonance techniques provided just this evidence using spectroscopy which can detect the chemicals present in a small volume of tissue in the brain ten years ago.

At the National Hospital in London they have detected the presence of lactate in the brain of a patient during an acute attack. They have stated in a letter to the *Lancet* “both oedema (tissue swelling) and vasculitis (inflammation of blood vessels) have been described in new plaques and it is conceivable that such changes may affect oxygen delivery to cells and so explain the lactate peak that we and others have found.”

“Conceivable” is a strange word to use because lactate can only be present when there is lack of oxygen. Doctors have a duty to correct oxygen deficiency, but the authors of the *Lancet* letter did not even discuss giving more oxygen to their patient.

### MS and Beta-Interferon

It is interesting that the ground rules for MS trials were changed for the development of

“...we must use a therapy successful in stopping this leakage [from the blood vessels] right at the start of the disease...”

beta-interferon treatment. The stated aim is not to improve disability in chronic MS patients, but to reduce the number of attacks.

Trials have shown that beta-interferon can reduce the number of attacks over two years in a group of patients from three to two (on average), but no effect on disability has been found. Unfortunately it actually induces attacks in some patients and may be associated with the development of suicidal depression.

The suitability of the therapy can only be determined by the reaction of the patient.

The cost of the drug? The figure quoted is £180 per injection, which is given every other day. Needless to say there should be proper evidence of a long term effect on disability before the NHS pays for this drug.

How does the drug work? A new paper indicates that it is by reducing the permeability of the blood-brain barrier and it is a continuation therapy, which indicates the importance of the blood-brain barrier. However, an acute relapse can be caused by nothing more sinister than a hot bath, which beta interferon is unlikely to prevent.

It had been postulated that beta-interferon has an immunological effect, but the idea that MS is an autoimmune disease has now finally been laid to rest, although judged by research fund allocations it would seem that the information has had no effect.

“...lactate can only be present when there is lack of oxygen. Doctors have a duty to correct oxygen deficiency...”

Researchers in Sweden looked at the immune changes that follow stroke, which is certainly due to a blood vessel problem. Exactly the same immunological changes and in the same quantity were found in stroke patients as are found in patients with MS. So the immune changes are not the cause of the problem, they result from it and are actually evidence of repair.

Inevitably the interferons have side effects

(Continued on page 8)

# INTERNATIONAL HYPERBARICS ASSOCIATION



*The International Hyperbarics Association is a coalition of doctors, parents, patients, corporate chamber-industry professionals, hyperbaric center owners, and above all members who are committed to the cause of medical hyperbarics.*

*Our members come to us from all geographical areas with one common goal— to share their knowledge and information regarding the latest hyperbaric news.*

*Our driving force is our members, who are committed to do all we can “to give life to the world.”*

— “Mundo vitam dare”

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## Upcoming Show

### Integrative Medicine Symposium & Healthcare Exhibition

Fontainebleau Hilton Resort  
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April 1-4, 2004

7 a.m.-5 p.m.

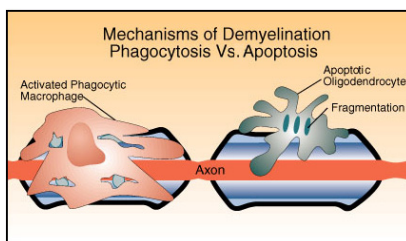
- CME Credit
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To register: 866.828.2962  
www.imjournal.com

## (conclusion) Hyperbaric Oxygen Therapy for Multiple Sclerosis Patients:

Where are we now?

(Continued from page 7)



The immune response is evidence of repair, not the problem

and there are no long-term studies of their safety. A report recently indicates that patients are developing antibodies to the interferon. This may mean that natural immunity, which is necessary to fight infection, is lost.

Where does this leave us as patients or potential patients? There are over sixty MS Therapy Centres and they are doing wonderful work, not only in providing oxygen therapy, but also in the day to day support of MS sufferers.

Hyperbaric oxygen therapy has been shown to be simple to use and able to induce a better remission in many patients. Used

regularly it can reduce the rate of progression, and in the charity setting, it is inexpensive. One hour of therapy in the USA typically costs about \$100-200 because it is doctor controlled, although the oxygen only costs about \$2.

Hyperbaric oxygen therapy for MS patients must remain outside of the NHS because this guarantees free access for patients. The last thing a patient should have to face feeling the need for more oxygen is to have to justify this to a “specialist,” who would require objective evidence of worsening.

Within the Health Service the costs would rise in a major way. In 1987 an article about, The “Inappropriate use of High Technology” in the BMJ, singled out as an example the use of hyperbaric oxygen for multiple sclerosis patients.

With simple centres run by patients, their relatives and volunteers this has been shown to be an inappropriate comment. Dr David Perrins has been able to follow over 800 patients who have had hyperbaric oxygenation for over 15 years, which has shown the stabilizing influence of regular therapy.

*“Hyperbaric oxygen therapy has been shown to be simple to use and able to induce a better remission in many patients. Used regularly it can reduce the rate of progression, and in the charity setting, it is inexpensive.”*

We in the MS National Therapy Centres must make more MS patients and their family doctors aware of the activities of the centres and the great benefits from the support available to them. If an organization does not grow it dies.

What is the final message? It is simply... breathing is important... it makes you better, and if you breathe more oxygen when you are ill, you will get better faster. It is improving on nature.

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