

THE PRESSURE POINT

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AMS, HYPOXIA AND AIR TRAVEL

Acute mountain sickness (AMS) is self-limiting and usually affects previously healthy individuals who go too rapidly to altitude, particularly above 2500m. There may be no symptoms for the first 12-24 hours. Thereafter symptoms develop and usually peak on the second or third day.

Symptoms include headache, nausea, vomiting, anorexia, fatigue, dizziness, insomnia, and breathlessness. The cause of acute mountain sickness is not understood but is clearly related to **hypoxia** and factors such as effort, air temperature, previous viral respiratory tract infection, anti-innate susceptibility. The incidence is quite high. For example, work at Pheriche, Nepal (4343m) in 1979 found that 43% of trekkers passing through were experiencing symptoms.

Acclimatization

Adequate acclimatization is essential for safe traveling in the mountains. The climbers adage is "climb high and sleep low." Ideally acclimatization should be progressive. At altitudes above 3000m, individuals should climb no more than 300m per day with a rest day every third day.

Treatment

Symptoms of mountain sick-



Traveling through the mountains can bring devastating outcomes when least prepared.

ness must be taken seriously and subjects must go no higher until the symptoms resolve. If the symptoms do not resolve within 24 hours, the person should descend. Often a descent of only 500m will greatly improve symptoms.

In young children, since

acute mountain sickness and the onset of high altitude pulmonary or cerebral edema can be easily overlooked, the diagnosis should always be assumed when a child becomes unwell above 2500m and descent should start immediately. Rapid descent will usually relieve the symptoms of acute mountain sickness, may be lifesaving when high altitude pulmonary and cerebral edema are present, and is the only definitive treatment for all forms of altitude illness. There is no place for a "wait and see" approach when children have acute mountain sickness.

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HYPERBARICS Q&A CORNER



Q: My 20-year old son has been on a motorcross team for about a year. I have noticed that his attention span has changed and am concerned about two recent concussions he has suffered during competition. I recently came upon an article regarding hyperbaric therapy and brain injury in children. How could hyperbarics help my son?
—Janice Obalgeski, FL

A:

Dear Janice,
Notable behavior changes can be observed after a concussion even if the blow to the head is minor in nature. Late symptoms of concussion may appear days to weeks after, and are diagnosed as POST CONCUSSION SYNDROME. These symptoms may include some or all of the following:

- Persistent low grade headache
- Lightheadedness
- Poor attention & concentration
- Memory dysfunction
- Irritability & low frustration tolerance
- Easy fatigability
- Intolerance of bright light
- Difficulty focusing vision

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- Questions Answered: MotorCross Injuries
- A Patient's Plea to her Insurance Carrier

Q & A: MOTOR-CROSS INJURIES (CONTINUED)

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- Intolerance of loud noises
- Sometimes ringing in the ears
- Sleep disturbance
- Anxiety & depressed mood

After two concussions in a season, symptoms may take up to a year or more to resolve. Sporting bodies have developed "return to play guidelines", but they are not precise and must be applied for each individual.

Mild hyperbaria is very useful in concussion recovery for a number of reasons, not the least of which is cost effectiveness. I have used mHBT extensively in my practice for concussion recovery and almost all cases have responded favorably.

1) Symptom Abatement:

Mild hyperbaria provides extra oxygen available in the blood plasma and the cerebral spinal fluid, which bathes the brain and spinal cord. Dr. Rudolph Cartwright, MD, reports that during cerebral



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concussion a common sequence of events occur which are characterized by an excessive release of glutamate, and increase in extracellular potassium and an increase in the intracellular concentration of calcium.¹

Many progressive healthcare professionals believe that the extra oxygen provided by mHBT is the stimulus for in-

creased energy of the neurons to restore chemical balance to NEURONAL HOMEOSTASIS.

2) Physical Rehabilitation

Often accompanied with a concussion is lack of activity or deconditioning. A large component of the recovery process is physical re-conditioning to FUNCTIONAL FITNESS, which is activity specific to motorcross.

Hyperbaric helps the body recovery from physical exertion and reduces recovery time from vigorous physical training. This reduction of recovery time allows for a greater workload capacity and frequency, therefore decreasing the rehabilitation period.

—Dr. John Gleddie

Footnote



¹ The Journal of Neurological and Orthopedic Medicine and Surgery Concussions in Sports: The Pathophysiology; Rudolph Cartwright, MD

AMS, HYPOXIA AND AIR TRAVEL (CONTINUED)

(Continued from page 1)

For more serious cases of **AMS**, such as those in mountain climbers whose conditions are complicated by pulmonary and cerebral edemas, portable hyperbaric chambers have proven to be life savers. A portable hyperbaric chamber allows the environmental pressure around the subject to be increased, equivalent to a descent of up to 600 m. As a result, portable chambers have enabled rescue teams to safely return climbers to sea level, without additional damage to the patient.

Air Travel

Commercial aircraft are pressurized but only to an altitude of 1800-2500m, and inspired oxygen pressure will be lower than at sea level. This usually has little effect because travelers do not exercise during the flight. However, in some travelers, such as patients with cardiopulmonary disease, the reduction in inspired oxygen pressure is critical and additional oxygen may be necessary.

Ideally the patient should be assessed in a respiratory clinic before traveling, lung function optimized, and ability to with-

stand **hypoxia** tested. Studies have shown that as long as patients with serious cardiopulmonary disease are assessed before travel and given supplementary oxygen as necessary, the incidence of serious side effects is low during flight. The availability and cost of oxygen on commercial aircraft varies.

Patients with heart and lung disease should contact their doctors early and arrange specialized assessment if necessary. Arrangements for oxygen can be made through the airline reservations office or the medical unit. The airline will require a medical form filled in by the general practitioner. Oxygen can be

supplied via a Hudson mask (patients using venturi masks or nasal cannulae can bring these with them) at flows up to 4l/min.

For the average traveler, however, *jet lag* tends to be the most serious complaint of air travel. Much like **AMS**, the decreased atmospheric pressure, coupled with the lowered oxygen level during flight, can leave even 'well' travelers feeling 'out of

sorts.' Fatigue, headaches, indigestion, and insomnia are among the shared symptoms. Further, if alcohol is consumed during flight, the body's oxygen stores are further depleted through dehydration.

Much like the treatment of **AMS**, doctors and patients are finding that an increased uptake of oxygen under pressure relieves these debilitating symptoms, leaving them refreshed and acclimated to their new surroundings—with no down-time.

In fact, modern portable chambers deliver a cost-saving option to travelers on business and pleasure trips. Standard recovery from the effects of 'jet lag' ranges anywhere from 12-48 hours, depending on the length of the flight and flight habits. With hyperbaric therapy, the body replenishes its lost oxygen reserves in the time it takes to give a full one-hour treatment.

So, whether its work or leisure, air travel need not *slow you down*.



Air travel slowing you down?

"Jet lag is a sign of hypoxia and the need for increased oxygen and air pressure."

MARIELLE'S PLEA: CLAIM NO. W84HBOT

A Letter to My Insurance Provider

February 18, 2003

To whom it may concern:

I am a patient of Dr. Alan Sosin and Dr. Robert Leslie, both of whom are working closely with Mr. James Brodsky, Pharmacist and Board Certified Naturopathic Physician.

Last January 2001, I was introduced to a chiropractor at the Health and Wellness Institute in Costa Mesa, California. Dr. Morgan Rogers designed a program consisting of three hours of Hyperbaric Therapy a week for extra oxygen and detoxification, as well as spinal manipulations to promote more movement.

I have to tell you, I was very skeptical to try yet another thing promising hope. To my surprise, after three weeks of this therapy, I started to feel better. I continued therapy for three more months and was very pleased by the way my body was responding to the treatments.

My regular physician, Dr. Sosin, was closely following my progress and was also pleased to see that the FIBROMYALGIA was under control. Then, just when things were going so well for me, I ran out of money and had to cut down on my therapies, to only one session per week.

When I moved to California, I developed blood poisoning from the heavy summer pollution. As a result of the hyperbaric therapies, my body had built up some resistance to the toxins. But even now, from time to time, I feel terrible in the summer months. Thus, by October, when I was really feeling lousy and extremely fatigued, I must confess, I did not know what to do.

Luckily, it was then that someone referred me to Mr. Brodsky. He was the one who finally discovered the malady which had plagued me all of my life. Up until then, I had done everything in my power to find out what is wrong with me by undergoing so many tests and seeing different specialists. I had even tried sundry medications, special diets, fasting—you name it!!

Mr. Brodsky, however, took a blood test and examined it under a microscope. It was the first time that anyone had conducted this type of test. After talking very briefly with Mr. Brodsky, he was almost certain that my problem was a blood disorder called ROLEAU.

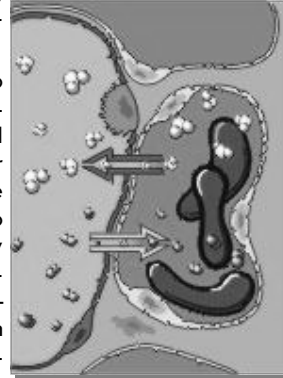
I was shocked when I saw my blood cells

clumping together like a cluster of caterpillars. This condition, Mr. Brodsky explained, could lead to more severe illnesses like cancer, strokes, toxemia, and mental dissociation.

Mr. Brodsky instructed me to immediately resume hyperbaric therapy, which I had completely discontinued for lack of money. At the same time, Dr. Sosin continued to prescribe Hyperbaric Therapy for me. They both firmly advised that I use it daily—advice which I have taken seriously and have been practicing since November.

On February 12th, I had another blood test repeated by Mr. Brodsky and Dr. Leslie. This test showed so much improvement, at least 75% better. To show the dramatic effects, I have recoded the results video-graphically against the first test results taken in October. The results show a clear outcome. Hyperbaric therapy has forced compressed oxygen into my body, helping all organs to function the way they are intended to work.

I can now absorb the nutrients that I need in order for the blood cells to detach from each other, flow independently, and get oxygen individually—therefore, making a healthy body. Those special nutrients are the Omega fatty acid enzymes, B-



Cellular Oxygen transfer

ries, that Dr. Rogers at the Wellness Institute simply lets me cry it out and sleep, until I can put myself back together enough to drive myself back home. Thank goodness that those episodes are less frequent! A home chamber would reduce clinic costs.

Prior to ordering a hyperbaric chamber, I called my insurance agent, Gene Reocker. After talking to you (my Insurance Provider), Mr. Reocker informed me that I am eligible for those treatments—that you will provide coverage for them, that all I need is a doctor's prescription and an explanation of

the need, which has already been provided. I am now providing you with another letter from my other physician, Dr. Leslie, prescribing the same treatment—Hyperbarics. If needed, I can also send the video showing this blood condition and the improvement with the use of this modality.

I would sincerely appreciate if you could do something for me soon. I just can't understand the reason why you are denying me help for doing the very thing that will prevent cancer or strokes—the very kind of strokes that killed my mother at their second strike. She was confined to a bed for close to five years in a nursing home before she died. She suffered all her life with the same symptoms that I am now experiencing, but at that time, nobody could help her. Today is a new day.

Throughout this ordeal, my faith and trust in God and a willingness to keep on trying has kept my spirit up until someone can find the solution. I am staying active and doing as much as I can each day to improve my health. I do not want to give in to the restrictions that my lack of oxygen brings on, like: extreme muscle pain, toxemia, anemia, mental fogginess, and many times, disorientation.

If I am denied coverage again, I will write to the insurance commissioner, hoping that they will take my situation under consideration. I hope you understand where I am coming from. I am doing all that I can to prevent even bigger problems and to live a more healthy and productive life.

Thank you so much for taking the time to read my lifelong story.

—Marielle Petersen, Orange CA

“Without sufficient oxygen, all that I eat turns into a toxin, producing muscle pain and disorientation, accompanied by nagging headaches.”

complex, iron, and calcium, which before now, I could not absorb on my own due to a lack of oxygen. Without sufficient oxygen, all that I eat turns into a toxin, producing muscle pain and disorientation, accompanied by nagging headaches. I am so very thankful to know that there is something out there that really works!

I am using hyperbaric therapy faithfully everyday. It would make it easier for me to take treatments at home because, as a result of the renewed stimulation of my brain cells, I have experienced horrible flash backs from my childhood. Those incidences were once too terrible for me to cope with, so I blocked them out. After certain sessions in the chamber, I emerge so disturbed and drained from the memo-

INTERNATIONAL HYPERBARICS ASSOCIATION



"Mundo vitam dare"

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The *International Hyperbarics Association* is a coalition of doctors, parents, patients, corporate chamber manufacturers, 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."

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