

The Pressure Point

IHA Works

Formation of Consensus Committee In Process

The International Hyperbarics Association is in the process of forming a **Consensus Committee for Hyperbaric Medicine**. Currently, the IHA takes advice from a pool of medical member advisers and specialists.

The doctors to chair this committee have been chosen specifically because of their field of medical expertise, extensive research and clinical experience in a variety of hyperbaric-related specialties.

The more formal Consensus Committee will serve to publish a series of recommendation statements on behalf of the International Hyperbarics Association. These statements will serve to guide members on questions arising from conflicting information currently being erroneously circulated in the hyperbaric field.

Concerned parents, doctors searching for educated answers from respected colleagues and industry professionals can look forward to medical opinion statements that are backed by science, practice and research.

More information will be made available as the committee finalizes its first statements.

Commemorating the Life of a Great Advocate for Hyperbarics

The Loss of a Great Friend

Ignacio Fojgel, Dec 22, 1952 to April 6, 2006



On April 6, 2006, the hyperbaric community lost a great friend and spokesman.

Dr. Ignacio Fojgel exhausted his battle with cancer. His cancer aggressively attacked his GI tract and quickly spread in a matter

of months to areas that proved to be inoperable and, in the end, untreatable.

Living in Argentina, Dr. Ignacio Fojgel conducted the hyperbaric department at the Universidad de Mamoides. His work brought relief to patients dealing with the effects of cerebral palsy, stroke and other neurological disorders.

As an adviser to the IHA, Dr. Fojgel traveled and spoke to many symposium-goers at various meetings—including

ACAM, DAN!, ICIM, ICHM, and many other conventions.

In addition, his advice online helped many IHA members in their times of need, especially with regard to hyperbaric treatment concerns, medical interactions, and their understanding of their diseases.

In past issues, Dr. Fojgel answered questions for members regarding the mechanisms of hyperbaria on the body. His article and presentation on hypoxia and air travel in the February 2004 issue, surely sprang from his many ruminations on an airplane from Argentina to the

States.

Too, Dr. Fojgel's analysis of the performance of the Argentine Women's Volleyball Team during National Playoffs brought a good chuckle, as well as practical proof that hyperbaric air was enough to boost player's energy levels despite the higher elevation.

His testimonial on the effect of hyperbarics on the 'soles' of an adult CP lawyer and patient was told in that particular "Iggy" style that came to be appreciated as his wit and charm.

Dr. Fojgel was very well read in just about every-

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At right:

Dr. Ignacio Fojgel often spoke on behalf of the International Hyperbarics Association.

As a professor of hyperbaric medicine, Dr. Fojgel was as great a learner as much as he was a teacher. Through his vast wealth of knowledge, his legacy has proven to be his thought-provoking inquiries and studies that have helped the hyperbaric field continue to move toward the future.

Commemorating the Life of a Great Advocate for Hyperbarics

Dr. Ignacio Fojgel (continued)

(Continued from page 1)

thing most people could think to discuss with him. He could talk to the everyday person and to astute medical professionals—to one as easily and intelligently as to the other—always mindful of the person, the topic, and most importantly, with a positive purpose.

His goals in Argentina coincided very well with the IHA. Perhaps that is why he chose us as his association.

Ignacio Fojgel spent his life educating the public and many doctors and professionals on hyperbaric medicine.

As a liaison for the IHA in Argentina, he changed many minds and lives. Everyday, he filled the void of ignorance with knowledge, challenging those who needed challenging and bolstering those who needed to share their truths.

We will be forever thankful that he chose us as associates, colleagues and friends. His voice strengthened our own voice.

His advice over the years follows:

July 2002 Hyperbarics Q&A: Ear Infections

By Dr. Ignacio Fojgel



Q: I suffer from severe ear infections about 4 times a year. I am at the point where I feel that the antibiotics are not working and that I have developed bacteria which is resistant to treatment. A friend told me about hyperbaric medicine and its usefulness against drug-resistant bacteria. Is this something I could try?

A: Hyperbaric oxygen is useful against certain types of bacteria, indeed, but

such treatments should not be attempted during a bout of your recurrent infection. Air may be trapped along Eustacian tubes, middle ear, sinuses, etc., because of the accompanying inflammation. As the procedure involves pressure changes, a session during such conditions might be harmful or at least transitorily painful, even at low (mild) pressures. Suitable decongestive medication, corticoids, anti-inflammatory enzymes, etc., should be

indicated by your physician, to attain a lower level of inflammation, compatible with a hyperbaric treatment. Only then could hyperbarics help your immune system fight bacteria, boost formerly ineffective antibiotics, and in general, ameliorate your oxygen status and your cells' energy production and use. Hyperbaric treatments are useful, not only against eventual infectious agents, but also for a better defensive response by your body.

Oct 2002 Hyperbarics Q&A: Catalyst or Cure in Itself? *By Dr. Ignacio Fojgel*



Q: I have been debating the question of hyperbaric treatment. How do I know if the adjunct treatments are working or if indeed the hyperbaric treatment is working?

—Archna S., UK

As with any other successfully combined treatment, each established modality adds to the therapeutic effect.

When the final result is better than the sum of its individual components, it may be called a synergy. If you wanted to study just one technique, and at the same time to rule out any interference, either of adjunct modalities or placebo, you would need a double-blind placebo study.

Unfortunately, hyperbaric treatments are not easy to blind, a true placebo is

difficult to gear, and the whole experiment might fall into a category of unethical practices, as it may involve loss of time, damage by defect of treatment, etc. Hyperbarics in general have been already validated by thousands of scientific papers, and the indications for neurological conditions are backed by over 500 studies, and countless individual cases.
—Ignacio Fojgel, MD Argentina

Dec 2002 A Season of Giving: Hyperbaric Answers

Q: *Lina Leilani, Kyoto, Japan*

My spouse suffered a stroke about 1 year ago and has very little control over bladder contractions. Before hyperbaric treatment, we generally empty his bladder to avoid problems, but 9 times out of 10, an accident occurs inside the chamber when he gets to pressure. Is this normal? Is there anything else I should be doing to make his treatment time more comfortable?

A: Some patients experience increased urine production from chamber sessions.

It is a sign of a better renal function and of the elimination of trapped water (edema). An incontinent patient may have to empty the bladder inside the chamber, in a bottle or on a diaper to that effect.

Eventually, control over incontinence from neurological causes may be gained, to various degrees, by this treatment.

—Ignacio Fojgel, M.D.



Q: *Abby Nigel, GA*

I am 25 years old and my wisdom

teeth have been bothering me off and on for the past few months. My dentist recommended extraction, and I wonder if hyperbaric therapy will help me heal after this procedure. I will be having all four extracted at the same time.

A: Wounds of most types are healed faster with hyperbaric treatments. Sessions will certainly hasten the usual healing time of such a multiple extraction by one third to one half. You may also want to add an Arnica homeopathic preparation, to further minimize the traumatic

(Continued on page 3)

Dec 2002

A Season of Giving: Hyperbaric Answers (Q & A)

effects of the procedure further.
—Ignacio Fojgel, M. D.

Q: Rodolfo Angolez, MEX



My wife has gestational diabetes, which is being controlled by diet. Her obstetrician tests her blood sugar regularly, but thinks that she may need to take insulin injections before she gets to term. She is at 16 weeks now. Can hyperbaric therapy help? Are pregnant women able to take treatments?

A: Be assured that pregnant women can take these mild treatments, which are similar or as high in pressure, as say scuba diving. It will also help in controlling diabetes, as the pancreas is better served with the extra partial pressures of oxygen provided by the pressure chamber. As for the diet, it may have to be adjusted further, on different or stricter terms.

—Ignacio Fojgel, M.D.

Q: Joanne Isidore, CA



I take regular therapy as part of my health and fitness routine (1 hour each session, 2-3 times a week). However, my children—1 and 3

years of age—are very curious about the chamber, and I am wondering if they would be harmed by therapy when they don't actually need it.

A: Healthy children that age can be taken into the chamber once in a while, without any second thought. If they were recovering from any condition, the better, as it will hasten recovery. Do not include children with a cold, otitis, sinusitis, or stuffy nose, for that matter. Any active condition shouldn't be treated without consulting with a knowledgeable physician.

—Ignacio Fojgel, M. D.

Q: Michael Treviccio, CA



My daughter was diagnosed with autism at 2 yrs old. I recently came upon hyperbarics on the internet and purchased a mild chamber for my home, with the help of my daughter's pediatrician. I have noticed, though, that my daughter becomes anxious before her treatment, and am concerned that it is a sign of something else. Her pediatrician recommended a mild sedative before treatments. Is there a more natural solution? Any theories on

the anxiety? Is it normal with autistic children?

A: These reactions to a routine change are usual with autistic children. A sedative might be necessary, but you can use homeopathic or herbal remedies. OTC homeopathic formulas with Valerian, Passiflora, Pulsatilla, etc., may be used, as they do not have any side effects. You may also want to ask your doctor about a rather strict diet and a treatment for the bowel lining, that, incredible as it may sound, may be affected in this condition.

—Ignacio Fojgel, M. D.

Q: Bryan Solomon, PR



Is there any way that hyperbaric therapy can help my stomach ulcer?

A: Severe stomach ulcers are treated with hyperbarics in Russia. As you may know, the autonomic nervous system is implicated in the condition, and since the chamber relaxes the sympathetic component and enhances the opposite, the parasympathetic, a better nervous regulation ensues. Healing takes place at a faster rate, too.

—Ignacio Fojgel, M. D.

May 2003

Shared MD Testimonials

By Dr. Ignacio Fojgel

Dear friends,

A 27 year old female birth hypoxia, CP patient, whose feet had long ago been operated upon—several times—to relieve spasticity, to correct them and her gait (her only sign and symptom), began experimental hyperbaric sessions (1.3 ATA/ 21% oxygen/ 60 minutes daily) one and a half months ago, at the Hyperbaric Medicine Unit of the Maimonides University, in Buenos Aires, Argentina.

Two weeks ago she remarked that her

workmates (she is a public attorney) and parents had noticed she was standing up straighter, and that her manner of walking was more "flexible" and less "hobbly".

Today, with a big smile, and showing me the thick, oddly eroded soles of her special boots she said, "You know that I drag my feet in this special way. The edges of my nailed soles get worn down like this in no time. Well, my 20 day-old boots still have pristine soles. Have you noticed

that I don't drag my feet anymore?!"

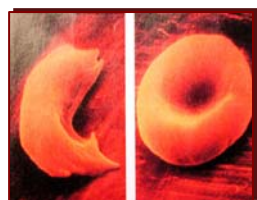
So much for the effects of ambient air, portable chamber bags, and low pressure hyperbarics on long-standing spasticity. It could still be a placebo-participation effect, a fleeting effect, and it is too premature to draw valid conclusions, I concede. It could be magic, for that matter, but frankly she couldn't care less.

Best Regards,
Ignacio Fojgel, M.D.
Buenos Aires, Argentina

Sep 2003

Shared MD Testimonials

By Dr. Ignacio Fojgel



Left: sickle cell Right: normal cell

Q: How does hyperbaric oxygenation help anemia? I am taking iron supplements, and would like to know if hyperbaric therapy will help."

—Marcie Charlot, CAN

A: Dear Ms. Charlot,

As you may know, there are different types of anemia. Hyperbaric oxygen helps most types, in different ways. Oxygen is a red blood cell (rbc) de-aggregant (i.e. it separates those cells), so the contact surface is multiplied, and oxygen is delivered much more efficiently.

Sickle cell anemia is further helped by

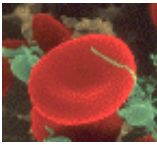
the rbc's wall stabilizing effect, that makes them more flexible, so the tiniest vessels can carry oxygenated cells. In any case, hyperbaric oxygen provides a multiplication of the amount of dissolved oxygen in the plasma. For example, hyperbaric air packs 30% more rbc-bound oxygen, but 50% more free oxygen, ready to be used. If some free radicals are formed during the short (one hour) sessions, it will excite natu-

(Continued on page 4)

Sep 2003

Shared MD Testimonials (cont.)

By Dr. Ignacio



ral anti-oxidative reactions, and they will also help the immune cells' ability to fight infections.

Other types of anemia

may be a natural defensive reaction against infection, especially when the immune system is not working optimally. Using certain types of iron supplements is contraindicated during hyperbaric treatments, to prevent its oxidization. Ask your practitioner

about it. He may indicate another type, or discontinue them altogether.

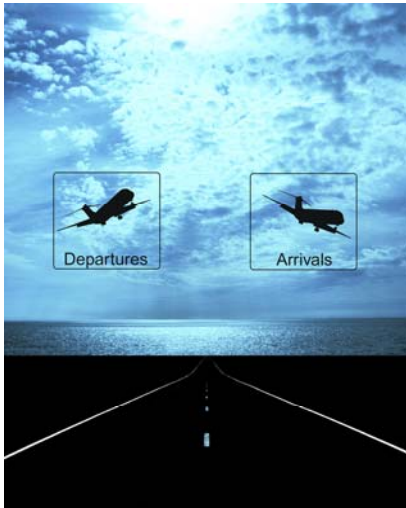
Best regards.

CIM Dept., Baromedicine Unit
Ignacio Fojgel, M.D.
Maimonides University
Buenos Aires, Argentina

Feb 2004

The Oxygen Connection

By Jill Neimark and Ignacio Fojgel, MD



The Oxygen Connection

So is there a connection between the relative hypoxia of air flights and the hypoxia common in chronic illness?

I turned to Ignacio Fojgel, M.D., Head of the Complimentary and Integrative Medicine Department at Maimonides University School of Medicine in Buenos Aires. He is a specialist in hyperbaric oxygen treatment who utilizes two chambers at his hospital in Buenos Aires.

Dr. Fojgel had written a research paper on the connection between the two, especially on neurological conditions like lyme. "The diminished oxygen levels in flight are sufficient for healthy individuals, but not for patients with pre-existing conditions," says Fojgel. "They may show symptoms after as little as two hours of flight."

Airplane flight for the chronically ill should therefore be regarded as a kind of potential altitude sickness, and precautions taken. Here are the conditions that can be triggered or worsened by altitude, notes Fojgel:

Hypertension, recent major surgery, valvular disease, diverticulitis, COPD, congestive heart failure, sickle cell trait or disease, unstable angina pectoris, Myocardial infarction, cardiac arrhythmias, congestive heart disease, peripheral arterial insufficiency, thrombophlebitis, osteomyelitis, pneumothorax, pulmonary hypertension, ulcerative colitis, epilepsy, chronic fatigue (CFIDS), lyme disease, and any other chronic illness.

Fojgel believes that a good deal of jetlag is actually a mild form of altitude sickness. "Most in-flight and post-flight disorders, including most so-called "jet-lag" can be traced to the hypoxic event called air travel. If a flight doesn't traverse more than two time zones, any such incident should not be termed jet-lag, but In fact, says Fojgel, "A patient of mine had a stroke after flying from Bangkok. After only 25 hyperbaric (HBO) sessions, there were no signs left of the stroke. The doctors at the best clinic in Buenos Aires were aghast."

Future Travel Solutions

So what can you do if you travel frequently by airline, or if you have any kind of chronic illness that could be worsened by air travel?

I know what I'm going to do from now on: pre-treat the day before in my chamber, and know ahead of time which practitioners have mild chambers in the city I'm going to, so that I can have a treatment the day after I touch down.

For a particularly long flight—one to, say, Brazil, Israel, or New Zealand, I'd also ask my doctor for a prescription for in-flight oxygen.

Dr. Fojgel also recommends the following:

- **Heavy meals** should be avoided prior or during an ascent to altitude, or in air transportation.
- **Alcohol** promotes dehydration, and is to be avoided.
- **Oxygen** by mask should be provided to neurological patients flying for more than 2 hours.
- **"Super-charging"** with several hyperbaric sessions, prior to the flight or ascent can be considered if there is a history of incidents, or if recovering from a recent illness, and/or Hyperbaric treatment can be indicated after an altitude episode, as a rapid recovery measure.
- **Adequate sleep** is recommended, but not on-board. If it is not possible to stay awake, do not lie down, but sleep with the back of the seat in a 45° position. Exercise in your seat (or aisle-walk) every two hours.

Feb 2005



Hyperbaric oxygen therapy for

T O X I C methaemoglobinaemias

By Ignacio Fojgel, MD

The treatment of methaemoglobinaemia basically consists of the provision of oxygen and of its re-conversion to haemoglobin by means of methylene blue and/or ascorbic acid, accompanied by measures of vital support.

The excess of methylene blue is in itself methaemoglobinizing, so dosage must be strictly adjusted.

The usual treatment of this rare intoxication results in cyanosis that is not modified by the administration of normobaric oxygen (transport deficit).

Eventual cardio-vascular, cerebral, renal and hepatic sequels ensue.

None of the usual measures addresses the organic damage, as they concentrate on the chemical elimination of methaemoglobin and the provision of oxygen to be transported via the normal physiological means.

The use of 100% oxygen can be exchanged for hyperbaric hyperoxia whenever cyanosis, cardio-vascular or neurological signs/symptoms do not respond to normobaric oxygen, or when methylene blue is ineffective (low NADPH levels due to low G6-PD).

Hyperbaric oxygen by itself transforms methaemoglobin into haemoglobin at a rate of 5-8% per hour of treatment.

From experience with cases of carboxihaemoglobinaemia (carbon monoxide intoxication and other tissue and blood poi-

sons, the usefulness of hyperbaric oxygen in the management of tissue hypoxia has been established. Oxygen is thus transported in physical dilution in plasma, spinal fluid and other body liquids, as it attains ultra-physiological levels.

The restoration of an adequate transport by the blood does not ensure its correct distribution and

Thus, the microvascular and tissue exchange deficiencies, which are the bases of the late sequels of the intoxication, are rapidly and absolutely resolved.

Post-treatment enhanced diuresis is explained by the enhancement of nephronal function, which collaborates in the elimination of toxic substances and metabolites.

Acetanilid	Nitrites	Acetophenetidin	
Phenols	Chloroanilines	Phenylazopyridine	
Hydroxylamine	Quinones	Inks, marking	
Alloxans	Nitrogen oxide	Alpha naphthyl-	Nitrobenzene
Phenylenediamine	Chloronitrobenzene	amine	Chlorobenzene
Kiszka	Shoe dye	Phenylhydrazine	Resorcinol
Aminophenols	Nitroglycerin	Lidocaine	Phenylfurans
Phenylhydroxyl-	Corning extract	Ammonium nitrate	Cobalt
amine	Sulfonal	Phenytol	Spinach
Menthol	Nitrosobenzene	Meta-chloroaniline	Nitrophenol
Amyl nitrate	Diaminodiphenyl-	Aniline dyes	Dapson
Piperazine	sulfone	Chloroquine	Sulfonamides
Methylacetanilid	Dimethylamine	Methylene blue	Sulfones
Anilinoethanol	Tetralan	Antipyrine	Para-bromoaniline
Prilocaine	Para-chloroaniline	Primaquine	Dimethyl aniline
Monochloroaniline	Dinitrobenzene	Moth balls	Toluenediamine
Arsine	Toluidine	Benzocaine	Para-nitroaniline
Propitocaine	Para-toluidine	Pyridium	Dinitrophenol
Naphthylamines	Dinitrotoluene	Nitrates	Tolyhydroxylamine
Bismuth subnitrate	Trional	Chlorates	Phenacetin
Pyrogallol	Hydroxyacetanilide	Pyridine	

Table. Compounds that can cause methaemoglobinaemias

utilization, as diverse organs—kidneys, liver, heart, brain and spinal cord or areas that have been deprived of oxygen—may be sub-clinically affected and display late sequels.

Hyperbaric therapy variants are repetitive transitory hyperoxygenation that reactivates mitochondrial mechanisms, block toxic metabolic paths (cytochrome p-445), with systemic and local (brain) anti-edematous effects.

Altered haemato-encephalic mechanisms may call for the limitation of the partial pressure of oxygen, and the duration or frequency of the sessions.

The effects of appropriate hyperbaric doses of oxygen may correct dizziness and vertigo, mental disorientation or confusion, and other neurological and psychological symptoms, without the deleterious effects of oxygen in an oxygen-

(Continued on page 12)

Press Briefing

CDC Releases Parent-Reported Estimates of Autism Prevalence

Thursday, May 4, 2006

Transcript:

OPERATOR: Now I will turn the meeting over to Dr. Glen Nowak. Thank you, sir. You may begin.

DR. NOWAK: Thank you, and welcome to all of you. Today's MMWR has an article on parental reports of diagnosed autism in children aged 4 to 17 years old in the United States. The results from this MMWR are based on two surveys conducted in 2003 and 2004, and today we have two people here to talk about the CDC's autism surveillance efforts as well as the study.

I'm going to have this started by Dr. Jose Cordero. Dr. Cordero is director of CDC's National Center on Birth Defects and Developmental Disabilities and his comments are going to try to help put this study in context, and CDC has some future studies coming out related to this topic.

Then the other person who will make comments following Dr. Cordero is Dr. Laura Schieve. She's an epidemiologist and a co-author on this study. So I will turn things over to Dr. Jose Cordero.

DR. CORDERO [CDC-dir birth defects]: Good morning. Thank you, Glen. Thank you for joining us today.

I would like to provide you an update of the report that CDC will be releasing today in MMWR on the prevalence of autism spectrum disorders, and to alert you regarding upcoming studies.

CDC is fully committed to the health and well-being of children. Our highest priority is to protect the health of children and to ensure that all children can live, play and learn to their fullest potential.

We know that about 17 percent of children have a developmental disabilities and that range from mild disabilities such as speech impairment to serious developmental disabilities such as mental retardation, cerebral palsy and autism.

The more severe developmental disabilities are affecting about 2 percent of children and costs in terms of medical and education is in the billions.

Autistic spectrum disorders, I'm going to use the term ASD, are an urgent public health issue, and they affect the lives of many, many families.

Parents and families who have a child who is affected by ASD are understandably concerned in finding the causes of this life-long disability as well as effective treatment.

We share this concern and we are dedicated to scientific research into the biological, environmental and genetic and other causes of autism, but also for other developmental disabilities.

Accurately estimating autism prevalence and trends is challeng-

ing for a number of reasons. Because autism is a behavior condition, children are often diagnosed at different ages and many are not diagnosed until they enter school.

The estimates of ASD prevalence have been summarized into two to six per thousand. That is a range of one in 500 to one in 166. But we need to continue monitoring and gather more specific data for the United States to verify these statistics.

CDC has been tracking and monitoring the prevalence of developmental disabilities since the 1980s, and autism since 1996, and we use different, multiple methods and multiple studies to gather this information.

There have been two previous ASD/CDC studies that look at autism prevalence. The first is the Metropolitan Atlanta Developmental Surveillance Program. We call it MADDSP. It actually published 1996 data. That's 8-year-old children that were between--sorry--between 3 to 10 year olds, and the prevalence was 3.4 per thousand.

CDC also conducted a community study in Brick Township [New Jersey]. That was done in 1998, and the prevalence there was four per thousand for classic autism, and for the spectrum of autism, it was 6.7 per thousand.

The study reported today in the MMWR is the first of many that would be providing autism prevalence estimates.

Later this year, an update of the MADDSP data on Metropolitan Atlanta Developmental Disability Surveillance Program, will be published and that report will look at two time points, 8-year-olds in 1906 and 8-year-olds in 2000.

Also later this year, the first ever multi-site report from six autism and developmental disabilities monitoring network sites will give autism prevalence rates for the year 2000 from these sites.

In 2007, we anticipate being able to report results from the 2002 study year, and we will do that for 14 sites of the network.

In addition, the supplement of the *Journal of Developmental and Behavioral Pediatrics* is expected to publish later this month, and it will have an article that would look at the time it takes between the first evaluation of autism to the time of diagnosis.

Over time, data from the surveillance network will provide a comprehensive understanding of trends in the rate of ASD or autism but also help us have an important resource to look at risk factors and other factors associated with ASDs.

Today's MMWR report presents parent-reported data from two national surveys. We think the public health value of this is twofold.



CDC reports on two parent-based surveys of autism

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CDC Releases Parent-Reported Estimates of Autism Prevalence (cont.)

First, it provides helpful and reliable information about the number of children diagnosed with autism. Second, it shows some ways autism might affect families.

The survey reported today, by themselves, can't tell us much about autism trends. These surveys are designed to provide us a snapshot, a picture of the world at a given point in time. In this case the results cover two years, 2003 and 2004.

Taken together, these studies confirm that autism is a condition of major public health concern that affects many families. We need to understand the prevalence of ASDs to improve service planning and to better recognize the similar rates of ASD in different areas among different groups of people.

This will help give us, this will really give us some clues about the potential classes of ASD.

We recognize that parents want answers, they want to know how to protect their children, and what can they do to help them stay healthy.

If children have autism, parents want to know what caused it, the most effective treatment, and how can they lower their risk, if they plan to have other children.

This is perfectly understandable and we share the frustration about not having more answers about the causes and cure of autism.

That's why CDC believes it's so imperative to continue monitoring the rates of autism and continuing the research, looking for causes of it.

Thankfully, there is hope. When parents know the signs of what to look for in their children, they can act early if they see a delay.

Please visit our site, www.cdc.gov/act early. And I will now turn this over to Dr. Laura Schieve, an epidemiologist in our Developmental Disabilities Branch.

DR. SCHIEVE [epidemiologist]: Thank you.

Today I'll be sharing the results of that study on parent-reported autism prevalence that is being published in the MMWR.

First, to give you a little information about this, we estimated a prevalence of diagnosed autism in U.S. school-aged children from two national surveys, and school age refers to children 4 to 17 years of age.

The two surveys were the *National Health Interview Survey* and the *National Survey of Children's Health*.

The surveys were independently conducted but both were conducted during the same time period, 2003 to 2004. Both were based on a nationally representative sample of non-institutionalized U.S. children and in both surveys parents or guardians of the sampled children were asked about a range of different health issues.

Autism prevalence was estimated from the question asking parents if they were ever told by a doctor, or other health care providers, that their child had autism.

Estimates of diagnosed autism from these surveys were 5.7 per

one thousand school-aged children from the National Health Interview Survey and 5.5 per one thousand school-aged children from the National Survey of Children's Health. Both surveys indicated that boys were nearly four times more likely to have been diagnosed with autism than girls.

Both surveys indicated that Hispanic children were less likely to have an autism diagnosis.

However, because the data are based on a parent report of a past diagnosis, we cannot exclude the possibility that the lower rate among Hispanics might personally reflect differences in symptom recognition, diagnosis and/or access to services.

Both surveys indicated similar age patterns, showing slightly higher prevalence among children six to eleven years of age.

However, it's important to interpret the age findings cautiously. Results by age were not statistically significant.

Also, the slightly lower prevalence among 4 to 5 year olds was actually somewhat expected, since for some children we know a diagnosis of autism may be delayed.

The slightly lower prevalence among the oldest age groups may relate to changes in autism awareness and diagnosis during the past decade, and also, even though parents were asked about any past diagnosis, it is possible that parents may not recall a diagnosis as readily for some older children, particularly for those diagnosed years earlier, whose symptoms may have been reduced by the time of the interview in 2003 or 2004.

Together, these two national surveys of parents suggested over 300,000 school-aged children had a diagnosis of autism in 2003-2004.

Our results are within the range reported from other studies using other methods.

Because the reliability and validity of the parents survey method hadn't been previously assessed for autism, we compared results from these two similar but independently conducted surveys of the U.S. population of children.

The consistency of prevalence estimates across the two surveys supports high reliability or reproducibility of parental report of autism and reliability is one important component of validity.

Also, we found a high level of consistency between parents reporting that their child had an autism diagnosis and parent reporting of expected social and behavioral concerns and special service needs.

In the National Survey of Children's Health, 94 percent of parents who reported their child had autism also reported that their child currently needs special services for a medical, behavioral or other health condition.

Also in the National Survey of Children's Health, nearly all children who were four to five years of age at the time of the survey, and whose parents reported a diagnosis of autism, were also assessed as having or being at high risk for developmental delay based on responses their parents gave to a separate series of questions on their child's early

(Continued on page 8)

CDC Releases Parent-Reported Estimates of Autism Prevalence (cont.)

development.

In the National Health Interview Survey, 83 percent of parents who reported their child had autism, also reported that their child had difficulties with emotional symptoms, conduct, hyperactivity or peer relationships, and this compared with only 15 percent of children not reported to have autism.

Altogether, the results reported here show that parent surveys provide helpful and reliable information about the number of children diagnosed with autism, and suggests some of the ways autism might affect these children and their families.

Thank you.

DR. NOWAK: At this point we'll open it up to questions.

OPERATOR: Maggie Fox from Reuters, your line is open.

QUESTION: Hi. Thanks. *For the enumerate among us, how does this translate to the one in 166, to the one in 500 numbers, and can you talk in a narrative way about what this might mean for the prevalence of autism and whether it's becoming more common?*

DR. NOWAK: Sure. I'll have Dr. Schieve start, answer that question, and if Dr. Cordero wants to add anything, we'll do that.

DR. SCHIEVE: In terms of how this compares to previous data, the prevalence estimates of diagnosed autism from these two parent surveys, not only were quite consistent with each other but they are within the range that is reported from previous

The prevalence estimates of diagnosed autism from these two parent surveys, not only were quite consistent with each other but they are within the range that is reported from previous studies...

studies and they fall in between two studies of U.S. children in select populations that Dr. Cordero mentioned earlier, that had prevalence rates of 3.4 per 1,000 children in one study, and 6.7 for autism spectrum disorder from another study.

In the prior studies, autism spectrum disorder was classified based on clinical examination and medical and education record review.

In this study, autism was assessed using a different method, by asking parents about a prior diagnosis, and thus, the child had to have come to the attention of a health

care provider and received a diagnosis, and that diagnosis would have had to have been effectively communicated to the parent.

DR. CORDERO: Yeah, and let me add that in terms of what it means, is that the estimate, given this study, it's about 300,000 school-aged children have a diagnosis of autism as reported to parents.

QUESTION: I'm sorry. Can I follow up on that?

DR. NOWAK: Sure.

QUESTION: *If the 3.4 per thousand, that correlates to one in 500, I take it, and the 6.7 correlates to one in 166?*

DR. CORDERO: The two per thousand would be one in 500 and the 6.7 is basically about one in 166.

QUESTION: Right. So where does this one fall in with--?

DR. CORDERO: Basically in between. It's 5.5 and 5.7. So it's within that range.

QUESTION: *Can you give us a different way of saying it, other than per thousand, though, so we can do a comparator, since all these groups go crazy with these numbers?*

DR. CORDERO: Okay. So you're asking--basically, what this would be is one in 175 to one in 182.

QUESTION: Thank you.

DR. CORDERO: If you just do the arithmetic.

QUESTION: Well, some of us are enumerate.

DR. CORDERO: Well, thank you. Some one else did it for me. Okay.

QUESTION: Thanks.

DR. NOWAK: The next question.

OPERATOR: Thank you. Betsy McKay, Wall Street Journal, your line is open.

QUESTION: Hi. Thanks. *I just needed a little bit of clarification, if you don't mind. You did say this but I'm still unclear about how this study might be compared in its importance to previous surveys.*

In other words, is this the first really comprehensive national survey for autism, or have there been previous, you know, nationally representative surveys done using other methods?

If you could just clarify that for me, put this a little more into context. That would be helpful.

DR. CORDERO: Okay. The previous studies, and the ones that are sort of our basic surveillance for autism is based on finding the diagnosis of autism in educational and medical records, and that's where what we talked about, the Metropolitan Atlanta Developmental Disabilities Surveillance Program here. But that study has been done in a number of states and local areas.

So it is a very intense look in different areas of the country. What the new thing is about this survey is giving us the first national representative sample of the prevalence of autism, and that's really what's new. And we had this in two surveys to help us compare and ensure validity between the studies.

...this survey is giving us the first national representative sample of the prevalence of autism...

QUESTION: *Okay. So this is CDC's first nationally representative survey of the--your first estimate, nationally, of the prevalence of autism?*

DR. CORDERO: It is our first national estimate of prevalence of autism.

QUESTION: Okay.

DR. CORDERO: Do understand that these are surveys that are for children's health and are used for many things, and so there is lots published but this is the first on autism.

QUESTION: Okay. Great; thanks. That's very helpful.

OPERATOR: Thank you.

The next question's from Anita Manning from USA Today.

(Continued on page 9)

CDC Releases Parent-Reported Estimates of Autism Prevalence (cont.)

Your line is open.

QUESTION: Hi. Thank you very much.

I'm looking at the numbers and see that the--I have to call it up. I'm sorry.

Okay. So the weighted prevalence per one thousand in the larger study, the NSCH, you see that in the younger children it's 4.4 but in the older children, 9 to 11, it's 6.8.

Can you explain--the reason I'm concerned, that we'll be questioned about this, is because of the age of the children and the concern about vaccines. So these older children would have had vaccines that might have had additives or ingredients that some parents think may be linked, where the younger children wouldn't.

And could that possibly account for higher rates?

DR. SCHIEVE: Sure. I can speak to that. I mean, first of all it's important to remember that neither of these surveys were designed to assess causes of autism. These surveys are a snapshot of one particular point in time.

But with respect to the age differences, you're correct. There is a certain pattern of results seen in both of the surveys.

Now both of those--but it's important to remember that there is no statistically significant difference in the rates you pointed out for either of those two surveys.

So we need to consider those patterns cautiously.

Also, our finding of a peak prevalence during the early school age is consistent with results of an earlier study on this issue, that documented peak prevalence of autism between five and eight years of age.

So the general pattern we are observing is in line with other studies.

Now looking at that lower prevalence among children aged 4 to 5, this was actually somewhat expected when we undertook this study, especially with this method, which again we have to remember, is based on parents' report of a diagnosis.

Although often autism can be identified as early as 18 months, many children won't be diagnosed until they start school, and for some children there will be a delayed diagnosis.

So some of these 4 to 5 year old children who might later go on to get an autism diagnosis may not have been diagnosed at the time of this survey.

So we just have to keep that in mind.

The peak prevalence estimates for children aged 6 to 11 years may also be reflective of peak diagnosis in treatment ages.

And by that I'd like to make the point that we don't have data to examine it further, but after children have received treatment for an extended time, they may show fewer symptoms of autism. So we cannot be sure whether some parents may have answered no to the question because their children were not currently showing severe signs of autism.

Also, the slightly lower rates of diagnosed autism among the oldest age group may be partially related in a change to the diagnostic criteria for autism that occurred during these children's childhood.

In 1994, the criteria for autism were broadened slightly, and so for all of those reasons, we can't really infer causes of autism from the age, although I would say that looking at the age results and the race, ethnicity results, to us, this does still provide important information on the need to consider that autism may be under-diagnosed in certain populations of children.

DR. NOWAK: Next question.

QUESTION: Thank you.

Elizabeth Kaledin, CBS News, your line is open



Questions remain unanswered

QUESTION: Hi; thank you. I'm unfortunately going back to this number issue and just wondering, if we're comparing this one in 166 number that we were working with to the new one in 175 to 181 that you just broke down for us, is that a statistically significant increase and one that we could then say yes, there is an increase in cases of autism here?

DR. CORDERO: Actually, let me say that we would have been very surprised if we ended up with exactly [1 in] 166 in the survey. First of all, remember this is parent reports. So we are going to expect to have--this simply represents parents that are actually being told that they have autism, they responded yes, I've been told my child has autism.

So the other thing is that this is just a snapshot. So I don't think that we can really compare this with other studies, to try to make a determination of trend.

QUESTION: Okay. So, in other words, there is no conclusion here about whether or not there is in fact an increase in numbers of cases of autism in the country?

DR. CORDERO: Exactly. I think this just gives us a point in time of what the prevalence base of autism, is based on parental reports for 2003 and 2004.

QUESTION: Okay; thank you.

OPERATOR: Thank you. Shankar Vedantam, Washington Post, your line is open.

QUESTION: Thanks. I was wondering if you might be able to break down for us, in general, how many--you say the majority of children tend to be diagnosed once they reach school.

Can you give us some breakdown of sort of what that timeline is. I mean, are you saying it's 51 percent? Are you saying it's 80 percent tend to be diagnosed when they're at school?

And I'd like to sort of go back to the question raised a couple questions ago about the difference between the children who are four to five and those who are six to eleven.

The point that you're making, that this is not statistically significant is well taken, but could this be a signal that you are seeing, that would have to be tested elsewhere, and if so, can you tell us what that signal says.

(Continued on page 10)

CDC Releases Parent-Reported Estimates of Autism Prevalence (cont.)

DR. CORDERO: Let me answer the first question. There are some studies that actually look at diagnosis, not only autism but other developmental disabilities, that were done some years back, and about half of the children in those studies were diagnosed at a school age, and there were some--I just came back from pediatric meetings and there was a presentation, and in that presentation I think that they were reporting about 30 percent of children with autism, were being recognized at school age.

So it is something in that range. We do hope that--

QUESTION: *And when you say school age you're saying--what is school age?*

DR. CORDERO: School age is between four--four or five, on.

QUESTION: *Okay. But then that's confusing here because four or five is part of the group that you're thinking is not at school.*

DR. CORDERO: School starts at around age five. Some children start at age four.

QUESTION: *Right. So basically if some of the children from age four or five are already in school, then, you know, the 4.4 that we are seeing in the NSCH study may actually be an accurate reflection of potentially a lowered rate of autism among younger children.*

DR. CORDERO: No. I think that what it does reflect is that there is less--younger children are less likely to have been recognized, and even studies in 1996, when we did the very first surveys of autism, we had exactly the same pattern, and a reason that we chose 8-year-olds was that when we looked--that was about the time that most children with autism have already been recognized.

QUESTION: *Okay. And what about the second question on the issue of the signal?*

DR. CORDERO: Say that again, what the question was.

QUESTION: *You pointed out there wasn't a statistically significant difference between the two things.*

However, I don't know whether you are not finding a statistically significant difference. If you pool the two studies together, I suspect you're finding a lack of statistical significance in each study taken separately.

However, you have two studies that are well-conducted studies, that are both sort of finding the same difference, though not statistically significant. So presumably, that itself assumes a little more significance than any one study on its own.

And even if it doesn't assume statistical significance, I'm trying to ask, you know, *what are you reading from the signal, give the concerns that have been voiced about the potential concern over vaccines?*

DR. NOWAK: Laura.

DR. SCHIEVE: Well, I guess I would say it's not--because these surveys were two separate samples of the U.S. population and it isn't advisable to combine the samples together. But you're right. We did report the age differences and we do comment in the paper on the fact that they show the same pattern.

In terms of the signal, again, I think that this is the first time we have really looked at diagnosed autism on a parent survey and it's important to keep in mind, that although we're very encouraged that our results were in line with those of other

studies, that the method is different and for this method we'll be very dependent on access to services and receiving a diagnosis of autism, and communication of that diagnosis to the parents, and of course parents correctly recalling that.

So all of that being said, when we look at patterns like this, we do feel that it merits monitoring those patterns for many reasons, and one of them being--are children being diagnosed at early ages? Is there room for improvement in diagnosis? And are there diagnostic differences in certain subgroups of the population? It is difficult to go beyond these particular surveys to infer beyond the causes of autism.

DR. CORDERO: Let me say that the first reason for this difference, and before thinking of any kind of other reason, is that the diagnoses have not been made and the children have not been recognized. There is ample evidence that that is really our major problem, and actually that is the reason that we have [off mike]

Let me also point out that studies that have used videotapes of children say that were diagnosed with autism at ages 2, 3, or 4, and when they went to their videotapes of when they were 6 months to 1 year old, actually consistently there were findings and there were indications that that child had autism as early as 6 months. So the major challenge we have right now is early recognition, and I think that this data do point out exactly that we have a major problem with that, and that is why it is so important to educate both pediatricians and parents about the early signs of autism.

DR. NOWAK: Next question?

OPERATOR: Tom Maugh from The Los Angeles Times, your line is open.

QUESTION: *How confident are we in the doctors' diagnoses here? Is it possible that doctors are just over-diagnosing this?*

DR. SCHIEVE: This is Dr. Schieve. To our knowledge, there hasn't been a past validation study on diagnosis of autism. There has been a study that has looked at how well providers diagnose, how well parents were able to recall a previous diagnosis of birth defects. The studies generally found the parents were specific in recalling their past diagnosis, that is, that if they reported a diagnosis, it generally had been made, but that they tended to underreport, so it had what we call low sensitivity at reporting depending on the condition. For some conditions, there was great reporting, and for other conditions, parents often did not report that they had a diagnosis besides there being evidence in the medical record that that child had received a diagnosis.

There have also been studies of adults who have been asked to recall various medical conditions, and these find similar things, that people tend to underreport past diagnoses rather than overreport past diagnoses. So in that respect, we might assume autism would be the same, although we cannot really say for sure because we do not have external validation.

...there were indications that that child had autism as early as 6 months. So the major challenge we have right now is early recognition...

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CDC Releases Parent-Reported Estimates of Autism Prevalence (cont.)

I would say that that was actually one of the questions we asked ourselves in looking at these data, is how reliable and valid are the results from a parent-reported diagnosis. But our results are encouraging in that these two independent surveys found such similar rates overall, and within some important demographic subgroups, and reliability is one important component of validity.

The other issue that was encouraging to us in terms of speaking to the validity is that the parents who reported their children had a diagnosis of autism also separately reported a high level of a range of difficulties that we might expect to see with autism such as difficulty with peers, that was in one survey. In the other survey, almost all of the children were classified as having a special health care need based on a separate series of questions. And then the youngest children, the 4-to 5-year-olds who were classified as having autism were nearly all reported to have some type of development concerns that put them into a category of developmental delay. In fact, for most of them, the level of concerns expressed by the parents was of a sufficient magnitude for them to be classified as having a high risk for developmental delays.

DR. CORDERO: I think the bottom line is that if we have any concern, it is the under-diagnosis. I think all indications are that pediatricians and physicians might tend to under-diagnose. We don't have much evidence that there is an overdiagnosis.

...pediatricians and physicians might tend to underdiagnose. We don't have much evidence that there is an overdiagnosis.

DR. NOWAK: Next question, please.

OPERATOR: Joanna Schaffhausen from ABC News, your line is open.

MS. SCHAFFHAUSEN: I have two questions. One is, is there a reason that you phrased the question "ever diagnosed" as opposed to "currently diagnosed" with autism? And the second question goes back to increase/decrease. It seems like

on the one hand we're saying the study is very in line with other studies on autism prevalence, and at the same time we're saying we can't really comment on whether there has been a change. I was wondering if you could comment on that.

DR. CORDERO: I'll ask Dr. Schieve to start.

DR. SCHIEVE: In terms of the first question, the phrasing of the question, these questions were developed by the National Center for Health Statistics. They asked about a range of health conditions, not just autism. Neither survey was designed specifically toward autism, so there is really only one specific question on autism in either of the surveys. That phrasing is used for a whole host of conditions, and so autism was included in that list.

DR. CORDERO: Yes, and the point is that, in fact, conditions that are chronic conditions, it's not like saying in an infectious disease you may have it today and then it would be gone tomorrow.

So in terms of the increase/decrease part, we are simply saying that this is a snapshot and when we look at what the number is, it fits within the range. We can say that it is really more at the upper end of that range, but that is basically its function so that the data can tell us.

DR. NOWAK: We will take two more questions.

OPERATOR: Miranda Hitti, from WebMD?

MS. HITTI: Thank you for taking my question. I was wondering, is there a reason that the term "autism" was used instead of ASD, and do you think that may have affected the results? In other words, might people have thought to themselves my child doesn't have autism, but they had ASD and thus answered "no."

DR. SCHIEVE: That's a good question. In terms of the phrasing, the National Health Interview Survey had started pilot testing some of this, and I don't know exactly, but I believe in the earlier 1990s, or developing the question and pilot testing later, when people did speak more in terms of autism than the broader autism spectrum disorder. I believe that the phrasing has been kept consistent in other surveys that were developed like the National Survey of Children's Health, for this comparability reason.

I am sorry, can you repeat the rest of your question? The issue about the potential underestimate. I think that that is a good point to keep in mind, that that is a limitation of this particular study. We do not have data to know how parents who had a child who was diagnosed with Asperger's disorder, for example, might have responded to the autism question. It is possible that they understand that to be an autism spectrum disorder and had responded affirmatively to this question. We cannot rule out that possibility, but it is one of the limits of both of these surveys, that those specific data were not collected for us to disentangle that.

DR. NOWAK: We will take one last question.

OPERATOR: Mike Stobbe, Associated Press, your line is open.

MR. STOBBE: Actually, my question has been answered. Thank you.

DR. NOWAK: Is there anybody else in the queue?

OPERATOR: We have one more question. Maggie Fox from Reuters, your line is open.

MS. FOX: Thanks. I'm being greedy. Am I right in reading this that only about half the parents responded to the survey, and would that affect the outcome, reliability?

DR. SCHIEVE: That's true. For one of the surveys, the response rate was about 56 percent. For the other survey, the response rate was 80 percent, and so we need to consider that as a potential limitation. All of those results are weighted to account for the non-response. But even more encouraging than that is that with that weighting, the results are so comparable between the surveys that it suggests to us that there was not some type of differential non-response, that the results are valid for both of them.

MS. FOX: Thanks.

DR. NOWAK: Thank you, folks. Thanks for your time this afternoon. If you have any additional questions, please contact CDC's Office of Media Relations and we'll see if we can help you.

[End of press conference.]

<http://www.cdc.gov/od/oc/media/transcripts/t060504.html>

"Mundo vitam dare"



15810 East Gale Avenue #178
Hacienda Heights, CA 91745

Toll free: 877.IHA..USA1
(877.442.8721)

pressurepoint.newsletter@ihausa.org
hyperbarics@ihausa.org
www.ihausa.org

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Announcements

Medical Advisors

- Jeff Bradstreet, MD
- Guisepina Feingold, MD
- Gunnar Heuser, MD
- James Neubrandner, MD
- Francisco Morales, MD
- Michael Uszler, MD
- Joseph Rich, MD
- John Zhang, MD
- Ignacio Fojgel, MD (in mem)



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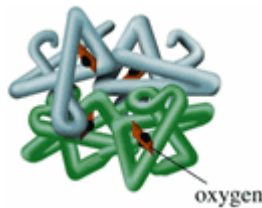
IHA Sponsored fundraising concert with Special Guest Country Recording Artist Mark Leland at Wisconsin Integrative Hyperbaric Center Fitchburg, Wisconsin 7-8:30 pm, Friday June 23, 2006 Call 608.278.4268 for details

conclusion

Commemorating the Life of a Great Advocate for Hyperbarics

Dr. Ignacio Fojgel

(Continued from page 5)



MRI Diagram: Oxygenated blood

hypersensitive system, usually brought about by hypoxia and diverse neurological conditions

The lack of oxygen in the liver, affecting metabolic and conjugation functions, is also corrected, which allows for an adequate detoxification. It prevents the functional exhaustion of the organ, inflammatory reactions and their structural effects (cirrhosis), as is also the case in organophosphates poisoning and other intoxications.

Hyperbaric hyperoxygenation is, in sum, a complementary treatment of methaemoglobinaemia that temporarily surpasses the causal agent, while allowing for a physiological normality until its re-conversion to normal haemoglobin. It also generates a polyvalent biological systemic modification, which notably accelerates the patient's recovery, with far less late sequels.

Dr. Ignacio Fojgel Director, Complementary and Integrative Medicines Dept. Chief, Baromedicine Unit, Maimónides University

Sources:

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