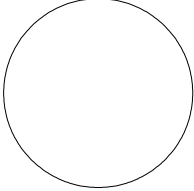


Does This Treatment Work?: Becoming an Informed Consumer



 Jordan Ile, B.S.
 Megan Leick, B.S.
 Pamela Terrell, Ph.D., CCC-SLP
 University of Wisconsin-Stevens Point

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Why is being an informed consumer important?

http://www.fox.com/wp-content/uploads/2014/05/Healthcare-consumer.jpg

2

Science vs. Pseudoscience

Science	Pseudoscience
Provide theoretical base for intervention	Often lacks a theoretical model or is outdated
Recommend intervention	Recommend intervention based on faulty models
Connect theory with intervention	Weak or nonexistent connection between theory and intervention
Systematic investigations	Systematic investigations lacking
Provide data/evidence	Provides evidence that is weak, anecdotal. Testimonials are popular.

3

1

How does pseudoscience happen?

- Lack of hypothesis testing before marketing the method
- Complex ideas and processes are put into simple models
- "Meme" theory
- Real science takes a long time

Validity
Reliability
Fidelity
- Money and marketability override research and science

4




The appeal of expert opinion

- High value placed on clinical authority
- Bandwagon effect ("everyone else is doing it")
- Presenters are often engaging and entertaining
- Advocates of pseudoscience may not be hucksters and charlatans, but misguided critical thinkers
- Consider: **education, experience, expertise, potential bias**

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Common fallacies




- Everybody's doing it!
(glittering generality, bandwagon)
- The doctor said so
(expert opinion)
- I saw it on TV!
(availability heuristic, anchoring bias, blind-spot bias)
- But it worked for me!
(confirmation bias, choice-supportive bias, sunk cost bias, placebo effect)

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2

Evidence-Based Practice

- **Why are you recommending this?**
 - Does the practitioner profit?
 - Is this the approach the practitioner always recommends?
 - Does the practitioner have a bias?
 - What are other options?
- **What does the research say?**
 - Can you provide peer reviewed support for this approach?
 - Are the improvements functional?
 - Does this approach work with a child like mine?



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6 TIPS TO BECOME A BETTER CRITICAL THINKER

WHAT IS CRITICAL THINKING:
It is the process of analyzing information objectively, separating the facts from bias to create reasoned judgments.

- **ACCEPT THAT YOU MAY NOT ALWAYS BE RIGHT**
You can't always be right and you can't always be wrong.
- **DO YOUR RESEARCH**
Don't get misled by headlines.
- **COLLABORATE WITH OTHER CRITICAL THINKERS**
Exchange your point of view through dialogue.
- **KNOW YOUR BIASES**
And the effect they have on your decisions.
- **QUESTION ASSUMPTIONS**
The majority of what we know is based on assumptions for the sake of time.
- **THINK IN REVERSE**
From what you know, ask "What if I don't know what I think I know?"

Become a critical thinker!

- What are the issues and conclusions?
- What are the reasons?
- Which words or phrases are ambiguous?
- What are your values and the values of the researcher/practitioner?
- Are there any fallacies in the reasoning?
- How good is the evidence?
- What significant information is omitted?
- What reasonable conclusions are possible?

Browne, M. N., & Keeley, S. M. (2015). *Asking the right questions: A guide to critical thinking*. Pearson.

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Latest information on Diseases and Conditions in 2023 - *Florida Healthcare*

"One Size Fits All"

Red Flag: Many diverse conditions that can be treated with the same treatment



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3

"One Size Fits All"

Red Flag: Similar treatments prescribed for very different conditions

Treatment for Arthritis

HBOT therapy, stem cell therapy, ozone therapy, bio-resonance, detoxing, IV vitamin therapy, cryotherapy, nasal laser therapy, laser IV therapy, Projuvenox, far infrared sauna, etc.

Treatment for Cerebral Palsy

HBOT therapy, stem cell therapy, ozone therapy, IV vitamin therapy, bio-resonance, detoxing



Stem Cell Treatment for Cerebral Palsy | Poseidonia Healthcare

Stem Cell Treatment for Rheumatoid Arthritis | Poseidonia Healthcare

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Research Quality and Design

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Research Quality and Design:

Red Flags: Claims unsupported by research

Years of internal Stem Cell research into Cerebral Palsy and the results experienced by our patients have identified very positive outcomes following the conclusion of Stem Cell Cerebral Palsy Treatment.

Whilst analysis of the benefits of Stem Cell Treatment for Cerebral Palsy is very new in the scientific research field, external findings support our own. With recent research pointing towards the usefulness and value of using Stem Cell Treatment for Cerebral Palsy. One such study conducted on the effects of Stem Cell Treatment with 17 severe Cerebral Palsy patients identified that most displayed significant improvements and in 27% of patients the improvements were so significant to the point where they were becoming almost independent.



Stem Cell Treatment for Cerebral Palsy | Poseidonia Healthcare

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Research Quality and Design

Red Flags: Limited amount of supporting research

Use of HBOT as treatment for Autism Spectrum Disorder

Therapeutic Use of Hyperbaric Oxygen Therapy for Children with Autism Spectrum Disorder

Dr. Muhammad Hudeib, Luis Y. M. Aguila and Ahmed N. Salem

ABSTRACT
Autism spectrum disorder (ASD) is neurodevelopmental disorder, characterized by impairment in social interaction, verbal and non-verbal communication and the presence of restricted and repetitive behavioral patterns. The condition manifests within the first 3 years of life and persists all adulthood. At present, the etiology of ASD is largely unknown, but genetic, environmental, immunological and neurological factors are thought to play a role in the development of ASD. The prevalence of ASD has increased dramatically in the past few decades. According to current estimates from the United States Centers for Disease Control and Prevention (CDC), as many as 1 in 59 children have ASD in USA. Studies from the Middle East on this topic are limited. Autism in Saudi Arabia is slightly higher than reported in the developed countries. Hyperbaric oxygen therapy (HBOT) has been gaining in popularity for the treatment of ASD over recent years. However, few studies of its effectiveness have been reported. This article reviews important publications regarding the physiologic and clinical efficacy of HBOT in ASD. Several case series and randomized trials have all proposed that low pressure low oxygen concentration hyperbaric treatment can improve the clinical manifestations of autism.

Hyperbaric oxygen therapy may improve symptoms in autistic children.

Rosignol DA, Rossignol LW

Hyperbaric Medical Center | Hyperbaric Oxygen Therapy (HBOT) | (poseidonia.healthcare)
I_Coll_Physicians_5 | (who.int)

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Research Quality and Design


Red Flag: Low quality research

Use of testimonials

- 2 video-based testimonials on their site
- Multiple write-in testimonials

Testimonials are *not inherently bad*, but are *low quality support and can be biased*

- The highest frequency of "external evidence" for the treatment effectiveness on the website



Hyperbaric Medical Center | Hyperbaric Oxygen Therapy (HBOT) | (poseidonia.healthcare)
Our Professional Team - Poseidonia Healthcare


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Bias

Are they qualified/what is their expertise on the treatment? What are previous affiliations with this treatment?

A quote from the managing director/founder of the organization


"As the founder of this amazing Group, it humbles me sometimes how this journey evolved; Poseidonia Healthcare had its roots planted way back in 1996 when I realised a shortfall on the island with regards to Diver Safety. I secured and operated a small Hyperbaric Chamber Facility specifically to cater for any Scuba Diving Emergencies that could arise from time to time, also to increase the safety, not only for my Group of Diving Centres around the Island of Cyprus but for the Diving Industry overall."



Our Professional Team - Poseidonia Healthcare

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5



- Credentials
- Education from accredited program
- Licenses and certifications
- Legitimacy of licensing board
- Publications
- Biases
- Personal or financial gain

Validate the experts

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Poseidonia Healthcare Professionals




DR SOTIRIS GEORGIOU
DR MICHAEL KOLIVAS
DR FRANTZ
DR IRINA PAVLIK MARANGOS
DR ALEX MEMISH
DR LEV SKLYAR

Poseidonia Healthcare Team

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"Dr. Lev Sklyar graduated from Omsk State Medical Institute in 1985 with a degree in pediatrics. Dr. Lev Sklyar has been working as an orthopedist and traumatologist at the Kurgan Research Institute of Experimental and Clinical Orthopedics and Traumatology, where, under the guidance of academician G.A. Ilizarov got his PhD in the provision of specialized medical care and rehabilitation of patients with diseases of the musculoskeletal system. Doctor Lev Sklyar has over 200 publications, 32 patents and invention certificates for the methods and devices for the diagnosis and treatment of the musculoskeletal system diseases."



DR LEV SKLYAR
Professor

Omsk State Medical University | Google Scholar | Eprints Center

18




- Educational background unknown
- Legitimacy of credentials unknown
- No background information or biography
- LinkedIn profile
- No presence on MedHelp

DR MICHALIS KOUMAS
MD Hyperbaric Physician

Evangelina Medical Center
Lafayette

19

- Vague credentials
- Educational background unknown
- No background information or biography
- Nonexistent in online searches and medical databases in Cyprus



DR ALEX MEMISH
Doctor

Methods
Google Search

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Autism Spectrum Disorders

"It has been demonstrated that the majority of patients affected by Autism Spectrum Disorder (ASD) have high levels of inflammation, compromised blood flow and low oxygen delivery to certain parts of the body. HBOT has been shown in clinical data to help decrease inflammation and reproduce oxygen and blood flow to affected areas, particularly affected regions in the brain. This has demonstrated to help improve overall functioning, receptive language, speech and eye contact scores."

By increasing the amount of oxygen carried by the blood stream (more specifically, the plasma), the greater the opportunity is for oxygen deprived tissues to receive the much needed oxygen.

HBOT therapy treats autism by increasing oxygen level in the body, however, there are three major reasons for considering this therapy:

- HBOT treatment delivers more oxygen to the body which means all the organs and cells in the body receive proper oxygen, resulting in enhanced functioning. These oxygenated cells improve blood circulation, decrease inflammation, and reduce nerve injury. This cumulative process lessens the effects of autism in children.
- HBOT therapy does not inflict any kind of pain on children. As most of the children are detected with autism at an early age, a painless treatment is essential. Our HBOT therapy does not require your child to wear a face mask as we have special hoods that helps make treatment child friendly. Also, our chamber is large enough to allow you as a parent to be inside with your child, as well as a supervising staff member inside with you to help monitor and watch your child during the therapy sessions.
- The biggest benefit of this treatment is that it does not require your child to get admitted to the hospital. Our HBOT treatment allows you to maintain a day-to-day routine and gives you time to combine HBOT with other treatments, which collectively yield better results.

Studies that have been carried out have shown an overall enhancement in receptive functioning, eye contact, cognitive awareness, and social communication as a result of HBOT treatments.

The recommended protocol for treating Autism with HBOT is a minimum of 40 sessions at 5 meters."


AutismSociety.org

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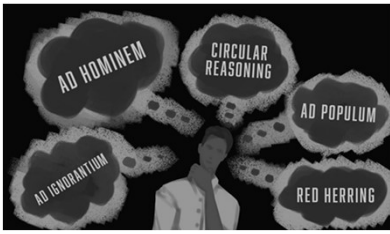
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Consider the cost of treatment

\$8,989 - \$26,967



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Fallacies

- Initially believable or logical before additional thought or research
- Used to mislead people – to trick them into believing something is factual and logical
- Discerning a valid argument from a false claim is an important skill
- Critical thinking skills can help you to avoid falling prey to fake news, false claims, and unsound arguments

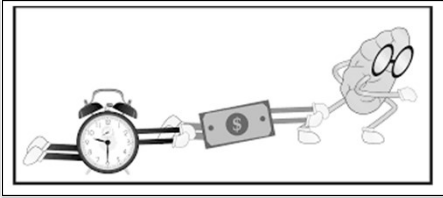
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Expert Opinion

The person making the claim is presented as an expert or a person who should be trusted but may not have appropriate credentials.



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Sunk Cost

You have invested so much money, time, and effort into the treatment that you feel you need to continue.

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Glittering Generalities

Vague, but attractive, verbiage is used to attract attention and appeal to emotion.

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"At Poseidonia Healthcare, we understand most of our patients have been let down or not recovered using the traditional health care system. Many have gone through many years of misdiagnosis and side effects from traditional pharmaceutical drugs. Our specialised Regenerative Therapies are all tailored to treat many Diseases and Conditions, they promote the body to heal itself through the introduction of powerful innovative natural healing therapies."

Appeal to Emotions

Use emotions in the place of logical reasoning to win an argument or convince a person to come to a certain conclusion.



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