Glossary of Terms

Abstraction: The method by which reviewers or researchers read scientific articles and then collect and record data from them.

Adverse effect: A harmful, unintended reaction to a diagnostic or therapeutic intervention.

Allocation concealment: The process used to prevent knowledge of group assignment in a randomized controlled trial before the actual intervention/treatment/exposure is administered.

Atmospheres (atm): Term commonly used for atmospheres absolute (see following term).

Atmospheres absolute (ata): Units of pressure; 1 atmosphere is pressure of the atmosphere at sea level.

Barotrauma: Physical injury sustained as a result of exposure to increased environmental air pressure; a condition of discomfort in the ear caused by pressure differences between the inside and the outside of the eardrum.

Before-after study: An observational study in which an outcome is measured in the same group of patients at one point before and after an intervention.

Bias: Any systematic error in the design, conduct, or analysis of a study that results in a mistaken estimate of effect.

Case series: A report on a series of patients with an outcome of interest. No control group is involved.

Cohort study: Involves identification of two groups (cohorts) of patients, one that did receive the exposure of interest, and one that did not, and following these cohorts forward for the outcome of interest.

Consistency: For any given topic, the extent to which similar findings are reported using similar or different study designs.

Controlled study: See randomized controlled trial, nonrandomized controlled trial.

Fair-quality study: A study that meets the following criteria: Generally comparable groups assembled initially but some question remains whether some (although not major) differences occurred in followup; measurement instruments are acceptable (although not the best) and generally applied equally; some but not all important outcomes are considered; and some but not all potential confounders are accounted for. Intention-to-treat analysis is done for randomized controlled trials. See also good quality study, poor quality study.

Focus group: A formal discussion with a group of people on a specific topic. The group is facilitated by a leader who keeps participants focused on the topic of interest. The purpose of a focus group is to collect in-depth information from a group of people who represent the population of interest.

Glasgow Coma Scale: A scoring system used in quantifying level of consciousness following traumatic brain injury.

Glasgow Outcomes Scale: A scoring system used to predict the level of long-term outcome for patients following a traumatic brain injury.

Good-quality study: A study that meets the following criteria: comparable groups are assembled initially and maintained throughout the study; follow-up at least 80 percent; reliable and valid measurement instruments applied equally to the groups; interventions clearly defined; important outcomes are considered; and appropriate attention to confounders in analysis. In addition, for randomized controlled trials, intention-to-treat analysis is used. See also fair quality study, poor quality study.

Gray literature: foreign or domestic open source material that usually is available through specialized channels and may not enter normal channels or systems of publication, distribution, bibliographic control, or acquisition by booksellers or subscription agents (Interagency Gray Literature Working Group, "Gray Information Functional Plan," 18 January 1995).

Hyperbaric oxygen therapy (HBOT): The inhalation of 100 percent oxygen inside a hyperbaric chamber that is pressurized to greater than one atmosphere.

Increased intracranial pressure (ICP): A condition in which the pressure of the cerebrospinal fluid or brain matter within the skull exceeds the upper limits for normal pressure. Almost always indicative of severe medical problems. The pressure itself can be responsible for further damage to the central nervous system by decreasing blood flow to the brain or by causing the brain to herniate (push through) the opening in the back of the skull where the spinal cord is attached.

Intention to Treat: A method of analysis for randomized trials in which all patients randomly assigned to one of the treatments are analyzed together, regardless of whether or not they completed or received that treatment.

Masking: An experimental method in which patients, caregivers and/or research staff do not know and cannot figure out which patients are receiving treatment and which the control (e.g. placebo). Also known as “blinding.”

Monoplace chamber: Type of HBOT chamber. Serves one patient at a time. Usually constructed of clear acrylic or metal (steel, aluminum) with acrylic viewports that allow for patient observation. Generally pressurized with 100 percent oxygen.

Multiplace chamber: Type of HBOT chamber. Serves more than one patient at a time. The entire chamber is pressurized with air, and each patient is given 100 percent oxygen through a facemask, tight-fitting hood, or endotracheal tube.

Nonrandomized controlled trial: Study design where treatments, interventions, or enrollment into different study groups are assigned by a process other than randomization. These groups are followed up for the variables/outcomes of interest.

Observational study: A study design in which the allocation or assignment of factors is not under the control of the investigator.

Poor-quality study: A study with the following characteristics: Groups assembled initially are not close to being comparable or maintained throughout the study; measurement instruments are unreliable or invalid or not applied at all equally among groups; outcome assessment is not masked; and key confounders are given little or no attention. For randomized controlled trials, no intention-to-treat analysis. See also good quality study, fair quality study.

Qualitative research: A kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification. Generally examines people's words and actions in narrative or descriptive ways more closely representing the situation as experienced by the participants.

Randomization: Ideally, a process that ensures every member of a population has an equal chance to be included in the study's sample. Study patients are assigned to treatment or control groups without regard to any patient characteristics or study personnel desires or biases.

Randomized controlled trial (RCT): Study design where treatments, interventions, or enrollment into different study groups are assigned by random allocation rather than by conscious decisions of clinicians or patients. These groups are followed up for the variables / outcomes of interest.

Retrospective comparison of cohorts: A type of observational study. This study design begins with a group of individuals with a particular outcome and tests the hypothesis that some prior characteristic or exposure is more common in persons with the outcome than those without.

Systematic review: An organized method of locating, assembling, and evaluating a body of literature on a particular topic using a set of specific predefined criteria.

Time-series: An observational study in which an outcome is measured in the same group of patients at multiple points before, during, or after an intervention.

Validity, external: The extent to which the results of a trial provide a correct basis for generalizations to other circumstances. Also called "generalizability" or "applicability."

Validity, internal: The extent to which a study describes the "truth." A study conducted in a rigorous manner such that the observed differences between the experimental or observational groups and the outcomes under study may be attributed only to the hypothesized effect under investigation.