

## Words as Keys

TWO THOUSAND YEARS AGO, a Maccabean editor defined succinctly, if apocryphally, the responsibilities of an editor when he concluded a "review article" with the words: "We have been careful that they that read may have delight, and they that are desirous to commit to memory may have ease, and that all those into whose hands it may fall may have profit." Today's editor, especially if editor of a scientific journal, can scarcely be said to generate the glow of delight in the bosom of his readers with any regularity. The subject matter hardly lends itself to the luxury of delight. How ecstatic can one wax over standard deviations, *P* values, or electron spin-resonance techniques? The realistic editor of today's scientific journal concentrates not on delight of the reader, but on his profit. He does so by presenting accurately and impartially information of the greatest interest and educational value with as much style and grace as the material permits.

But what of the third objective of our Maccabean editor, to assure that "they that are desirous to commit to memory might have ease"? Certainly the modern editor can do little to increase the ability of his readers to remember everything or, perhaps, even anything of what they read, especially in view of the probable state of his own memory. The modern editor can and should, however, recognize that the present rate of growth of published scientific information is incompatible with "committing to memory" as a technique for information retrieval, and he should offer his readers a viable, practical alternative. Information retrieval is today one of medicine's pressing problems, and editors have an obligation to their readers to assure that the information supplied is presented in such a manner that it can be retrieved in the future. This must be done by a system equally practical for the clinician, the laboratory investigator, the historian, and the casual but interested reader.

A considerable number of information retrieval systems is presently available. They vary in complexity, accuracy and cost from shoeboxes filled with file cards to nationwide computer complexes, with a rich and imagina-

tive selection between. All these systems have advantages. All also have disadvantages. That there are so many systems is proof that none is perfect. A limitation common to all retrieval systems is the problem of agreement upon what entries are to be filed for retrieval. In anesthesiology these limitations occur at two levels. First is the matter of definition of terms. Is it *respiration or ventilation? Hypercarbia or hypercapnia? Pyrexia, hyperpyrexia, or hyperthermia?* The lack of a standard nomenclature is a major impediment to development of effective retrieval systems in anesthesiology. The second problem relates to lack of agreement on how detailed a retrieval system should be in handling the contents of individual articles. A brief, straightforward article about the effects of halothane-air anesthesia on mitochondrial metabolism in the rat liver could easily generate two dozen or more entries in a retrieval system if the demand for detail were carried to its ultimate conclusion. There could be entries not only for halothane, of course, but also for each of the metabolic substrates studied, as well as their metabolic products, to say nothing of noninformative entries such as *air, rat, or even animal*. The absurdity of retrieval systems burdened with trivia becomes a major deterrent to their rational use.

ANESTHESIOLOGY has attempted in the past to assist the home indexer, the professional reader, and the international indexer by publishing with each article a list of key words. The purpose of the key words was to provide entry points into retrieval systems. Key words have, however, by and large been a failure. They have failed for the reasons already mentioned: lack of standard nomenclature, and absence of agreement on what should be listed as key words, both problems being accentuated by assigning to the individual authors responsibility for selecting the key words to be published. Because key words as presently employed have so notably failed in performing the function for which they were originally designed, the time has come either to abandon key words or to modify them in a manner so that their usefulness may be increased.

Elimination of key words would hardly help in developing effective retrieval systems. The only thing left, therefore, is to attempt to develop a system of key words which might not only decrease confusion but might even contribute to establishment of a standard nomenclature in anesthesiology. It is in this spirit that a new system of key words was introduced with the January issue of ANESTHESIOLOGY. Admittedly no panacea, it is submitted as a system that deserves what could be termed a "clinical trial" to establish its effectiveness and its weaknesses.

Key words will now be used to define areas of knowledge within anesthesiology, instead of attempting to define individually all the bits and pieces of information of possible interest to the reader. The number of key words will,

therefore, be restricted. Only 139 will be used. This necessitates a supplemental list of sub-headings to facilitate information retrieval. While the supplemental list contains some thousand or so entries, each entry is rigorously defined to eliminate irrelevant items and to avoid ambiguity and repetition. Consistency and accuracy will be assured by having one individual, an anesthesiologist, assign all key words from the established lists. It is hoped the result will help define terms used in anesthesiology and at the same time, provide an orderly and rational grouping of retrieval items of value both to the research investigator searching for a particular piece of information and to the student reviewing large areas of knowledge.

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## Metabolism

**PEDIATRIC HYPERALIMENTATION** All aspects of intravenous hyperalimentation and the various metabolic effects of bypassing the gastrointestinal tract are reviewed. The technique of intravenous alimentation in properly selected patients represents a major advance in our ability to provide nutrients to the patient with a temporarily incompetent gastrointestinal tract. However, many questions regarding the metabolic effects of bypassing the GI tract remain unanswered. A strong plea for further study of these patients is made so that better understanding of the metabolic and endocrine responses to this form of therapy can be achieved.

The various forms of hyperalimentation, ranging from ethyl alcohol through the intravenous administration of lipids to the more complex hyperalimentation mixtures, are discussed. Major complications are metabolism- or catheter-related. Septicemia secondary to misuse or plugging of the catheter is a fre-

quent complication. Persistent glycosuria, dehydration, acidosis, and other metabolic changes, including radiographically evident osseous changes, have all been reported. Among 118 pediatric patients treated by intravenous hyperalimentation, 81 complications and ten deaths were attributable to therapy. The authors suggest strongly that hospitals unable to provide a team with complete control for the routine of parenteral hyperalimentation should not use this technique. Patients requiring such therapy should be referred to a center where all ancillary facilities are available on a 24-hour basis. (Heird, W. C., and others: *Intravenous Alimentation in Pediatric Patients*. *J. Pediatr.* 80:351-372, 1972.) **ABSTRACTER'S COMMENT:** Although the method represents a great advance for critically ill patients in the pediatric age group, one should not lose sight of the need for the earliest possible return to normal feeding via the gastrointestinal tract.