

## What is Biomedical?

By Sidney MacDonald Baker, MD

The purpose of the Defeat Autism Now! project is to identify effective biomedical treatments for autism. But what do we mean by *biomedical*?



The word *biomedical* means that the fundamental principle of biology—the individuality of each living creature—is the first consideration in the medical treatment options for each patient. Thirty-five years of such consideration and common sense combine to form two biomedical questions that capture my thinking about the best path to recovery for each person.

1. Does this person have a special unmet need to *get* something beneficial?
2. Does this person have a special unmet need to *avoid* or *get rid of* something allergenic or toxic?

These questions arise when we start the *easy* first steps of inquiry by asking, “What is the best initial diagnostic/treatment step?” (In other words, on day one we don’t need to decide on the whole plan, just today’s answer to today’s question: what is the best first step?) The same “get and get rid of” questions apply with each subsequent step and recur when we arrive at the *difficult* ultimate question: “Have we done everything we can for this person?”

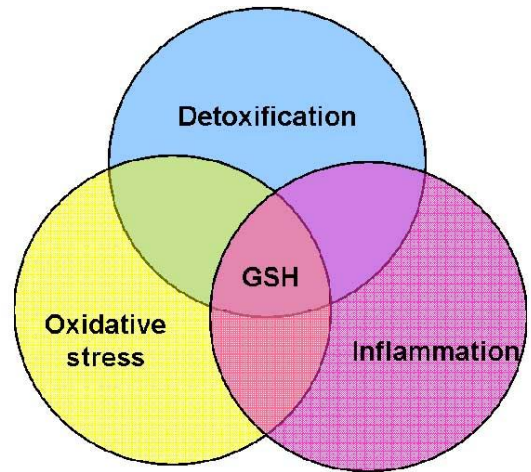
*Biomedical* is a way of thinking about medical problem-solving, not a fixed set of tests and treatments. The subject of biomedical thinking is the individual, the details of whose story provide the grist for the mill that delivers treatment options. There is no one-size-fits-all biomedical treatment *protocol* for autism. But there is a biomedical *approach* to the treatment of each individual child in the spectrum, just as there is for prevention and treatment of chronic illness in general. Getting the questions right is more important than getting the label or diagnosis right. The patient—not the “protocol”—is the expert and expresses his or her expertise by responses to tests and treatments which become the guide for further understanding of the options.

If therapeutic options for each child spring from the details of the child’s history, physical exam, and lab tests and not from a label, then what good is the label or the diagnostic grouping that it names? Diagnostic criteria, relatively unimportant for driving treatment decisions in an individual child, form the basis for research showing general differences between children in the autism spectrum and normal controls.

What are the biggest differences? Among all the many laboratory and clinical measurements showing significant differences between *groups* of children with autism and groups of normal children, three biochemical areas stand out, giving us a framework for understanding causes and treatments for many individuals—individuals who will still differ among themselves in the way these areas interact and respond to treatment. The group differences in the research studies I refer to are many *fold* and therefore demand our attention in ways that would not be the case if the differences were a matter of, say, 15 to 30 percent (a usual threshold for belief that a measured difference is real). Such small but significant differences between normal and autistic children abound and provide the basis for what Boyd Haley, Ph.D. has termed the “biochemical train wreck” of autism. The few major differences between groups of autistic and groups of normal children give us insight into the cause and prevention of the train wreck and should serve as a guide to research and public policy as well as individual biomedical questions.

The three processes in which huge differences are found are pictured in the Venn diagram below. The overlap features a particular molecule GHS (glutathione) whose chemistry is central in all three areas. Difficulties of children in the autism spectrum with respect to detoxification, inflammation and oxidative stress have been studied, described, presented and published, leaving no room for doubt that these three interconnected domains are crucial to understanding the origins and treatments of our children’s problems.

The same diagram describes the chemistry of the major diseases of modern affluent industrialized societies (cardiovascular, cancer, auto-immune, dementia, etc.). It is credible therefore that autism is not a separate problem from all the other diseases of affluent societies in which disturbed ecological balance triggers vicious cycles in the chemistry of inflammation, detoxication and oxidative adaptation. This understanding of the biochemical and ecological context of the autism epidemic moves us away from the current medical paradigm of name-it, blame-it, and tame-it prescription-pad medicine toward a systems approach that focuses on each child as an individual. Such an approach has led to the recovery of thousands of children. How does *biomedical* differ from just plain *medical*? Medical language and thinking are disease-oriented and begin with an effort to understand how to group individuals according to their similarities as defined by signs, symptoms and tests. We speak of “disease entities” that subject their “victims” to “attack.” This is the lingo of sudden, short-lived illnesses that characterized medical practice until about a century ago. There is not much point in quibbling about the way we speak about catching a cold, coming down with measles, or fracturing a collar bone. Giving a suitable name is close to the full expression of our understanding of the process of the acute infection or trauma that produced the illness. It’s not so with chronic illness in which the mechanism is obscure and the name is a description. I do not mean to imply that a descriptive name is a bad thing—we are all reassured by any implication that “they know what I’ve got.” Even a scary name can be better than uncertainty. Especially in children, however, the naming and predicting that go with labels like autism have been a disaster for many families because the name has foreclosed the biomedical questions and the predictions have cut off hope and intention, two key ingredients of inspired clinical decisions and healing.



I do not know how *biomedical* came into the vocabulary of those of us who have started and nurtured the Defeat Autism Now! Project within the Autism Research Institute. The term is generally used for a field of engineering in which human capacities are extended by the use of mechanical or electronic devices. As the word is used now in relation to autism it wrongly implies to some the implication of “alternative’ or fringe medicine. There is no such thing as alternative biochemistry or alternative immunology, the two medical disciplines that overlap in the Venn Diagram and form the basis for our clinical approach to children in the autism spectrum.

The biomedical approach to patients is nothing more than common sense as expressed by questions acknowledging the basic biological fact of individuality, which is Nature’s most powerful adaptive strategy. The term *biomedical* should convey a sense of rejection of the utter nonsense of at least one aspect of current mainstream medicine: the acceptance of the notion that you can take a group of people who are sick in similar ways, give a descriptive name such as autism, colitis, depression, etc. to the group, and then say that the symptoms are caused by the name. If engineers talked that way, bridges would all fall down and the cause would be some translation into Greek or Latin of “Fally-Down Bridge Disease.” Everyone would laugh at them—but they don’t scoff when people say that “autism” is making your kid speechless, self-injurious, or physically ill. In our opinion, they should.

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