

GLOSSARY OF TERMS FOR CATHRYN NAGLER'S WEBINAR, APRIL 28, 2015

The Microbiome	"The microbiome" refers to the collective genomes of the microorganisms that live on and inside the human body (the microbiota). Humans have over 100 trillion microbes in our microbiome. The largest number are found in the digestive system, but distinct populations of microbes are found in many other locations of the body. Collectively, they are essential for a normal, healthy life.
Commensal	In biology, commensalism is a relationship between individuals of two species in which one species obtains benefits from the other without harming or benefiting the latter. It is a one-way beneficial relationship. The microbes in the human gut are considered to be in a <i>commensal</i> relationship with their host – us. If a relationship is two-way, with each organism helping the other, it is said to be <i>symbiotic</i> . A more accurate term to describe the relationship between humans and our microbiome is <i>amphibiotic</i> : the relationship might be good today but harmful tomorrow. All of these terms are used to describe the relationships between microbes and the species they inhabit.
Antibody (IgE)	An antibody, or immunoglobulin, is a high-molecular-weight protein usually found in the serum. It is the main component of the humoral (fluid) part of the immune system. Antibodies are synthesized by B lymphocytes (a specific type of white blood cell) after each has been stimulated to differentiate into a plasma cell. There are five major types of immunoglobulins, one of which is called Immunoglobulin E (IgE). IgEs are an important part of the allergic response in that they initiate the release of histamines from other specialized cells.
Oral (or Immune) Tolerance	Oral tolerance is a state of non-reactivity towards a substance that would normally be expected to initiate an immunological response. Specifically, oral tolerance refers to the lack of an immune response to food ingested <i>via</i> the oral cavity (the mouth).
Antigen	An "antigen," (antibody generator), is any substance that elicits an immune response, often resulting in the production of specific antibodies that will bind to the antigen. A common analogy used to describe this binding is to think of the antigen as a key and the antibody as a lock. The terms "antigen" and "immunogen" are sometimes used interchangeably.
Allergen	An allergen is an antigen that causes an allergic reaction. In more technical terms, the allergic reaction results from stimulation of a specific kind of hypersensitivity (Type I) in individuals, mediated through IgE responses.
Sensitization	This term is used in several ways in immunology, but for our purposes it refers to an immune response to antigens to which we have been previously exposed.
ELISA (Enzyme-Linked ImmunoSorption Assay)	The ELISA is used as a sensitive test for the presence of antigens or antibodies in biological fluids. It uses a colored substance that allows for accurate and quantitative measurement of specific materials in the tested fluid. It is widely used in research labs and as a diagnostic tool in medicine.
Colonization	Our normal intestinal microbiome is the result of colonization of the gut of a newborn by commensal microbes. Once colonized, the gut resists colonization by abnormal or pathological microbes.
Mucosal Barrier	The inner surfaces of our body – including the oral cavity, the respiratory system, the urogenital system, and the digestive system – which are wet, are lined by a variety of epithelial tissues. These wet, mucus-producing epithelia, and their underlying connective tissue, are referred to as a <i>mucosa</i> . A mucosa serves as a physical barrier to the outside world, but more importantly for our purposes, <i>mucosae</i> provide an immune barrier as well. In this capacity, they are referred to as a <i>mucosal barrier</i> .