Jean Mouillet
Homeopathy and the immune system

Reading excerpt

Homeopathy and the immune system
of Jean Mouillet
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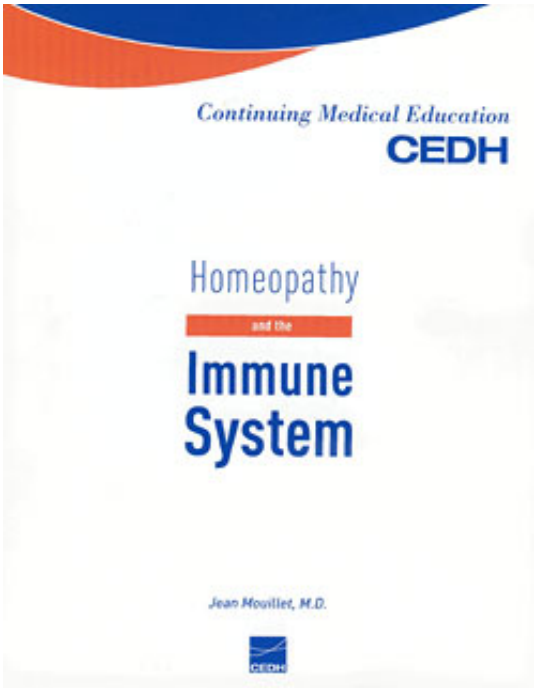

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A Immunity

Immunity corresponds to two very different definitions:
• On the one hand it is the total of all defense mechanisms of a live organism against foreign agents (antigens), especially infec tious agents, i.e. the immune system in the larger sense of the term,
• On the other hand it is the state of a living organism protected by these mechanisms against a given disease.

"Immunity could be defined as the possibility for a person to make a distinction between what the body accepts or rejects."

The first element of this definition corresponds to a permanent dynamic state adapting to the environment, it can translate into a balanced state when all the mechanisms used are "effective", or into a pathological state when these same defense mechanisms are overloaded or disrupted.

Immunity could be defined as the possibility for a person to make a distinction between what the body accepts or rejects.

1 The immune system

The main function of any immune system is distinguishing self from non-self, it is quite hard since in the human body 90% of cells are bacterial cells and only 10% of cells carry a self marker.

This necessary symbiosis is a two-part system:
• Tolerance to antigens (Ag) and bacteria in the first years of life,
• Defense mechanisms targeted at Ag (including germs and bacteria) not encountered in the primary immune tolerance phase.

Antigens can get into the body via two different media:
• Unwounded skin (1.7m^2 in average)
• Mucous membranes: respiratory (80m^2) and especially digestive (350m^2) not forgetting ocular and gynecological mucous membranes.

Excerpt from J. Mouillet, „ Homeopathy and the immune system “
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Any aggression will trigger the immune system, made of two defense walls, natural immunity and acquired immunity.

a

Natural or innate immunity

It is the first defense barrier of the human body; it is innate and non specific.

Several actors are involved:
• Sentinel cells (macrophages, denditric cells) that will prepare the antigens that migrate to the lymph nodes to inform T and B cells.
• About twenty different type of cytokines: interferons (IFN-a/pA/), TNF-a, various interleukins (IL2, IL6, IL12, IL4,...) produced by previous cells and that have, among other properties, a regulating action on the immune response:
• Pro-inflammatory cytokines (TNF-a and various IL),
• Cytokines that are able to shift the Th1/Th2 balance to be used where needed. In fact this shift to either Th1 orTh2 can promote Th1 activity (IL 12 and IFN--/) and thus cell-mediated immunity or Th2 activity by fostering the production of immunoglobulins (humoral immunity).
• Natural killer cells (NK), that identify infected cells as being abnormal and also secrete various cytokines.
• The complement system cooperating with natural antibodies to destroy infected cells.
• And finally fever decreasing viral or bacterial multiplication.

In case of aggression, this first line of defense is activated and triggers an inflammatory reaction.
We need to keep in mind that this innate immunity has pre-existing defenses, an immediate action but also defense mechanisms that remain identical regardless of the foreign agent encountered.

b

Acquired immunity

Also sometimes called adaptive immunity or specific immunity (SI), its mechanisms of action are more refined than innate immunity. These complex mechanisms are able to adapt their response during an infection to improve their recognition of the pathogen.

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This improved response is then retained after the pathogen has been eliminated, in the form of an immunological memory, and allows the adaptive immune system to mount faster and stronger attacks each time this pathogen is encountered.

This immune response involves several elements:
• Organs of the immune system: i.e. bone marrow, thymus and lymph nodes were immunity cells are produced.
• Triggering factors (e.g. viruses, bacteria, parasites, foreign mole cules, various toxic substances).
• Antigen-presenting cells.
• Molecules from the major histocompatibility system (Human Leukocyte Antigen system (HLA) in humans).
• B and T lymphocytes at the core of the reaction.

T lymphocytes
Express activated cytokines triggering a delayed hypersensitivity called cell-mediated immunity.
B-lymphocytes
Helped by T helper cells (cellular cooperation) trigger the production of immunoglobulins or antibodies, at the start of humoral immunity:
- IgM, produced during the body's first contact with an antigen,
- IgG, are more numerous and have a long-lasting action against soluble antigens they can bind to many kinds of pathogens, for example viruses, bacteria, and fungi,
- IgA or secretory IgA slgA) produced in external body secretions (e.g. saliva, tears, breast milk) preventing pathogens from bin ding to mucosal denditric cells or epithelial cells (skin and mucous membranes),
- IgE produced in the skin, digestive tracts, tonsils and upper res piratory tract, involved in allergic reactions via mass cells,
- IgD, acting as antigen receptors on the surface of B-lymphocytes.

B-cells secrete antibodies that bind specifically to the antigen that triggered their production.
Activated during a primary aggression this immune memory is retained by B-cells and leads to a faster and stronger response when encountering this same antigen.

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		Innate immunity	Acquired immunity
Chronology	Primary infection	Quick reaction: first defense wall against pathogens	Second defense wall: delay about 7 days
	Repeated infections	Identical to the primary response	Immune memory => almost immediate reaction
Specificity		Non-specific response	Specific response (Ig and T-cell receptors)
Recognized pathogen-associated molecular patterns (PAMPs)		Fixed and common to several pathogens	Unique to the specific infectious agent
Molecular and cellular effectors		Complement, phagocyte cells and some cytokines	CTL (L cytotoxic T-lymphocyte) and plasma cells producing antibodies helped by innate effectors

The immune system in action: innate immunity / acquired immunity

"The innate immune system is our first line of defense against invading organisms while the adaptive immune system acts as a second line of defense."

The innate immune system (NSI) is our first line of defense against invading organisms while the adaptive immune system (SI cell-mediated and humoral immunity) acts as a second line of defense and also affords protection against re-exposure to the same pathogen. Even though these two arms of the immune system have distinct functions, there is interplay between these systems (i.e., components of the innate immune system influence the adaptive immune system and vice versa).
Newborns acquire this immunity via the digestive tract as it is transmitted passively in utero by the mother to her fetus, and during breastfeeding for newborns. It is exactly the same process for respiratory immunity.

The MALT system *(Mucous associated lymphoid tissue)*
Everything happens in the mucous membranes with mucous associated lymphoid tissue (MALT):
• Gut associated lymphoid tissue (GALT) for the digestive tract (e.g. adenoids, tonsils, aggregates in the appendix and Peyer's patches). Large aggregates of GALT have distinct B cell follicles

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and T cell areas. Antigen presenting accessory cells are also present. It is the induction phase.
At first, the primary gut flora called microbiota brings up the tolerance of the immune system by constantly stimulating it. Under normal conditions this microbiota is not invasive and produces probiotics theoretically beneficial for the subject. However it can trigger severe systematic infections in pathological conditions. These pathologies go from food allergies to autoimmune diseases like Celiac disease or Crohn's disease.
• Bronchial associated lymphoid tissue (BALT) for the upper res piratory tract.Diffuse aggregates of lymphocytes are found in the mucous membranes of the upper airways and protect the respiratory epithelium.

IgA or secretory IgA (sIgA)
Next to the lymphocytes we find in the mucous membranes plasma cells that secrete immunoglobulin A (IgA) changing into secretory IgA (slgA).
These slgA play a major role in defending the body against foreign agents by:
• Regulating the microbiota by reinforcing the mucus defense barrier,
• Promoting GALT maturation, for symbiosis,
• Neutralizing pathogens and preventing infections by bacteria or viruses
• Excluding antigens.
Decreased or absent IgA (selective IgA deficiency) can lead to increased risk of allergies or autoimmune disorders, such as Celiac disease.

On a physiological level, the antigen can follow two paths:
• The antigen can be engulfed by epithelial cells then transmit ted to denditric cells to be presented to B-cells that will produce IgA.
• Or, it follows the lymphatic migration and will bind to other mucous membranes, and can even get back to the GALT.
These multiple locations can bring up some characteristics of the Psoric chronic reactional mode (CRM), especially alternating pathologies.

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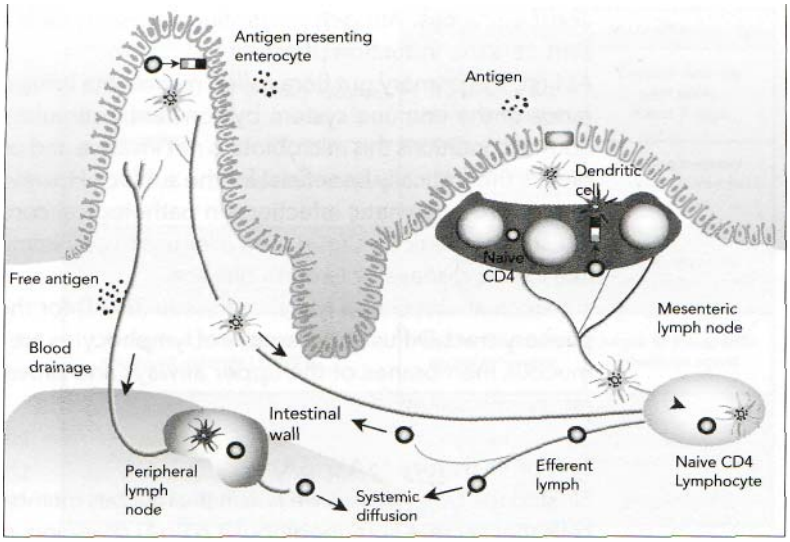

Intestinal immunity
(Pr J.-M. Huraux et al. Virology and Immunology department of the Jussieu University Hospital, Jussieu - France)

Reminder on the continuous immunity stimulation by saprophytic flora.

The humoral immune response varies and answers to several factors:

• Genetic factors specific to each person (HLA system) but above all the interaction between genetic factors and the environment, which will induce physiological or pathological states.

• Nature, dose of the antigens and how they entered the body

• Age:

- Antenatal and neonatal; relative functional immunity.
- In the first years of life: fast increase of the IgM and IgA.
- In elder persons: progressive decrease in the immune response capacities towards antigen, with immune system deficiency affec ting the innate and adaptive immunity, explaining their greater sensitivity to infections.

Let's note also an increased sensitivity to B-cells and self-antigens and a decrease in their suppressing functions, corresponding to the increased frequency of autoimmune disorders.

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• Hormonal factors: pregnancy-induced immunosuppression leads to IL2 and IFN--y inhibition, to "tolerate" the fetal allograft.
• Nutritional factors: malnutrition leads to global, innate and adap tive immune deficiencies

An effective immune response must:
• Avoid an inadequate activation (hypersensitivity orautoimmunity)
• Obtain an adapted response
• Ensure the return to homeostasis

2

Notion of terrain

The notion of terrain is used in homeopathy and conventional medicine, yet their visions differ.

• The homeopathic approach: is based on phenomenology, the preferential study of certain symptoms defining a specific reactional mode common to a group of patients.

• The immunological approach is experimental and analytical, based on the existence of a real individuality explaining:
• The notion of diseases caused by various factors occurring on a predisposed genetic terrain,
• The sensitizing or protecting role of some immunogenetic com
binations according to various aggressions (e.g. bacterial, viral),
• The existence of a very specific immune reaction for each indivi
dual, especially to vaccines.

"The notion of terrain is used in homeopathy and conventional medicine, yet their visions differ."

What brings them closer is appreciating:
• The importance of the aggression, shown by the severity of the symptoms,
• The patient's reactivity according to the number of symptoms exhibited,
• Etiological factors,
• Factors that show a deficiency or alteration of the immune res ponse, especially looking at the way a patient interacts with the environment, including psychosomatic factors through the neuroendocrine system (NES).

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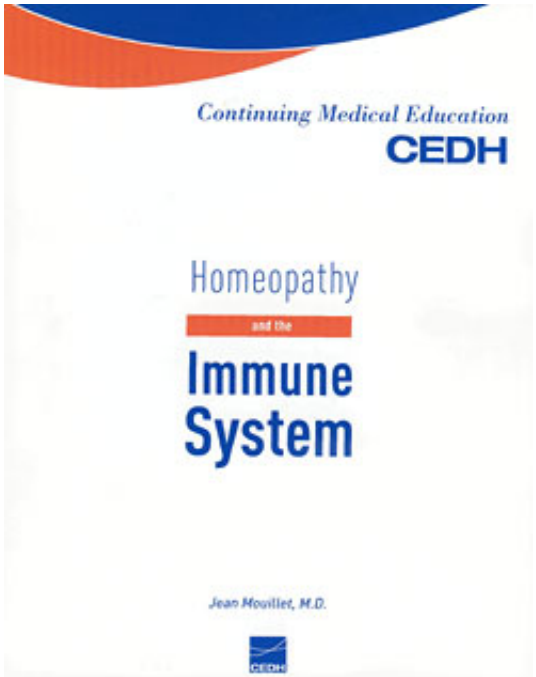

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