

Translation by Patrizia Rustichelli-Stirgwolt

The review of the Italian association of psycho-neuro-endocrine-immunology

Edited by Francesco Bottaccioli

PNEI NEWS

The new knowledge of science and health



VITAL MICROBES

Their importance on overall health: from the mouth to the womb through the gastro-intestinal tract.

Pnei News – bimonthly review – nr 2 – year IX – March – April 2015

PNEI NEWS NR 2 – MARCH – APRIL 2015

EDITORIAL

Page 3. Good bye Pasteur

Francesco Bottaccioli

DOSSIER: THE GUT MICROBIOTA

Page 4. Countless links between oral and general health

Interview with Benedita Sampaio Maia.

In this issue, the microbiologist at Porto University tells us about old and recent findings about the oral microbiome and its key role on overall health.

Paola Emilia Cicerone

Page 7. The symbiosis between human organism and intestinal microorganisms

The surface of the gastro-intestinal tract harbors an articulated eco-system whose components interact with each other. The emerging trophic and chemical-physical properties of these interactions are proving to play an increasingly important role in the PNEI network.

Francesco Sforza

Page 12. The influence of microbes during pregnancy

The recent findings on microbiota show that the uterine environment is not sterile. The fetus comes into contact with the maternal microbiota at a very early stage.

Francesco Bottaccioli

INTEGRATIVE TREATMENTS

Page 15. Healing relationships. When also the pharmacist is PNEI oriented

Pharmacy has become a reference point to meet the needs of citizens that would be otherwise entangled in a net of specialists whose indications are often unclear if not conflicting. The pharmacist is developing a new role that focuses on the individual relationship. This is an essential role and it fully belongs to the new model of integrative healthcare.

Massimiliano Descisciolo

PSYCHOLOGY

Page 20. Attachment and trauma

The study on long-term effects of the style of attachment on the brain and the entire organism provides an important key for the diagnoses of psychiatric disorders and pathologies in Internal Medicine.

Maria Giuseppina Mantione, Antonio Onofri

EDITORIAL

Good bye Pasteur

Francesco Bottaccioli – Master Director of “PNEI and Science of Integrative Care”, University of Aquila

The Dossier of this issue is devoted to the human microbiota, a well known subject even among the most distracted health operators. As it is our habit, we cover this topic by communicating the most updated knowledge and by pointing out the implications in healthcare that these news findings involve. The most intriguing evidence contradicts the well-established idea that the fetus resides in a sterile environment.

In reality the bacterial exposure begins with the pregnancy and continues during the development of the fetus. It begins with small colonies of microbes that are very similar to those found in the mother’s oral cavity.

This finding involves a first practical implication: until now a good oral hygiene and dental prevention and care were considered important in order to avoid mouth inflammations and/or gingival infections that would be very dangerous to treat with antibiotics during a pregnancy. Now we know that a good oral health is important as it also affects the quality of the developing microbiota in the unborn baby.

This microbial imprinting in womb will increase during delivery and lactation. A vaginal delivery and breastfeeding represents a deep biological base for the mother-child contact and the colonies of microbes hence transferred are considered optimal. On the contrary, the adaptation to the environment for the newborn baby will be more imbalanced and exposed to more risks of developing immune dysregulation disorders such as allergies and autoimmune diseases even at an adult age.

Thus additional practical implications emerge from this picture: the key role played by nutrition during pregnancy, lactation, weaning and the absolute importance of the kind of therapies administered during pregnancy and the first stages of life. In this dossier it is documented how an inflammatory maternal diet during pregnancy triggers an inflammation in the fetus and increases the risk of premature delivery. Data have shown that the use of antibiotics before a C-section alters the microbiota of the newborn babies to their 6 months of life.

Not to mention the reckless use of antibiotics for infants.

We are living a change of paradigm on the relationship between microbes and life.

The old paradigm started with the research of Louis Pasteur between the 1850s and 1870s. It was while observing the fermentation process that the great biochemist proved that microbes are everywhere and can be the cause for infectious diseases¹. As Louis Pasteur himself explains², in 1878 the French surgeon Charles-Emmanuel Sédillot created the neologism “microbe”. Since that moment on, due to the growing pharmacological research, microbes have been considered as dangerous, as the cause of diseases and thus to be eliminated at any cost.

The current paradigm on microbiota changes substantially our vision on microbes indicating new medical practices.

This point leads to a topic for further discussion or thought: paradigm shifts are absolutely real, in spite of the strong attacks still directed against Thomas Kuhn³ nowadays. After each scientific revolution, the scientists see the same object with a different vision. Obviously the real object still exists. In this case it is the microbes discovered by Pasteur. For more than a century medicine thought its task was to eliminate them anyhow.

The current paradigm considers microbes in their vital processes, depicting new relationships that can be either conflicting or cooperative between them and the organism. This also explains how the progress of knowledge works: oscillating between preservation and revolution. The scientific revolution preserves the concept of microbe as vital unit but revolutionizes it in the relational concept of microbiota. The microbe still exists but it is not considered the same as before.

1. Louis Pasteur: *Les microbes organizes, leur rôle dans la Fermentation, la Putréfaction et la Contagion* (1878)
2. . Op. cit.
3. At this regard: Paolo Flores D'Arcais, *Micromega*, *Almanacco di Filosofia* 2/2015, page, 12