

ERICE INTERNATIONAL SEMINARS

49th Session

SESSION 10

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INTERDISCIPLINARY RESEARCH CENTRE OF EXCELLENCE FOR CHILDREN WELFARE

Chairman A. Zichichi –

Co-chair N. Charpak, S. Parmigiani, F.Vom Saal

Strict adherence to science is imperative during this period in our history when science is being marginalized and dismissed while decisions are being made that could have widespread impact on the health of our children for generations to come.(Theo Colborn- The Endo Disruption Exchange-TDEX)

Generated by **discussions between members** (Fred vom Saal and myself) **of the pollution and mother-child** (Nathalie Charpack and Julieta Villegas) **PMP's** during previous International Seminars on Planetary Emergencies

The Center is is devoted to

the development of innovative research projects on multiple and synergic environmental risks (ranging from chemical pollution to cultural situations) that compromise the pre- peri- and post-natal development of children affecting physiology, brain and behavior.

An Interdisciplinary approach

Objectives

detection of **emerging issues that affect the welfare of children** and the establishment of **an international research team constituted by scientists from different disciplines to promote scientific knowledge, research and action proposals.**

research projects (animal models and humans)

two emerging topics: (1): **a)Developmental exposure to Endocrine disrupting chemicals (EDCs) and b) culturally impoverished mother-Infant social relationships.**

(2) prematurity and low birth weight and Universal access to Kangaroo Mother Care (KMC- directed by N.Charpack)

Developmental exposure to Endocrine disrupting chemicals (EDCs)*:Effects on physiology, brain and behavior

*interfere with the endocrine system by mimicking the action of natural hormones , *thus biologically active at very low doses* (even if less potent than the natural products, are present in living tissue at concentrations millions of times higher that the natural hormones)

An Inter disciplinary group of scientists **gathered twice** for *workshops*(directors **T. Colborn - P. Palanza – S. Parmigiani – F. vom Saal**) under the auspices of *the International School of Ethology* at the **Ettore Majorana Centre for Scientific Culture** in Erice.

"Environmental Endocrine-Disrupting Chemicals: Neural, Endocrine and Behavioral Effects"

November 5-10, 1995

"Impact of Endocrine Disrupters on Brain Development and Behavior"

March 15 - 20 , 2002

"Autism, ADHD, childhood cancers, childhood diabetes, childhood behavior problems, Parkinson disorders... Alzheimer's disorders...testicular cancer...the epidemic of prostate cancer and breast cancers—the list just keeps growing. And exposure to chemicals while in the womb prior to birth could be contributing to these disturbing findings."

THEO COLBORN

President, The Endo Disruption Exchange (TEDX)



The vast majority of the thousands of chemicals annually introduced and potentially dangerous for animal and human health **are not tested scientifically** (chemical technology without science) for the **intergenerational effects that are initiated during development in the uterus.** (Theo Colborn ,1927-2014, dedicated herself to revealing the dangers of endocrine disrupting chemicals to wildlife, humans and the environment.)

The Erice consensus Statement on environmental endocrine disrupting chemicals was published after the 1995 workshop

...as scientist we seek only the truth; we believe global problems require global solutions; and our goal should be "**science without borders and laboratories without walls**" (adapted from: Paul Dirac, Piotr Kapitza, and Antonio Zichichi, Erice Statement, 1982).

Agreement

EDC range across all continents and oceans. Living organisms are **exposed in the womb (in mammals)** or, in fish, amphibians, reptiles, and birds (in the egg) - **Every pregnant woman in the world has endocrine disruptors in her body that are transferred to the fetus** **Exposure during early(pre and postnatal) development can reduce intellectual capacity and social adaptability.** Interfere with **sex and thyroid hormone function** leading to **disruption of brain, sexual development and behavioral abnormalities.** **Loss of this in nature can change the character of human societies.**

goals

- **ascertaining biologic markers of exposure to and effects on the organism (human included);**
- **strategies for increasing communications and collaboration among disciplines to optimize resources for future research**
- **translating the findings of research into information that is useful for decision makers and the public.**

From the speakers of this session you'll learn how this part of research will be carried out in animal models of translational medicine and neuroscience and at clinical levels in humans

Other issues include: mother-infant emotional relationship **effects on cognitive development and clinical implications** a) **the role of mirror neurons in the mother infant attachment (monkey as animal model)** and b) **mother-child attachment and behavioral development in impoverished cultural environments**