



**Neonatology and Osteopathy project**

*Foundation C.O.ME. Collaboration*

Our NE-O Development Program leadership team oversees the foundation's work in improving inter-professional collaboration on neonatology, preterm infants' health and growth.

The NE-O team is a multidisciplinary group aiming at studying the role of osteopathy in the field of neonatology.

## **General Description**

### *Introduction*

The improvement of quality of life in preterm infants has been set as one of the major priorities by international agencies. Lawn et al (Lancet 2014) reviewed the MDG and targeted a significant enhancement of newborn therapies by 2035. Although the reduction of the mortality is one of the highest priorities, other relevant milestones are related to reduction morbidity, thus the consequences of prematurity. It has been estimated that 15 million preterm births, especially of those younger than 32 weeks' gestation, are at the highest risk of neonatal death, with ongoing post-neonatal mortality risk, and important risk of long-term neurodevelopmental impairment, stunting, and non-communicable conditions. 4 million neonates annually have other life-threatening or disabling conditions including intrapartum-related brain injuries, severe bacterial infections, or pathological jaundice. As a matter of fact, it has been argued that failure to improve birth outcomes by 2035 will result in an estimated 116 million deaths, 99 million survivors with disability or lost development potential, and millions of adults at increased risk of non-communicable diseases after low birthweight (Lawn 2014).

Within these worldwide scenario and long-term health care perspectives, alternative and complementary approaches aiming at improving health conditions in preterm infants are recommended. Among those, osteopathic manipulative treatment (OMT) has been showed to reduce the length of stay, and thus health status on preterm infants (Cerritelli 2015, 2013). Moreover, the use of OMT produced a net saving of almost 1,600€ per newborn, determining an overall net saving of more than 500,000€ during the 14 month study period (Cerritelli 2015). Notwithstanding the positive results, concerns are still about the generalisability of findings, mechanisms of actions and disease-specific results of osteopathy.

Therefore the NE-O project has the aim to fulfill these gaps and produce compelling evidence regarding the short-, medium-, and long- term biological, neurological and health-related effects of osteopathic treatment on preterm infants. This can produce data to explore the extent to which osteopathy can play a role on disabilities following neonatal conditions and therefore the economical value of osteopathic approach.

### *Working streams*

The NE-O project is a multi-centre research project with the following general working streams:

1. health information: the development of a data collection platforms, including a minimum perinatal dataset with standard metrics for counting births, stillbirths, neonatal deaths, birthweight, and gestational age, plus maternal outcomes and key programme coverage data, in association with osteopathic data.
2. health-related research: exploring the role of osteopathy on improving health outcomes in pathological newborn samples and the relevance of OMT as preventive approach on non-communicable diseases
  1. [efficacious role]: OMT and disability
    1. tools: standardised and simplified disability assessments of routine use
    2. neurodevelopmental outcomes
  2. [preventive role]: OMT and long-term risk of NCDs
  3. [social research]: as a consequence of health-related research, the impact of OMT on family
3. biological research: deepening the understanding of the biological effects of osteopathy on preterm infants
  1. stress-related outcomes
  2. inflammatory outcomes
  4. neurological research: exploring the sequelae of OMT in regards to central and peripheral nervous system functions
5. public health research: the impact of OMT and its use on health care system
  1. health improvements [DALY, HALE]
  2. health economics
  3. health service
  4. health policy

Each working stream will be composed by a multidisciplinary team with specific skills. This will allow the group to achieve general and specific aims as well as the critical discussion regarding health care policies, procedures, information, divulgation, publishing.

Goals of the group will be to promote/encourage multidisciplinary collaborations to enhance quality of practice. This might led to discuss the possibility to include some traditional, complementary and alternative medicines within health care services. Specifically, in the context of Neonatal Intensive Care Units (NICU), team working has been tested since mid 90s to implement procedures and deliver better practices. However, to date, a fully integration of multidisciplinary collaborations is still limited, although promising results in terms of clinical effectiveness and reduction of costs. Therefore, the project might fulfill this gap and promote the interprofessional collaboration as

innovation tool for improving neonatology practice. Moreover, it will open a discussion table of value to government policy-makers, regulators, researchers and health-care practitioners to debate on better evidence-based multidisciplinary practices.

## Partners

further information at <http://www.comecollaboration.org/it/ne-o/partner/>

Partners of the NE-O project are both public hospitals and universities.

The project includes several collaborations with different public hospitals (listed below):

- Arcispedale S.Maria nuova – Department of obstetrics, gynaecology and pediatrics – Neonatology unit - Reggio Emilia
- Azienda Ospedaliera di Rilievo Nazionale e di Alta Specializzazione Garibaldi - U.O.C. Neonatology – I.C.U. - Catania
- San Pietro Fatebenefratelli hospital – pediatrics and neonatology unit - Rome
- Bambini Vittore Buzzi hospital - Neonatology – I.C.U. - Milan
- ASST dei Sette Laghi - Neonatology – I.C.U. and pediatrics - Varese
- Azienda Ospedaliero-Universitaria of Modena – Maternal and child department – Complex unit of neonatology - Modena
- Azienda Socio-Sanitaria Territoriale - Pediatrics and neonatal pathology unit - Vimercate
- Foundation Poliambulanza Istituto Ospedaliero - Neonatology – I.C.U. - Brescia
- Macerata hospital – Complex unit of pediatrics-neonatology - Macerata
- Fornaroli Magenta hospital - Pediatrics and neonatal pathology unit - Magenta
- Castelli Verbania hospital - Maternal and child department - Verbania
- Ente Ospedaliero Ospedali Galliera - Pediatrics and neonatal pathology unit – Genoa
- Gaslini hospital - Neonatology – I.C.U. - Genoa
- Salesi Hospital - Neonatology – I.C.U. - Ancona

## Universities

Different european universities are constantly collaborating with the NE-O project.

- Liverpool John Moore University – Faculty of Science – School of natural sciences and psychology - Liverpool - UK

- University of Chieti-Pescara – Department of Neuroscience, imaging and clinical sciences – Chieti - Italy
- University of Milano-Bicocca – Department of Psychology – Milan - Italy
- University of Modena and Reggio Emilia – Department of Medical and Surgical Sciences for Children and Adults – Modena – Italy
- University of Genoa – Department of Medicine – Genoa – Italy

## References

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