

# Comparing the use of gestational age or weight to estimate Neonatal Endotracheal tube Depth of Insertion (NEDI)

<b>Submission date</b> 21/02/2012	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 12/06/2012	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 17/01/2019	<b>Condition category</b> Respiratory	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Newborn babies who have difficulty breathing after birth are often supported with a ventilator (respirator). Babies are ventilated through a plastic tube called an endotracheal tube (ETT) which is inserted into the trachea (windpipe) through the mouth. ETTs are marked each centimetre along their length from the tip so that it is known how far from the baby's lips the tube has been inserted. It is important that the tip of the ETT is correctly positioned in the trachea above the carina (the point where it divides to supply the left and right lung) so that support is given evenly to both lungs. Most doctors estimate how far they should insert the ETT using the baby's weight. Studies suggest that estimating the depth of insertion using their gestational age may be more accurate. We aim to determine which method is more accurate.

### Who can participate?

Newborn babies who are having an ETT inserted for respiratory support in the Neonatal Intensive Care Unit (NICU).

### What does the study involve?

Babies enrolled in this study will have the depth of insertion of the ETT estimated using either their gestational age or their birth weight.

### What are the possible benefits and risks of participating?

One group may have a higher proportion of correctly placed ETTs. There are no more risks above those inherent in needing intubation and ventilation

### Where is the study run from?

The National Maternity Hospital, Dublin, Ireland.

### When is study starting and how long is it expected to run for?

The study started on 10/01/2012 and we estimate that it will run for 1 year.

Who is funding the study?  
National Children's Research Centre (Ireland)

Who is the main contact?  
Dr Colm O'Donnell

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Colm O'Donnell

**Contact details**  
The National Maternity Hospital  
Holles Street  
Dublin  
Ireland  
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## Additional identifiers

**Protocol serial number**  
N/A

## Study information

**Scientific Title**  
A randomised controlled trial comparing the use of gestational age or weight to estimate Neonatal Endotracheal tube Depth of Insertion (NEDI)

**Acronym**  
NEDI

**Study objectives**  
Compared to using a newborn infant's weight, using the gestational age to estimate the appropriate depth of insertion of an oral endotracheal tube (ETT) will result in more correctly placed ETTs on chest X-ray (i.e. tip of ETT between upper border of the first thoracic vertebra, T1, and the lower border of the second thoracic vertebra, T2)

**Ethics approval required**  
Old ethics approval format

**Ethics approval(s)**  
Ethics Committee at The National Maternity Hospital, Holles Street, Dublin, Ireland, 30/11/2011, ref: NEDI001

**Study design**

Single centre randomised trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Neonatal respiratory support

**Interventions**

Infants in both treatment arms will have an endotracheal tube placed via the mouth

Infants randomised to WEIGHT will have the ETT secured at the lips at a depth determined by the formula Insertion Depth (cm) = 6 + (birth weight, kg)

Infants randomised to GESTATIONAL AGE will have the ETT secured at the lips at a depth determined by the following table

ETT length at lip (cm) Corrected gestation (weeks)

5.5 23 24

6.0 25 26

6.5 27 29

7.0 30 32

7.5 33 34

8.0 35 37

8.5 38 40

9.0 41 43

**Intervention Type**

Other

**Phase**

Not Applicable

**Primary outcome(s)**

Endotracheal tube (ETT) tip between the upper border of the 1st thoracic vertebra (T1) and the lower border of the second thoracic vertebra (T2) on chest X-ray

**Key secondary outcome(s)**

1. Number of extubations before chest x-ray
2. Repositioning of ETT following chest x-ray
3. Unequal lung expansion on initial chest x-ray following intubation
4. Air leaks - pneumothorax, pneumomediastinum, pulmonary interstitial emphysema
5. Duration of ventilation
6. Oxygen therapy at 28 days
7. Oxygen at 36 weeks
8. Death before discharge from hospital

**Completion date**

30/09/2012

# Eligibility

## Key inclusion criteria

Newly born infants [term ( $\geq$  37 weeks' gestation) or preterm ( $<$  37 weeks' gestation)] who are intubated in the neonatal intensive care unit

## Participant type(s)

Patient

## Healthy volunteers allowed

No

## Age group

Neonate

## Sex

All

## Key exclusion criteria

Infants with known upper airway (e.g. Pierre-Robin sequence) or lung (congenital diaphragmatic hernia) anomalies

## Date of first enrolment

10/01/2012

## Date of final enrolment

30/09/2012

# Locations

## Countries of recruitment

Ireland

## Study participating centre

The National Maternity Hospital

Dublin

Ireland

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# Sponsor information

## Organisation

The National Maternity Hospital (Ireland)

ROR

<https://ror.org/03jcx214>

## Funder(s)

### Funder type

Hospital/treatment centre

### Funder Name

National Children's Research Centre (Ireland)

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated and analysed in this study are available upon request from Prof. Colm O' Donnell for a period of 5 years. Consent for sharing this data from the participants' parent(s) /guardian(s) was not specifically sought at the time of study entry. The decision whether to share anonymised data will be made based on a description of the purpose for which the data is sought, and the types of planned analyses

### IPD sharing plan summary

Available on request

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	01/02/2015	16/01/2019	Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes