



**Universiteit
Leiden**
The Netherlands

Spontaneous breathing and respiratory support of preterm infants at birth

Pas, A.B. de

Citation

Pas, A. B. de. (2009, March 5). *Spontaneous breathing and respiratory support of preterm infants at birth*. Retrieved from <https://hdl.handle.net/1887/13595>

Version: Corrected Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/13595>

Note: To cite this publication please use the final published version (if applicable).

Spontaneous breathing and respiratory support of preterm infants at birth

ISBN/EAN: 978-90-9023975-0

Printed by: Pasmans Offsetdrukkerij BV, Den Haag

Arjan B te Pas was recipient of a grant from the Ter Meulen Fund, Royal Netherlands Academy of Arts and Sciences, The Netherlands and recipient of a postgraduate scholarship from the Royal Women's Hospital, Melbourne, Australia.

The printing of this thesis was financially supported by:

Cardinal Health Nederland BV, J.E Jurriaanse Stichting, Fisher & Paykel Healthcare SAS, Netherlands
Teleflex Medical BV, Nestlé Nutrition, Abbott BV, Heinen + Löwenstein Nederland BV.

© 2009 A.B.te Pas

Spontaneous breathing and respiratory support of preterm infants at birth

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 5 maart 2009
klokke 13:45 uur

door

Arjan Benedictus te Pas

geboren te Spijkenisse in 1968

Promotiecommissie

Promotor: Prof. Dr. F.J. Walther

Copromotor: Prof. C.J. Morley

Referent: Dr. A.H. van Kaam

Overige leden: Prof. Dr. J.M. Wit
Prof. Dr. H.A. Delemarre-van de Waal

Table of Contents

| | | |
|-----------|---|---|
| Chapter 1 | General introduction / Outline of this thesis | 9 |
|-----------|---|---|

Part 1 • Breathing at birth

| | | |
|-----------|--|----|
| Chapter 2 | From liquid to air: breathing after birth <i>J Pediatr. 2008;152(5):607-11</i> | 19 |
| Chapter 3 | Spontaneous breathing patterns of very preterm infants treated with continuous positive airway pressure at birth <i>Pediatr Res. 2008 Sep;64(3):281-5</i> | 31 |
| Chapter 4 | Breathing patterns in preterm and term infants immediately after birth <i>Pediatr Res. 2009, in press</i> | 45 |

Part 2 • Respiratory support at birth

| | | |
|-----------|---|-----|
| Chapter 5 | Ventilation of preterm infants in the delivery room <i>Based on: te Pas AB, Walther FJ. Ventilation of very preterm infants in the delivery room Current Ped Rev 2006;3: 187-197</i> | 61 |
| Chapter 6 | Early nasal continuous positive airway pressure and low threshold for intubation in very preterm infants <i>Acta Paediatr. 2008 Aug;97(8):1049-54</i> | 87 |
| Chapter 7 | Early respiratory management of respiratory distress syndrome in very preterm infants and bronchopulmonary dysplasia: a case-control study <i>PLoS ONE 2007;2:e192.</i> | 99 |
| Chapter 8 | A randomized controlled trial of delivery room respiratory management in very preterm infants <i>Pediatrics 2007;120:322-9</i> | 113 |
| Chapter 9 | Positive end expiratory pressure is required to develop a functional residual capacity in preterm rabbits ventilated from birth. <i>Submitted</i> | 127 |

| | | |
|------------|--|-----|
| Chapter 10 | Establishing functional residual capacity at birth: the effect of sustained inflation and positive end expiratory pressure in a preterm rabbit model <i>Pediatr Res. 2009, accepted for publication</i> | 143 |
| Chapter 11 | Effect of sustained inflation length on establishing functional residual capacity at birth in ventilated premature rabbits <i>Submitted</i> | 159 |
| Chapter 12 | General discussion / Conclusion / Future Perspectives | 175 |
| Chapter 13 | Summary | 187 |
| Chapter 14 | Summary in Dutch | 193 |
| | Authors and affiliations | 201 |
| | List of abbreviations | 203 |
| | Curriculum Vitae | 205 |
| | Publications | 207 |

Voor Sara, Leyla en Diba

