

Supplementary oxygen is
NOT mandatory during
regional anaesthesia for
Caesarean section.

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OUTLINE:

- *Physiological principles.*
- *Reasons to use oxygen.*
- *Reasons not to use oxygen.*

The feto-placental unit is adapted to inefficient oxygen transfer

- High fetal haematocrit.
- High fetal oxygen affinity.
- High fetal cardiac output.
- Double Bohr effect.

C O N C L U S I O N

- The fetus is well-adapted to low PO_2
- Attempts to increase PO_2 above normal physiological values are unnecessary

Reasons to use oxygen.

- *To increase fetal oxygenation.*
- *To increase maternal safety if hypotension or hypoventilation.*

Oxygen Transfer from Mother to Fetus during Cesarean Section under Epidural Anesthesia

Sivam Ramanathan, MD,* Shamala Gandhi, MD,† James Arismendy, AAS,‡
Jack Chalon, MD,§ and Herman Turndorf, MD||

FORUM

**Supplementary oxygen administration for elective
Caesarean section under spinal anaesthesia**

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Supplementary oxygen for elective Caesarean section under spinal anaesthesia: useful in prolonged uterine incision-to-delivery interval?†

K. S. Khaw^{1*}, W. D. Ngan Kee¹, A. Lee¹, C. C. Wang², A. S. Y. Wong¹, F. Ng¹ and M. S. Rogers²

British Journal of Obstetrics and Gynaecology
August 2000, Vol 107, pp. 987–994

Cord blood oxygen saturation in vigorous infants at birth: what is normal?

G. M. Arikan *Registrar*, H. S. Scholz *Resident*, E. Petru *Professor*, M. C. H. Haeusler *Professor*,
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Hypotension is not treated with oxygen....

Prevention of Hypotension during Spinal Anesthesia for Cesarean Delivery

An Effective Technique Using Combination Phenylephrine Infusion and Crystalloid Cobydration

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Floria F. Ng, R.N., B.A.Sc.‡

Respiratory Function?

Changes in pulmonary function tests during spinal anaesthesia for caesarean section

D. A. Conn, A. C. Moffat, G. D. R. McCallum, J. Thorburn
Department of Anaesthetics, Western Infirmary, Glasgow, UK

Anaesthesia, 1996, Volume 51, pages 1120-1122

Respiratory effects of spinal anaesthesia for Caesarean section

M. C. KELLY, K. T. J. FITZPATRICK AND D. A. HILL

Anaesthesia, 2004, 59, pages 743-749

Impact of spinal anaesthesia and obesity on maternal respiratory function during elective Caesarean section*

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Pulse oximetry easily
identifies any patient
who needs oxygen!

- Simple masks & nasal cannulae don't meaningfully increase fetal oxygen.
- Mothers & babies don't normally benefit from supranormal oxygen.
- A few may benefit: identified by pulse oximetry.
- Giving oxygen routinely to every patient is a "shotgun" approach.

Emergencies

OBSTETRICS

**Supplementary oxygen for emergency Caesarean section
under regional anaesthesia^{†‡}**

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Can it do any harm?

Supplemental Oxygen:

THE DARK SIDE

- Distraction from the real issues.
- Risks of using common gas outlet.
- Discomfort & interference with communication.
- Uteroplacental vasoconstriction.
- Free radical generation.

Free Radicals & Pathological Changes:

- Ischaemia-reperfusion injury.
- Bronchopulmonary dysplasia.
- Retinopathy of prematurity.
- Necrotizing enterocolitis.
- Intracranial haemorrhage.



PEDIATRICS[®]

**Resuscitation of Asphyxiated Newborn Infants With Room Air or Oxygen: An
International Controlled Trial: The Resair 2 Study**

Ola Didrik Saugstad, Terje Rootwelt and Odd Aalen

Pediatrics 1998;102;1-

DOI: 10.1542/peds.102.1.e1

Summary:

- The fetus is well adapted
- No benefit from O₂
- Use specific therapies
- Patients, not numbers
- Use clinical judgment
- Don't lose sight
- Beware the dark side!
- First, do no harm