# A Comprehensive Guide to CRQ for Final FRCA




*Edited by*
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# Chapter 47

# Anaesthesia and cerebral palsy

*Meenal Rana*

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## Questions

A 10-year-old child with cerebral palsy (CP) is scheduled for elective orthopaedic surgery.

1. Give the National Institute for Health and Care Excellence (NICE) definition of 'cerebral palsy'. (1 mark)
2. List three antenatal and three postnatal risk factors for cerebral palsy. (6 marks)
3. List only any 10 clinical features of cerebral palsy. (10 marks)
4. List three drugs that can be used to treat hypertonia in patients with cerebral palsy. (3 marks)

## Sample answers

1. Give the National Institute for Health and Care Excellence (NICE) definition of 'cerebral palsy'. (1 mark)

   Cerebral palsy is defined as an umbrella term for a group of permanent movement and posture disorders that limit activity.

2. List three antenatal and three postnatal risk factors for cerebral palsy. (6 marks)

   *Antenatal (70–80%):*

   - *Maternal factors:* Toxoplasmosis, syphilis, varicella zoster and parvovirus B19, rubella, cytomegalovirus, herpes simplex virus (TORCH) infection
   - *Fetal factors:* Teratogen exposure, genetic and metabolic disorders, multiple births and prematurity
   - *Social factors:* Low socio-economic status

*Perinatal (~10%):* Birth asphyxia and trauma, e.g. non-vertex presentation, placental abruption, ruptured uterus, prolonged or obstructed labour, post-maturity

*Postnatal (~10%):*

- *Infections:*
  - Neonatal sepsis
  - Early onset meningitis
- *Trauma:* Head injuries before 2 years
- *Other:*
  - Hyperbilirubinaemia respiratory distress
  - Intraventricular haemorrhage

*Types of cerebral palsy:*

- Spastic (most common, involves hypertonia and muscle stiffness)
- Dyskinetic (involuntary movements)
- Ataxic (co-ordination and balance issues)
- Mixed (combination of symptoms)

**3.** List only any 10 clinical features of cerebral palsy. (10 marks)

*Airway:*

- Temporomandibular spasticity
- Poor dentition

*Respiratory function:*

- Increased risk of respiratory complications due to scoliosis
- Weak respiratory muscles
- Chronic lung diseases
- Chronic aspiration
- Increased oral secretion

*Gastrointestinal issues:* Increased risk of gastro-oesophageal reflux and aspiration

*Neuromuscular considerations:*

- Altered responses to muscle relaxants; increased sensitivity to depolarising agents and resistance to nondepolarising agents
- Fixed flexion deformities with potential difficulty in getting vascular access and performing regional anaesthesia procedures
- Osteoporosis risk of low impact fractures
- Higher risk of bleeding for surgery done for correction of above deformity
- Higher incidence of epilepsy
- Higher incidence of mental health problems

*Urological:* Neuropathic bladder and incontinence

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*Thermoregulation:* Impaired thermoregulation leading to risks of hypothermia or hyperthermia

*Autonomic dysfunction:* Potential for unpredictable cardiovascular responses

*Communication difficulties*

*Learning and intellectual disability*

*Sensory impairment (visual/hearing)*

**4.** List three drugs that can be used to treat hypertonia in patients with cerebral palsy. (3 marks)

**i.** Baclofen

**ii.** Diazepam

**iii.** Gabapentin

**iv.** Clonidine

**v.** Botulinum toxin A

## Further reading

1. Hayakawa H, Pincott ES, Ali U. Anaesthesia and cerebral palsy. BJA Educ 2022; 22:26–32.

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# A Comprehensive Guide to CRQ for Final FRCA

The Final Fellowship of the Royal College of Anaesthetists (FRCA) examination is a globally recognized standard for assessing anesthetist competency. Reflecting the shift from Short Answer Questions (SAQs) to Constructed Response Questions (CRQs), this book addresses key clinical scenarios and fundamental science topics, providing concise answers with detailed explanations where needed. The principal authors, Drs Meenal Rana and Anil Darbar, along with the contributors, include consultant anesthetist, intensivists, senior anesthetic trainees, and a consultant obstetrician and gynecologist, all serving in the National Health Service (NHS).

***Key Features***

- Comprehensive coverage of clinical and basic science topics relevant to the FRCA examination
- Focus on the updated CRQ format aligned with the RCOA curriculum
- Precise answers complemented by detailed explanations for in-depth understanding
- A practical resource for mastering the evolving FRCA examination pattern

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JP medical publishers

www.jpmedpub.com

ISBN 978-1-78779-187-9

9 781787 791879