

# ANXIOLYSIS IN DIAGNOSTIC IMAGING — NO WORRIES?

Himasha Nanayakkara<sup>1</sup>, John Cockburn<sup>2</sup>

Dept. of Medicine<sup>1</sup>

Dept of Medical Imaging<sup>2</sup>, The Canberra Hospital, ACT, Australia, 2605



ACT  
Government

Canberra Health  
Services

## INTRODUCTION

- Patients experience anxiety and claustrophobia-related symptoms during diagnostic scans in medical imaging
- Up to 15% of patient's undergoing an MRI will suffer from anxiety causing the scan to be aborted or require sedation to complete it (Dewey et al., 2007)
- Anxiety may affect patient satisfaction, the technical quality of a scan, cause delays in diagnosis and treatment and impair patient outcomes.
- Anxiolysis (minimal sedation) aims to reduce anxiety and excessive motion, resulting in improved satisfaction, image quality efficiency
- While over-sedation can lead to increased recovery time there is a negligible increased risk of complications from standard dosage as long as due regard is given to patients with specific conditions (ASA, 2002).
- ANZCA released a position statement PS09 (ANZCA, 2014) for guidelines around sedation for diagnostic procedures, however the wording of the document and its formulation is open to mis-interpretation.
- RANZCR has endorsed AS09 but there remains scope for misinterpretation.
- This poster aims to clarify anxiolysis in radiology. It defines a diagnostic scan, a diagnostic procedure, anxiolysis, minimal sedation and conscious sedation such that no over-interpretation is possible. We recommend that in future endorsements of position statements, explicit definitions such as the ones we propose are included to avoid misinterpretations in the future.

## BACKGROUND ANZCA Position statement PS09 (2014)

The following organisations have endorsed this document:

- Australasian College for Emergency Medicine
- College of Intensive Care Medicine of Australia and New Zealand
- Gastroenterological Society of Australia
- New Zealand Society for Gastroenterology
- Royal Australasian College of Surgeons
- Royal Australian and New Zealand College of Psychiatrists
- Royal Australian and New Zealand College of Radiologists

### Guideline on sedation and/or analgesia for diagnostic and interventional medical, dental or surgical procedures

This document is intended to apply wherever procedural sedation and/or analgesia for diagnostic and interventional medical, dental and surgical procedures are administered, but excludes situations where sedation is used for longer term management of patients such as in intensive care units or for psychiatrically disturbed patients. The Australian and New Zealand College of Anaesthetists (ANZCA) and all co-signing colleges/societies recognise that practitioners with diverse qualifications and training are administering a variety of medications to patients to allow such procedures to be performed. This document addresses pertinent issues for all practitioners involved in such activities.

#### 1. Definitions

1.1 **Procedural sedation and/or analgesia** imply that the patient is in a state of drug-induced tolerance of uncomfortable or painful diagnostic or interventional medical, dental or surgical procedures. Lack of memory of distressing events and/or analgesia may be desired outcomes, but lack of response to painful stimulation is not assessed.

1.1.1 **Conscious sedation** is defined as a drug-induced depression of consciousness during which patients are able to respond purposefully to verbal commands or light tactile stimulation. Interventions to maintain a patent airway, spontaneous ventilation or cardiovascular function may, in exceptional situations, be required. Conscious sedation may be achieved by a wide variety of drugs including propofol, and may accompany local anaesthesia. All conscious sedation techniques should provide a margin of safety that is wide enough to render loss of consciousness unlikely.

1.1.2 **Deeper sedation** is characterised by depression of consciousness that can readily progress to the point where consciousness is lost and patients respond only to painful stimulation. It is associated with loss of the ability to maintain a patent airway, inadequate spontaneous ventilation and/or impaired cardiovascular function, and has similar risks to general anaesthesia, requiring an equivalent level of care.

1.1.3 **Analgesia** is reduction or elimination of pain perception, usually induced by drugs that act locally (by interfering with nerve conduction) or generally (by depressing pain perception in the central nervous system). This may be achieved by a wide range of drugs including methoxyflurane and nitrous oxide.

1.2 **General anaesthesia** is a drug-induced state characterised by absence of purposeful response to any stimulus, loss of protective airway reflexes, depression of respiration and disturbance of circulatory reflexes. General anaesthesia is sometimes indicated during diagnostic or interventional medical or surgical procedures and requires the exclusive attention of an anaesthetist, or other trained and credentialled medical practitioner within their scope of practice (see ANZCA professional documents PS01 Recommendations on Essential Training for Rural General Practitioners in Australia Proposing to Administer Anaesthesia, PS02 Statement on Credentialling and Defining the Scope of Clinical Practice in Anaesthesia, PS08 Recommendations on the Assistant for the Anaesthetist, PS16 Statement on the Standards of Practice of a Specialist Anaesthetist, PS55 Recommendations on Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations).

\*In this 2014 position statement, endorsed by RANZCR in the 2020 practice guidelines (RANZCR, 2020) there is no definition of what constitutes a diagnostic procedure. This may lead to confusion in non-radiological circles. Is a diagnostic scan a diagnostic procedure? Does AS09 cover routine diagnostic MRI and CT scans?

\*Note that there are THREE defined levels of sedation defined. Anxiolysis is absent.

## BACKGROUND ASA 2002 (on which ANZCA PS09 is based)

Volume 96, Issue 4  
April 2002

Practice Parameter | April 2002  
**Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists**

An Updated Report by the American Society of Anesthesiologists Task Force on Sedation and Analgesia by Non-Anesthesiologists

+ Author and Article Information  
Anesthesiology April 2002, Vol. 96, 1004-1017  
<https://doi.org/10.1097/0000542-200204000-00031>

### Definitions

"Sedation and analgesia" comprise a continuum of states ranging from minimal sedation (anxiolysis) through general anesthesia. Definitions of levels of sedation-analgesia, as developed and adopted by the ASA, are given in table 1. These Guidelines specifically apply to levels of sedation corresponding to moderate sedation (frequently called conscious sedation) and deep sedation, as defined in table 1.

Table 1. Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia

	Minimal Sedation (Anxiolysis)	Moderate Sedation/Analgesia (Conscious Sedation)	Deep Sedation/Analgesia	General Anesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal or tactile stimulation	Purposeful response after repeated or painful stimulation	Unarousable, even with painful stimulus
Airway	Unaffected	No intervention required	Intervention may be required	Intervention often required
Spontaneous ventilation	Unaffected	Adequate	May be inadequate	Frequently inadequate
Cardiovascular function	Unaffected	Usually maintained	Usually maintained	May be impaired

\*There are FOUR defined levels of sedation

\*The guidelines specifically exclude Anxiolysis from subsequent recommendations regarding patient care and monitoring.

\*Anxiolysis = Minimal sedation

\*Anxiolysis is NOT conscious sedation – it is a level below

## PROBLEM

In 'non-radiological hands' PS09 can be misinterpreted to apply to diagnostic CT and MRI scans. Taken to extremes, this could end up with an inefficient service in which there is Anaesthetist involvement in the administration of simple oral anxiolysis, officious hyper-documentation, excessive monitoring during anxiolysis, and a more anxious patient.

## SOLUTION

Future endorsements of PS09 should explicitly state that it does not cover routine diagnostic CT and MRI scans. Anxiolysis by definition is NOT conscious sedation. Radiologists need to be explicit about this and refer to anxiolysis only as minimal sedation (as defined by the ASA)

## CONCLUSION

1. Radiologists should be aware that non-radiologists may confuse diagnostic scans with image-guided diagnostic procedures when formulating policies and procedures.
2. Interventional radiologists need to be fully conversant with PS09 and ASA 2002.
3. All radiologists should know the terminology and implications of levels of sedation in a radiology department. This includes patient selection, medications, side-effects, monitoring and after-care.
4. We recommend that Radiologists read Anxiolysis (minimal sedation) for procedures and tests (MD Anderson Cancer Centre, 2020)

## REFERENCES

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