

# Sedation for painful procedures by non-anaesthetists in the Netherlands.

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Sedation.....????

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We've been doing it for  
yeeeeaaars...!



# Background

The last 10 years there is a strong increase of diagnostic and therapeutic interventions of a limited invasive character;

- gastro-enterology
- interventional radiology
- interventional cardiology
- pulmonology
- gynaecologie (IVF)
- etc...



# Definitions

(Insp. for Health Care, Dutch Ministry of Health, Welfare and Sports)

## Sedation

=

Flattening of consciousness thereby making a painful procedure more bearable and improving the working conditions of the doctor



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General anaesthesia

=

Complete unconsciousness, no  
communication possible, vital functions/  
reflexes are impaired



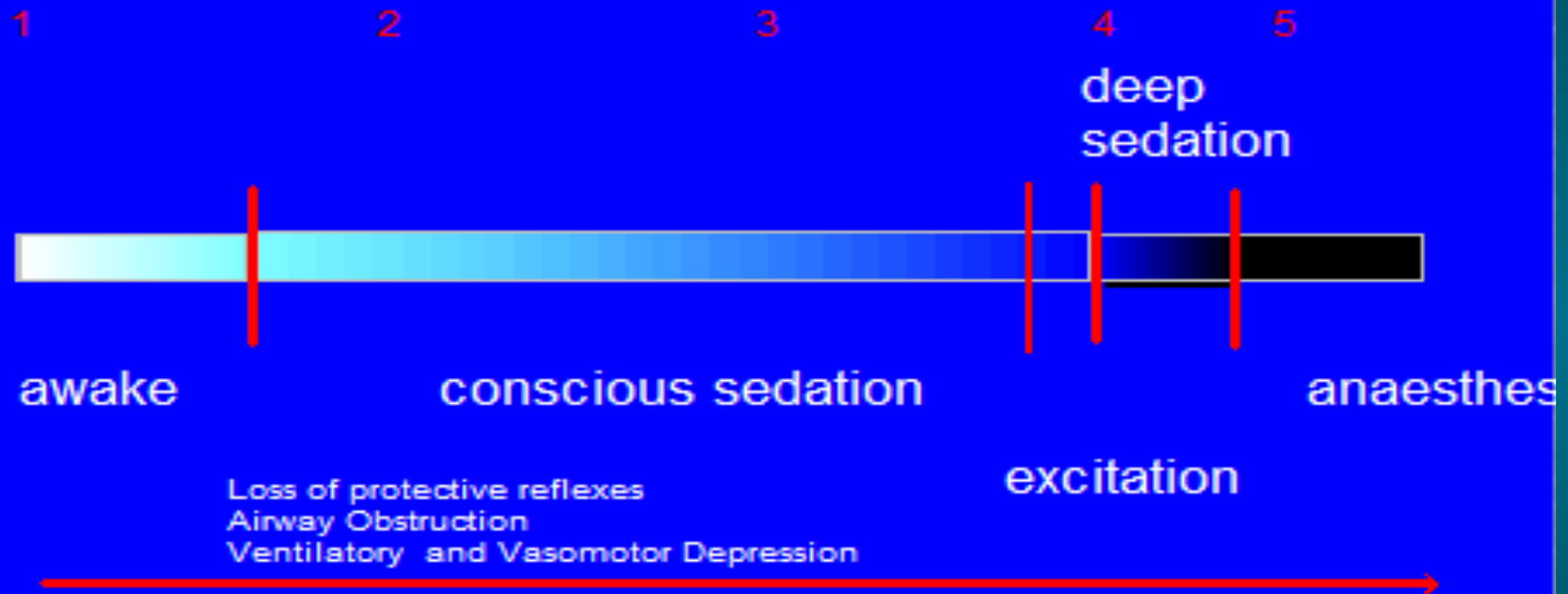
# Major difference sedation/ general anaesthesia

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- Communication with patient is still possible
- Vital functions/reflexes are unimpaired



# The Sedation Anaesthesia Spectrum



- (1) Awake & Orientated
- (2) Somewhat Sleepy
- (3) Eyes closed, responds promptly to verbal stimulus
- (4) Eyes closed, responds only to physical stimulus
- (5) Eyes closed, does not awaken in response to physical stimulus

# Current situation in most hospitals in the Netherlands

- Consulting doctors administer sedation themselves
- Double task; - the intervention (complicated)  
- sedation (divided attention)





# Sedation is not without danger !

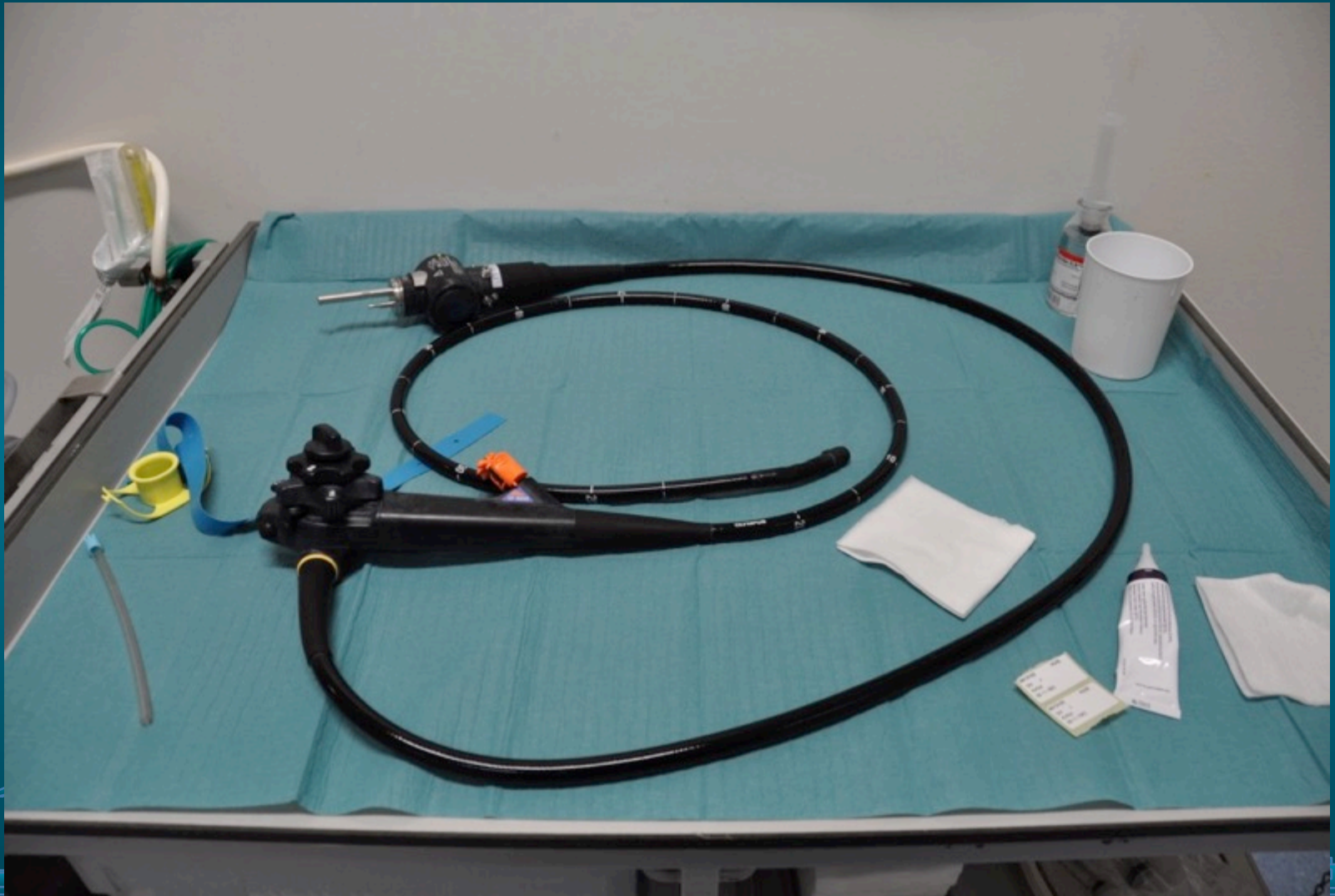
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Mortality in sedation is 3-10  
times higher than in general  
anesthesia !

(Quine MA, Gut, 1999)

(Arbous S, Anesthesiology 2005)





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# The 'awake' patient

- For the patient; - uncomfortable
  - anxiety
  - pain
  - long immobilisation
- For the doctor; - un-cooperative patient
  - difficult intervention





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# Who is the Sedation Practitioner Specialist (SPS) ?

- Registered Nurse Anesthetist
- > 2 years of clinical experience
- Certified in BLS and ALS
- 1 year of extra theory/practice training  
(10 theory lectures, 50 pt under direct and 50 under indirect supervision of a certified SPS)
- Theory exam and practice evaluation  
before certification



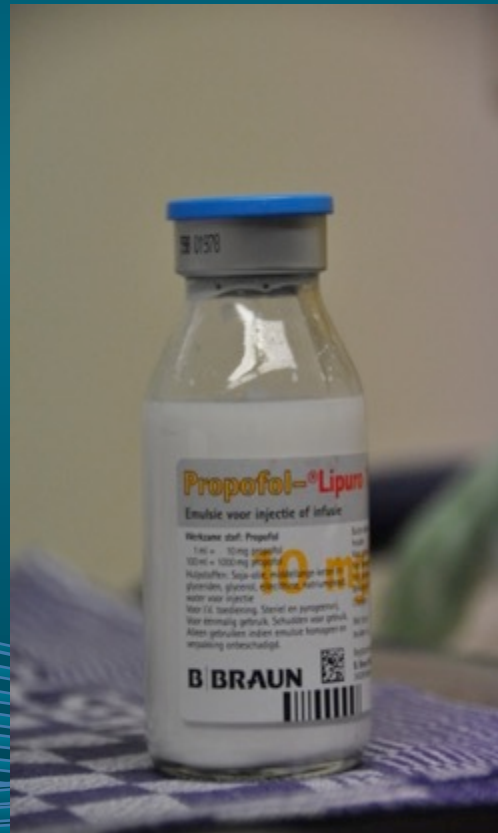
# Tasks of the SPS

- Pre-operative screening (POS)
  - Per-operative management
  - Post-operative management
- = completely independent.

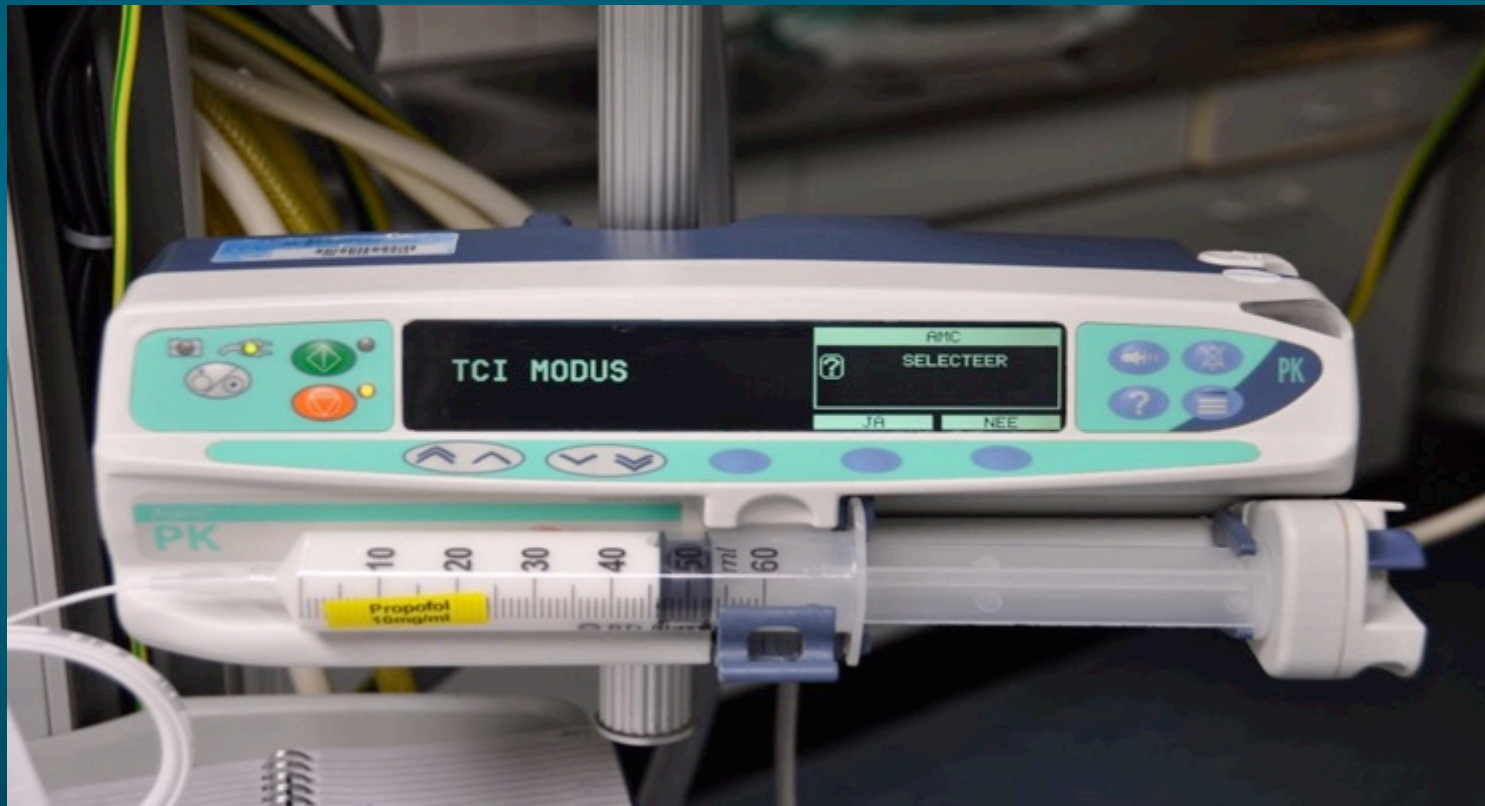
An anaesthetist is to be available for consultation or in case of emergencies (2-3 min. away)



# M.O. of the SPS



# Target Controlled Infusion





# Advantages of Propofol

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- Pharmacokinetic properties;
  - quick distribution (plasma 2-4 min)
  - quick metabolisation without adverse effects
- Pharmacodynamic properties;
  - very quick onset (30-60 sec)
  - quick recovery
  - possible to titrate

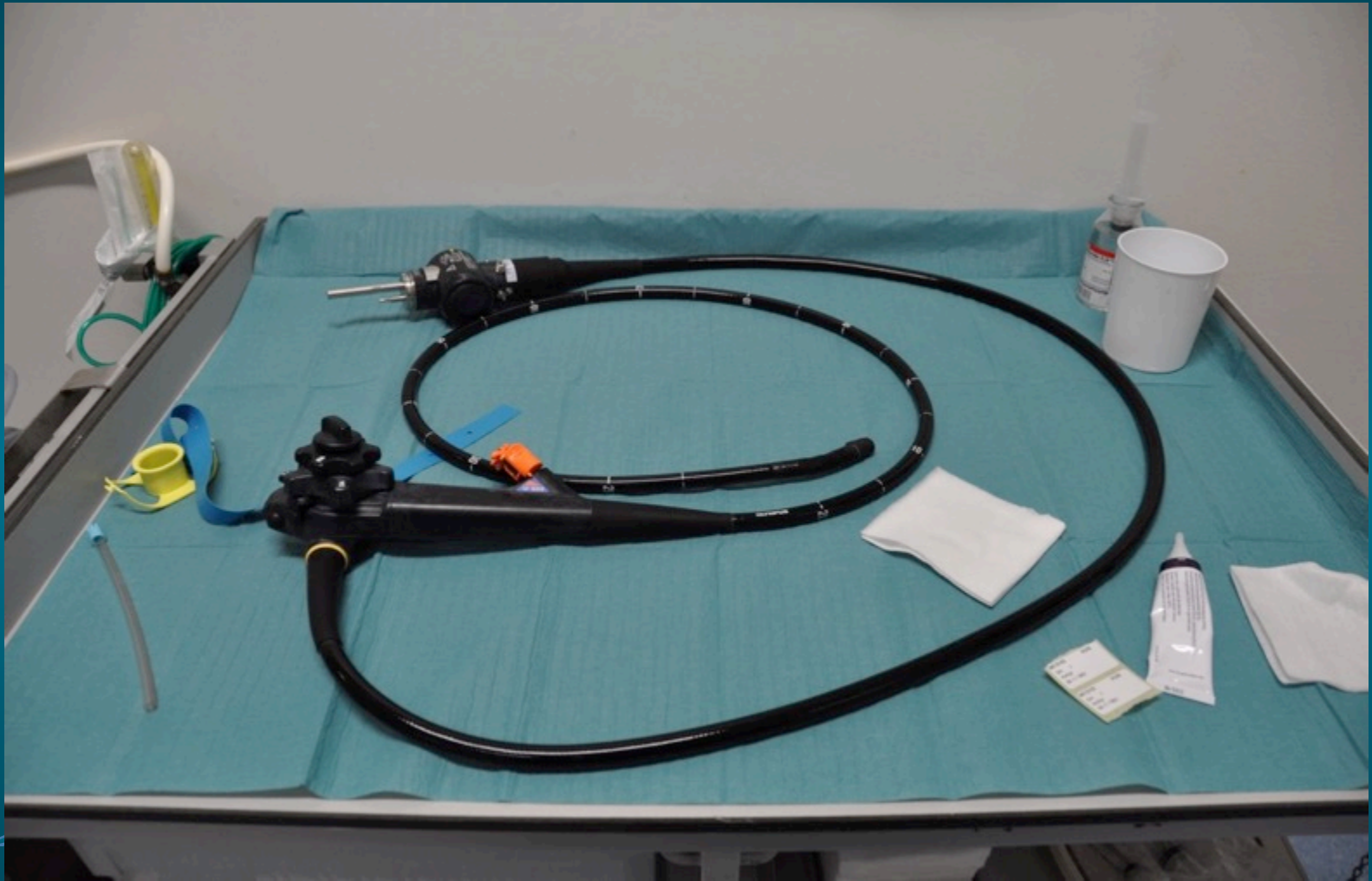


# Disadvantages of Propofol

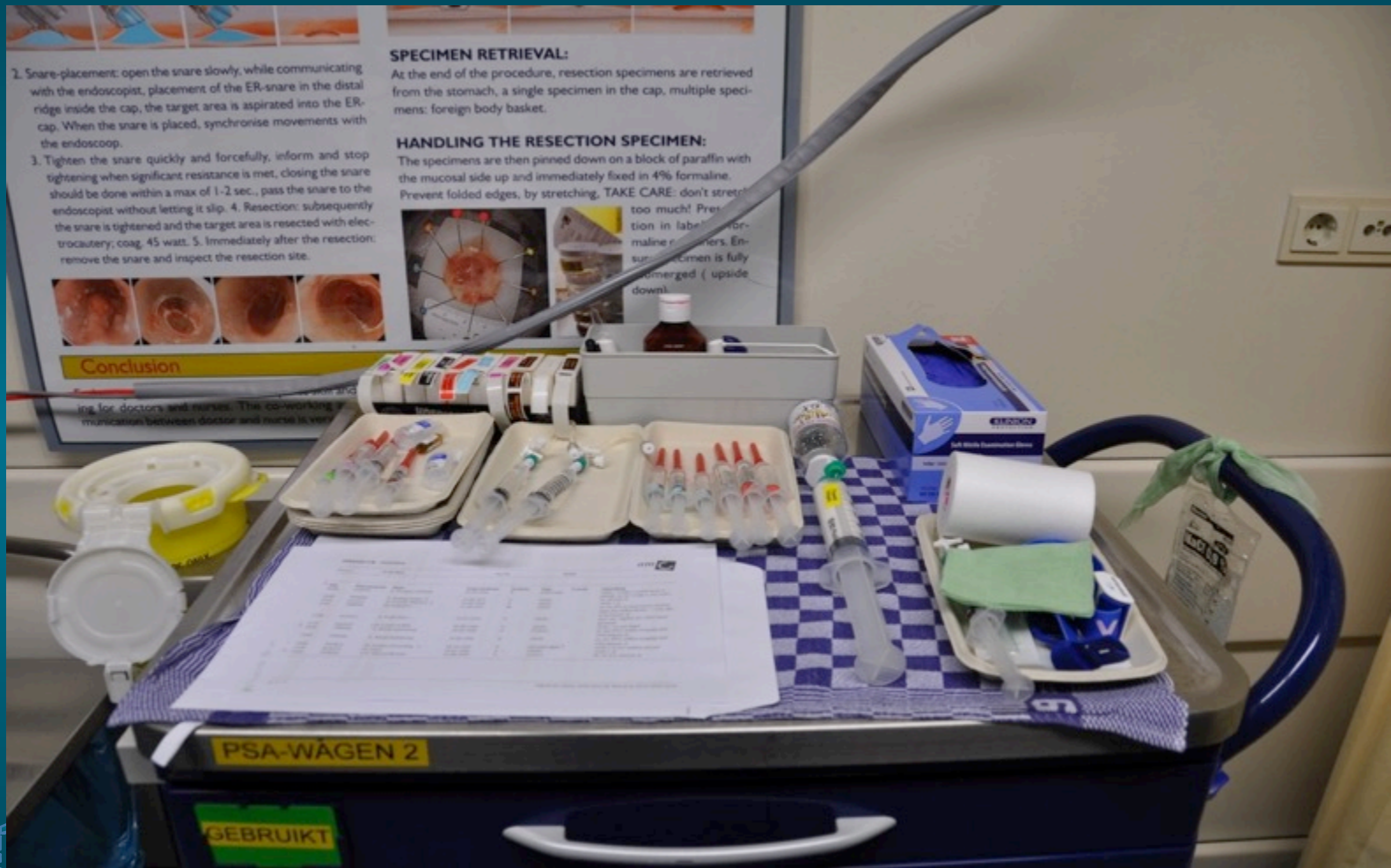
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- Painful on injection
- Hypersensitivity/allergy for soja, proteins
- Restlessness, euphoria and disinhibition of fantasies
- Hypotension





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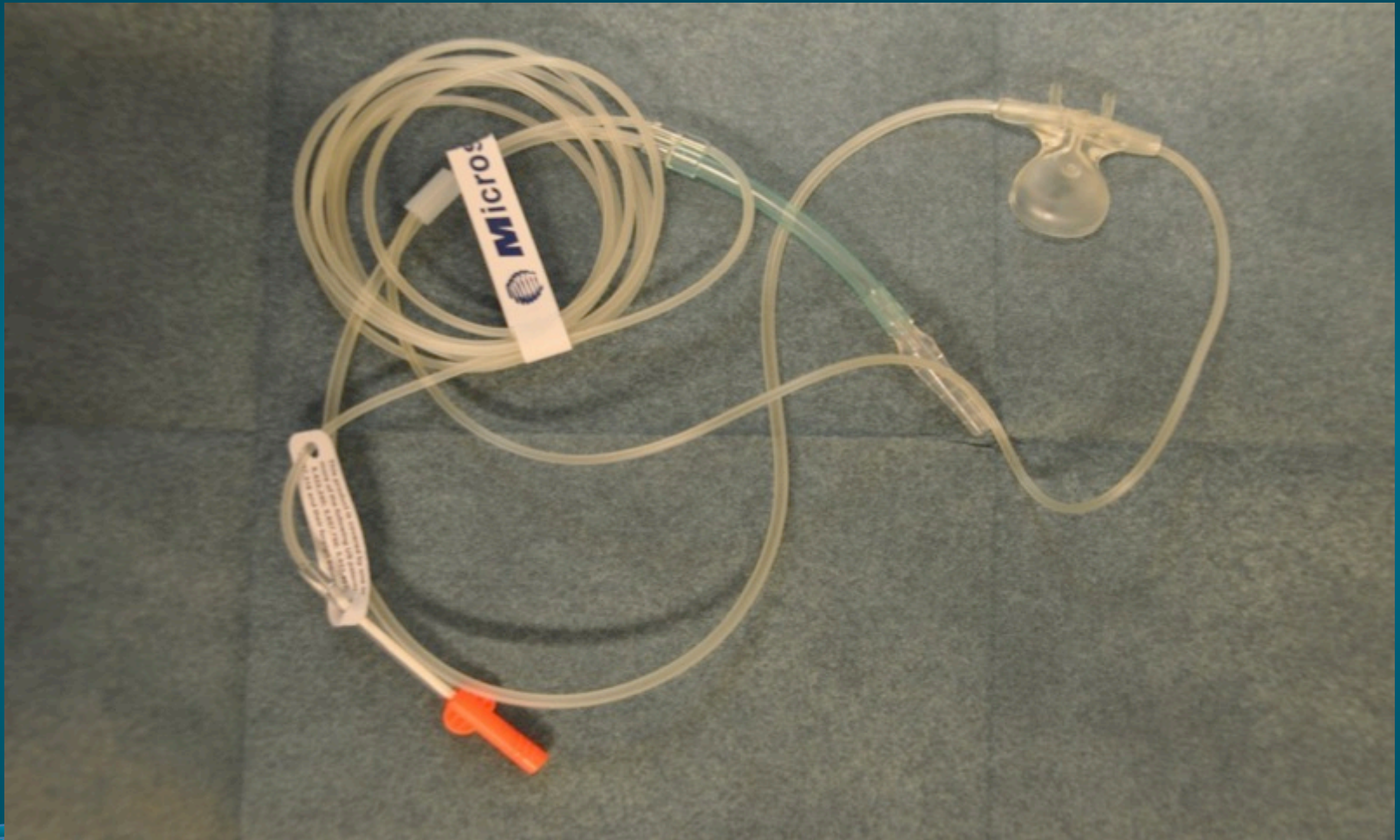




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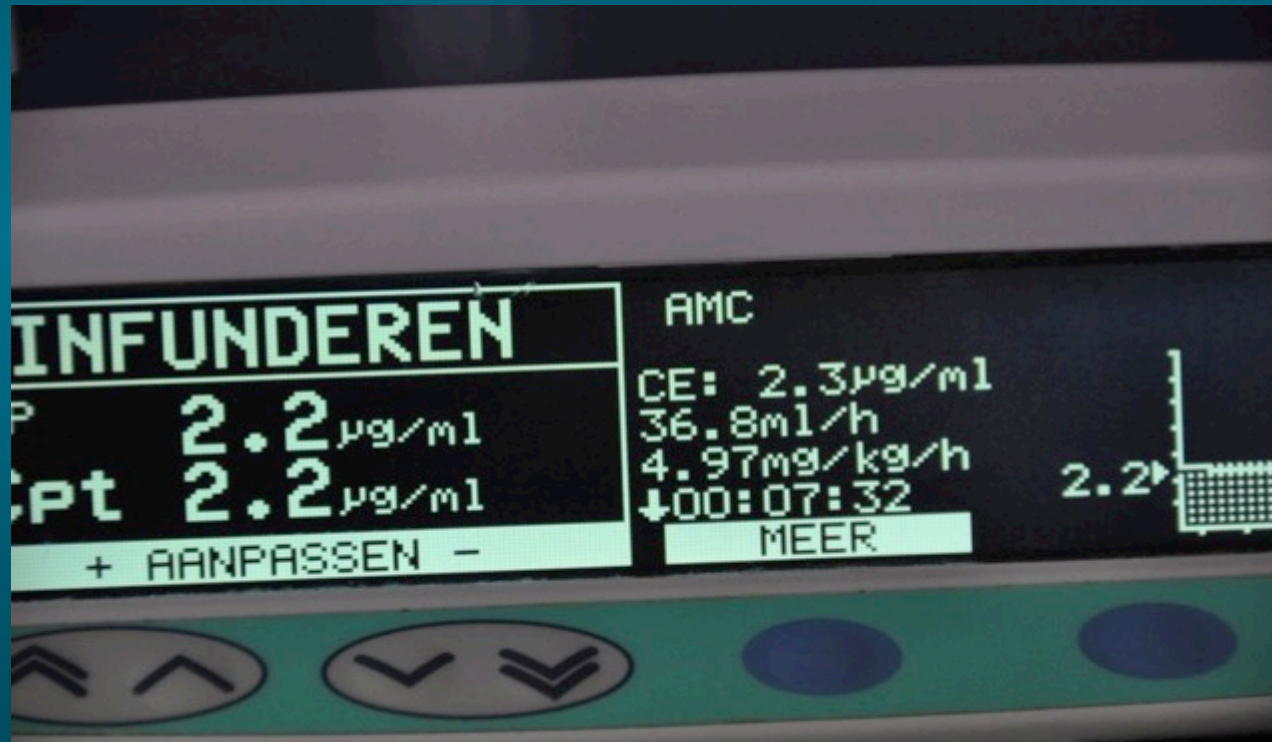
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# Tuning targets





# Effect site concentration !





S2

WOMEN

S3

# Recovery

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- Recovery room on the unit
- Respiratory surveillance;
  - SpO<sub>2</sub>, Freq., BP
- Properly awake
  - no pain or PONV, chaperone to go home !



# Type of patient...

- ASA 1-2 (ASA 3 and above unsuitable/an anaesthetist has to be consulted)
- Obesity
- COPD
- Cardio-vascular compromised conditions
- Mental retardation
- Diabetes
- Cystic fibrosis
- Sleep apnoe (OSAS)
- etc...



# Unsuitable patients...

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- Allergic to soya, Propofol
- Difficult Airway management
- ASA 3 and > (consult backup)
- Has not fasted
- MI < 6 months previous to procedure



# What does sedation involve ?

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- **Titration;** - tuning amount of sedation/analgesia to individual needs changes per minute, per patient and per procedure
  - purpose: the exact level of sedation needed for the procedure
  - short-acting drugs: < therapeutic range



# What does sedation involve ?

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- Vital functions (interpretation monitoring)
- Airwaymanagement skills
- IV skills
- Knowledge of anesthetic/sedative drugs
- CPR-skills



# What does sedation involve ?

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- Direct action in;
  - airway obstruction
  - hypoxaemia
  - arrhythmias
  - myocardial ischaemia





# Latest developments

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‘Sedation and/or analgesia outside the Operation Theatre has to be done by certified and competent personnel’

‘A new review framework for sedation/analgesia outside the Operating Theatre’ (Inspection for Health Care by the Ministry of Public Health, Welfare and Sports. February 2012)



# Conclusion

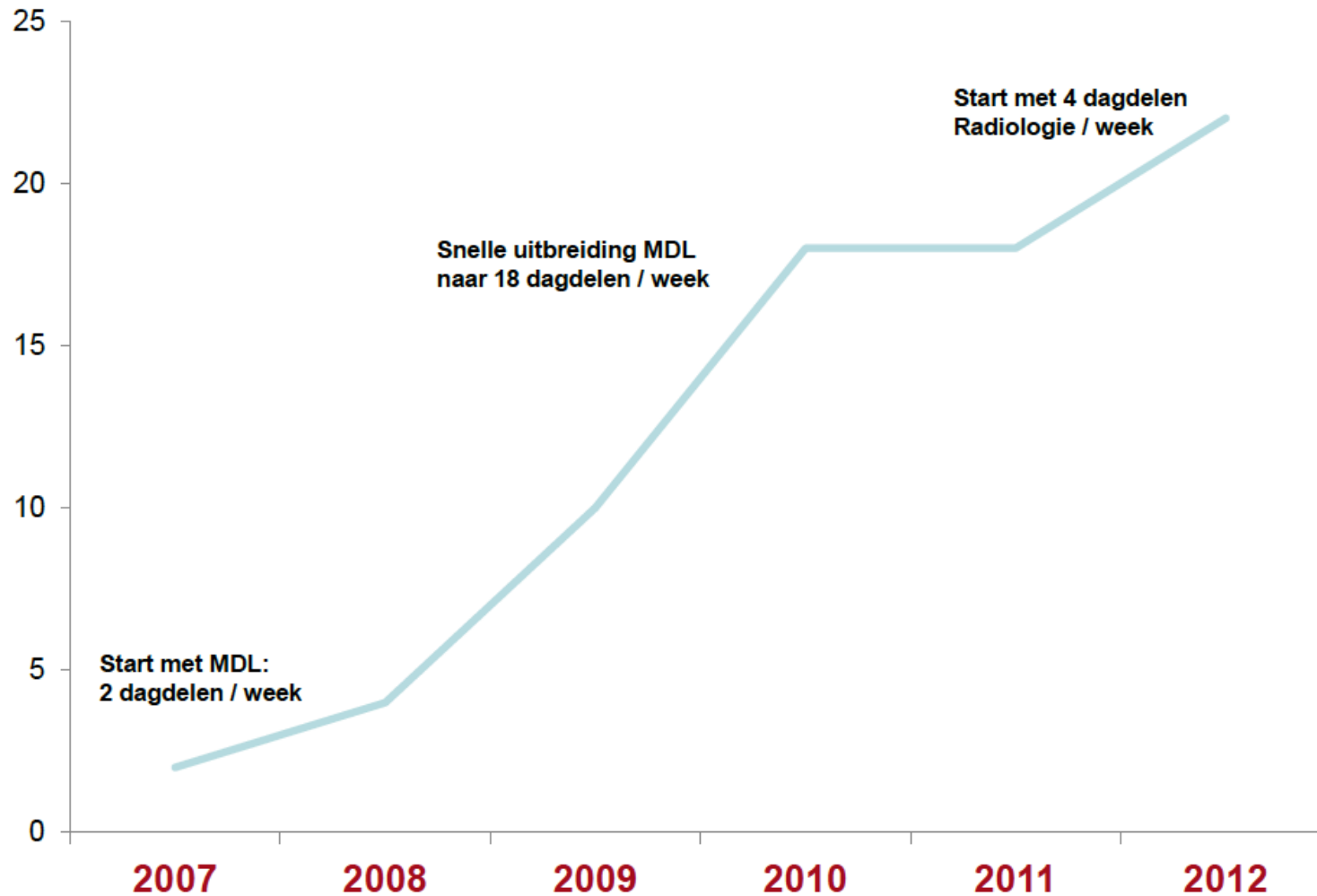
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- Sedation by an SPS means;
  - better patient safety
  - easier life for the medical practitioner
  - good sedation
  - good monitoring
  - quick recovery
  - very satisfied patients



# Groei van ondersteuning door PSA

## Ondersteuning PSA in dagdelen / week



# A final quote...

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‘Where sedation is concerned there is no room for doubt: there was an era *before* sedation practioner specialist and now we are in the era *of* the sedation practioner specialist.’

(Medical practioners of the Gastro-enterology department AMC)



