



Inhalation Sedation & COVID-19 AGP Classification

Infection control for both patients and staff has become a very Frequently Asked Question. Whilst most of the queries raised have centred around infection control for patients receiving Inhalation Sedation (RA), a further pertinent topic has arisen – AGP (Aerosol Generating Procedure).

Whilst there is no doubt that administering IS can be placed into that category due to the necessary patient/staff orientation and “exposure to the aero-digestive tract” Ref: 1., it is more a question of classification and enhanced risk – if any.

Items such as ultrasonic scalers and high-speed instruments will produce more air bound contamination than any other instrumentation used in dentistry. However, understanding the risk will help significantly to reduce any further possible risk of infection to staff during the procedure.

Inhalation Sedation (RA) is administered using relatively low flows of the mixed gases-oxygen/nitrous oxide – usually around 6 litres per minute. These are directed to the patient through a closed breathing circuit and administered via a nasal mask. The dental breathing system should be active – complying with the required definition of scavenging at ‘an air flow rate of 40-45 L/min’. In addition, the mask used should only be a double type – whether autoclavable or disposable. During the current situation, use of a single nasal mask type with its more inefficient fit is definitely contra-indicated.

Double mask types:

Porter grey autoclavable available in paediatric or adult only.

Accutron Clearview single patient use available in paediatric, adult & large adult sizes (these masks are coloured and scented although a unscented version is also available)

Single mask types:

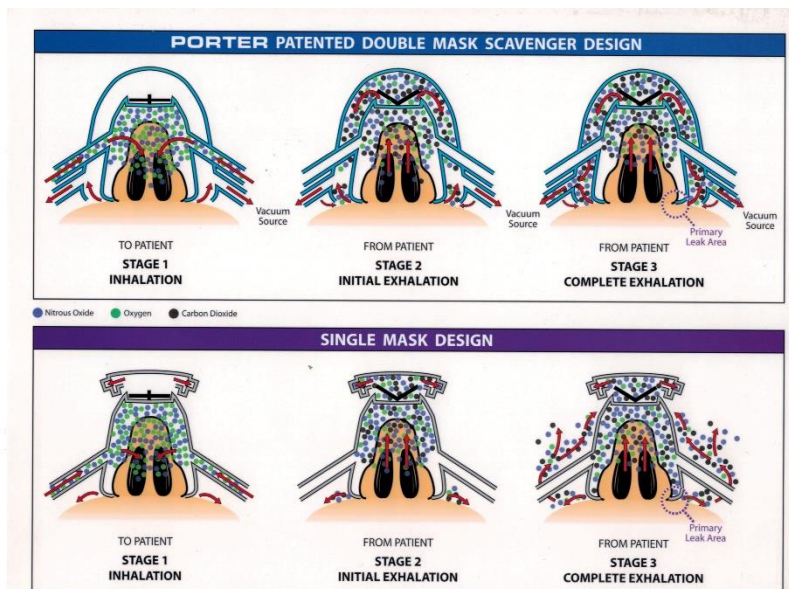
Matrx blue autoclavable or Dynamite single patient use (white) available in small, medium & large

Accutron grey autoclavable or PIP single patient use available in small, medium & large (PIP is coloured and scented)

It is also important to ensure that all other components of the breathing system are intact with no damage or signs of wear. All connections should be tight with no possibility of

leakage. If the breathing system is older than two years, then consideration should be given to replacement.

The diagram below was issued by Porter Instruments in 2004 and depicts the typical gas flow during inhalation and exhalation. It clearly shows the differences between using a double and single nasal mask type when exhalation takes place.



Dental staff wishing to utilise Inhalation Sedation during this period should therefore ensure the following:

- 1) The breathing system is an active one – and not an older passive system converted to active (if in doubt as to the exact type, expert advice should be sought).
- 2) The mask is a double and not single type.
- 3) The system has adequate draw – i.e. 40-45 L/min at the nasal mask at all times during the sedation procedure.
- 4) The mask fit is correct for the patient. The Porter brown autoclavable mask is available in paediatric or adult. The Accutron Clearview is available in three sizes – paediatric, adult & large adult. Great care should be exercised to ensure the correct mask fit as this is vital to prevent waste gases escaping the system.

There appears to be some contradictory opinions as to the exact AGP classification for inhalation sedation. The SAAD website gives it as 'moderate'. However, R A Medical Services, having read through many documents and papers as available and consulted some expert advice, are soundly of the opinion that the correct classification for AGP during IS procedures is 'low'.

Unfortunately, there is not currently a significant amount of clinical papers on this subject to formally back this statement, however it is based on sound knowledge of the product and procedures of inhalation sedation.

Admittedly there are some variables, and these include:

- 1) Patient selection
- 2) Staff technique
- 3) Condition of sedation flowmeter and breathing system/mask
- 4) Availability of various mask sizes
- 5) Availability of correct 'active' draw – i.e. AGSS or Miniscav™

Conclusion:

Whilst the use of an active scavenger breathing system will actually help to reduce staff exposure to patient's aerosol droplets, it does not fully prevent or protect. There is currently a large amount of speculation re exact causative factors of infection. On the resource forum, Don't Forget the Bubbles, used by the RCEM, there is an interesting article on Aerosol Generating Procedures by Andrew Tagg, a British trained ED Physician currently working in Australia.

He states "Thompson et al (2013) took 99 air samples around presumptive AGP's, **26.1%** of the contained viral RNA. But the baseline level of contamination, when no AGPs (as defined by WHO 2009) were performed was **10.5%**. **Just because a procedure might generate a aerosol, it does not hold true that the aerosol can cause an infection"**. Ref 2.

As a result of some communication between R A Medical and Andrew Tagg, an opinion was proposed that the correct classification for AGP in conjunction with inhalation sedation (RA) would be 'low'.

There certainly appears to be some contradictory opinions as to the exact AGP classification for inhalation sedation. The SAAD website currently gives it as 'moderate'. However, R A Medical Services, having read through many documentation available and consulted some expert advice are soundly of the opinion that the correct classification for AGP during IS procedures should be considered as 'low' – with the above information considered.

For further advice or information on the subject above, please contact: Mrs Janet Pickles janet@ramedical.com or tel: 01535 652444

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Ref 1: Dr C Trivedy. Covid-19 FAQ for the Dental Team. The Probe May 2020

Ref 2: Tagg, A. Aerosol Generating Procedures, Don't Forget the Bubbles, 2020