

Nitrous Oxide-Oxygen Administration

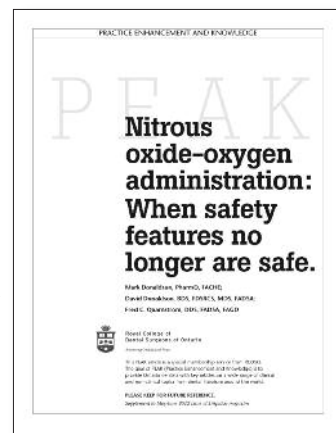
PEAK (Practice Enhancement and Knowledge) is a College service for members. The goal is to regularly provide Ontario dentists with copies of key articles on a wide range of clinical and non-clinical topics from the dental literature around the world.

It is important to note that PEAK articles may contain opinions, views or statements that are not necessarily endorsed by the College. However, PEAK is committed to providing quality material to enhance the knowledge and skills of member dentists.

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Nitrous oxide-oxygen administration is used widely in North American dental practices to achieve minimal sedation or anxiolysis. Due to its relative safety and efficacy, Ontario dentists who have successfully completed a training program designed to produce competency in nitrous oxide-oxygen administration do not need a facility permit for its use.

Despite the large and inherent margin of safety of nitrous oxide-oxygen administration, the College's Guidelines for the Use of Sedation and General Anesthesia in Dental Practice set out several safety requirements related to the gas delivery system that ensure maintenance of the appropriate standards for its use.



According to the guidelines, nitrous oxide-oxygen gas delivery systems must:

- have a fail-safe mechanism, such that it will not deliver an oxygen concentration of less than 30 per cent in the delivered gas mixture;
- have pipeline inlet fittings or pin-indexing that do not permit interchange of connections with oxygen and nitrous oxide;
- be checked regularly for functional integrity by appropriately trained personnel and receive appropriate care and maintenance according to the manufacturer's instructions or annually, whichever is more frequent;
- be equipped with a common gas outlet compatible with 15mm male and 22mm female conical connectors;
- have readily available a reserve supply of oxygen ready for immediate use. This should be a portable "E" size cylinder attached with appropriate regulator and flowmeter, as well as connectors, tubing and reservoir bag, which allow use of a full face mask for resuscitative ventilation with 100 per cent oxygen;
- be equipped with a scavenging system installed per manufacturer's specifications.

PEAK is pleased to provide members with an article on this important subject called "Nitrous oxide-oxygen administration: When safety features no longer are safe" from the February 2012 issue of the Journal of the American Dental Association.

The article reviews the safety features that have been developed by the manufacturers of nitrous oxide-oxygen gas delivery systems to ensure patient safety. The article emphasizes the importance of awareness of these safety features and how to maintain their integrity. It also provides guidance on how to react when a safety feature is suspected of failing.

IMPORTANT NOTE

Nitrous oxide-oxygen gas delivery systems must function reliably and accurately. They must be checked regularly for functional integrity by appropriately trained personnel and receive appropriate care and maintenance according to the manufacturer's instructions or annually, whichever is more frequent. A written record of this annual maintenance/servicing must be kept on file for review by the College as required.

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