# Forces exerted on upper and lower teeth during intubation: a randomized crossover trial comparing indirect videolaryngoscopy to direct laryngoscopy

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Measuring the forces exerted on upper en lower teeth during classic (direct) and (indirect) (video)laryngoscopy.

Ethical reviewApproved WMOStatusRecruitment stoppedHealth condition typeProcedural related injuries and complications NECStudy typeObservational invasive

# Summary

## ID

NL-OMON37617

**Source** ToetsingOnline

**Brief title** Forces on Teeth during Videolaryngoscopy

# Condition

- Procedural related injuries and complications NEC
- Upper respiratory tract disorders (excl infections)

#### Synonym

Forces on teeth, pressures teeth

**Research involving** 

Human

## **Sponsors and support**

#### Primary sponsor: Catharina-ziekenhuis

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### Source(s) of monetary or material Support: Afdelingsbudget

### Intervention

Keyword: Forces, Intubation, Teeth, Videolaryngoscopy

### **Outcome measures**

#### **Primary outcome**

The frequency with which forces are being exerted on upper and lower teeth

during classic and video laryngoscopy.

#### Secondary outcome

Magnitude of forces being exerted

Differences in forces exerted when comparing the classic laryngoscope and the

different videolaryngoscopes.

# **Study description**

#### **Background summary**

During endotracheal intubation the anesthesiologist uses a laryngoscope blade to distract the tongue to achieve the best view of the glottis opening, thereby avoiding using the maxillary incisors as a fulcrum to lever the soft tissues upwards. Using the maxillary incisors as a fulcrum may otherwise result in dental trauma. It is obvious that contact with teeth and - even worse - the incidence of accidental dental trauma, is directly related to the difficulty of the intubation.

Indirect videolaryngoscopy has proven advantageous over direct laryngoscopy using a classic Macintosh blade, for improved viewing of the glottis, with subsequent more successful intubations, and a shorter effective airway time both in patients with normal and difficult airways. Previously, it has been demonstrated that the forces exerted by the anesthesiologist on the patient\*s maxillary incisors are reduced when using a videolaryngoscope, compared with a classic Macintosh laryngoscope. However, only one type of videolaryngoscope was used. Also only forces exerted on upper teeth were registered.

#### **Study objective**

Measuring the forces exerted on upper en lower teeth during classic (direct) and (indirect) (video)laryngoscopy.

### Study design

Randomized, cross-over trial

#### Study burden and risks

Minimally, the study will be conducted completely while the patient is under general anesthesia. The risk of dental injury may be slightly increased, as two devices are being placed in the patients mouth.

# Contacts

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# **Trial sites**

### **Listed location countries**

Netherlands

# **Eligibility criteria**

#### Age

Adults (18-64 years) Elderly (65 years and older)

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# **Inclusion criteria**

Age > 18 year ASA I - III Elective surgery requiring endotracheal intubation

### **Exclusion criteria**

Age < 18 year ASA IV Patients requiring other than size 3 blade Macintosh laryngoscope Preoperative predictors of a difficult airway (Mallampati score IV, thyromental distance < 65 mm, interincisor/interdental distance < 35 mm) Inadequate neck movement Surgery of face and throat No teeth, bad dentition.

# Study design

## Design

Study type:	Observational invasive
Intervention model:	Crossover
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Diagnostic

### Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	02-05-2012
Enrollment:	100
Туре:	Actual

### Medical products/devices used

Generic name:

Videolaryngoscope

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# **Ethics review**

Approved WMO Date: Application type: Review commission:

06-04-2012 First submission MEC-U: Medical Research Ethics Committees United (Nieuwegein)

# **Study registrations**

# Followed up by the following (possibly more current) registration

No registrations found.

# Other (possibly less up-to-date) registrations in this register

No registrations found.

## In other registers

Register	ID
ISRCTN	ISRCTN28037056,10/29/2010
ССМО	NL39915.060.12