

## Systematic review and meta-analysis of frequency and diameters of midline lingual foramina

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Lingual mandibular foramina represent an anatomical feature found on the oral bone surface of the mandible. These structures host vascular and nervous anastomosis derived from the branches of the submental artery, lingual artery and the mylohyoid nerve. Studies on cadavers and on radiological images in-vivo reported the content, the frequency and the dimension of these foramina [1]. In surgical practice, this area is considered to be in low-risk from potential accidents, but reports in english-language literature showed intra-operative massive bleeding when implant interventions occurred in this area [2]. This systematic review and meta-analysis aims to summarize qualitatively and quantitatively the features of the lingual foramina on the midline of the inferior jaw. Systematic review and meta-analysis has been performed complying the PRISMA statement, and registered on PROSPERO database. The frequency rate of the foramina were resulted to have a point estimate of 0.965. The means of the diameters were shown to have a point estimate of 0.840 with a standard error of 0.06. The results showed a significant high frequency that has been reported in literature of this variation, presenting a consistent diameter dimensions, sign of significant caliber of the related vessels and nerves. Even if this variation is underestimated in current textbooks of oral anatomy, this evidence based anatomy [3] study suggests an accurate pre-surgical planning as well as a proper risk management preparation to minimize intra-operatory-and post-operatory injures.

### References

- [1] Bernardi et al. (2014) Anterior mandibular lingual foramina: an in vivo investigation. *Anat Res Int* 2014: 906348.
- [2] Dubois et al. (2010) Excessive bleeding in the floor of the mouth after endosseus implant placement: a report of two cases. *Int J Oral Maxillofacial Surg* 39(4):412–415.
- [3] Yammine K. (2014) Evidence-based anatomy. *Clin Anat* 27(6):847-52.

### Key words

Systematic review, Evidence-based anatomy, Meta-analysis, Midline lingual foramina, Cone beam computed tomography.