

Table S1. Search strategy accuracy of computer-assisted surgery in maxillary reconstruction.

| Search | PubMed Query | Items found |
|--|---|-------------|
| #5 | #1 AND #2 AND #3 AND #4 | 920 |
| #4 | "Reproducibility of Results"[Mesh] OR reproducibil*[tiab] OR accurac*[tiab] OR accurate[tiab] OR precis*[tiab] OR reliabl*[tiab] OR reliabil*[tiab] OR valid*[tiab] OR correct*[tiab] OR repeat*[tiab] | 3185145 |
| #3 | "Surgery, Computer-Assisted"[Mesh] OR "Image Processing, Computer-Assisted"[Mesh] OR "Multimodal Imaging"[Mesh] OR imag*[tiab] OR three-dimension*[tiab] OR 3-D[tiab] OR 3-dimension*[tiab] OR 3D[tiab] OR digitali*[tiab] OR computer*[tiab] OR pre-operative plan*[tiab] OR preoperative plan*[tiab] OR (virtual[tiab] AND surgical[tiab] AND plann*[tiab]) OR vsp[tiab] OR rapid prototyp*[tiab] OR stereolithograph*[tiab] OR intraoperative navigat*[tiab] OR CAD/CAM[tiab] OR CAS[tiab] OR cutting guide*[tiab] OR surgical template*[tiab] OR mirror function*[tiab] | 1887919 |
| #2 | "Reconstructive Surgical Procedures"[Mesh:NoExp] OR reconstruct*[tiab] | 325896 |
| #1 | "Maxilla"[Mesh] OR maxillectom*[tiab] OR maxilla*[tiab] OR maxillo*[tiab] OR midface[tiab] OR palatomaxill*[tiab] OR hard palate[tiab] OR palatal[tiab] OR upper jaw[tiab] OR hemimaxill*[tiab] | 118594 |
| Search strategy in PubMed from 8 January 2021 (read from bottom-up). | | |
| Search | Embase.com Query | Items found |
| #6 | #5 NOT ('conference abstract'/it OR 'conference review'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it OR 'short survey'/it) | 1714 |
| #5 | #1 AND #2 AND #3 AND #4 | 2257 |
| #4 | 'data accuracy'/exp OR 'measurement precision'/exp OR 'measurement repeatability'/exp OR 'repeatability'/exp OR 'accuracy'/exp OR 'reliability'/exp OR reproducibil*:ab,ti,kw OR accurac*:ab,ti,kw OR accurate:ab,ti,kw OR precis*:ab,ti,kw OR reliabl*:ab,ti,kw OR reliabil*:ab,ti,kw OR valid*:ab,ti,kw OR correct*:ab,ti,kw OR repeat*:ab,ti,kw | 4096457 |
| #3 | 'image processing'/exp OR 'multimodal imaging'/exp OR 'computer assisted surgery'/exp OR 'three dimensional imaging'/de OR 'image reconstruction'/exp OR imag*:ab,ti,kw OR 'three-dimension*':ab,ti,kw OR 3-dimension*:ab,ti,kw OR 3D:ab,ti,kw OR 3-D:ab,ti,kw OR digitali*:ab,ti,kw OR computer*:ab,ti,kw OR 'pre-operative plan*':ab,ti,kw OR 'preoperative plan*':ab,ti,kw OR (virtual NEAR/3 surgical NEAR/3 plann*):ab,ti,kw OR vsp OR 'rapid prototyp*':ab,ti,kw OR stereolithograph*:ab,ti,kw OR 'intraoperative navigat*':ab,ti,kw OR 'CAD/CAM':ab,ti,kw OR CAS:ab,ti,kw OR 'cutting guide*':ab,ti,kw OR 'surgical template*':ab,ti,kw OR 'mirror function*':ab,ti,kw | 2440940 |
| #2 | 'reconstructive surgery'/exp OR 'craniofacial surgery'/exp OR reconstruct*:ab,ti,kw | 435124 |
| #1 | 'maxilla'/exp OR 'hard palate'/exp OR 'maxilla resection'/exp OR maxillectom*:ab,ti,kw OR maxilla*:ab,ti,kw OR maxillo*:ab,ti,kw OR midface:ab,ti,kw OR palatomaxill*:ab,ti,kw OR 'hard palate':ab,ti,kw OR palatal:ab,ti,kw OR 'upper jaw':ab,ti,kw OR hemimaxill*:ab,ti,kw | 136690 |
| Search strategy in Embase.com from 8 January 2021 (read from bottom-up). | | |
| Search | Cochrane Library Query | Items found |
| #5 | #1 AND #2 AND #3 AND #4 | 43 |

| Search | Cochrane Library Query | Items found |
|--------|---|-------------|
| #4 | (reproducibil* OR accurac* OR accurate OR precis* OR reliabl* OR reliabil* OR valid* OR correct* OR repeat*):ti,ab,kw (word variatons have been searched) | 203513 |
| #3 | (imag* OR three NEXT dimension* OR 3 NEXT dimension* OR 3D OR 3 NEXT D OR digitali* OR computer* OR pre NEXT operative NEXT plan* OR preoperative NEXT plan* OR virtual NEAR/3 surgical NEAR/3 plann* OR vsp OR rapid NEXT prototyp* OR stereolithograph* OR intraoperative NEXT navigat* OR CAD NEXT CAM OR CAS OR cutting NEXT guide* OR surgical NEXT template* OR mirror NEXT function*):ti,ab,kw (word variatons have been searched) | 149823 |
| #2 | reconstruct*:ti,ab,kw (word variatons have been searched) | 10285 |
| #1 | (maxilla* OR maxillectom* OR maxillo* OR midface OR palatomaxill* OR “hard palate” OR palatal OR “upper jaw” OR hemimaxill*):ti,ab,kw (word variatons have been searched) | 8151 |

Search strategy in The Cochrane Library from 8 January 2021 (read from bottom-up).

Table S2. Study design and risk of bias assessment.

| Author | Study design | Assessment of bias | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------------------------------------|--------------|--------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Liu et al. (2009) [18] | RCS | 10/20 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| Melville et al. (2019) [19] | RCS | 11/20 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| Morita et al. (2017) [20] | RCS | 10/20 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Numajiri et al. (2018) [21] | RCS | 10/20 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Schepers et al. (2016) [8] | RCS | 12/20 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Tarsitano et al. (2016) [22] | PCS | 15/20 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| Yang et al. (2018) [23] | PCS | 15/20 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| Zheng et al. (2016) [25] | RCS | 11/20 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| Navarro Cuéllar et al. (2021) [27] | RCCS | 18/24 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | | | | | | | |
| Swendseid et al. (2019) [26] | RCSS | 18/24 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | | | | | | | |
| Wang et al. (2016) [11] | RCCS | 16/24 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | | | | | | | | |
| Zhang et al. (2015) [24] | RCCS | 16/24 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | | | | | | | | |

RCS—retrospective case study; PCS—prospective case study; RCCS—retrospective case-controlled study. Case studies were scored according to the Institute of Health Economics (IHE) quality appraisal checklist for assessing case-series studies, as follows: 1 (yes) or 0 (partial/unclear/no). Case controlled studies were scored according to the Methodological Index for Non-Randomized Studies (MINORS) as follows: 0 (not reported), 1 (reported but inadequate), or 2 (reported and adequate).

References

Guo B, Moga C, Harstall C, Schopflocher D: A principal component analysis is conducted for a case series quality appraisal checklist. *J Clin Epidemiol* 69:199-207 e192, 2016.Slim K, Nini E, Forestier D, Kwiatkowski F, Panis Y,

Chipponi J: Methodological index for non-randomized studies (minors): development and validation of a new instrument. ANZ J Surg 73:712-716, 2003.