

Appendix 1 Advanced search strategy & search terms

PubMed

("fluorescence-guided surgery"[Title/Abstract] OR "near-infrared imaging"[Title/Abstract] OR "near-infrared fluorescen*" [Title/Abstract] OR "near infrared fluorescen*" [Title/Abstract] OR "image-guided surgery"[Title/Abstract] OR "image guided surgery"[Title/Abstract] OR "fluorescent-guided surgery"[Title/Abstract] OR "fluorescent guided surgery"[Title/Abstract] OR "fluorescence guided surgery"[Title/Abstract] OR "fluorescence guided resection"[Title/Abstract] OR "fluorescence image guided"[Title/Abstract] OR "fluorescence image guided resection"[Title/Abstract] OR "fluorescence image guided surgery"[Title/Abstract] OR "fluorescence imaging"[Title/Abstract] OR "optical imaging"[Title/Abstract] OR "intraoperative imaging"[Title/Abstract]) OR "fluorescence-guided intraoperative imaging"[Title/Abstract] OR "precision-guided imaging"[Title/Abstract] OR "precision guided imaging"[Title/Abstract] OR "Spectroscopy, Near-Infrared"[Mesh] OR "Indocyanine Green"[Mesh] AND ("head and neck cancer"[Title/Abstract] OR "head and neck neoplasm"[Title/Abstract] OR "head and neck tumor"[Title/Abstract] OR "head and neck tumour"[Title/Abstract] OR "oral tumor" [Title/Abstract] OR "oral cancer" [Title/Abstract] OR "Head and Neck Neoplasms"[Mesh])) NOT ("review"[Publication Type] OR "systematic review"[Publication Type]) AND ("0001/01/01"[Date - Publication] : "2023/08/01"[Date - Publication])

Embase

((('fluorescence-guided surgery':ti,ab,kw OR 'near-infrared imaging':ti,ab,kw OR 'near-infrared fluorescen*':ti,ab,kw OR 'near infrared fluorescen*':ti,ab,kw OR 'image-guided surgery':ti,ab,kw OR 'image guided surgery':ti,ab,kw OR 'fluorescent-guided surgery':ti,ab,kw OR 'fluorescent guided surgery':ti,ab,kw OR 'fluorescence guided surgery':ti,ab,kw OR 'fluorescence guided resection':ti,ab,kw OR 'fluorescence image guided':ti,ab,kw OR 'fluorescence image guided resection':ti,ab,kw OR 'fluorescence image guided surgery':ti,ab,kw OR 'fluorescence imaging':ti,ab,kw OR 'optical imaging':ti,ab,kw OR 'intraoperative imaging':ti,ab,kw OR 'fluorescence-guided intraoperative imaging':ti,ab,kw OR 'precision-guided imaging':ti,ab,kw OR 'precision guided imaging':ti,ab,kw OR 'spectroscopy, near-infrared':ti,ab,kw OR 'near-infrared spectroscopies':ti,ab,kw OR 'near-infrared spectroscopy':ti,ab,kw OR 'spectroscopies, near-infrared':ti,ab,kw OR 'spectroscopy, near infrared':ti,ab,kw OR 'nir spectroscopy':ti,ab,kw OR 'nir spectroscopies':ti,ab,kw OR 'spectroscopies, nir':ti,ab,kw OR 'spectroscopy, nir':ti,ab,kw OR 'spectrometry, near-infrared':ti,ab,kw OR 'near-infrared spectrometries':ti,ab,kw OR 'near-infrared spectrometry':ti,ab,kw OR 'spectrometries, near-infrared':ti,ab,kw OR 'spectrometry, near infrared':ti,ab,kw OR 'near infrared spectroscopy':ti,ab,kw OR 'nirs':ti,ab,kw OR 'indocyanine green':ti,ab,kw OR 'green, indocyanine':ti,ab,kw OR 'icg':ti,ab,kw) AND ('head and neck cancer':ti,ab,kw OR 'head and neck neoplasm':ti,ab,kw OR 'head and neck tumor':ti,ab,kw OR 'head and neck tumour':ti,ab,kw OR 'oral tumor':ti,ab,kw OR 'oral cancer':ti,ab,kw OR 'head and neck neoplasms':ti,ab,kw) AND [article]/lim OR [data papers]/lim) AND [01-01-1947]/sd NOT [01-08-2023]/sd

SCOPUS

TITLE-ABS-KEY-AUTH ("fluorescence-guided surgery" OR "near-infrared imaging" OR "near-infrared fluorescen*" OR "near infrared fluorescen*" OR "image-guided surgery" OR "image guided surgery" OR "fluorescent guided surgery" OR "fluorescent-guided surgery" OR "fluorescence guided resection" OR "fluorescence guided surgery" OR "fluorescence image guided surgery" OR "fluorescence image guided resection" OR "intraoperative image guidance" OR "fluorescence imaging" OR "optical imaging" OR "intraoperative imaging" OR "fluorescence-guided intraoperative imaging" OR "precision-guided imaging" OR "precision guided imaging" OR "Indocyanine Green" OR " Green, Indocyanine" OR " ICG" OR " Spectroscopy, Near-Infrared" OR " Near-Infrared Spectroscopies" OR " Near-Infrared Spectroscopy" OR " Spectroscopies, Near-Infrared" OR " Spectroscopy, Near Infrared" OR " Spectroscopy" OR "NIR Spectroscopies" OR " Spectroscopies, NIR" OR " Spectroscopy, NIR" OR " Spectrometry, Near-Infrared" OR " Near-Infrared Spectrometries" OR " Near-Infrared Spectrometry" OR " Spectrometries, Near-Infrared" OR " Spectrometry, Near Infrared" OR " near infrared spectroscopy" OR NIRS) AND TITLE-ABS-KEY-AUTH ('head AND neck AND cancer' OR 'head AND neck AND neoplasm' OR "head and neck tumor" OR "head and neck tumour" OR "oral tumor" OR "oral cancer") AND DOCTYPE (

ar OR dp)

AND (PUBYEAR < 2023 OR PUBDATETXT ("july 2023" OR "june 2023" OR "may 2023" OR "april 2023" OR "march 2023" OR "february 2023" OR "january 2023"))

CNKI

SU% = Fluorescence-guided surgery + Near-infrared imaging + Near-infrared fluorescence + Image-guided surgery + Fluorescence-guided surgery + Fluorescence-guided resection + Fluorescence imaging + Fluorescence image-guided resection + Intraoperative imaging + Fluorescence-guided intraoperative imaging + Precision-guided imaging AND SU% = Head and neck cancer + Head and neck malignancies + Head and neck tumors + Oral tumors + Oral cancer

Note: The search terms were in precise Chinese.

Appendix 2 Lists of excluded studies as population overlapped

Study	Reason for exclusion
Zhou 2022	Overlapping population with Krishnan 2022 (NCT 02415881)
de Wit 2022	Overlapping population with Voskuil 2020 (NCT 03134846)
Voskuil 2020	Overlapping population with Steinkamp 2021 (IRB number 2017/580)
Fakurnejad 2020	Overlapping population with Krishnan 2022 (NCT 02415881)
van Keulen 2019, a	Overlapping population with Krishnan 2022 (NCT 02415881)
van Keulen 2019, b	Overlapping population with Krishnan 2022 (NCT 02415881)
van Keulen 2019, c	Overlapping population with Krishnan 2022 (NCT 02415881)
Gao 2018	Overlapping population with Krishnan 2022 (NCT 02415881)
Rosenthal 2015	Overlapping population with Moore 2017 (NCT 01987375)

a, van Keulen S, van den Berg NS, Nishio N, *et al.* Rapid, non-invasive fluorescence margin assessment: Optical specimen mapping in oral squamous cell carcinoma. *Oral Oncol* 2019;88:58-65. b, van Keulen S, Nishio N, Fakurnejad S, *et al.* The Clinical Application of Fluorescence-Guided Surgery in Head and Neck Cancer. *J Nucl Med* 2019;60:758-63. c, van Keulen S, Nishio N, Birkeland A, *et al.* The Sentinel Margin: Intraoperative Ex Vivo Specimen Mapping Using Relative Fluorescence Intensity. *Clin Cancer Res* 2019;25:4656-62.