

## Appendix 1 Search strategies

*Database: Cochrane Library CENTRAL (date run: 17/01/2023)*

ID	Search strategy	Hits
#1	(Superb microvascular imaging):ti,ab,kw	15
#2	(SMI):ti,ab,kw	924
#3	(neovascularization of carotid plaque):ti,ab,kw	5
#4	#1 Or #2	927
#5	#3 and #4	1

*Database: Ovid MEDLINE(R) ALL (date run: 17/01/2023)*

ID	Search strategy	Hits
1	carotid.mp.	152,391
2	("plaque*" or "fatty streak" or "fibroatheroma").mp.	164,774
3	("vulnerability" or "stability" or "neovascularization").mp.	754,458
4	superb microvascular imaging.mp.	277
5	1 and 2 and 3 and 4	23

*Database: Embase Classic + Embase (date run: 17/01/2023)*

ID	Search strategy	Hits
1	carotid.mp.	239,439
2	("plaque*" or "fatty streak" or "fibroatheroma").mp.	238,344
3	("vulnerability" or "stability" or "neovascularization").mp.	885,705
4	superb microvascular imaging.mp.	393
5	1 and 2 and 3 and 4	37

*Database: Wanfang (date run: 17/02/2023)*

### Search strategy

1. 颈动脉 ;
2. ("斑块" or "脂肪条纹" or "纤维血管瘤");
3. ("脆弱" or "稳定" or "新生血管");
4. 超微血流显像 ;
5. 1 and 2 and 3 and 4.

## Appendix 2 Definitions and equations for the diagnostic accuracy parameters

*Sensitivity refers to the probability of the positive results of superb microvascular imaging (SMI) for patients with intraplaque neovascularization (IPN). Equation of sensitivity is as follows:*

$$\text{sensitivity} = \frac{\text{number of true positives}}{\text{number of true positives} + \text{number of false negatives}} \quad [1]$$

*Specificity refers to the probability of the negative results of SMI for patients without IPN. Equation of specificity is as follows:*

$$\text{specificity} = \frac{\text{number of true negatives}}{\text{number of true negatives} + \text{number of false positives}} \quad [2]$$

*The positive likelihood ratio (LR+) is the probability that a positive test would be expected in a patient divided by the probability that a positive test would be expected in a patient without a disease. The equation of positive likelihood ratio is as follows:*

$$\text{Positive likelihood ratio} = \frac{\text{probability of positive test in those with disease}}{\text{probability of positive test in those without disease}} \quad [3]$$

*The negative likelihood ratio (LR-) is the probability of a negative test in those with disease, compared to the probability of a negative test in those without disease*

$$\text{Negative likelihood ratio} = \frac{\text{probability of negative test in those with disease}}{\text{probability of negative test in those without disease}} \quad [4]$$

*The diagnostic odds ratio (DOR) a test is the ratio of the odds of positivity in subjects with disease relative to the odds in subjects without disease, which is the measure of the effectiveness of a diagnostic test*

$$\text{DOR} = \text{LR} + / \text{LR} - \quad [5]$$