

## Appendix 1: Risk of Bias Assessment of RCTs

|                    |      |                        |                  |  |                            | Assessment of Bias  |   |  |                                  |                                      |
|--------------------|------|------------------------|------------------|--|----------------------------|---|---|--|----------------------------------|--------------------------------------|
| Study Author [Ref] | Year | Setting                | Participants     | Intervention   | Outcome                    | Randomisation & Concealment (Selection Bias)                    | Blinding (Performance bias)   | Blinding of outcomes (detection bias)                | Data completion (attrition bias) | Selective reporting (reporting bias) |
| Agarwal [55]       | 2011 | Single centre, India   | 4 PSP<br>23 SPP  | Iodopovidone vs talc via chest drain   | Recurrence of pneumothorax | Low risk: Computer generated sequence                           | High risk: not blinded to allocation  | Low risk: pneumothorax recurrence                    | Low risk: no loss to follow-up   | Low risk: all outcomes reported      |
| Alayouty [17]      | 2011 | Single centre, Egypt   | 82 PSP           | Minocycline vs abrasion (after VATS Bullectomy)  | Recurrence of pneumothorax | High risk: odd or even trial number                             | High risk: not blinded to allocation  | Low risk: pneumothorax recurrence                    | Low risk: no loss to follow-up   | Low risk: all reported               |
| Almind [6]         | 1989 | Single centre, Denmark | 71 PSP<br>25 SSP | 3 arms: talc, tetracycline or chest drainage alone   | Recurrence of pneumothorax | Unclear: no details given                                       | Unclear: no details given   | Low risk: pneumothorax recurrence                    | Moderate: 7% loss to follow-up   | Low risk: all outcomes reported      |
| Chen [51]          | 2006 | Single centre, Taiwan  | 202 PSP          | Minocycline vs no agent via chest drain (after VATS Bullectomy)                                    | Recurrence of pneumothorax | Low risk: by chart number assigned before work-up (odd or even) | High risk: not blinded as pain with minocycline expected to unmask blinding | Low risk: pneumothorax recurrence (patient reported) | Low risk: no loss to follow-up   | Low risk: all outcomes reported      |
| Chen [52]          | 2013 | Two centres, Taiwan    | 214 PSP          | Minocycline vs no agent via chest drain  | Recurrence of pneumothorax | Low risk: Computer generated sequence                           | High risk: not blinded to allocation  | Low risk: pneumothorax recurrence                    | Low risk: no loss to follow-up   | Low risk: all outcomes reported      |
| Chung [22]         | 2008 | Multi-centre, Korea    | 144 PSP          | 3 arms: talc & dextrose, dextrose vs no agent (after VATS + bleb resection or electro-coagulation) | Recurrence of pneumothorax | Unclear: no details given                                       | Unclear: no details given   | Low risk: pneumothorax recurrence                    | Low risk: no loss to follow-up   | Low risk: all outcomes reported      |

|                     |      |                              |                   |   |                            |  |  |                                   |                                |                                 |
|---------------------|------|------------------------------|-------------------|---|----------------------------|--|--|-----------------------------------|--------------------------------|---------------------------------|
| <b>Light [7]</b>    | 1990 | Multi-centre, USA            | 46 PSP<br>183 SSP | Tetracycline vs chest drainage alone                | Recurrence of pneumothorax | Low risk: Sequentially numbered sealed envelopes | High risk: not blinded as pain unable to match yellow colour of tetracycline | Low risk: pneumothorax recurrence | Low risk: 3% loss to follow-up | Low risk: all outcomes reported |
| <b>Tschopp [18]</b> | 2002 | Multi-centre (across Europe) | 144 PSP           | Talc poudrage vs no agent (after thoracoscopy)      | Recurrence of pneumothorax | Low risk: sealed envelopes                       | Unclear: no details given  | Low risk: pneumothorax recurrence | Low risk: 1% loss to follow-up | Low risk: all outcomes reported |
| <b>Wied [41]</b>    | 1983 | Single centre, Denmark       | 41 PSP            | Tetracycline vs silver nitrate (after thoracoscopy) | Recurrence of pneumothorax | Low risk: sealed envelopes                       | Unclear: no details given  | Low risk: pneumothorax recurrence | Low risk: no loss to follow-up | Low risk: all outcomes reported |

PSP: Primary Spontaneous Pneumothorax. SSP: Secondary Spontaneous Pneumothorax