

# Sameday bilateral surgery for cataract

## Review information

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### Dates

Assessed as Up-to-date:

Date of Search:

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### What's new

Date / Event	Description
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### History

Date / Event	Description
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## Abstract

### Background

### Objectives

### Search methods

### Selection criteria

## Data collection and analysis

### Results

### Authors' conclusions

## Plain language summary

### [Plain language title]

[Summary text]

## Background

### Description of the condition

### Description of the intervention

### How the intervention might work

### Why it is important to do this review

## Objectives

## Methods

### Criteria for considering studies for this review

#### *Types of studies*

#### **Immediate sequential bilateral surgery/same day sequential surgery.**

10) Risks/advantages of performing surgery on both eyes on the same day for "normal" patients (i.e. not mentally impaired or senile)

P: Patients with age-related cataract

I: Immediate sequential bilateral surgery versus surgery on both eyes on separate dates

C: Risk of endophthalmitis, post-operative anisometropia, patient satisfaction

O: Endophthalmitis rates. Postoperative anisometropia (>3 diopters difference spherical equivalent). Subjective satisfaction assessed by validated questionnaires. Serious adverse events

***Types of participants***

***Types of interventions***

***Types of outcome measures***

Primary outcomes

Secondary outcomes

**Search methods for identification of studies**

***Electronic searches***

***Searching other resources***

**Data collection and analysis**

***Selection of studies***

***Data extraction and management***

***Assessment of risk of bias in included studies***

***Measures of treatment effect***

***Unit of analysis issues***

***Dealing with missing data***

***Assessment of heterogeneity***

***Assessment of reporting biases***

***Data synthesis***

***Subgroup analysis and investigation of heterogeneity***

***Sensitivity analysis***

## **Results**

**Description of studies**

***Results of the search***

***Included studies***

***Excluded studies***

**Risk of bias in included studies**

***Allocation (selection bias)***

***Blinding (performance bias and detection bias)***

***Incomplete outcome data (attrition bias)***

***Selective reporting (reporting bias)***

***Other potential sources of bias***

## **Effects of interventions**

## **Discussion**

### **Summary of main results**

### **Overall completeness and applicability of evidence**

### **Quality of the evidence**

### **Potential biases in the review process**

### **Agreements and disagreements with other studies or reviews**

## **Authors' conclusions**

### **Implications for practice**

### **Implications for research**

## **Acknowledgements**

## **Contributions of authors**

## **Declarations of interest**

## **Differences between protocol and review**

## **Published notes**

## Characteristics of studies

### Characteristics of included studies

#### Lundström 2006

<b>Methods</b>	RCT Compares self-assessed visual function and visual acuity in patients receiving same-day bilateral cataract surgery or bilateral cataract surgery on different dates
<b>Participants</b>	Country and clinic: Blekinge Hospital, Karlskrona, Sweden Patients with age-related cataract receiving phacoemulsification. Demographics of Group 1: n= 50, mean age 72.5 yrs, 54.0 % women, median VA 0.6/0.6 (right/left eye) prior to surgery Demographics of Group 2: n= 46, mean age 72.5 yrs, 54.3% women, median VA 0.6/0.6 (right/left eye) prior to surgery No of patients excluded after randomization: 6% in Group 1, 10.9% in Group 2 No of patients lost to follow-up: not reported
<b>Interventions</b>	Group 1: immediate sequential bilateral cataract surgery Group 2: sequential bilateral cataract surgery delayed by 2 months
<b>Outcomes</b>	Visual acuity was 0.8 or better in 91.5% of patients in Group 1 and 91.3% of patients in Group 2. Two months after surgery total disability score (Catquest-score) was 7.0 in Group 1 and 7.0 in Group 2.
<b>Notes</b>	only means are presented, no standarddeviations postoperative anisometropia not noted. email to author The study was supported by the County Council of Blekinge. No conflicts of interests noted

#### Risk of bias table

<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Random sequence generation (selection bias)	Unclear risk	"The patients were randomly assigned to ISCS or to DSCS". No further description of randomization procedure
Allocation concealment (selection bias)	Unclear risk	Not described in paper
Blinding of participants and personnel (performance bias)	High risk	Not possible to blind patients or personnel to whether the patient had both eyes operated on the same day or on two different dates.
Blinding of outcome assessment (detection bias)	Unclear risk	Not reported
Incomplete outcome data (attrition bias)	Unclear risk	High rate of exclusions after randomization/drop-outs (8/96=8.3%), not possible to assess whether this influenced the outcome since the characteristics of drop-outs were not compared to non-drop-outs
Selective reporting (reporting bias)	Low risk	Important outcomes are reported

Other bias	Low risk	Not likely in this study
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### Sarikkola 2011

<b>Methods</b>	RCT Compares visual outcome, patient satisfaction, complication rates and postoperative anisometropi in patients randomized to immediate sequential bilateral or delayed sequential bilateral cataract surgery
<b>Participants</b>	Country and clinic: Helsinki University Eye Hospital, Helsinki, Finland Patients with age-related cataract undergoing phacoemulsification Demographics of Group 1: mean (SD) age 75.3 (7.9), 73.6% women, preop CDVA (median) 20/60 Demographics of Group 2: mean (SD) age 75.0 (8.1), 74.3% women, preop CDVA (median) 20/60 No of patients excluded after randomization: 4% in Group 1 and 2.7% in Group 2 No of patients lost to follow-up: 3.2% in total
<b>Interventions</b>	Group 1: immediate sequential bilateral cataract surgery Group 2: delayed sequential bilateral cataract surgery
<b>Outcomes</b>	Postoperatively satisfaction with vision (VF-7) was 24.3 (21.0) in Group 1 and 23.8 (19.2) in Group 2. Rate of any complications (intraoperatively up to 1 months postop) was 106/493 in Group 1 and 124/506 in Group 2. The rate of serious complications (wound leak, corneal edema, cystoid macular edema, endophthalmitis) was 9/493 in Group 1 and 9/506 in Group 2. CDVA was 20/25 or better in 376/493 in Group 1 and 336/506 in Group 2
<b>Notes</b>	email to author on post-op VA The study was supported by private and public research grants. No conflict of interests reported

### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	"Randomization was performed using sealed envelopes after the preoperative examination"
Allocation concealment (selection bias)	Unclear risk	Patients (and staff) knew after the preoperative assessment but before the surgery to which group they belonged
Blinding of participants and personnel (performance bias)	High risk	Not possible to blind patients or personnel to who had same-day or different day surgery
Blinding of outcome assessment (detection bias)	Unclear risk	Not reported
Incomplete outcome data (attrition bias)	Low risk	96.0% in Group 1 and 97.3% in Group 2 were treated per protocol. 491/507 randomized patients had 1 month follow-up
Selective reporting (reporting bias)	Low risk	Important outcomes were reported
Other bias	Low risk	Not likely in this study

**Serrano-Aguilar 2012**

<b>Methods</b>	RCT Compares postsurgical complications, visual acuity and self-perceived visual function after immediate sequential of delayed sequential bilateral cataract surgery
<b>Participants</b>	Country and clinic: multiple clinics in the Canary Islands, Spain Patients with age-related cataract receiving phacoemulsification Demographics of Group 1: mean (SD) age 72.9 (8.2), 61.2 % women, preop CDVA (median) 20/100 Demographics of Group 2: mean (SD) age 71.7 (7.9), 60.5% women, preop CDVA (median) 20/100 No of patients excluded after randomization: 5.0% in Group 1 and 3.7% in Group 2 No of patients lost to follow-up: 0 patients at 1 month follow-up
<b>Interventions</b>	Group 1: immediate sequential bilateral cataract surgery Group 2: delayed sequential bilateral cataract surgery
<b>Outcomes</b>	Postoperative visual acuity was only reported as median values. Rate of any complications (intra- and postop + dry eyes) was 39/834 in Group 1 and 59/780 in Group 2. Rate of serious complications (wound leak, corneal edema, cystoid macular edema, endophthalmitis) was 10/834 in Group 1 versus 3/780 in Group 2. Visual function score (VF-14 questionnaire) was 93.3 (12.8) in Group 1 and 95.8 (8.5) in Group 2 one month after surgery on the last eye.
<b>Notes</b>	email was sent to author to provide means and standard deviations on postoperative visual acuities The study was supported by public research grants

**Risk of bias table**

<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Random sequence generation (selection bias)	Low risk	"A computer-generated sequence was used"
Allocation concealment (selection bias)	Unclear risk	"Random numbers were obtained for all patients on the waiting list before participants were selected on the basis of the inclusion and exclusion criteria. Randomization was performed sequentially for blocks of 200 patients". Unclear whether those including the patients in the study were aware of the patients randomization status before inclusion/exclusion
Blinding of participants and personnel (performance bias)	High risk	Not possible to blind patients or personnel to whether the patient had both eyes operated on the same day or on two different dates.
Blinding of outcome assessment (detection bias)	Unclear risk	Not reported
Incomplete outcome data (attrition bias)	Low risk	Low number of exclusions and drop-outs (<5% at the 1 months postoperative examination)
Selective reporting (reporting bias)	Low risk	Important outcomes were reported

Other bias	Low risk	Not likely in this study
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### Footnotes

## Characteristics of excluded studies

### *Arshinoff 2003*

<b>Reason for exclusion</b>	Retrospective observational study reporting the outcome after same-day bilateral cataract surgery. Does not compare same-day bilateral with different-day bilataralt surgery
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### *Arshinoff 2006*

<b>Reason for exclusion</b>	Observational study assessing the resource utilization and economic incentives of same-day and different date bilateral cataract surgeries
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### *Arshinoff 2011*

<b>Reason for exclusion</b>	Literature review of reported cases. Not prospective or randomized study
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### *Chung 2009*

<b>Reason for exclusion</b>	Prospective, non-randomized, observational study comparing the outcome after same-day bilateral cataract surgery to separate date bilateral surgery
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### *Huang 2007*

<b>Reason for exclusion</b>	Retrospective observational study describing the outcome after same-day bilateral cataract surgery. Does not compare to patients being operated on separate dates
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### *Johansson 2003*

<b>Reason for exclusion</b>	Retrospective study reporting the outcome after same-day bilateral cataract surgery but does not compare to different date bilateral surgery
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### *Johansson 2004*

<b>Reason for exclusion</b>	Retrospective study reporting the refractive outcome after same-day bilateral cataract surgery but does not compare to different date bilateral surgery
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### *Leivo 2011*

<b>Reason for exclusion</b>	RCT. Compares economic costs not the rate of complications, postoperative anisometripi, postoperative visual function or patients satisfaction
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**Lundström 2009**

<b>Reason for exclusion</b>	Observational study reporting the resource utilization in same-day versus different date bilateral cataract surgery
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**Nassiri 2009**

<b>Reason for exclusion</b>	Prospective, non-randomized, observational study comparing the outcome after same-day or different date bilateral cataract surgery
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**Ramsay 1999**

<b>Reason for exclusion</b>	Retrospective study reporting the outcome after same-day bilateral cataract surgery. Does not compare to patients being operated on separate dates. Only a small number of patients had phacoemulsification, the majority had ECCE
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**Sarikkola 2004**

<b>Reason for exclusion</b>	Retrospective study reporting the outcome after same-day bilateral cataract surgery. Does not compare to a group operated on two separate dates
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**Sharma 2001**

<b>Reason for exclusion</b>	Observational study reporting the outcome after same-day bilateral cataract surgery but does not compare to patients being operated on separate dates. Only 1 patient received phacoemulsification, the rest had ECCE
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**Totan 2000**

<b>Reason for exclusion</b>	Retrospective study reporting the outcome after same-day bilateral cataract surgery in pediatric and adult patients. Does not compare to an adult group operated on two separate dates
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**Wertheim 2002**

<b>Reason for exclusion</b>	Observational study reporting the outcome after same-day bilateral cataract surgery. Does not compare same-day bilateral to different-day bilateral surgery
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*Footnotes*

**Characteristics of studies awaiting classification**

*Footnotes*

**Characteristics of ongoing studies**

*Footnotes*

## Summary of findings tables

### Additional tables

### References to studies

#### Included studies

##### **Lundström 2006**

[Published in: *J Cataract Refract Surg*; 32: 826-830]

[Empty]

##### **Sarikkola 2011**

[Published in: *J Cataract Refract Surg* 2011; 37: 992-1002]

[Empty]

##### **Serrano-Aguilar 2012**

[Published in: *J Cataract Refract Surg*; 2012: 1734-1742]

[Empty]

#### Excluded studies

##### **Arshinoff 2003**

[Published in: *J Cataract Refract Surg*; 29: 1281-1291]

[Empty]

##### **Arshinoff 2006**

[Published in: *J Cataract Refract Surg*; 32: 1355-1360]

[Empty]

##### **Arshinoff 2011**

[Published in: *J Cataract Refract Surg*; 37: 2105-2114]

[Empty]

##### **Chung 2009**

[Published in: *Jpn J Ophthalmol*; 53: 107-113]

[Empty]

##### **Huang 2007**

[Published in: *Chang Gung Med J*; 30: 151-160]

[Empty]

##### **Johansson 2003**

[Published in: *Br J Ophthalmol*; 87: 285-290]

[Empty]

**Johansson 2004**

[Published in: *J Cataract Refract Surg*; 30: 1326-1334]

[Empty]

**Leivo 2011**

[Published in: *J Cataract Refract Surg*; 37: 1003-1008]

[Empty]

**Lundström 2009**

[Published in: *Acta Ophthalmol*; 87: 33-38]

[Empty]

**Nassiri 2009**

[Published in: *Eye*; 23: 89-95]

[Empty]

**Ramsay 1999**

[Published in: *J Cataract Refract Surg*; 25: 753-762]

[Empty]

**Sarikkola 2004**

[Published in: *J Cataract Refract Surg*; 30: 1335-1341]

[Empty]

**Sharma 2001**

[Published in: *J Cataract Refract Surg*; 27: 741-744]

[Empty]

**Totan 2000**

[Published in: *J Cataract Refract Surg*; 26: 1008-1011]

[Empty]

**Wertheim 2002**

[Published in: *Br J Ophthalmol*; 86: 1356-1358]

[Empty]

**Studies awaiting classification****Ongoing studies****Other references****Additional references****Other published versions of this review**

## Data and analyses

### 1 Complication rate

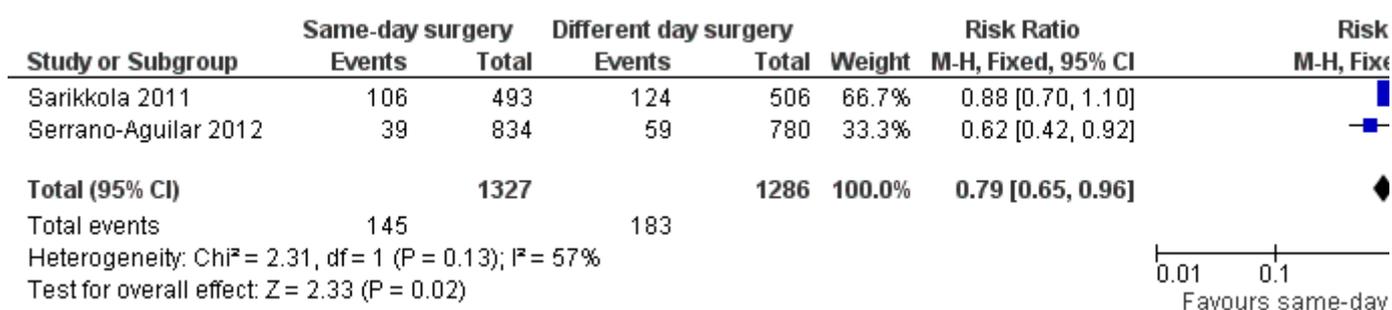
Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Any postoperative complications	2	2613	Risk Ratio (M-H, Fixed, 95% CI)	0.79 [0.65, 0.96]
1.2 Serious postoperative complications	2	2613	Risk Ratio (M-H, Fixed, 95% CI)	1.57 [0.76, 3.23]

### 3 Self-assessed visual function

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
3.1 Subjective visual function test	2	2096	Std. Mean Difference (IV, Fixed, 95% CI)	-0.12 [-0.20, -0.03]

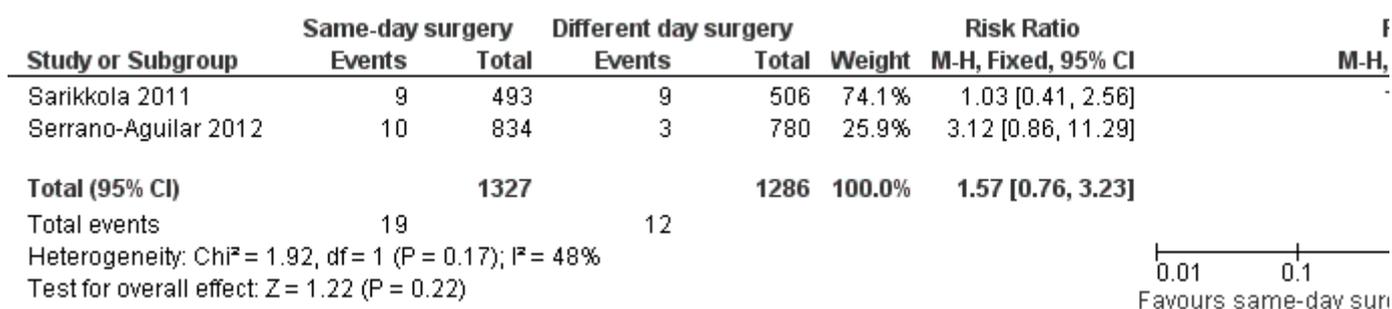
## Figures

Figure 1 (Analysis 1.1)



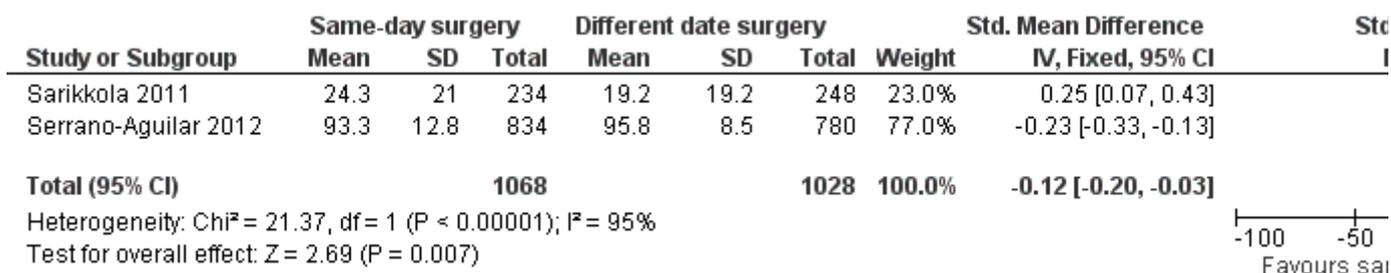
Forest plot of comparison: 1 Complication rate, outcome: 1.1 Any postoperative complications.

Figure 2 (Analysis 1.2)



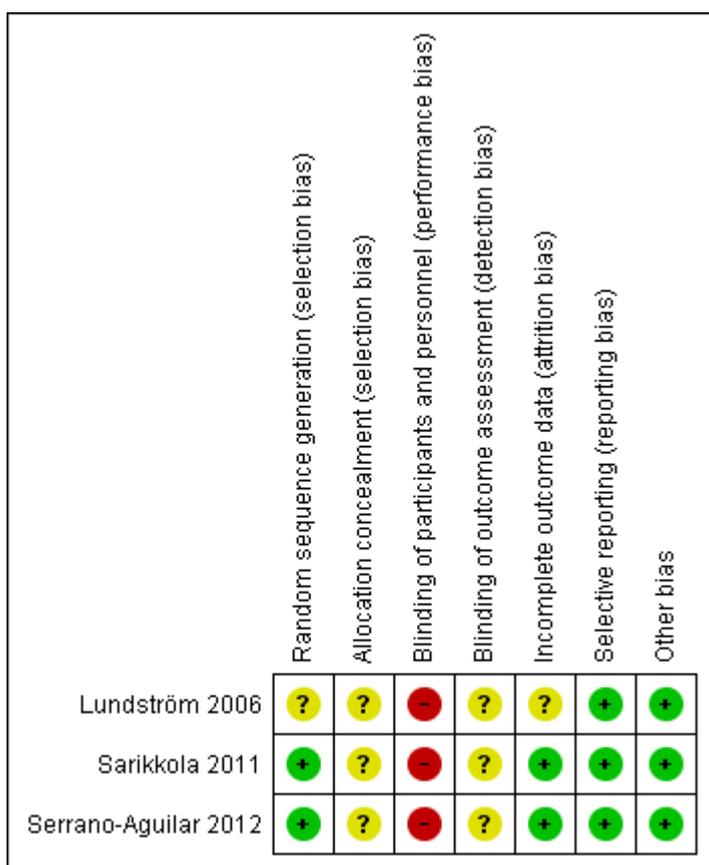
Forest plot of comparison: 1 Complication rate, outcome: 1.2 Serious postoperative complications.

### Figure 3 (Analysis 3.1)



Forest plot of comparison: 3 Self-assessed visual function, outcome: 3.1 Subjective visual function test.

### Figure 4



Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

## Sources of support

### Internal sources

- No sources of support provided

### External sources

- No sources of support provided

## Feedback

## Appendices