

NKR 4 Grå Stær PICO 4a Toric IOLs for treatment of astigmatism (>2 dioptrier) in patients with cataract

Review information

Authors

Sundhedsstyrelsen¹

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Citation example: S. NKR 4 Grå Stær PICO 4a Toric IOLs for treatment of astigmatism (>2 dioptrier) in patients with cataract. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Characteristics of studies

Characteristics of included studies

Holland 2010

Methods	RCT Compares UCDVA, spectacle independence and safety in patients receiving toric (AcrySof Toric) or non-toric (Acrysof) IOL
Participants	Country and clinic: multicenter study in USA Patients with age-related cataract and preexisting corneal astigmatism Demographics of study population: 55.1% female, mean age was 71 years Follow-up: 1 year postoperatively
Interventions	Group 1: toric IOL (Acrysof Toric) Group 2: spherical IOL (Acrysof SA60AT)
Outcomes	UCDVA at 1 year postoperatively was 20/25 or better in 154/243 in Group 1 and 98/237 in Group 2 Distance vision spectacle independence at 6 months postoperatively was 147/241 in Group 1 and 86/236 in Group 2 Safety: complications (e.g. macular edema, retinal detachment, additional surgical procedures) occurred in 11/243 in Group 1 and 3/237 in Group 2
Notes	The study was sponsored by Alcon Laboratories Inc. Data from the study were considered during the approval process of the AcrySof Toric IOL by the United States Food and Drug Administration

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	"Each site had sealed randomization envelopes with IOL treatment assignments enclosed... For each subject both an AcrySof Toric and a control IOL was available before beginning of surgery. After the surgical incision was performed, the envelope was opened and the assigned IOL was implanted"
Allocation concealment (selection bias)	Low risk	"Intraocular lens diopter and cylinder power were calculated for all subjects preoperatively, because IOL assignment was not revealed until cataract surgery was in progress"
Blinding of participants and personnel (performance bias)	Unclear risk	"After ... the envelope was opened and the assigned IOL was implanted... the investigators were no longer masked to IOL assignment, but the subject remained masked"
Blinding of outcome assessment (detection bias)	Unclear risk	Not reported
Incomplete outcome data (attrition bias)	Unclear risk	"Of the 541 enrolled subjects, 24 did not receive implants owing to preoperative or intraoperative exclusions; 517 received the AcrySof Toric IOL (n=256) or the control IOL (n=261). Results exclude subjects who received IOLs but discontinued (Toric n=4, control n=2) or were lost to follow-up (Toric n=9, control n=22)" Thus, 5% in the toric and 9% in the control group were lost after randomization. A comparison between the lost group and the analysed group is not provided and hence we cannot judge whether the high number of lost subjects were likely to affect the results
Selective reporting (reporting bias)	Low risk	Important outcomes are reported
Other bias	High risk	Industry sponsored study but not likely to affect the result

Visser 2014

Methods	Study design: Randomized controlled trial Study grouping: Parallel group
Participants	Baseline Characteristics Intervention <ul style="list-style-type: none"> ● Mean age (SD): 74 (50-88) ● No. of males (%) : 49 Kontrol <ul style="list-style-type: none"> ● Mean age (SD): 74 (49-87) ● No. of males (%) : 54 Overall <ul style="list-style-type: none"> ● Mean age (SD): ● No. of males (%) : Included criteria: 21 years or older, bilateral age-related cataract, and bilateral regular corneal astigmatism of at least 1.25D. Excluded criteria: Irregular corneal astigmatism, Fuchs endothelial dystrophy stage 2 or higher, glaucoma related extensive visual field loss, or and expected postoperative corrected distance visual acuity of less than 20/40 Pretreatment: Age, mean (range) intervention: 74 (50-88), male %: 49%Age, mean (range), kontrol: 74 (49-87), male %: 54%
Interventions	Intervention Characteristics Intervention <ul style="list-style-type: none"> ● Description: Acrysof aspherical toric IOL (model SN6AT3-T9) ● Duration of intervention: ● Dose: ● Follow-up time after EoT: 6 mdr Kontrol <ul style="list-style-type: none"> ● Description: Acrysof aspherical IOL model SN60WF ● Duration of intervention: ● Dose: ● Follow-up time after EoT: 6 mdr
Outcomes	Brilleafhængighed <ul style="list-style-type: none"> ● Outcome type: DichotomousOutcome ● Reporting: Fully reported ● Direction: Lower is better ● Data value: Endpoint Antal patienter der ikke opnåede postop UCDVA 0.8 (snellen) eller bedre <ul style="list-style-type: none"> ● Outcome type: DichotomousOutcome ● Reporting: Fully reported ● Direction: Lower is better ● Data value: Endpoint Antal komplikationer <ul style="list-style-type: none"> ● Outcome type: DichotomousOutcome ● Reporting: Fully reported ● Direction: Lower is better ● Data value: Endpoint
Notes	<i>Jesper Hjortdal on 28/04/2019 20:55</i> Select A: RCT. Inkluderes.

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Judgement Comment: Patients were randomized using a online program. s. 1464
Allocation concealment (selection bias)	Low risk	Judgement Comment: computer generated. central allocation
Blinding of participants and personnel (performance bias)	Low risk	Judgement Comment: The patients and investigator performing the postoperative examinations were blinded.
Blinding of outcome assessment (detection bias)	Low risk	Judgement Comment: The investigator performing the postoperative examinations were blinded.
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Intet frafald i kontrolgruppen og 4 der falder fra i interventingsgruppen (2 dør og 2 dropouts). men der er foretaget intention to treatanalyser
Selective reporting (reporting bias)	Low risk	Judgement Comment: Protokol på clinical trials. All primary and secondary outcomes of interest are reported
Other bias	Low risk	Judgement Comment: appears to be free of other sources of bias

Characteristics of excluded studies

Ahmed 2010

Reason for exclusion	Observational study describing the outcome after bilateral implantation with toric IOLs but did not compare to a group not receiving toric IOL implantation
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Alberdi 2012

Reason for exclusion	Prospective observational study describing the rotational stability of Rayner T-flex. Does not compare visual function to patients not receiving toric IOL
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Ale 2012

Reason for exclusion	Retrospective study comparing the outcome after implantation of two different types of IOLs (AcrySof Toric and AT-Torbi) but does not compare to patients not receiving toric IOL implantation
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Alio 2010

Reason for exclusion	Prospective, observational study describing the outcome after implantation of a toric IOL (Acri.Comfort 646 TLC) but does not compare to patients not receiving toric IOL implantation
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Alio 2011

Reason for exclusion	Prospective case series describing the outcome after implantation of a toric IOL (AcrySof) but does not compare to a group not receiving toric IOL implantation
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Alio 2011b

Reason for exclusion	Prospective case series describing the outcome after implantation of a toric IOL (AT Lisa 909M) but does not compare to a group not receiving toric IOL implantation
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Bachernegg 2015

Reason for exclusion	Wrong study design
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Bandeira 2018

Reason for exclusion	Wrong study design
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Bauer 2008

Reason for exclusion	Prospective, observational studies describing the outcome after implantation of a toric IOL (AcrySof) but does not compare to a group not receiving toric IOL implantation
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Cervantes-Coste 2012

Reason for exclusion	Observational study describing the outcome after implantation of a toric IOL (AcrySof) but does not compare to a group not receiving toric IOL implantation
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Chua 2012

Reason for exclusion	RCT comparing the outcome after implantation of an acrylic (AcrySof Toric SN60T3, SN60T4, and SN60T5) or a silicone (Staar AA4203-TF, AA4203-TL) toric IOL but does not compare to a group receiving a non-toric IOL
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Correia 2009

Reason for exclusion	Paper published in Portugese
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Dardzhikova 2009

Reason for exclusion	Observational study describing the outcome after implantation of a toric IOL (AcrySof) but does not compare to a group not receiving toric IOL implantation
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De Silva 2006

Reason for exclusion	Prospective, observational study describing the outcome after implantation of a toric IOL (MicroSil 6116TU) but does not compare to a group receiving a non-toric IOL
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Dick 2006

Reason for exclusion	Observational study describing the outcome after implantation of a toric IOL (MicroSil Toric) but does not compare to a group receiving non-toric IOL implantation. Paper published in German
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Elhofi 2015

Reason for exclusion	Wrong study design
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Emesz 2015

Reason for exclusion	Wrong comparator
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Entabi 2011

Reason for exclusion	Cohort study describing the outcome after impantation of a toric IOL (T-flex 623T) but does not compare to a group receiving a non-toric IOL
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Ernst 2011

Reason for exclusion	Retrospective case series describing outcome after implantation of AcrySof Toric IOL
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Feng 2017

Reason for exclusion	Wrong intervention
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Ferreira 2012

Reason for exclusion	RCT. Compares Tecnis and AcrySof Toric IOLs. Does not compare to a group not receiving a toric IOL
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Freitas 2014

Reason for exclusion	Wrong study design
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Frohn 1999

Reason for exclusion	Case report of a single patient receiving a toric IOL
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Gangwani 2014

Reason for exclusion	Wrong comparator
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Gayton 2011

Reason for exclusion	Retrospective study describing the outcome after implantation of a toric IOL (AcrySof toric) but does not compare to a group receiving a non-toric IOL
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Gerl 2017

Reason for exclusion	Wrong study design
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Gil 2014

Reason for exclusion	Wrong intervention
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Gills 2002

Reason for exclusion	Case report describing management of astigmatism with 2 toric IOLs
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Gills 2002b

Reason for exclusion	Prospective study describing the outcome of combined toric IOL implantation (Staar) and relaxing incisions in reducing high preexisting astigmatism
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Gills 2003

Reason for exclusion	Case report describing the management of astigmatism with 2 toric IOLs
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Goggin 2011

Reason for exclusion	Observational study describing the outcome after implantation of a toric IOL (SN60TT AcrySof Toric) but does not compare to a group receiving a non-toric IOL
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Goggin 2011b

Reason for exclusion	Same study population as Goggin 2011, describes the outcome after implantation of a toric IOL (SN60TT Acrysof Toric) but does not compare to a group receiving a non-toric IOL
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Gundersen 2012

Reason for exclusion	Observational study describing the outcome after implantation of a toric IOL (AcrySof Toric) but does not compare to a group receiving a non-toric IOL
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Hatch 2015

Reason for exclusion	Wrong intervention
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Hirnschall 2014

Reason for exclusion	Wrong intervention
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Hoffmann 2011

Reason for exclusion	Case series describing the outcome after implantation of a toric IOL (AcrySof Toric) but does not compare to a group receiving a non-toric IOL
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Jampaulo 2008

Reason for exclusion	Retrospective, interventional, case series describing the rotational stability of a toric IOL (Staar Toric) but does not compare visual outcome/spectacle indepenence in patients receiving/not receiving a toric IOL
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Jin 2010

Reason for exclusion	Partly observational and partly theoretical study evaluating the effect of axis misalignment on postoperative refraction
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Jung 2018

Reason for exclusion	Wrong study design
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Kasthurirangan 2015

Reason for exclusion	Wrong outcomes
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Kersey 2007

Reason for exclusion	Case series describing the outcome after implantation of a toric IOL in patients who had previously undergone penetrating keratoplasty
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Kessel 2016

Reason for exclusion	Wrong study design
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Kim 2010

Reason for exclusion	Prospective, observational study describing the rotational stability of a toric IOL (AcrySof Toric) but does not compare visual outcome or spectacle indepenence in patients receiving/not receiving a toric IOL
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Koshy 2010

Reason for exclusion	Prospective, observational study describing the rotational stability of a toric IOL (AcrySof SN60TT) but does not compare visual outcome or spectacle indepenence in patients receiving/not receiving a toric IOL
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Lam 2016

Reason for exclusion	Wrong study design
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Lane 2009

Reason for exclusion	Prospective non-randomized study comparing outcome after implantation of AcrySof Toric or AcrySof spherical IOL
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Leon 2015

Reason for exclusion	Wrong study design
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Leyland 2001

Reason for exclusion	Case series describing the outcome and rotational stability of a toric IOL (Staar Toric AA-4203TF) but does not compare to a group receiving a non-toric IOL
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Liu 2014

Reason for exclusion	Wrong study design
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Maedel 2014

Reason for exclusion	Wrong study design
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Mairot 2016

Reason for exclusion	Wrong study design
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Mayer 2017

Reason for exclusion	Wrong study design
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Mencucci 2013

Reason for exclusion	Prospective, non-randomized, observational study comparing the outcome after implantation of AcrySof Toric and AcrySof spherical IOL
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Mencucci 2013a

Reason for exclusion	Wrong study design
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Mendicute 2008

Reason for exclusion	Prospective, observational study describing the outcome after implantation of AcrySof toric IOL but does not compare to a group receiving non-toric IOL
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Mendicute 2009

Reason for exclusion	Wrong study population
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Mingo-Botin 2010

Reason for exclusion	Wrong study population
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Mohammad Rabei 2016

Reason for exclusion	Wrong study design
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Mojzis 2011

Reason for exclusion	Retrospective study evaluating the outcome after multifocal toric IOL implantation
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Mozayan 2014

Reason for exclusion	Wrong study design
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Nagpal 2015

Reason for exclusion	Wrong study design
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Nanavaty 2017

Reason for exclusion	Wrong study design
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Osher 2011

Reason for exclusion	Observational study describing the outcome after combined toric IOL implantation and astigmatic keratotomy. Does not compare to a group not receiving toric IOL implantation
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Ouchi 2011

Reason for exclusion	Prospective study evaluating the effect of toric IOL implantation combined with limbal relaxing incisions. Does not compare to a group not receiving toric IOL implantation
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Packer 2018

Reason for exclusion	Wrong comparator
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Park 2011

Reason for exclusion	Prospective study comparing toric and non-toric IOL implantation in patients undergoing simultaneous phacoemulsification and 23-gauge vitrectomy. All patients had vitreoretinal disease
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Pepose 2015

Reason for exclusion	Wrong comparator
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Poll 2011

Reason for exclusion	Retrospective study comparing outcome after toric IOL or peripheral corneal relaxing incisions
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Pouyeh 2011

Reason for exclusion	Retrospective case series describing the outcome after implantation of a toric IOL (AcrySof Toric) in a teaching hospital. Does not compare to a group receiving a non-toric IOL
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Roensch 2012

Reason for exclusion	Case series describing the outcome after toric IOL (AcrySof Toric) or multifocal IOL (AcrySof Restor) implantation. Does not compare to a group receiving a non-toric, monofocal IOL
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Ruhswurm 2000

Reason for exclusion	Observational study describing the outcome after toric IOL (Staar AA4203T) implantation. Does not compare to a group receiving a non-toric IOL
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Sambhara 2017

Reason for exclusion	Wrong study design
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Sasaki 2012

Reason for exclusion	Prospective, non-randomized study comparing outcome after implantation of a toric (AcrySof Toric) or spherical (AcrySof) IOL
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Scialdone 2013

Reason for exclusion	Wrong comparator
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Seth 2018

Reason for exclusion	Wrong study design
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Sheppard 2013

Reason for exclusion	Multicenter cohort study describing the outcome after implantation of a toric IOL (Tecnis Toric) but does not compare to a group receiving a non-toric IOL
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Stanwood 2002

Reason for exclusion	Case series describing the outcome after implantation with a toric IOL (Staar AA4203TF or AA4203TL) but does not compare to a group receiving a non-toric IOL
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Statham 2009

Reason for exclusion	Retrospective chart review comparing outcome after AcrySof Toric or AcrySof spherical IOL
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Stewart 2010

Reason for exclusion	Retrospective study describing the outcome after toric IOL implantation (Rayner T models) in patients who had previously undergone penetrating keratoplasty compared to non-keratoplasty patients. Does not compare to a group receiving a non-toric IOL
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Sun 2000

Reason for exclusion	Retrospective study describing the outcome after implantation of a toric IOL (Staar AA4203TF) or a non-toric IOL (unknown model). The study included both patients who underwent cataract surgery and clear lens extraction
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Swiatek 2012

Reason for exclusion	Retrospective case series reporting the outcome after implantation of a toric IOL (AcrySof T3-T9) but does not compare to a group receiving a non-toric IOL
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Tassignon 2011

Reason for exclusion	Observational study describing the outcome after spherotoric IOL implantation (Morcher BIL IOL). Does not compare to a group receiving a non-toric IOL
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Thomas 2018

Reason for exclusion	Wrong study design
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Titiyal 2014

Reason for exclusion	Wrong study design
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Vasavada 2013

Reason for exclusion	Wrong study design
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Vickovic 2012

Reason for exclusion	Observational study evaluating the outcome after implantation of AT TORBI toric intraocular lens. Does not compare to a group not receiving a toric IOL
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Visser 2011

Reason for exclusion	Prospective, observational study describing the outcome after implantation of different types of toric IOLs (AcrySof SN60T6, SN60T7, SN60T8 or SN60T9) but does not compare to a group that did not receive toric IOL implantation
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Visser 2011b

Reason for exclusion	Cohort study describing the outcome after implantation of a multifocal IOL (AT Lisa). Does not compare to a group receiving a non-toric or non-multifocal IOL
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Visser 2012

Reason for exclusion	Observational study describing the outcome after implantation of different types of toric IOLs (AcrySof Toric) or toric phakic IOL (Artiflex pIOL, Artisan Toric pIOL) implantation. Does not compare to a group receiving a non-toric IOL
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Waltz 2015

Reason for exclusion	Wrong patient population
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Webers 2017

Reason for exclusion	Wrong study design
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Woo 2015

Reason for exclusion	Wrong study design
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Zuberbuhler 2008

Reason for exclusion	Retrospective study describing the outcome after implantation of a toric IOL (AcrySof SA60T3, SA60T4, SA60T5) but does not compare to a group receiving a non-toric IOL
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Zukaite 2019

Reason for exclusion	Wrong study design
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Footnotes

References to studies

Included studies

Holland 2010

[Empty]

Visser 2014

Visser, Nienke; Beckers, Henny J. M.; Bauer, Noel J. C.; Gast, Sacha T. J. M.; Zijlmans, Bart L. M.; Berenschot, Tos T. J. M.; Webers, Carroll A.; Nuijts, Rudy M. M. A.. Toric vs aspherical control intraocular lenses in patients with cataract and corneal astigmatism: a randomized clinical trial.. JAMA Ophthalmology 2014;132(12):1462-1468. [DOI:]

Excluded studies

Ahmed 2010

[Empty]

Alberdi 2012

[Empty]

Ale 2012

[Empty]

Alio 2010

[Empty]

Alio 2011

[Empty]

Alio 2011b

[Empty]

Bachernegg 2015

Bachernegg, Alexander; Ruckl, Theresa; Strohmaier, Clemens; Jell, Gerlinde; Grabner, Gunther; Dexl, Alois K.. Vector Analysis, Rotational Stability, and Visual Outcome After Implantation of a New Aspheric Toric IOL... Journal of Refractive Surgery 2015;31(8):513-520. [DOI:]

Bandeira 2018

Bandeira, Francisco; Morral, Merce; Elies, Daniel; Eguiza, Sergio; Souki, Spyridoula; Manero, Felicidad; Guell, Jose L.. Transitional conic toric intraocular lens for the management of corneal astigmatism in cataract surgery.. Clinical Ophthalmology 2018;12(Journal Article):1071-1079. [DOI:]

Bauer 2008

[Empty]

Cervantes-Coste 2012

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Chua 2012

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Correia 2009

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Dardzhikova 2009

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De Silva 2006

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Dick 2006

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Elhofi 2015

Elhofi, Abdel Hamid; Helaly, Hany Ahmed. Comparison Between Digital and Manual Marking for Toric Intraocular Lenses: A Randomized Trial.. Medicine 2015;94(38):e1618. [DOI:]

Emesz 2015

Emesz, Martin; Dexl, Alois K.; Krall, Eva M.; Bachernegg, Alexander; Moussa, Sarah; Jell, Gerlinde; Grabner, Gunther; Artl, Eva-Maria. Randomized controlled clinical trial to evaluate different intraocular lenses for the surgical compensation of low to moderate-to-high regular corneal astigmatism during cataract surgery.. Journal of Cataract & Refractive Surgery 2015;41(12):2683-2694. [DOI:]

Entabi 2011

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Ernst 2011

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Feng 2017

Feng K.; Guo H.K.; Zhang Y.L.; Wu, Z.. Visual quality comparison after multifocal toric intraocular lens or monofocal toric intraocular lens implantation.. [Zhonghua yan ke za zhi] Chinese journal of ophthalmology 2017;53(4):274-280. [DOI:]

Ferreira 2012

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Freitas 2014

Freitas, Giuliano Oliveira; Boteon, Joel Edmur; Carvalho, Mario Jose; Pinto, Rogerio Melo Costa. Treatment of astigmatism during phacoemulsification.. Arquivos Brasileiros de Oftalmologia 2014;77(1):40-46. [DOI:]

Frohn 1999

[Empty]

Gangwani 2014

Gangwani, Vinod; Hirschall, Nino; Findl, Oliver; Maurino, Vincenzo. Multifocal toric intraocular lenses versus multifocal intraocular lenses combined with peripheral corneal relaxing incisions to correct moderate astigmatism.. Journal of Cataract & Refractive Surgery 2014;40(10):1625-1632. [DOI:]

Gayton 2011

[Empty]

Gerl 2017

Gerl M.; Breyer D.R.H.; Hagen P.; Koss M.J.; Mueller M.; Al Saad M.; Gerl R.H.; Kaymak H.; Klabe K.; Kretz, F. T. A.. Clinical Comparison of a Trifocal and a Trifocal-Toric Intraocular Lens Based on the Same Diffractive Platform.. Klinische Monatsblätter für Augenheilkunde 2017;234(10):1276-1282. [DOI:]

Gil 2014

Gil, Miguel A.; Varon, Consuelo; Cardona, Genis; Vega, Fidel; Buil, Jose A.. Comparison of far and near contrast sensitivity in patients symmetrically implanted with multifocal and monofocal IOLs.. European journal of ophthalmology 2014;24(1):44-52. [DOI:]

Gills 2002

[Empty]

Gills 2002b

[Empty]

Gills 2003

[Empty]

Goggin 2011

[Empty]

Goggin 2011b

[Empty]

Gundersen 2012

[Empty]

Hatch 2015

Hatch, Kathryn M.; Woodcock, Emily C.; Talamo, Jonathan H.. Intraocular lens power selection and positioning with and without intraoperative aberrometry.. Journal of Refractive Surgery 2015;31(4):237-242. [DOI:]

Hirschall 2014

Hirschall, Nino; Gangwani, Vinod; Crnej, Alja; Koshy, John; Maurino, Vincenzo; Findl, Oliver. Correction of moderate corneal astigmatism during cataract surgery: toric intraocular lens versus peripheral corneal relaxing incisions.. Journal of Cataract & Refractive Surgery 2014;40(3):354-361. [DOI:]

Hoffmann 2011

[Empty]

Jampaulo 2008

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Jin 2010

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Jung 2018

Jung, Na Yeon; Lim, Dong Hui; Hwang, Sung Soon; Hyun, Joo; Chung, Tae-Young. Comparison of clinical outcomes of toric intraocular lens, Precizon vs Tecnis: a single center randomized controlled trial.. BMC Ophthalmology 2018;18(1):292. [DOI:]

Kasthurirangan 2015

Kasthurirangan S.; Bentow, S.. Refractive and corneal astigmatism in patients with monofocal intraocular lens.. Investigative Ophthalmology and Visual Science.Conference: 2015 Annual Meeting of the Association for Research in Vision and Ophthalmology, ARVO 2015.United States 2015;56(7):2967. [DOI:]

Kersey 2007

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Kessel 2016

Kessel, Line; Andresen, Jens; Tendal, Britta; Erngaard, Ditte; Flesner, Per; Hjortdal, Jesper. Toric Intraocular Lenses in the Correction of Astigmatism During Cataract Surgery: A Systematic Review and Meta-analysis. Ophthalmology 2016;123(2):275-286. [DOI:]

Kim 2010

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Koshy 2010

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Lam 2016

Lam, Douglas K. T.; Chow, Vanissa W. S.; Ye, Cong; Ng, Paul Ka-Fai; Wang, Zheng; Jhanji, Vishal. Comparative evaluation of aspheric toric intraocular lens implantation and limbal relaxing incisions in eyes with cataracts and <=3 dioptres of astigmatism.. British Journal of Ophthalmology 2016;100(2):258-262. [DOI:]

Lane 2009

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Leon 2015

Leon, Pia; Pastore, Marco Rocco; Zanei, Andrea; Umari, Ingrid; Messai, Meriem; Negro, Corrado; Tognetto, Daniele. Correction of low corneal astigmatism in cataract surgery.. International Journal of Ophthalmology 2015;8(4):719-724. [DOI:]

Leyland 2001

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Liu 2014

Liu, Zhiping; Sha, Xiangyin; Liang, Xuanwei; Wang, Zhonghao; Liu, Jingbo; Huang, Danping. Toric intraocular lens vs. peripheral corneal relaxing incisions to correct astigmatism in eyes undergoing cataract surgery.. Eye Science 2014;29(4):198-203. [DOI:]

Maedel 2014

Maedel, Sophie; Hirnschall, Nino; Chen, Yen-An; Findl, Oliver. Rotational performance and corneal astigmatism correction during cataract surgery: aspheric toric intraocular lens versus aspheric nontoric intraocular lens with opposite clear corneal incision.. Journal of Cataract & Refractive Surgery 2014;40(8):1355-1362. [DOI:]

Mairot 2016

Mairot A.; Dot C.; El Chehab H.; Agard, E.. Interest of low power toric intra ocular lenses in cataract surgery, about 80 eyes Apolline Mairot; Corinne Dot; Hussam El Chehab; Emilie Agard.. Investigative Ophthalmology and Visual Science.Conference: 2016 Annual Meeting of the Association for Research in Vision and Ophthalmology, ARVO 2016.United States 2016;57(12):1315. [DOI:]

Mayer 2017

Mayer W.J.; Kreutzer T.; Dirisamer M.; Kern C.; Kortuem K.; Vounotrypdis E.; Priglinger S.; Kook, D.. Comparison of visual outcomes, alignment accuracy, and surgical time between 2 methods of corneal marking for toric intraocular lens implantation.. Journal of cataract and refractive surgery 2017;43(10):1281-1286. [DOI:]

Mencucci 2013

[Empty]

Mencucci 2013a

Mencucci R.; Giordano C.; Favuzza E.; Gicquel J.J.; Spadea L.; Menchini, U.. Astigmatism correction with toric intraocular lenses: Wavefront aberrometry and quality of life.. British Journal of Ophthalmology 2013;97(5):578-582. [DOI:]

Mendicute 2008

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Mendicute 2009

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Mingo-Botin 2010

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Mohammad Rabei 2016

Mohammad-Rabei, Hossein; Mohammad-Rabei, Elham; Espandar, Goldis; Javadi, Mohammad Ali; Jafarinasab, Mohammad Reza; Hashemian, Seyed Javad; Feizi, Sepehr. Three Methods for Correction of Astigmatism during Phacoemulsification.. Journal of Ophthalmic & Vision Research 2016;11(2):162-167. [DOI:]

Mojzis 2011

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Mozayan 2014

Mozayan E.; Lee, J. K.. Update on astigmatism management.. Current opinion in ophthalmology 2014;25(4):286-290. [DOI:]

Nagpal 2015

Nagpal, Ritu; Sharma, Namrata; Vasavada, Viraj; Maharana, Prafulla K.; Titiyal, Jeewan S.; Sinha, Rajesh; Upadhyay, Ashish D.; Vajpayee, Rasik B.. Toric intraocular lens versus monofocal intraocular lens implantation and photorefractive keratectomy: a randomized controlled trial.. American Journal of Ophthalmology 2015;160(3):479-486.e2. [DOI:]

Nanavaty 2017

Nanavaty, Mayank A.; Bedi, Kaveeta K.; Ali, Shahnaz; Holmes, Mathew; Rajak, Saul. Toric Intraocular Lenses Versus Peripheral Corneal Relaxing Incisions for Astigmatism Between 0.75 and 2.5 Diopters During Cataract Surgery.. American Journal of Ophthalmology 2017;180(Journal Article):165-177. [DOI:]

Osher 2011

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Ouchi 2011

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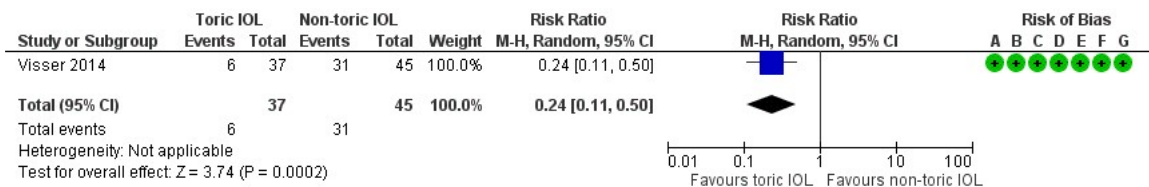
Data and analyses

1 Torisk IOL vs Non-torisk IOL

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Spectacle dependence.	1	82	Risk Ratio (M-H, Random, 95% CI)	0.24 [0.11, 0.50]
1.3 No of patients not obtainingUCDVA 20/25 or better	2	194	Risk Ratio (M-H, Random, 95% CI)	0.47 [0.34, 0.64]
1.4 Number of complications.	1	82	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.35, 2.39]

Figures

Figure 1 (Analysis 1.1)

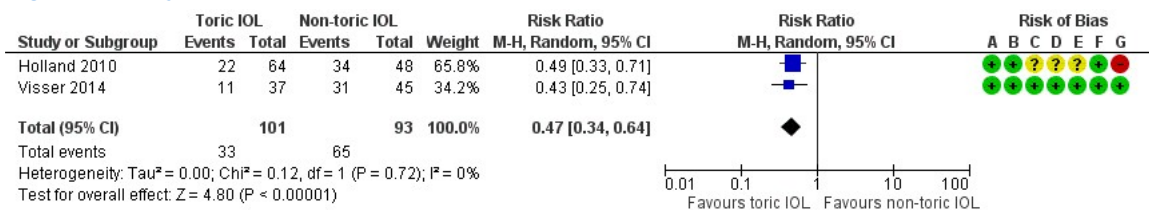


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of participants and personnel (performance bias)
- (D) Blinding of outcome assessment (detection bias)
- (E) Incomplete outcome data (attrition bias)
- (F) Selective reporting (reporting bias)
- (G) Other bias

Forest plot of comparison: Torisk IOL vs Non-Torisk IOL, outcome: 1.1 Spectacle dependence..

Figure 2 (Analysis 1.3)

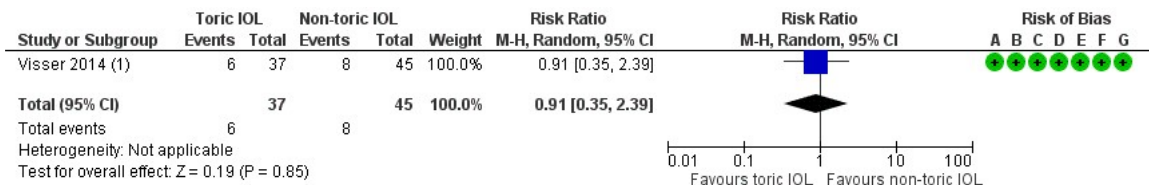


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of participants and personnel (performance bias)
- (D) Blinding of outcome assessment (detection bias)
- (E) Incomplete outcome data (attrition bias)
- (F) Selective reporting (reporting bias)
- (G) Other bias

Forest plot of comparison: 1 Torisk IOL vs Non-torisk IOL, outcome: 1.3 No of patients not obtainingUCDVA 20/25 or better.

Figure 3 (Analysis 1.4)



Footnotes

(1) Inkluderer en misagllignment, der skulle korrigeres

Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of participants and personnel (performance bias)
- (D) Blinding of outcome assessment (detection bias)
- (E) Incomplete outcome data (attrition bias)
- (F) Selective reporting (reporting bias)
- (G) Other bias

Forest plot of comparison: 1 Torisk IOL vs Non-torisk IOL, outcome: 1.4 Number of complications..