



Creating a Multifocal Cornea

PresbyMAX Hybrid after 1 year

Review of over 11000 treatments **with PresbyMAX technology** in more than 65 centres

Comparison Matrix of the Grand Total

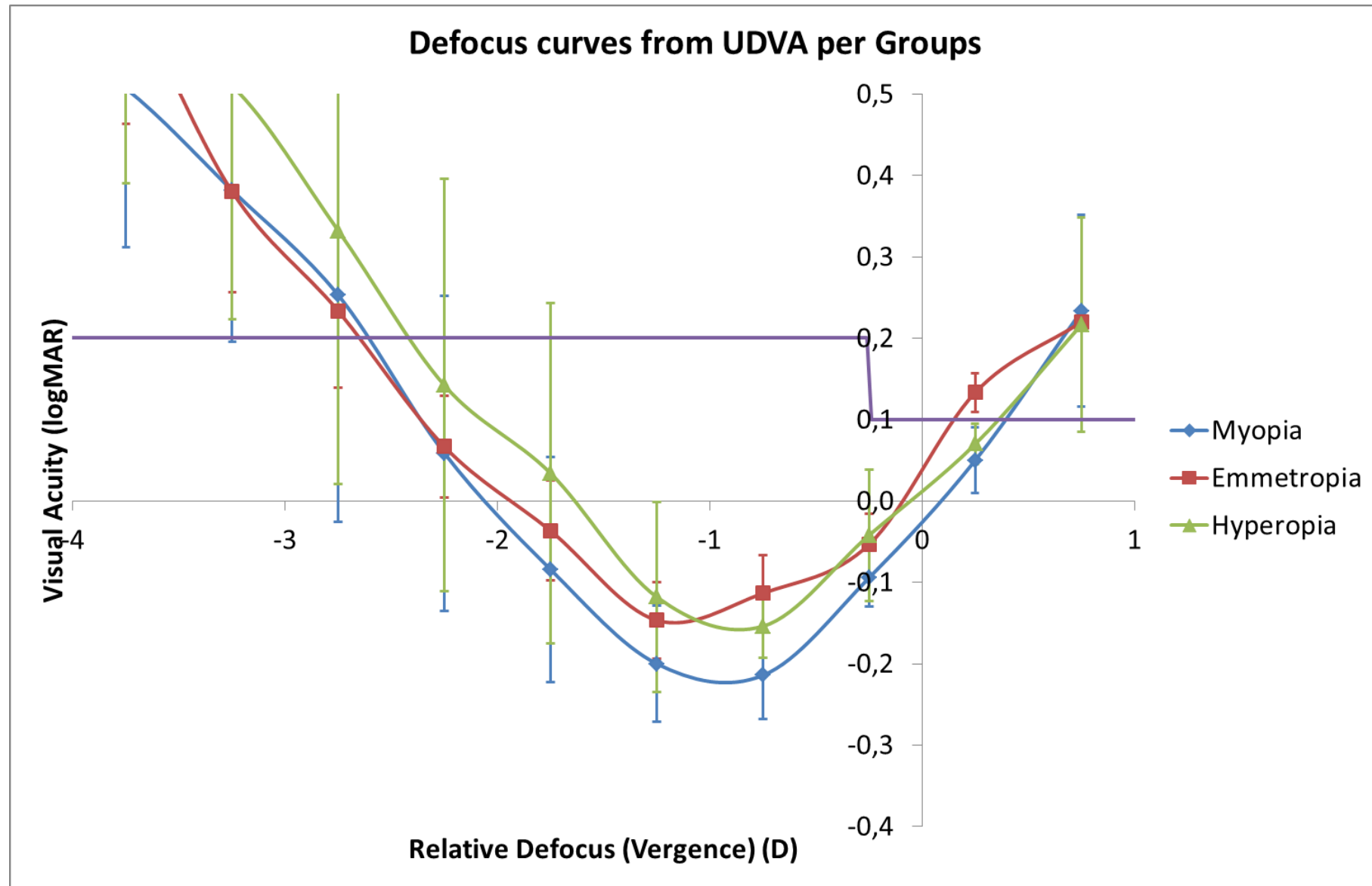
PresbyMAX symmetric is comparable to other techniques (but for us was not enough)

Presbyopic approach	n	Follow-Up	UDVA	UNVA	DCNVA	CDVA	CNVA	Refr.Outc.	Retreat.	Reversal
Monovision	514	6M-5Y	20/20 87%>20/25	J1 90%>J2	---	---	---	---	17%	5%
Multifocal	234	6M-2Y	20/20 87%>20/25	J4 81%>J3	J5 49%>+2Ins	12%<-2Ins	11%<-2Ins	76%±0.5DS	21%	---
LBV	670	1Y	20/17 99%>20/25	J3 91%>J3	---	0%<-2Ins	---	88%±0.5DS 86%±0.5DC	19%	---
Supracor	169	6M	20/23 58%>20/25	J2-J3 90%>J3	---	9%<-2Ins	0%<-2Ins	54%±0.5DS 46%±0.5DC	13%	---
Intracor	189	6M-18M	20/24 77%>20/25	J3 66%>J2	J2	9%<-2Ins	11%<-2Ins	---	---	---
KAMRA	166	6M-4Y	20/17 93%>20/25	J3 73%>J2	---	5%<-2Ins	5%<-2Ins	---	1%	6%
PresbyMAX (Symmetric)	892	6M-1Y	20/24 77%>20/25	J1 90%>J2	J3 38%>+2Ins	5%<-2Ins	3%<-2Ins	85%±0.5DS 98%±0.5DC	10%	1%



SCHWIND PresbyMAX® Symmetric

3-years stability on 30 patients



PresbyMAX® - Method of action

Targets for the Central and Pericentral Areas

1. Method of action

2. Presbyopic approaches

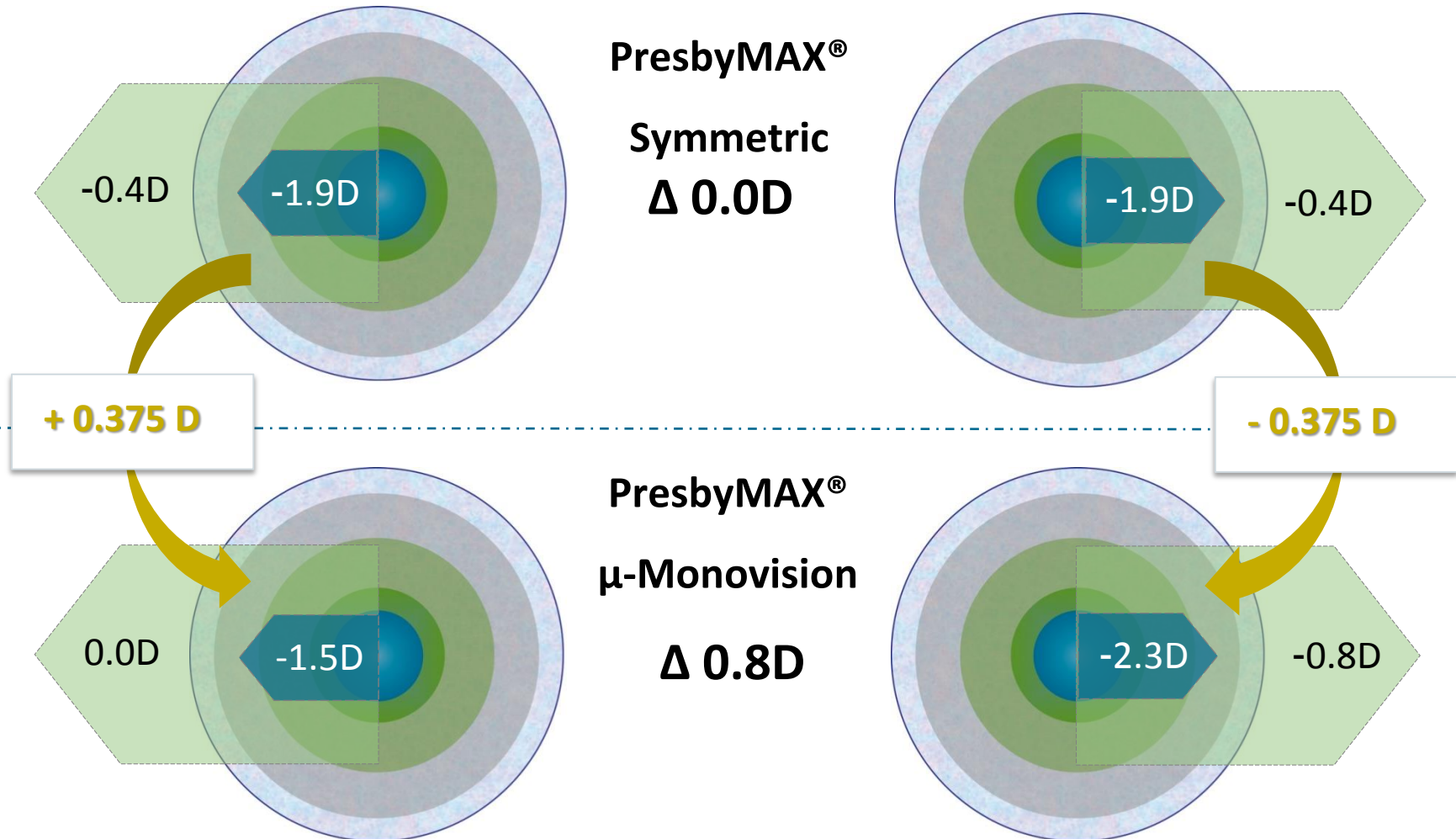
3. Alternative solutions

4. Key message

5. Comparison matrix

Distance Eye („dominant“)

Near Eye („non-dominant“)



SCHWIND PresbyMAX® μ -Monovision

Myopic vs. Hyperopic results on 34 patients

Using μ -monovision at 6-months

- No difference could be observed for myopes vs. hyperopes
- 95% reached UDVA 20/25 or better
- Only 5% lost 2 lines but 15% gained 2 or more lines of CDVA
- 90% reached UNVA J4 or better
- 100% reached DCNVA J5 or better
- Only 5% lost 2 lines, 50% gained 2 or more lines of DCNVA

No postoperative differences after myopic vs. hyperopic μ -monovision bi-aspheric ablation profile for presbyopic corneal treatments

PresbyMAX® - Method of action

Targets for the Central and Pericentral Areas

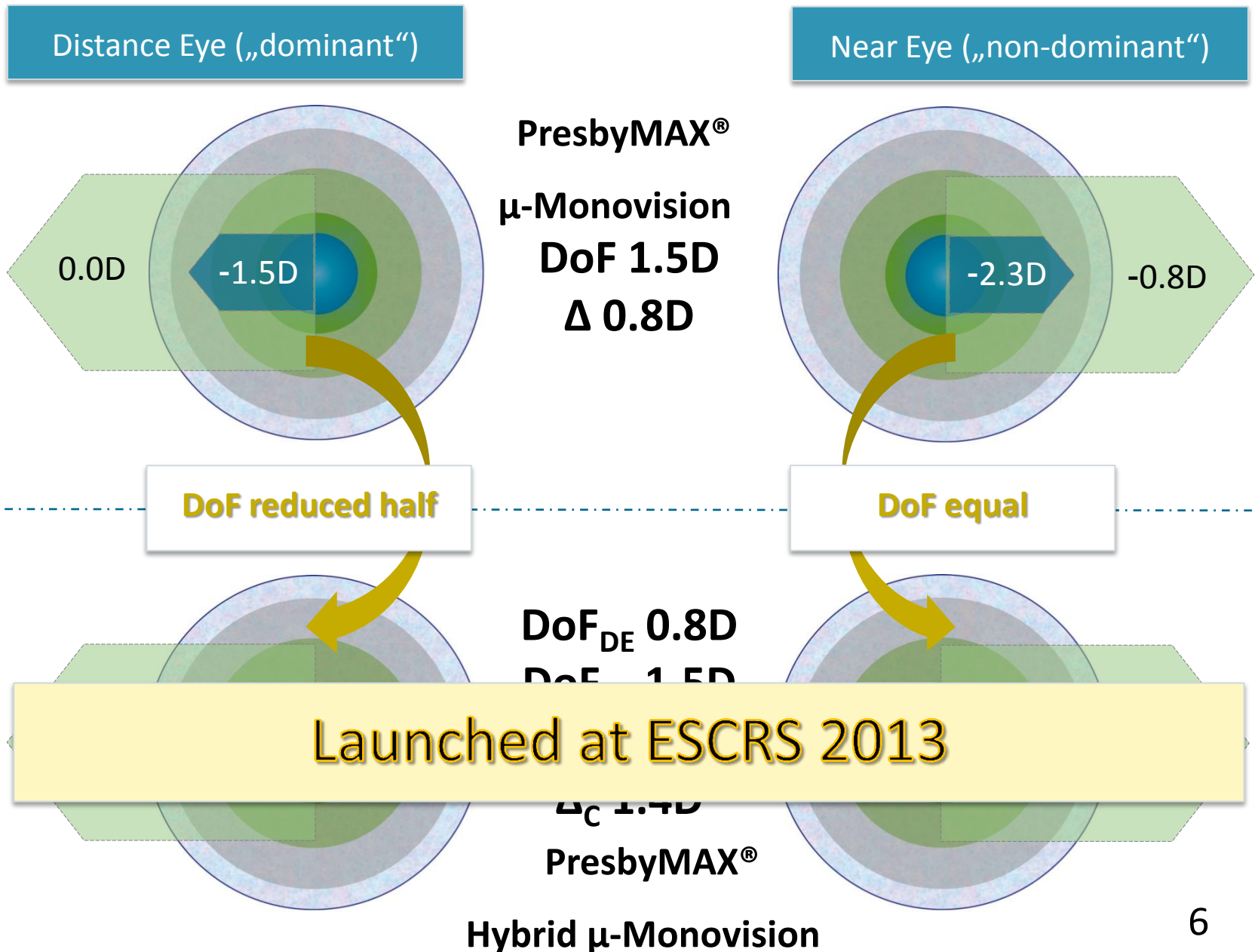
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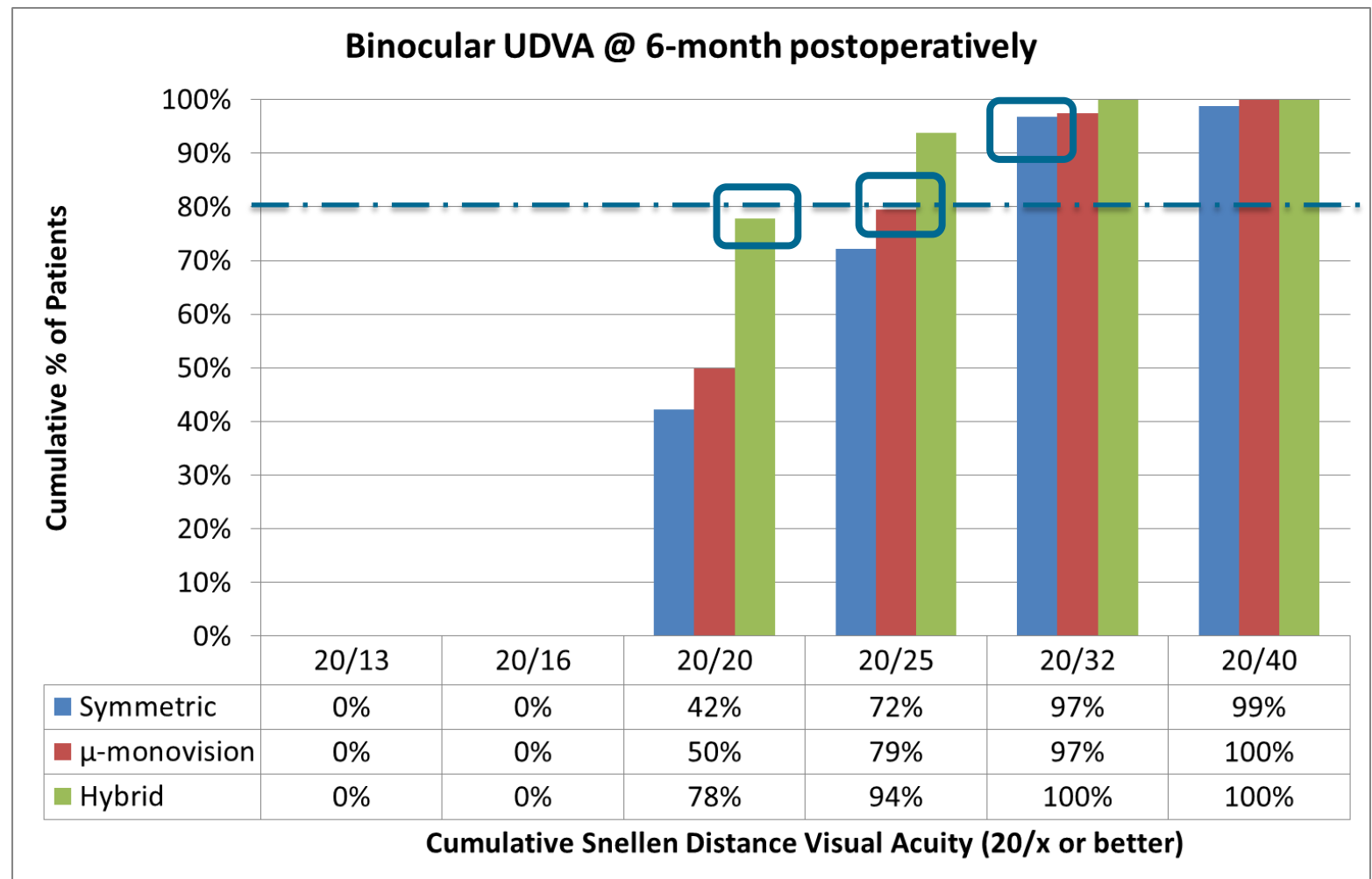
4. Key message

5. Comparison matrix



SCHWIND PresbyMAX®

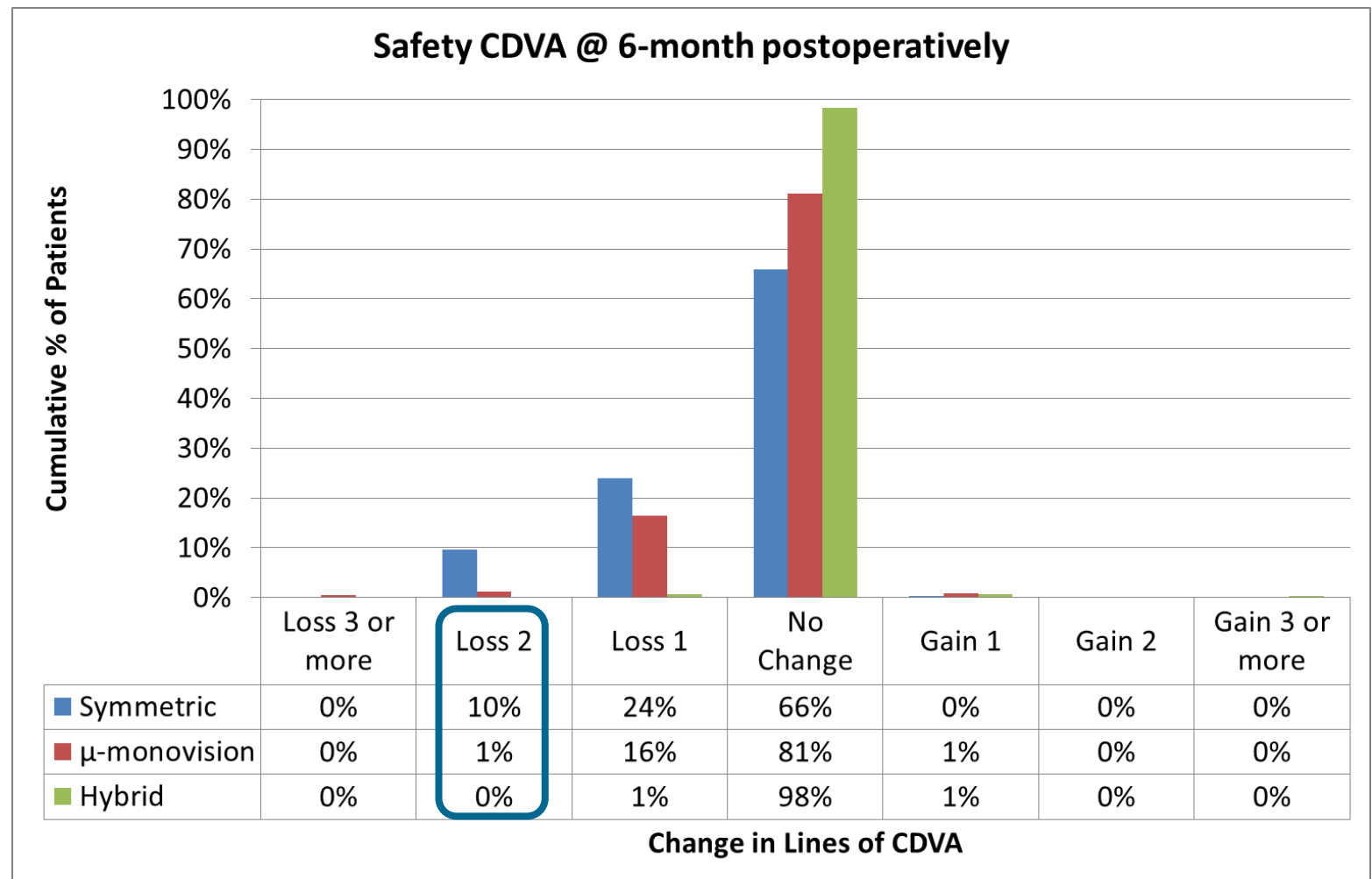
Symmetric (250 patients) vs. μ -monovision (239 patients) vs. hybrid (145 patients)



μ -monovision 1 letter better than symmetric
 hybrid 2 letters better than μ -monovision and 3 letters better than symmetric

SCHWIND PresbyMAX®

Symmetric (250 patients) vs. μ -monovision (239 patients) vs. hybrid (145 patients)

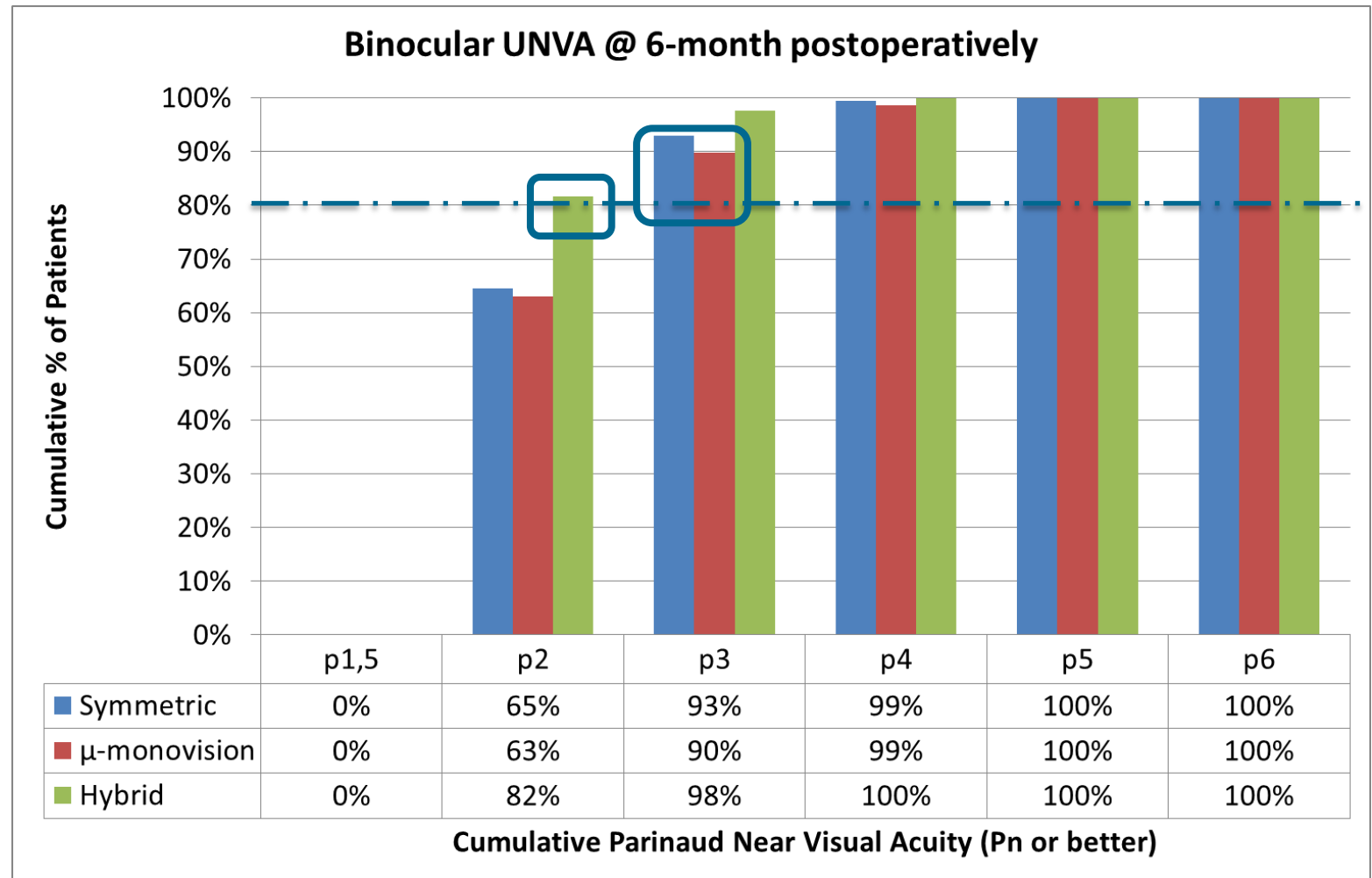


μ -monovision better than symmetric

hybrid better than μ -monovision and better than symmetric

SCHWIND PresbyMAX®

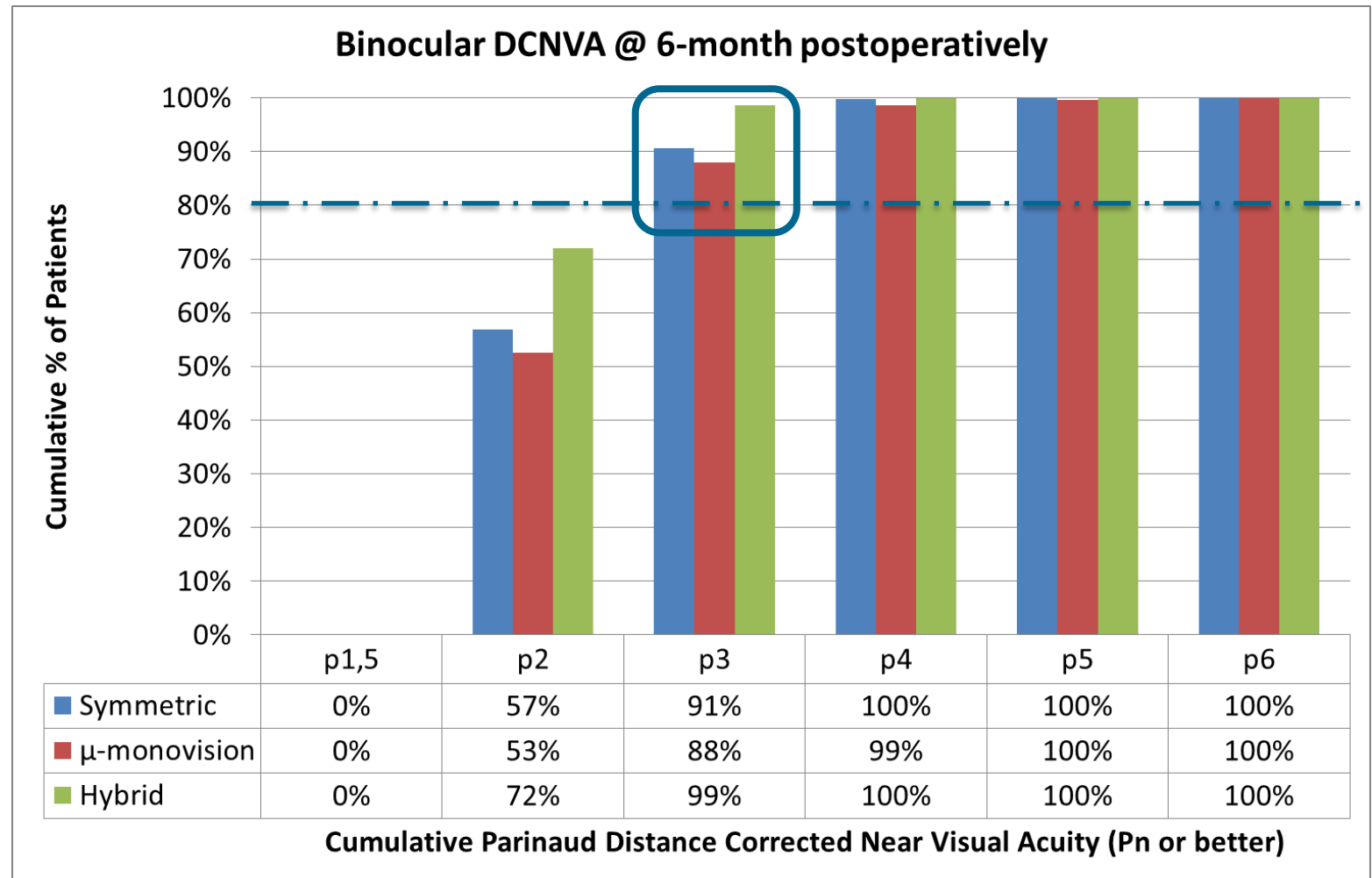
Symmetric (250 patients) vs. μ -monovision (239 patients) vs. hybrid (145 patients)



hybrid 1 letter better than μ -monovision and 1 letter better than symmetric

SCHWIND PresbyMAX®

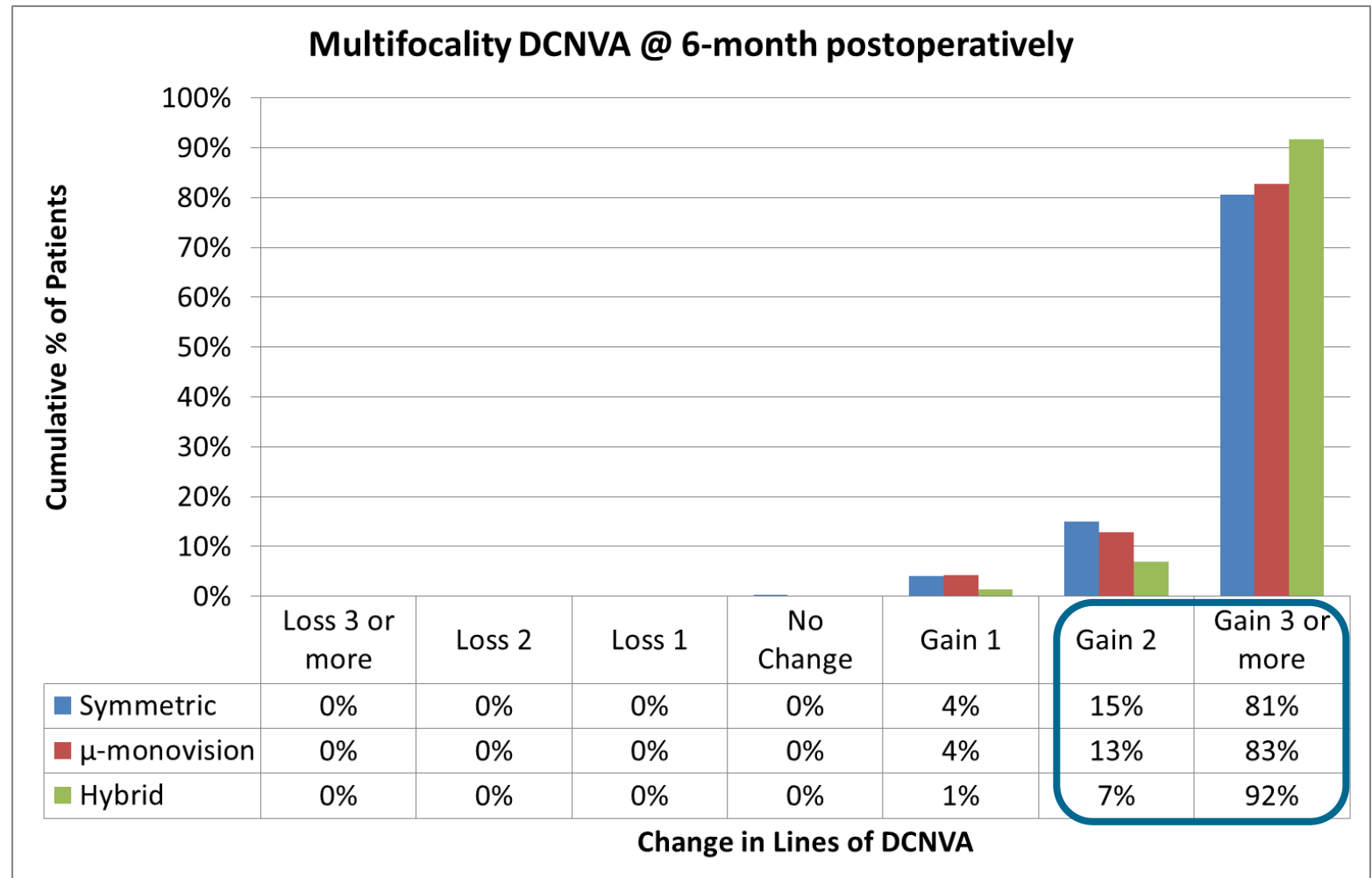
Symmetric (250 patients) vs. μ -monovision (239 patients) vs. hybrid (145 patients)



hybrid 1 letter better than μ -monovision and symmetric

SCHWIND PresbyMAX®

Symmetric (250 patients) vs. μ -monovision (239 patients) vs. hybrid (145 patients)



SCHWIND PresbyMAX® (Reversal)

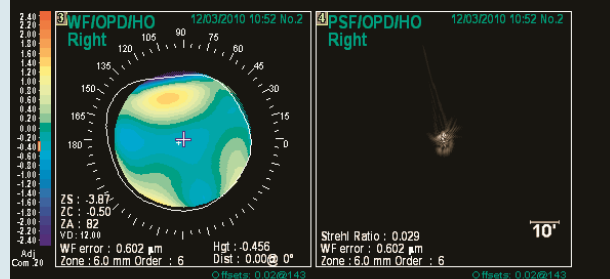
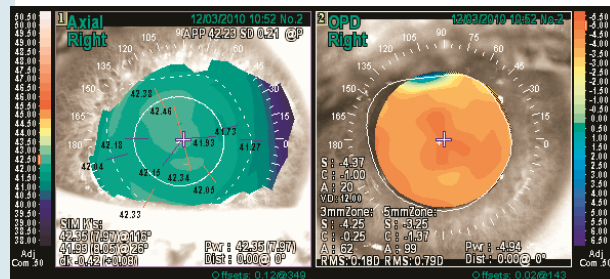
Case report on a PresbyMAX reversal

Before PresbyMAX

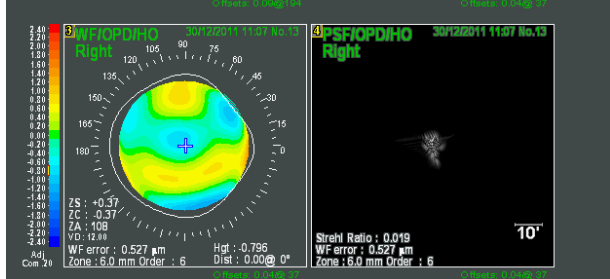
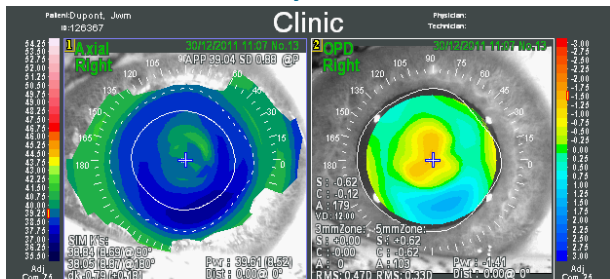
After PresbyMAX

After PresbyMAX Reversal

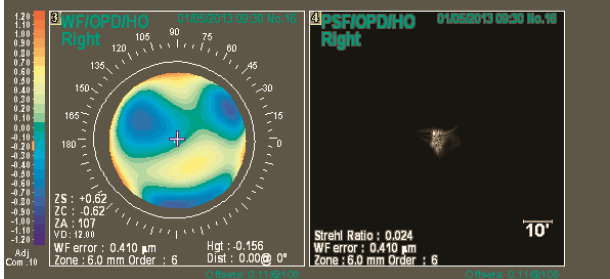
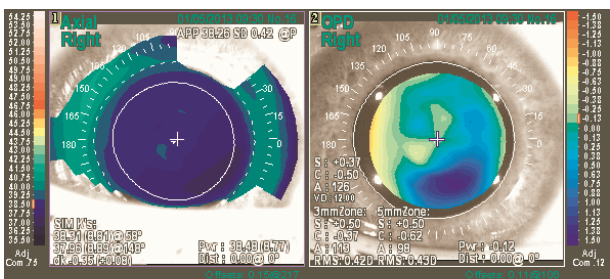
Before PresbyMAX Reversal



5. Zernike/OPD No.2 Right Zone: 6.0 Order: 6	6. Zernike/Corn No.2 Right Zone: 6.0 Order: 6
High	High
6.Trefoil	-0.188
7.Coma	-0.142
8.Coma	-0.021
9.Trefoil	0.000
10.Tetra	0.042
11.Astia	0.191
12.Sphe	0.092
13.Astia	-0.048
14.Tetra	0.055
15.Pent	-0.051
16.Trefoil	0.033
17.Coma	-0.016
18.Coma	-0.035
19.Trefoil	0.044
20.Pent	0.038
21.Hexa	-0.049
22.Tetra	0.041
23.Astia	0.041
24.Sphe	-0.013
25.Astia	0.041
26.Tetra	-0.031
27.Hexa	0.000



5. Zernike/OPD No.13 Right Zone: 6.0 Order: 6	6. Zernike/Corn No.13 Right Zone: 6.0 Order: 6
High	High
6.Trefoil	-0.062
7.Coma	-0.064
8.Coma	0.066
9.Trefoil	0.037
10.Tetra	0.096
11.Astia	-0.081
12.Sphe	0.148
13.Astia	0.096
14.Tetra	-0.001
15.Pent	-0.022
16.Trefoil	-0.039
17.Coma	0.004
18.Coma	-0.022
19.Trefoil	0.000
20.Pent	0.000
21.Hexa	0.000
22.Tetra	-0.008
23.Astia	0.008
24.Sphe	0.183
25.Astia	0.012
26.Tetra	0.012
27.Hexa	0.001



5. Zernike/OPD No.16 Right Zone: 6.0 Order: 6	6. Zernike/Corn No.16 Right Zone: 6.0 Order: 6
High	High
6.Trefoil	-0.259
7.Coma	-0.171
8.Coma	0.192
9.Trefoil	0.051
10.Tetra	-0.030
11.Astia	-0.029
12.Sphe	0.041
13.Astia	0.104
14.Tetra	0.096
15.Pent	-0.012
16.Trefoil	0.095
17.Coma	-0.039
18.Coma	0.026
19.Trefoil	0.000
20.Pent	0.000
21.Hexa	-0.035
22.Tetra	0.000
23.Astia	0.002
24.Sphe	0.071
25.Astia	-0.016
26.Tetra	-0.020
27.Hexa	0.011

CW SphAb (6mm): +0.19 µm

-0.12 µm

+0.17 µm

UDVA: 20/1000

20/40

20/16

Luger MH, Ewering T, Arba-Mosquera S. Nonwavefront-Guided Presby Reversal Treatment Targeting a Monofocal Cornea After Bi-aspheric Ablation Profile in a Patient Intolerant to Multifocality. J Refract Surg. 2014 Mar 1;30(3):214-6

SCHWIND PresbyMAX® (Reversal)

Case report on a PresbyMAX reversal










Reversal procedure

- Reversal procedures are seldom (1%)
- They can be safely corrected using a non-wavefront-guided presby reversal treatment targeting a monofocal cornea

Comparison Matrix of the Grand Total

PresbyMAX hybrid is for all metrics comparable or superior than the best of the competing technologies

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Multifocal	234	6M-2Y	20/20 87%>20/25	J4 81%>J3	J5 49%>+2lns	12%<-2lns	11%<-2lns	76%±0.5DS	21%	---
LBV	670	1Y	20/17 99%>20/25	J3 91%>J3	---	0%<-2lns	---	88%±0.5DS 86%±0.5DC	19%	---
Supracor	169	6M	20/23 58%>20/25	J2-J3 90%>J3	---	9%<-2lns	0%<-2lns	54%±0.5DS 46%±0.5DC	13%	---
KAMRA	166	6M-4Y	20/17 93%>20/25	J3 73%>J2	---	5%<-2lns	5%<-2lns	---	1%	6%
PresbyMAX (Symmetric)	892	6M-1Y	20/24 77%>20/25	J1 90%>J2	J3 38%>+2lns	5%<-2lns	3%<-2lns	85%±0.5DS 98%±0.5DC	10%	1%
PresbyMAX (μ-Monovision)	478	6M	20/23 79%>20/25	J1 90%>J2	J3 83%>+2lns	3%<-2lns	2%<-2lns	87%±0.5DS 93%±0.5DC	15%	1%
PresbyMAX (Hybrid)	372	6M	20/21 94%>20/25	J1 95%>J2	J3 92%>+2lns	1%<-2lns	1%<-2lns	89%±0.5DS 88%±0.5DC	10%	1%

SCHWIND PresbyMAX® Hybrid

Mean outcomes

	PresbyMAX Hybrid (372 eyes)		Myopes (96 eyes)		Emmetropes (104 eyes)		Hyperopes (172 eyes)	
	PreOP	PostOP 6M	PreOP	PostOP 6M	PreOP	PostOP 6M	PreOP	PostOP 6M
Age (years)								
Mean±SD	53±6		50±3		52±7		56±7	
Range	44 to 70		44 to 59		44 to 66		44 to 70	
DE SEq (D)								
Mean±SD	0.39±2.27	-0.04±0.22	-2.94±1.79	-0.14±0.18	0.75±0.46	0±0.23	2.05±0.71	0±0.23
Range	-7.75 to +4.62	-1.00 to +0.75	-7.75 to -0.13	-0.75 to +0.13	-0.50 to +1.50	-1.00 to +0.50	+0.12 to +4.62	-1.00 to +0.75
NE SEq (D)								
Mean±SD	0.24±2.53	-0.64±0.49	-3.4±1.93	-0.81±0.43	0.74±0.47	-0.58±0.58	1.94±0.9	-0.54±0.44
Range	-8.37 to +5.50	-2.75 to +0.25	-8.37 to -0.12	-2.25 to 0.00	-0.50 to +1.38	-2.25 to +0.12	+0.12 to +5.50	-2.75 to +0.25
Cyl (D)								
Mean±SD	0.53±0.61	0.17±0.22	0.9±0.86	0.2±0.24	0.47±0.49	0.18±0.23	0.35±0.37	0.14±0.2
Range	0.00 to 3.75	0.00 to 1.25	0.00 to 3.75	0.00 to 1.25	0.00 to +3.50	0.00 to +1.00	0.00 to +2.25	0.00 to +1.00
UDVA (20/x)								
Mean±SD	20/66±23	20/21±4	20/200±26	20/21±4	20/27±8	20/20±4	20/61±13	20/22±3
Range	CF to 20/13	20/50 to 20/13	CF to 20/16	20/32 to 20/13	20/80 to 20/13	20/50 to 20/13	20/200 to 20/16	20/32 to 20/13
UNVA (logRAD)								
Mean±SD	0.6±0.3	0.0±0.1	0.1±0.2	0.0±0.1	0.6±0.2	0.1±0.1	0.8±0.2	0.0±0.1
Range	1.1 to 0.0	0.3 to -0.2	0.8 to 0.0	0.2 to -0.1	0.9 to 0.0	0.3 to -0.2	1.1 to 0.0	0.2 to -0.2
CDVA (20/x)								
Mean±SD	20/19±3	20/19±3	20/19±3	20/19±3	20/18±3	20/19±3	20/20±2	20/20±2
Range	20/25 to 20/13	20/25 to 20/13	20/25 to 20/13	20/25 to 20/13	20/20 to 20/13	20/25 to 20/13	20/20 to 20/13	20/25 to 20/13
DCNVA (logRAD)								
Mean±SD	0.5±0.2	0.1±0.1	0.4±0.1	0.1±0.2	0.4±0.2	0.1±0.1	0.6±0.2	0.1±0.1
Range	0.8 to -0.1	0.7 to 0.0	0.6 to 0.1	0.6 to 0.0	0.8 to -0.1	0.7 to 0.0	0.8 to 0.2	0.7 to 0.0
CNVA (logRAD)								
Mean±SD	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.1	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
Range	0.1 to -0.3	0.1 to -0.2	0.0 to -0.1	0.1 to -0.2	0.0 to -0.2	0.1 to -0.1	0.1 to -0.3	0.1 to -0.1

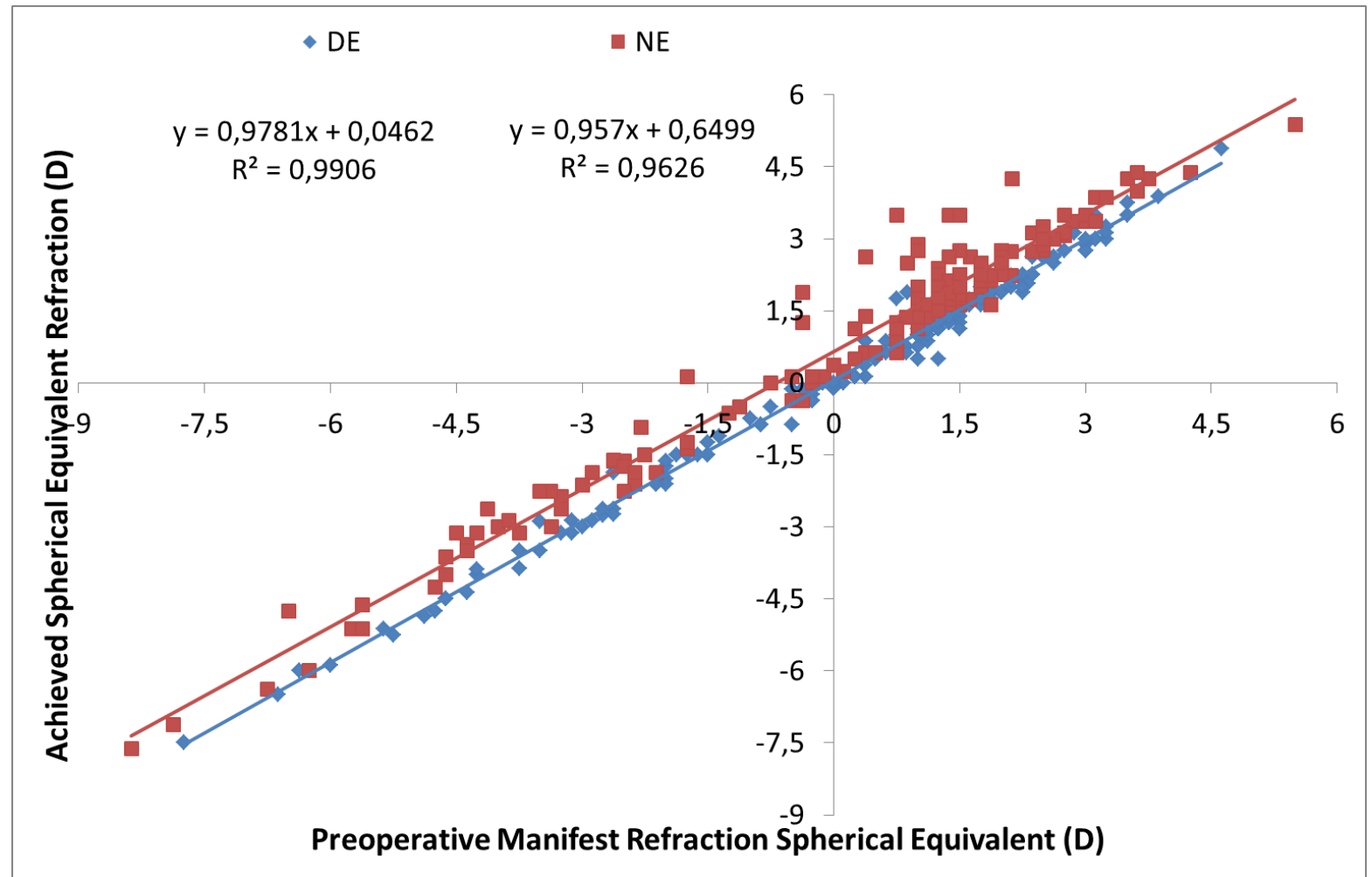
SCHWIND PresbyMAX® Hybrid

Benchmark outcomes

Binocular Performance (186 patients)		"FDA-like" Benchmarks	PresbyMAX Hybrid	Pass/Fail
Refractive	PostOP astigmatism greater than 2.0 D	<5%	0%	√
	Deviation from target SEq within 1.0 D	>75%	98%	√
	Deviation from target SEq within 0.5 D	>50%	76%	√
Distance	More than 2 lines loss of CDVA	<5%	0%	√
	PostOP CDVA worse than 20/40	<1%	0%	√
	PostOP UDVA of 20/40 or better	>85%	99%	√
Near	More than 2 lines loss of CNVA	<5%	0%	√
	PostOP CNVA worse than +0.3 logRAD	<1%	0%	√
	PostOP UNVA of +0.3 logRAD or better	>85%	100%	√

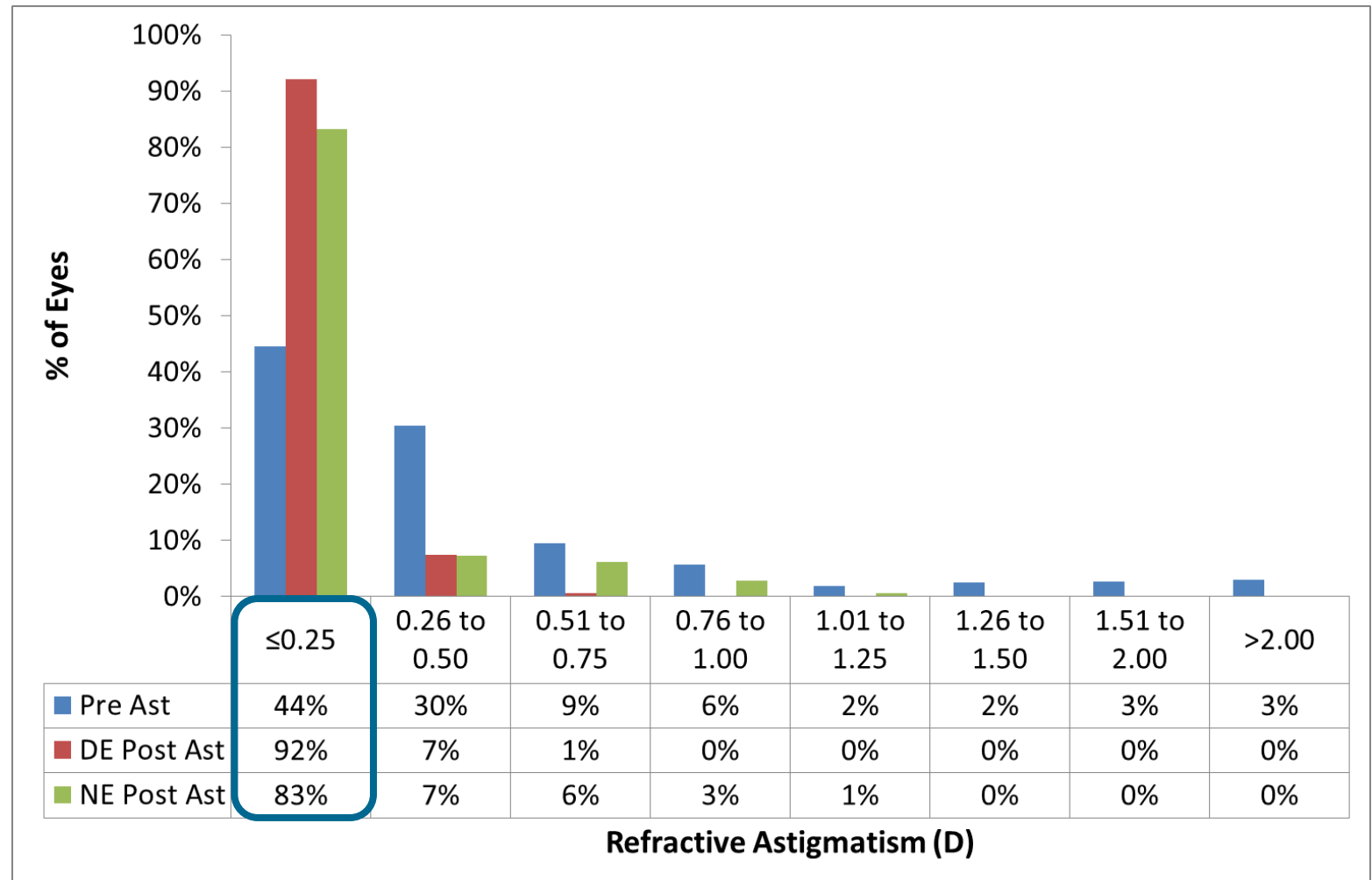
SCHWIND PresbyMAX® Hybrid

Refractive correction on 186 patients



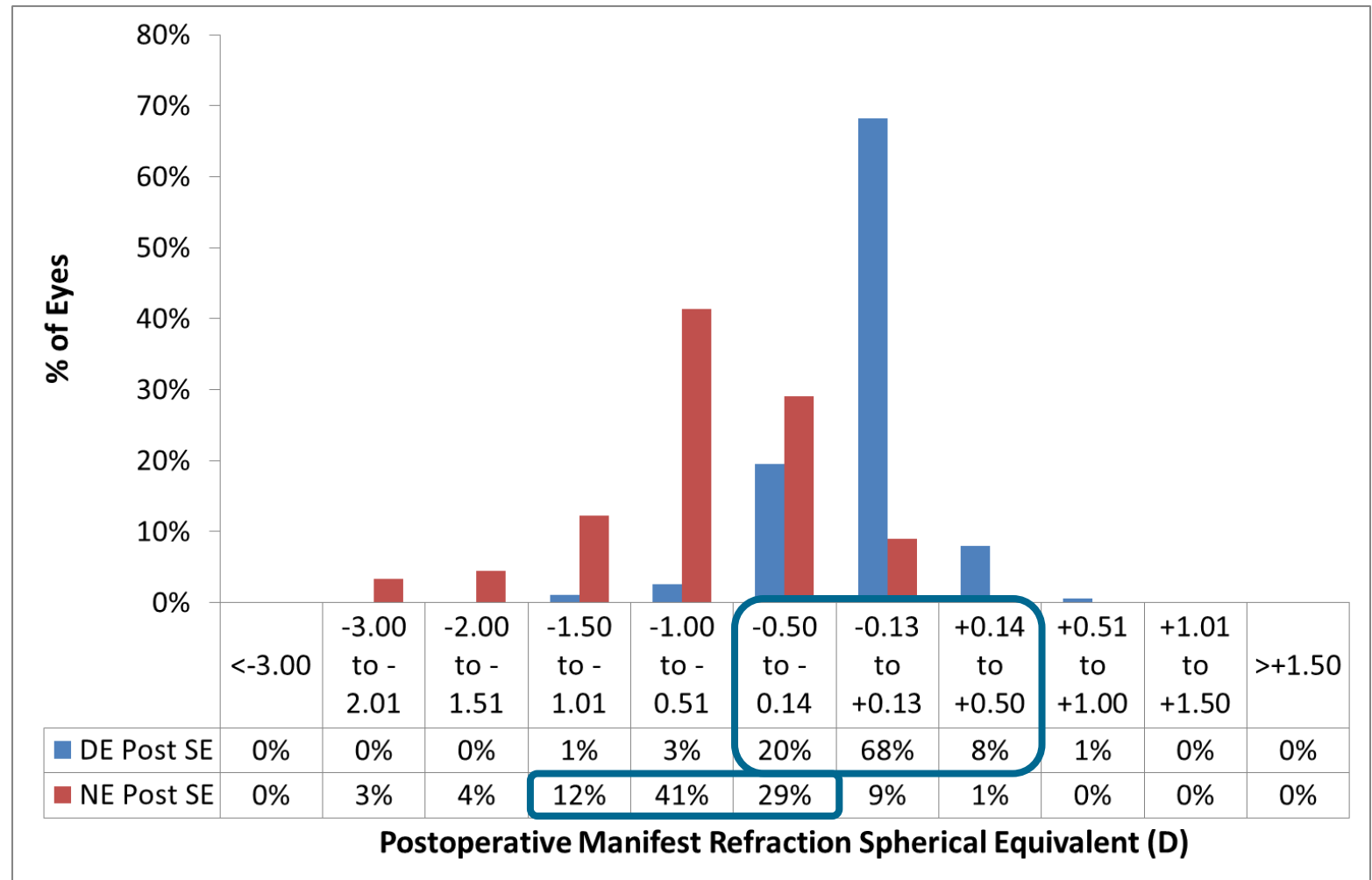
SCHWIND PresbyMAX® Hybrid

Refractive astigmatism outcomes on 186 patients



SCHWIND PresbyMAX® Hybrid

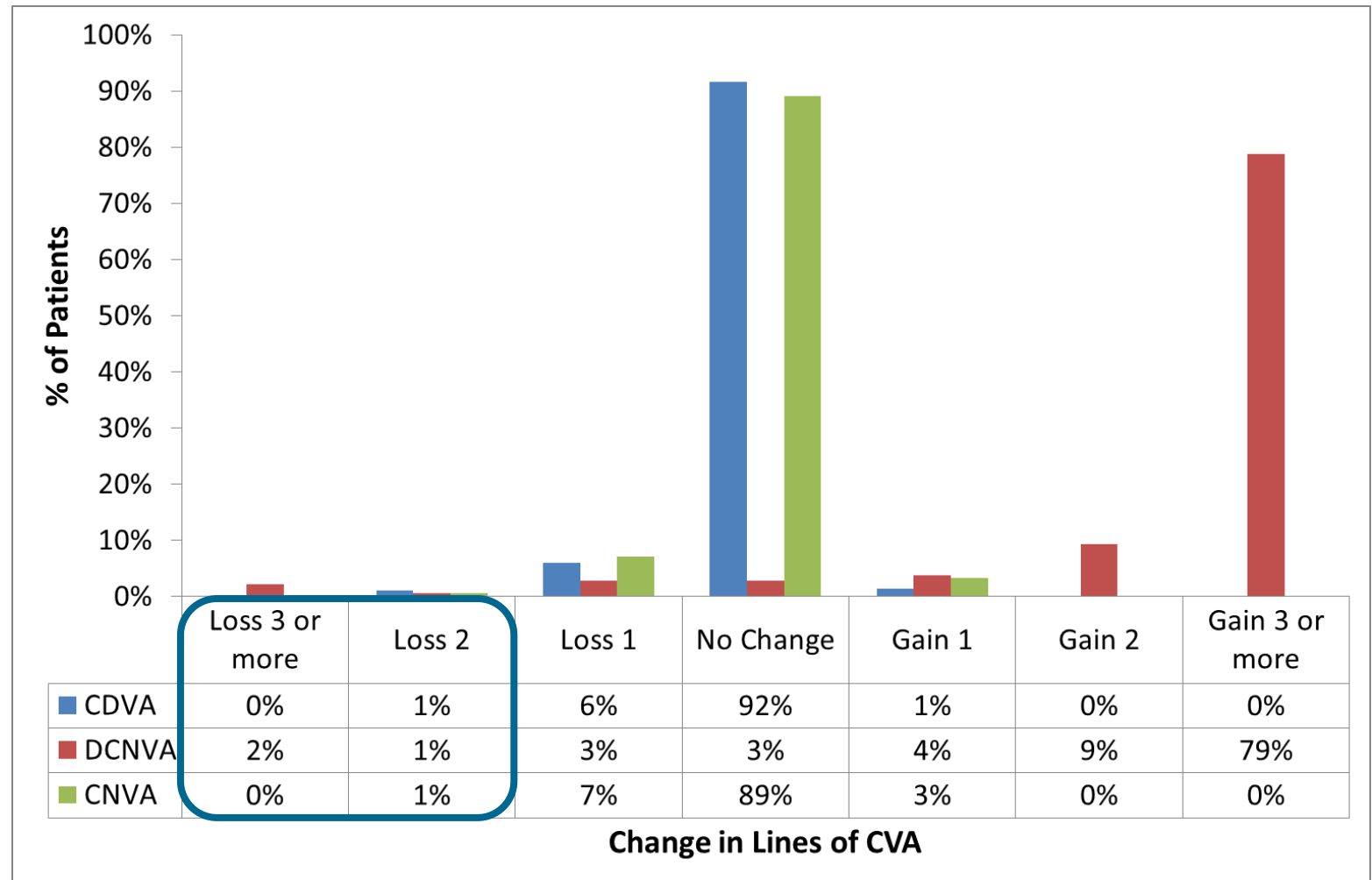
Refractive outcomes on 186 patients



DE 95% within $\pm 0,5D$ (from emmetropic target)
NE 83% within $\pm 0,63D$ (from $-0,8D$ target)

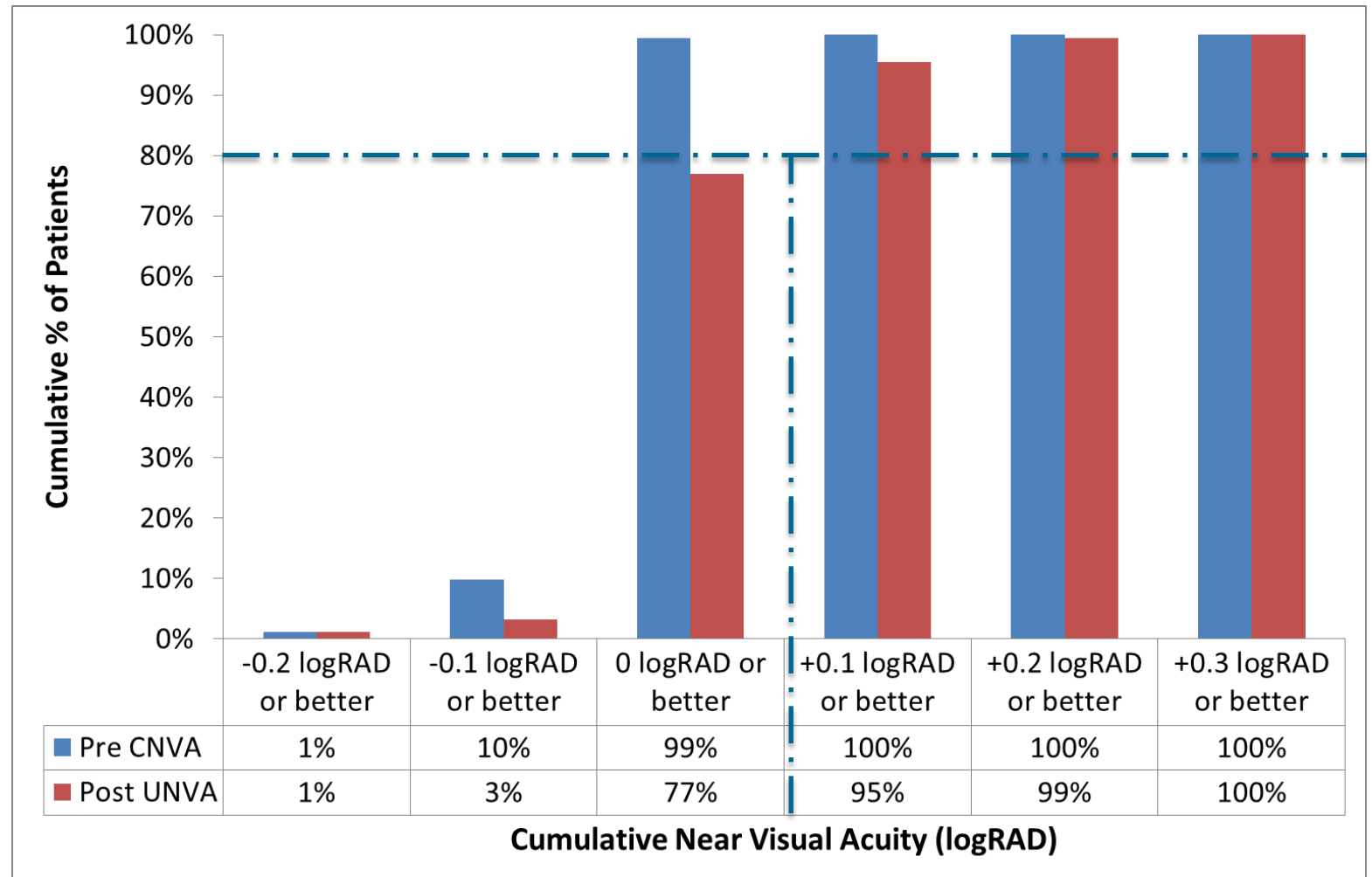
SCHWIND PresbyMAX® Hybrid

Safety on 186 patients



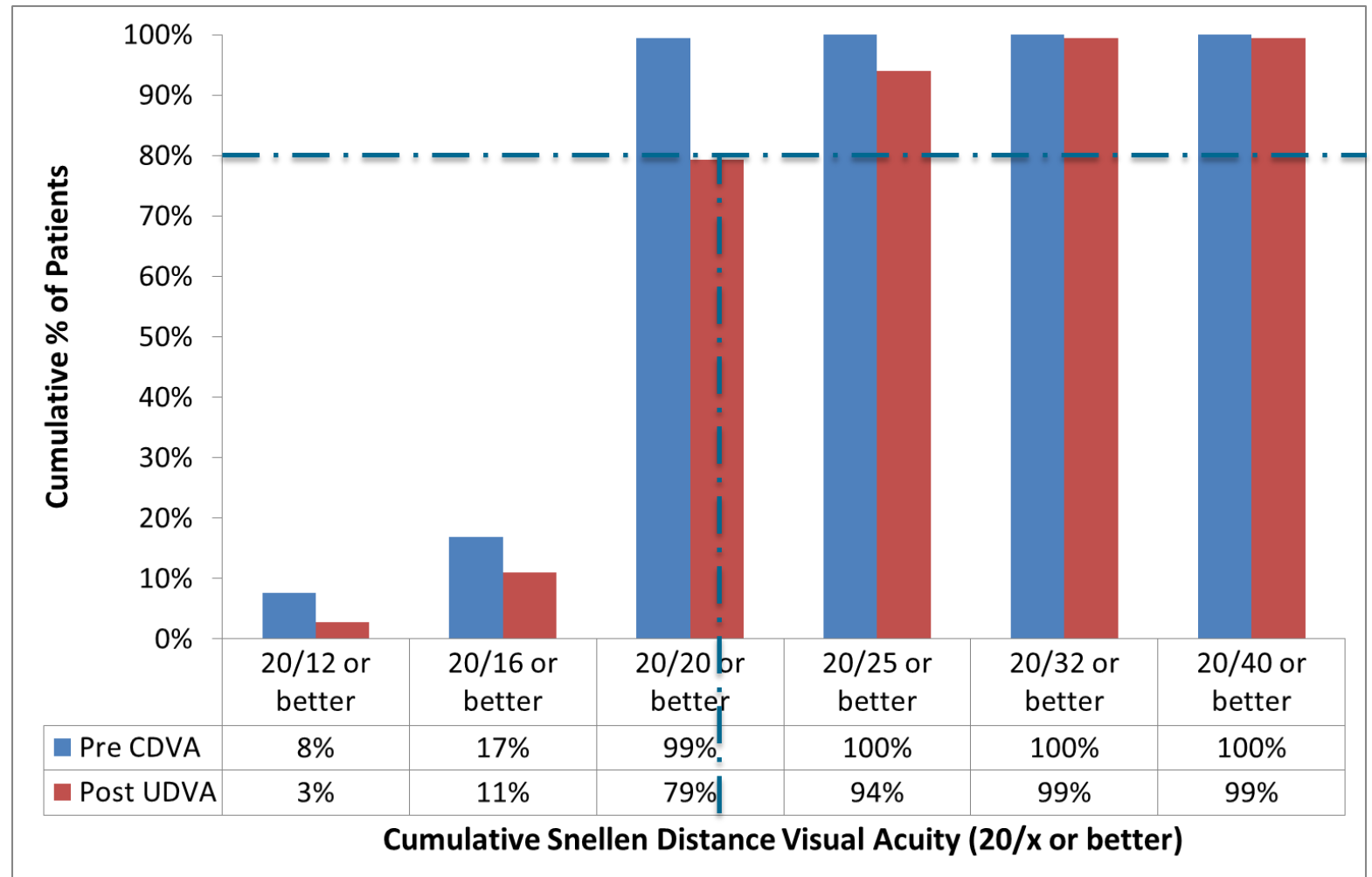
SCHWIND PresbyMAX® Hybrid

UNVA on 186 patients



SCHWIND PresbyMAX® Hybrid

UDVA on 186 patients



SCHWIND PresbyMAX®

Summary

Widely used

- Over 11000 treatments in more than 65 centres

Near vision recovery is immediate

- From Day1 postop

Good efficacy

- Bottom-line is binocular UDVA 20/25

Based on SphAb

- Pupil dependent

Stable

- Demonstrated for over 3-years with prospects over 8-years

Predictable

- 10-15% retreatment rate; 1% reversal rate

Reversible

Hybrid version with +1,75D planned addition

- All rounder solution

SCHWIND PresbyMAX® Hybrid

Summary

Currently the most frequently used variant

Offering the best results

- From Day1 postop
- Compared to other PresbyMAX variants
- Compared to competing technologies

Easy to use - All rounder solution

- Stable
- Predictable
- **Reversible**
- Little compromises



**Thank you very
much for your kind attention!**

Vielen Dank für Ihre Aufmerksamkeit!

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