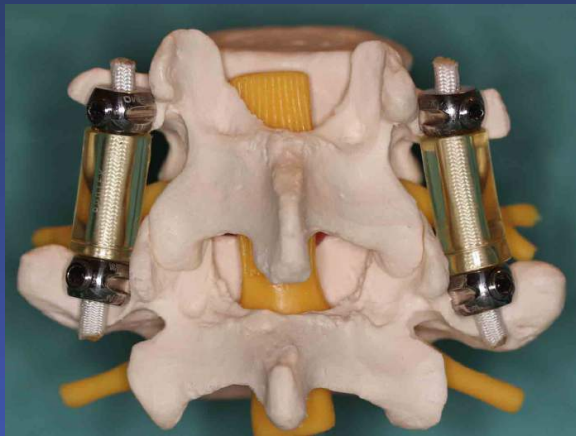
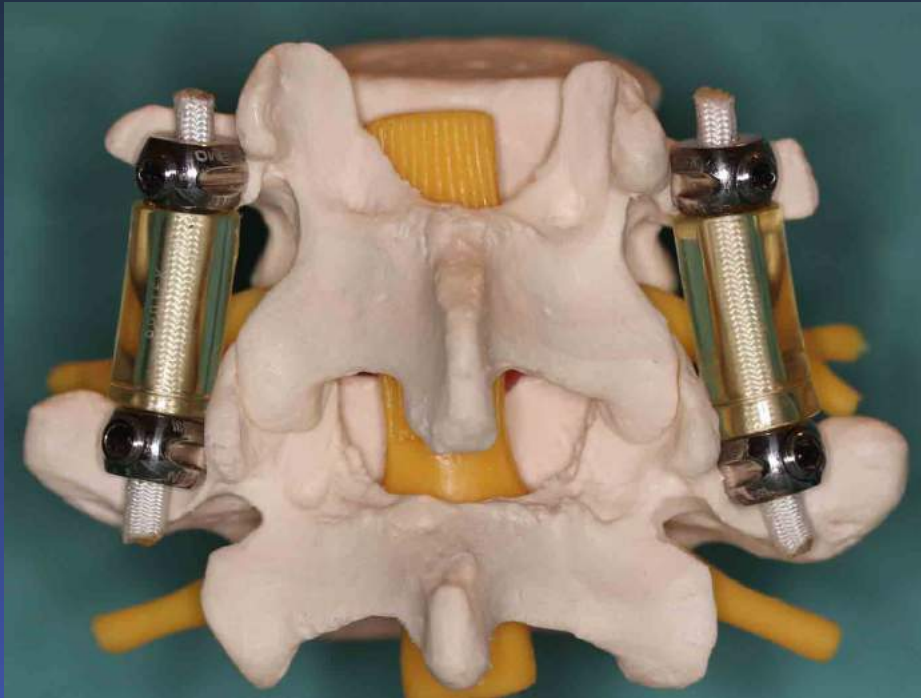


NEW DYNAMIC STABILISATION: CLINICAL AND BIOMECHANICAL OUTCOME AFTER 500 PATIENTS

Philipp Cathrein



DYNESYS



Philipp Cathrein

Gilles Dubois

DYNESYS 2002-2018

- Review of 1250 own patients
- Mean age 69 years
- Average segments 2.4 (1 to 6)

DYNESYS 2002-2018

- Revisions within 1 year < than 3 %
- Revision of adjacent segment
 - 1-7 years 4 %
 - 8- 16 years 17 %

DYNESYS 2002-2018

Reoperation at 1 - 7 years: 4%
rarely fused

Reoperation at 8-16 years: 17%
Fusion or lost of mobility in 90 %
of the reoperated segments
tested during revision surgery

DYNESYS 2002-2018

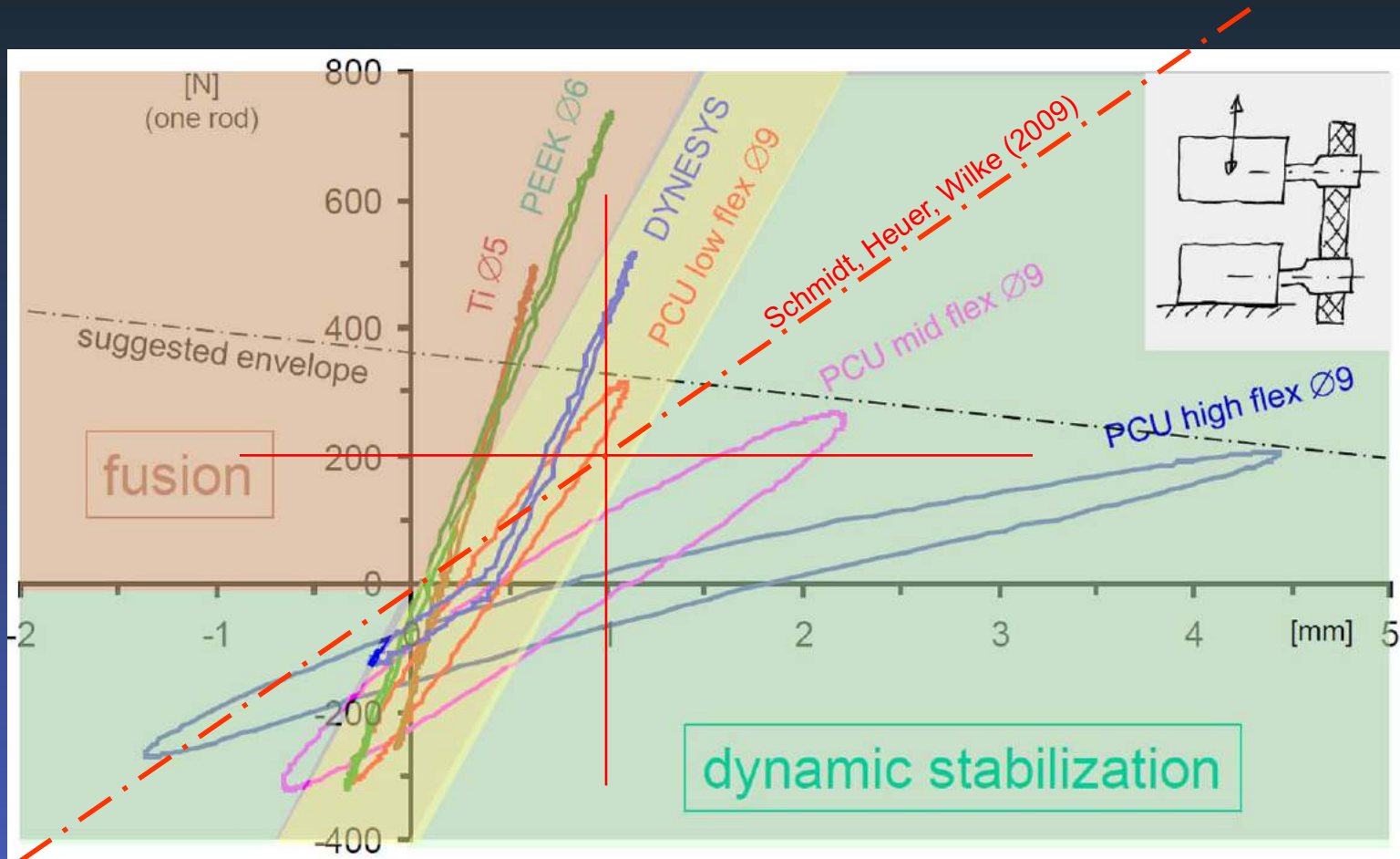
Review of 1250 own patients

Conclusion Dynesys is too stiff

? How can we prevent fusion ?

Stiffness threshold for dynamic stabilisation

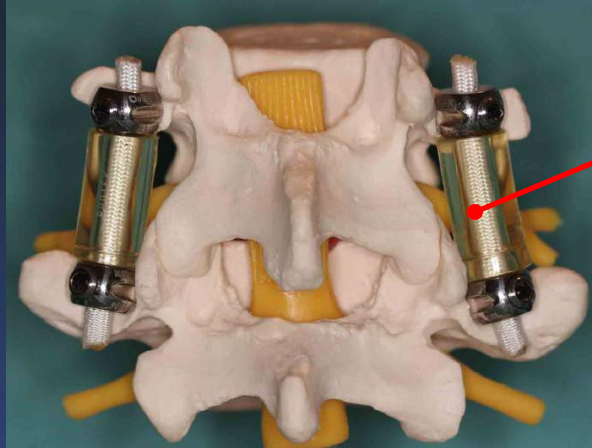
Overview posterior pedicular based rods after 1 million cycles



Principles of dynamic stabilisation

DYNESYS

(state-of-the-art)

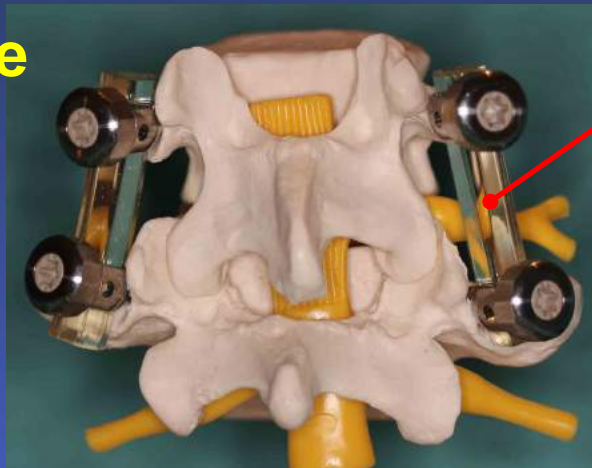


one stiffness

pretended cord and spacer

SpineShape

(new)

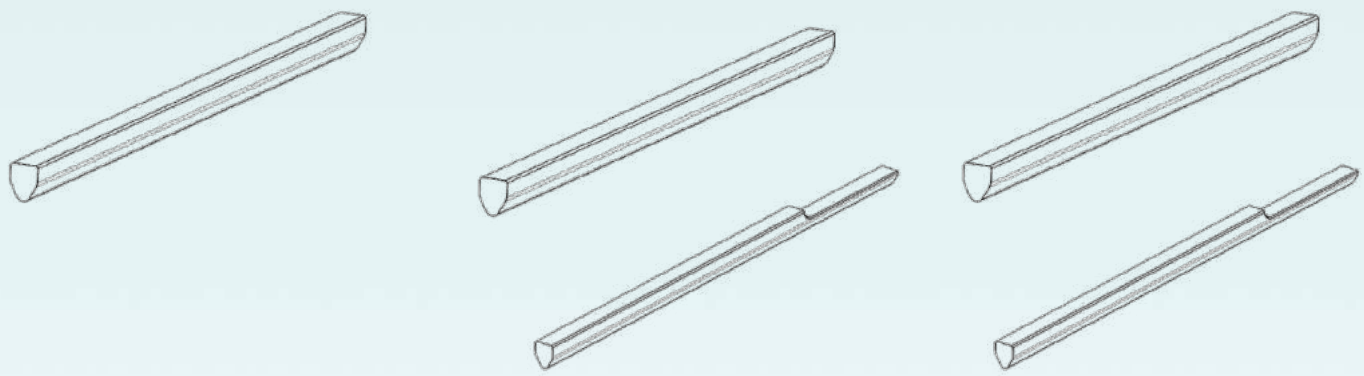


three different stiffness

given by three different grades of PCU:

- stiff (low flex)
- medium (mid flex)
- elastic (high flex)

Dynamic stabilization with 3 different stiffness



Indications for optimal rod stiffness

	elastic	medium	stiff
➤ (Dynamic) stenosis.....	X	X	
➤ Facet joint syndrome / Spondyloarthrosis	X	X	
➤ Osteochondrosis Modic Type I or III	X	X	
➤ Discopathy (recurrent disc prolapse / herniation)		X	
➤ Late adjacent segment syndrome.....		X	
➤ Complement to disc prosthesis.....		(X)	
➤ Osteochondrosis Modic Type II		X	X
➤ Degenerative spondylolisthesis (Meyerding <1).....		X	X
➤ (Degenerative) Scoliosis (early stage - non rigid).....		X	X
➤ Instability *		X	X
➤ Complement to cage.....		(X)	(X)

*) hypermobility with antelsthesis / hypomobility with retrolsthesis when decompressed

Clinical Results since 7/2015

Patients 295

Indications

Discopathy / herniation 88 33%

Adjacent segment 74 27%

Facet joint / arthrosis 48 18%

Degenerative stenosis 36 13%

Degenerative scoliosis 24 9%

Osteochondrosis Complementary to TDP

Degenerative sp`listhesis Complementary to cage

Clinical Results since 7/2015

Average age 67 (28 – 89)

Average number of segments 2.3

Primary surgery 53 %

Revision surgery 47 %

Rod-Type high flex 38 %

mid flex 62 %

low flex 1 patient

Clinical Results since 7/2015

VAS for low back pain	pre-op	post-op
Primary surgery	6.6	1.7
Revision surgery	7.4	2.0
Both	7.0	1.8

VAS for sciatic back pain	pre-op	post-op
Primary surgery	7.9	1.3
Revision surgery	8.1	1.5
Both	8.0	1.4

Clinical Results since 7/2015

Patients satisfaction: overall pain			mobility
excellent	(VAS 0-1)	57 %	2.8°
good	(VAS 2-3)	32 %	2.6°
fair	(VAS 4-5)	11 %	2.4°
poor	(VAS > 6)	<1 %	-

Clinical Results since 7/2015

Patients walking time after 3 month

no limitation due to spine	51 %
30-60 min	36 %
15-29 min	11 %
< 15 min	2 %

Patients made all a progress in walking time

Clinical Results since 7/2015

Post-operative medication after 3 months:

none	62 %	}	76 %
mild	14 %		
other	24%		

Clinical Results since 7/2015

Rev. surgery after spine shape	12 patients	4.1%
device related	5 patients	
adjacent segment	4 patients	
disc herniation	2 patients	
infection	1 patient	

Conclusions

Spine shape is a proven implant for true dynamic stabilisation, it maintains motion in all operated segments after 3 months

Clinical results in the first 3 years are good, patients satisfaction is given

Surgeons have the choice of different rod stiffness, also to respect the patients requirements

Conclusions

Shorter operating time

Faster rehabilitation

Patients do not feel the implant

Rarely sacroiliac joint pain

Our philosophy

Bring the spine back to physiological degeneration especially in younger patients and preserve the sagittal balance.

60 years old woman, stenosis, rod high flex 3 month

reclination 11.3°

neutral

inclination 9.2°



60 years old woman, stenosis, rod high flex 12 month

reclination 10.7°

neutral

inclination 3.8°

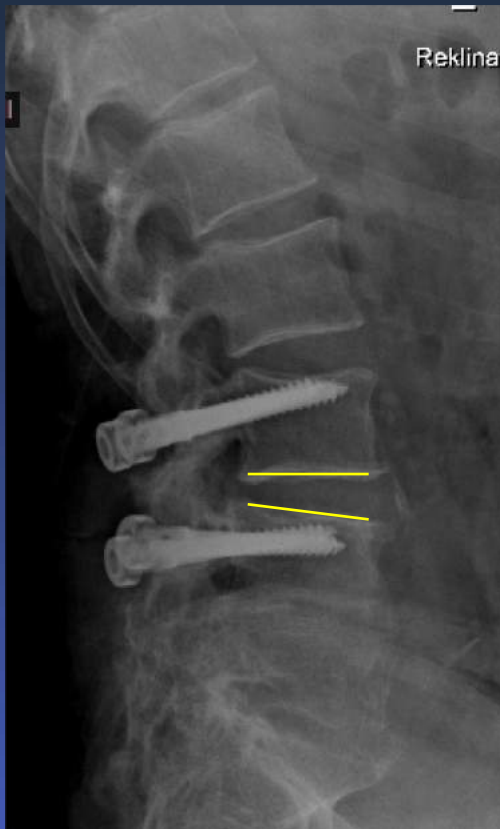


45 years old man, epifusional stenosis, rod mid flex

reclination 10°

neutral

inclination 1°

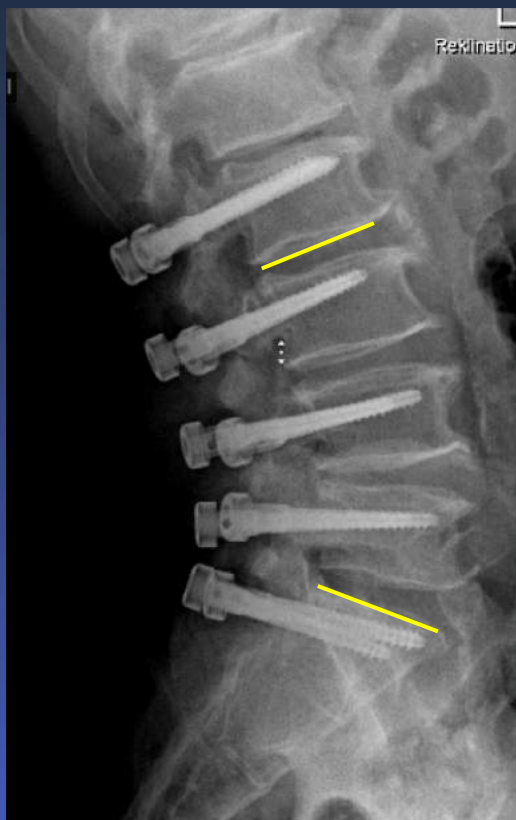


68 years old man, recurrent stenosis, rod mid flex

reclination 40°

neutral

inclination 20°



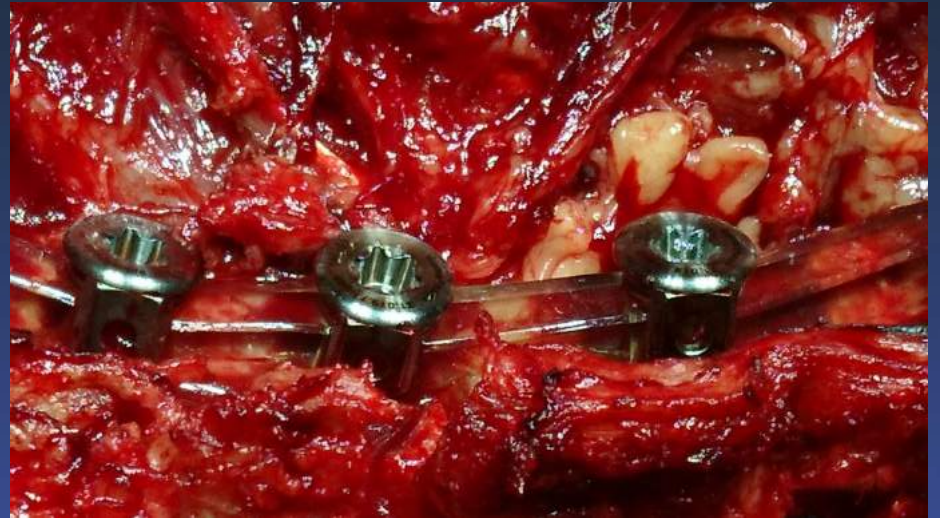
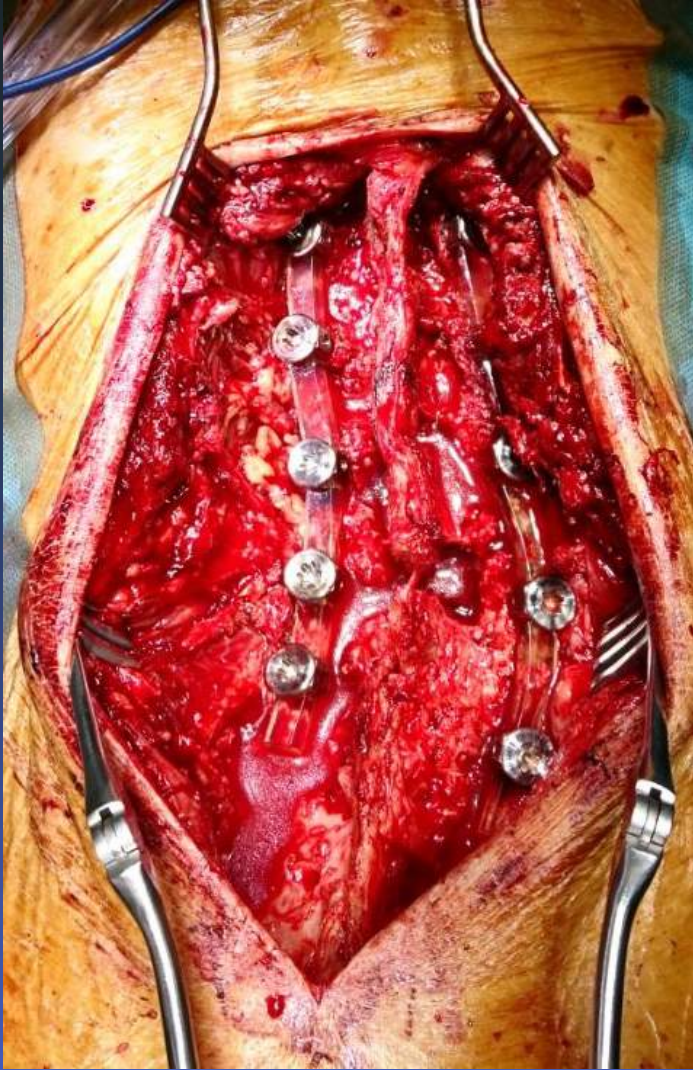
Conclusions

Dynesys system is often ending in a spontaneous fusion of the facet joint 8 to 10 years after operation

As Professor Wilke and team showed in their threshold for dynamic stabilisation: dynesys is too stiff for a true dynamic stabilisation

Spine shape has the potential for dynamic stabilisation and seem to maintain mobility in the first 4 years

SPINE SHAPE INI: outlook



Thank you