

**KU LEUVEN**

**▶▶ UHASSELT**

**fwo**

**UZ  
LEUVEN**

REhabilitation of lumbar Arthrodesis  
**REACT**  
Controlled Trial

*From evidence to practice*

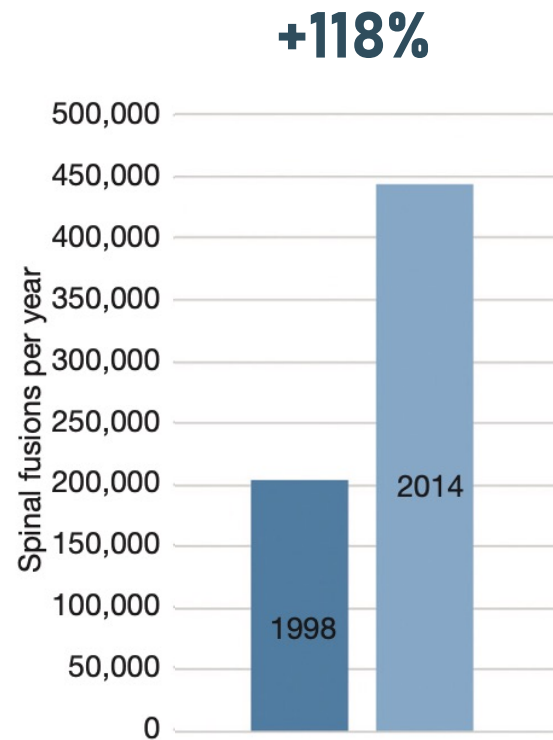
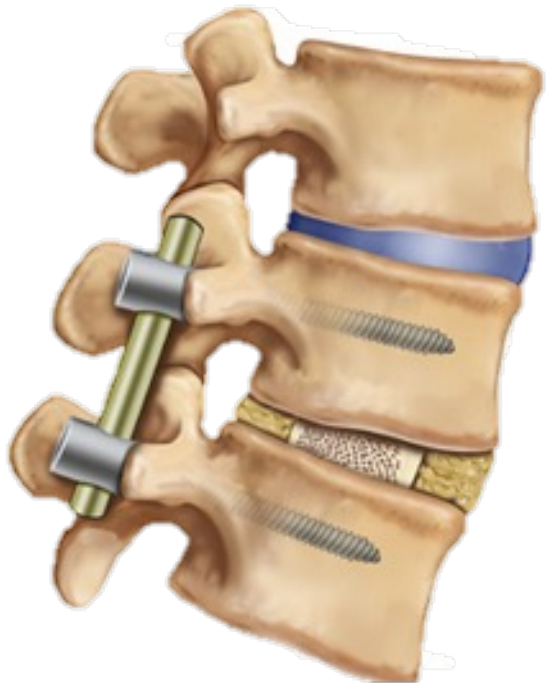
## Development of an evidence-based and ready-to-use rehabilitation pathway for lumbar fusion surgery

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# Lumbar fusion surgery



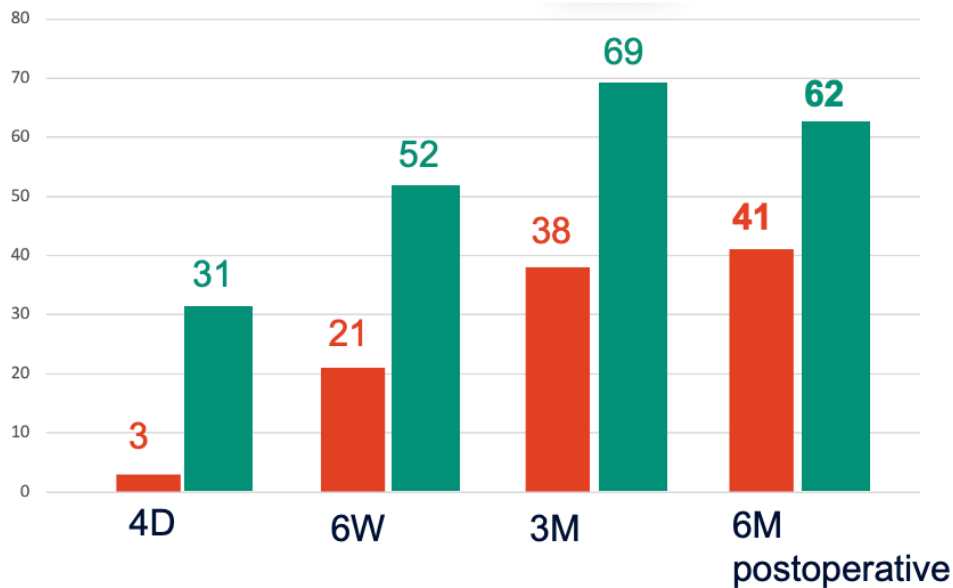
\* USA, Reisener et al. (J. Spine Surgery, 2020)

## Current outcomes 6 months after LFS are suboptimal

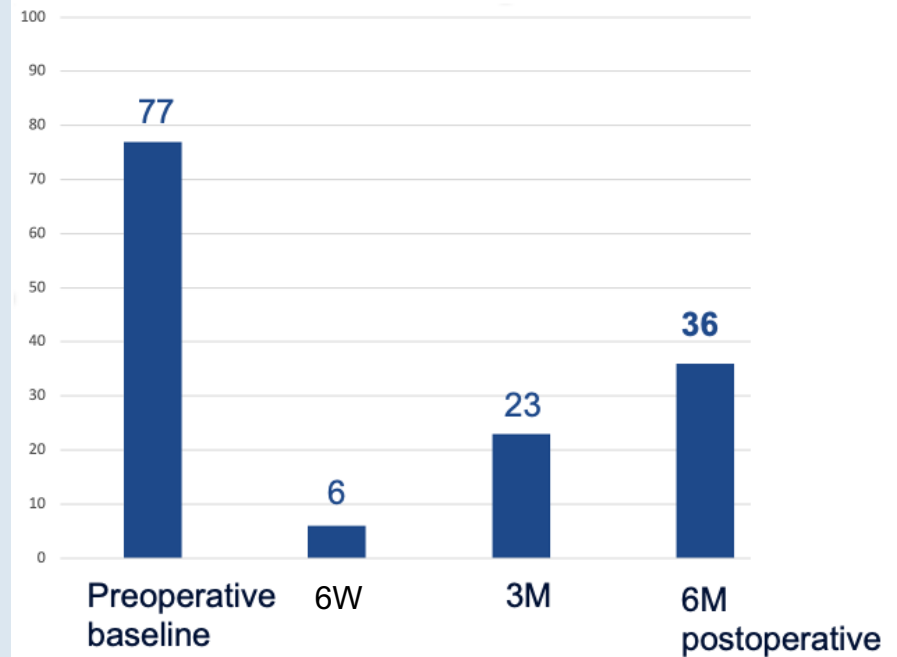
Improved function 41%

Less pain 62%

% **Responders** compared to 1D preop based on minimal clinically important chance for Oswestry Disability Index and NRS back pain (30%)



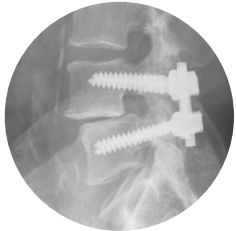
Return-to-work 36%







# How can we improve clinical outcomes?



## Surgical advancements

✓ **Acceptable bony fusion rates**

*Chun et al., Neurosurg Focus, 2015*



## Rehabilitation

! **Significantly improves clinical outcomes**

*Bogaert et al., Eur Spine J, 2022*

? **No consensus on content or timing**

*Van Erp et al., Spine, 2018*

*Gilmore et al., NZJ of Physiotherapy, 2016*

*Rushton et al., Spine, 2014*

# Modified Delphi Study

## 31 experts

- ✓ 3 online + 1 live round
- ✓ **Consensus (75% agreement)**  
on 122 statements
- ✓ CREDES guideline



Expert characteristics	No. of experts (n=31) (%)
<b>Clinical discipline</b>	
Neurosurgery	5 (16)
Orthopedic surgery	5 (16)
Physical medicine and rehabilitation	3 (10)
Physical therapy	8 (26)
Psychology	5 (16)
Physician assistant	1 (3)
General medicine	1 (3)
Clinical epidemiology	1 (3)
Nursing	2 (6)
<b>Country</b>	
Belgium	25 (81)
The Netherlands	6 (19)



**Therapeutic alliance**



**Promoting healthy lifestyle**

*Preoperative phase*



**Individual physiotherapy & information in group**  
(+multidisciplinary therapy on indication)



**Discharge criteria**



**Early mobilisation, daily physiotherapy**  
(+multidisciplinary therapy on indication)

*Hospitalisation phase*



**Lumbar fusion surgery**



**Follow-up**

*Postoperative phase*



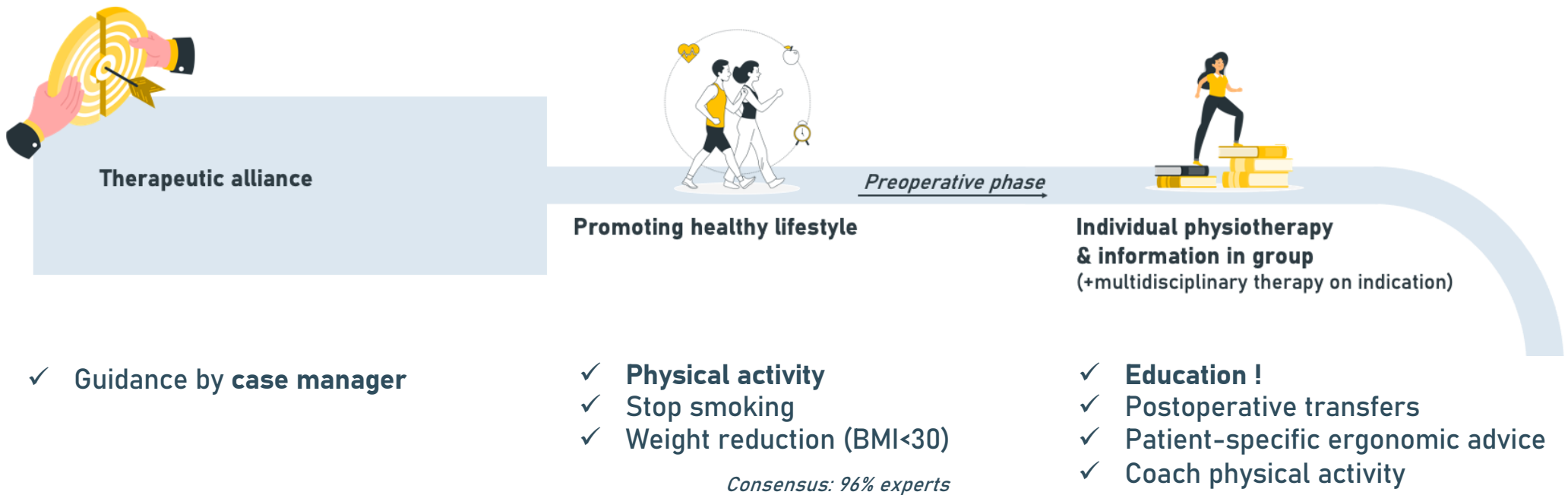
**Referral to skilled physiotherapist**  
based on team assessment (+multidisciplinary therapy on indication)



**Which musculoskeletal loading of the vertebral column is allowed?**



# 1) Prehabilitation



## 2) Perioperative rehabilitation



*Hospitalisation phase*

### **Discharge criteria**

- ✓ Controlable pain
- ✓ Clean wound
- ✓ Basic ADL
- ✓ Stairs if necessary in home situation

**Early mobilisation, daily physiotherapy**  
(+multidisciplinary therapy on indication)

### **Lumbar fusion surgery**

\*Mon-Tue-Wed: if no weekend therapy is available

### 3) Postoperative rehabilitation



## What musculoskeletal loading is allowed & when?

### Low to moderate loading

E.g. walking, gentle cycling and light household tasks, picking up objects

### Immediately

*Consensus: 96% experts*

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### High loading

E.g. certain sporting activities, heavy lifting

**From 12 weeks onwards** based on a favorable recommendation by the treating physician

*Consensus: 78% experts*

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### Return to work

**Sooner than 3 months if functionally possible**

*Consensus: 83% experts*

### Postoperative brace is **NOT** recommended

*Consensus: 100% experts*

No effect of bracing on pain, function or fusion rate

*Nasi et al., Eur Spine J, 2020*

52% of Belgian surgeons prescribes bracing after lumbar fusion surgery

*Bogaert et al., Eur Spine J, 2019*

# Evaluation of this optimal rehabilitation pathway

## REhabilitation of lumbar Arthrodesis **REACT** Controlled Trial

### Lumbale fusie op 1 of 2 niveaus

Operatie waarbij 2 wervelichamen (wat overeenkomt met 1 niveau) of 3 wervelichamen (wat overeenkomt met 2 niveaus) aan elkaar worden vastgemaakt.

#### Op deze pagina

- + Afspraken
- + Wat is een lumbale fusie op 1 of 2 niveaus?
- + Verloop
- + REACT revalidatie
- + Omgaan met ongemakken na de operatie
- + Onze specialisten

#### Afspraken

Wervelkaom

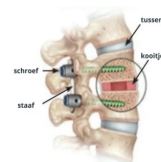
+32 16 34 25 60 - werkdagen van 8 tot 17 uur

Bekijk uw afspraken via mymexuzhealth.

### Wat is een lumbale fusie op 1 of 2 niveaus?



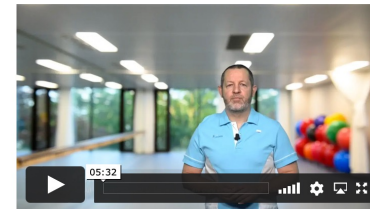
Orthopedische chirurg Lieven Moke legt uit hoe een lumbale fusie op 1 of 2 niveaus verloopt.



### Omgaan met pijn en spanning

Op verschillende momenten tijdens uw revalidatie kunt u spanning ervaren, denk bijvoorbeeld aan spierspanning. Wat is de invloed van pijn en spanning op mijn lichaam en hoe kan dit omhoog tot een goed gevoel?

In deze video leggen we u uit hoe u dit herkent bij uzelf en welke technieken u helpen om opnieuw vertrouwen in uw lichaam te krijgen. Probeer enkele van deze technieken uit (bv. ademhaling, sociale activiteiten, spierontspanning) en bespreek dit tijdens het geplande preoperatieve consultatie bij een gespecialiseerde kinesitherapeut.



Kinesitherapeut Koen Bernar legt uit hoe u spanning in uw eigen lichaam kan ervaren en hoe u dit kan ombuigen naar een goed gevoel en vertrouwen in uw eigen lichaam.

### Kinesitherapie tijdens uw hospitalisatie

U wordt snel na de operatie gemotiveerd om te bewegen, omdat dit uw herstel ten goede komt. Het is belangrijk dat u de dagen hierna steeds meer gaat bewegen, bv. zelf uit bed komen en geleidelijk aan meer wandelen.

Oefen ook voldoende zelf deze activiteiten, en varieer regelmatig van houding. Bespreek daarnaast ook de activiteiten die voor u belangrijk zijn met uw kinesitherapeut, zodat u deze kan inoefenen.



Kinesitherapeut Veerle D'Hondt over revalidatie tijdens uw opname



## REVALIDATIE BIJ EEN LUMBALE FUSIE

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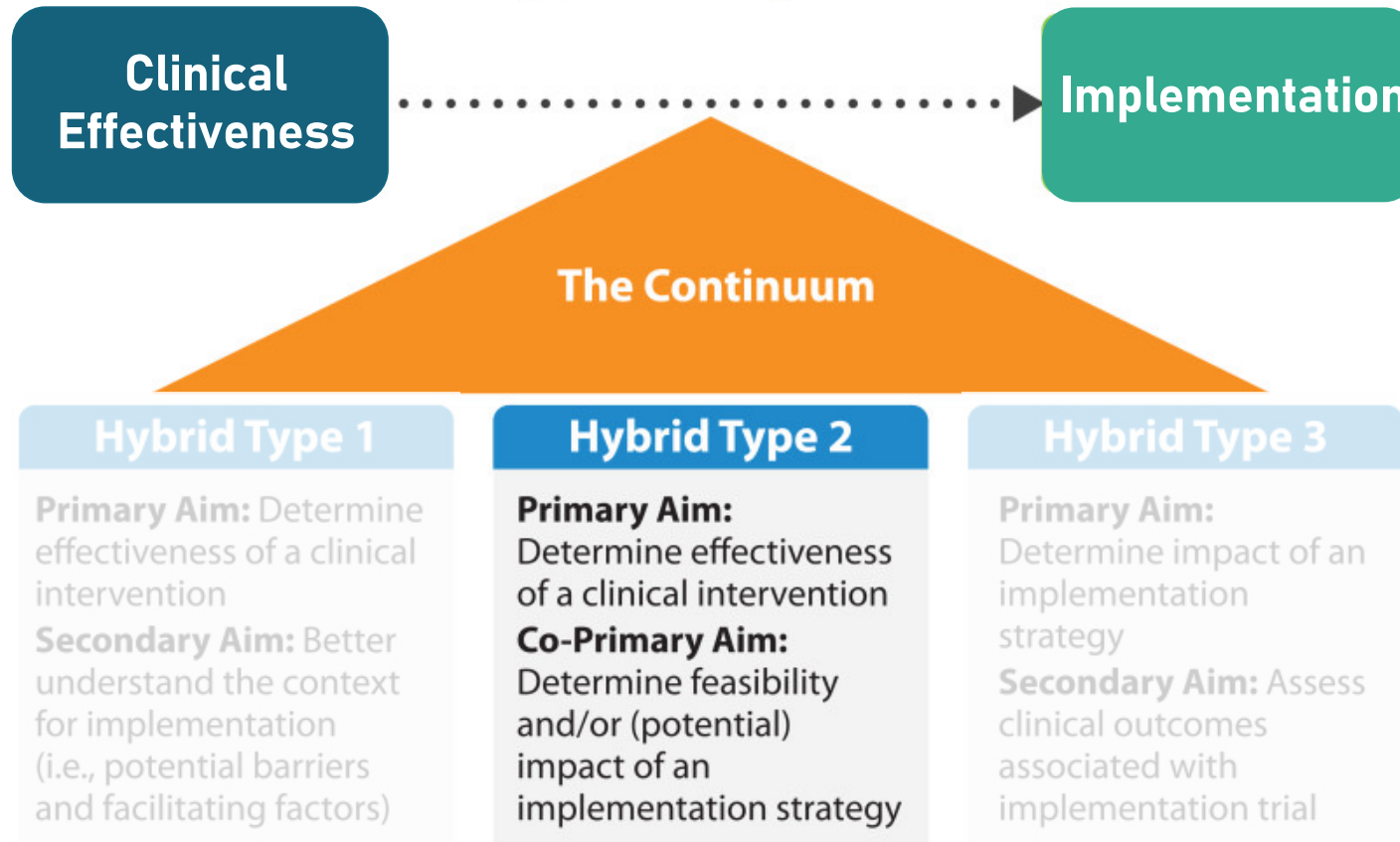


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# Evaluation of this optimal rehabilitation pathway

## Types of Hybrids



*Curran et al., Medical Care, 2012*

*Hartvigsen J., Pain Science in Motion Congress, 2022*

# Evaluation of this optimal rehabilitation pathway

## Clinical Effectiveness

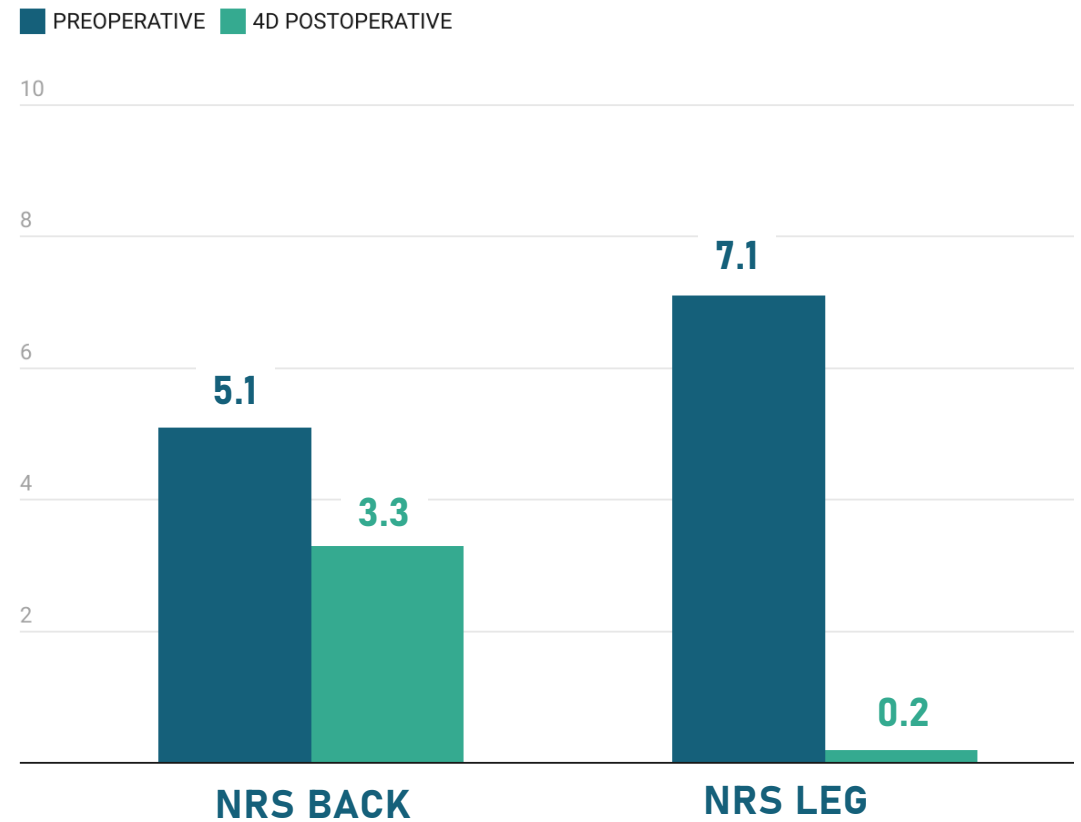
<b>Pain</b>	NRS leg, NRS back
<b>Functionality</b>	Oswestri Disability Index (ODI)
<b>Return to work</b>	timing and % of RTW
<b>Psychosocial factors</b>	Tampa Scale for Kinesiophobia, Depression Anxiety Stress Scale, Pain Catastrophizing Scale
<b>Quality of life</b>	EQ5D

## Implementation

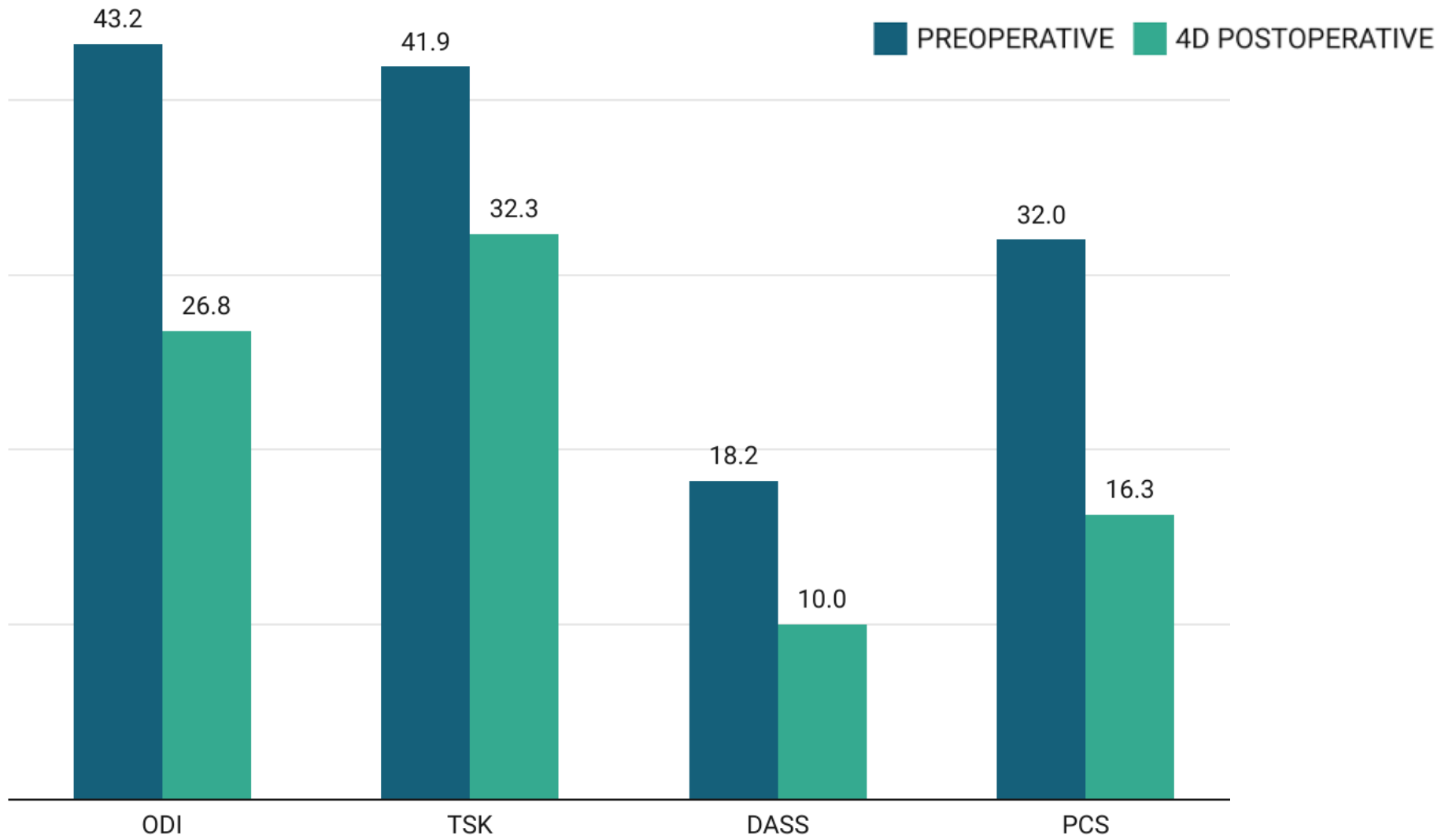
<b>Acceptability</b>	Acceptability questionnaires
<b>Barriers/facilitators</b>	Focus group
<b>Fidelity</b>	Fidelity checks
<b>Feasibility &amp; sustainability</b>	Clinical sustainability tool



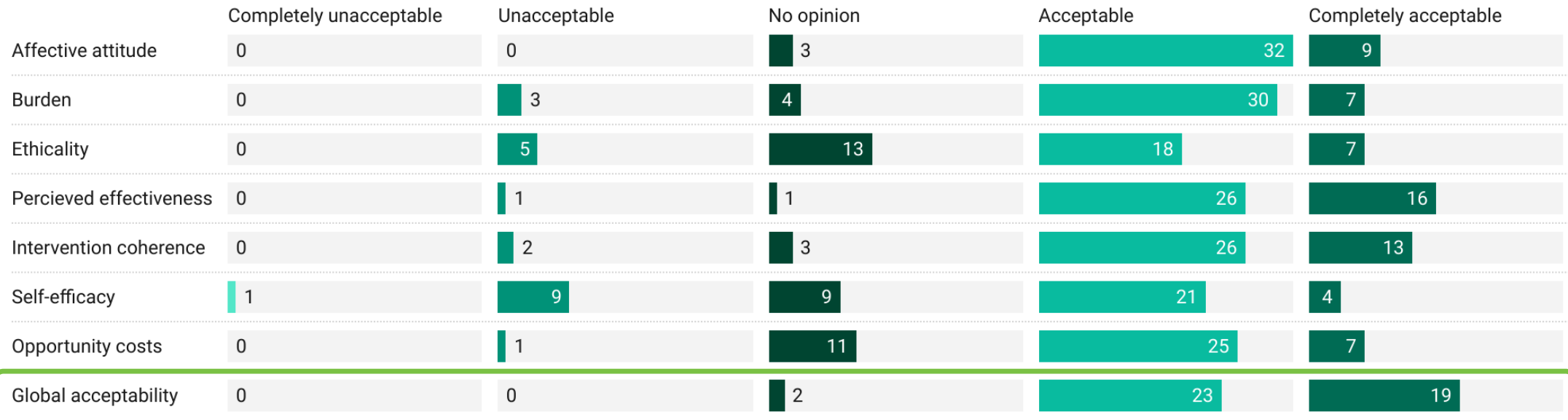
Mean age **52y**  
83% female  
56% working preoperatively



# 1 | Clinical Effectiveness



### Acceptability from the view of healthcare professionals



95% of healthcare providers score global acceptability as (completely) acceptable





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Thank you !



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[www.uzleuven.be/REACT](http://www.uzleuven.be/REACT)