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Degenerative Joint Disease: Evidence-based Approaches to Care

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Outline

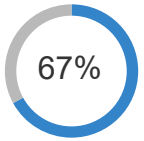
1. Current Landscape of DJD care
2. Discuss the current evidence base for DJD
3. Overview of the unique challenges of delivering evidence-based care for DJD
4. Overview of Innovative Delivery Models

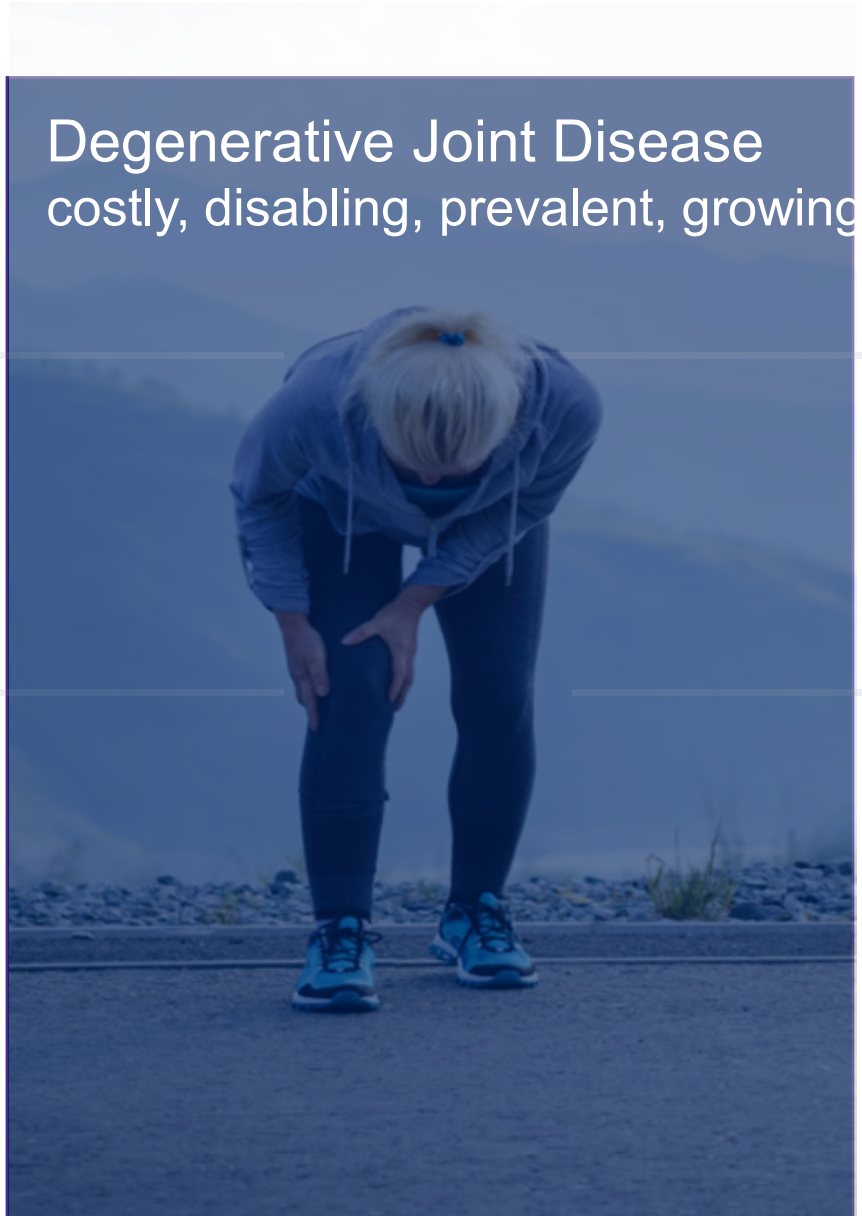
DJD Care today

Who is the DJD patient?

Chronic disease

2/3 have psychologic distress

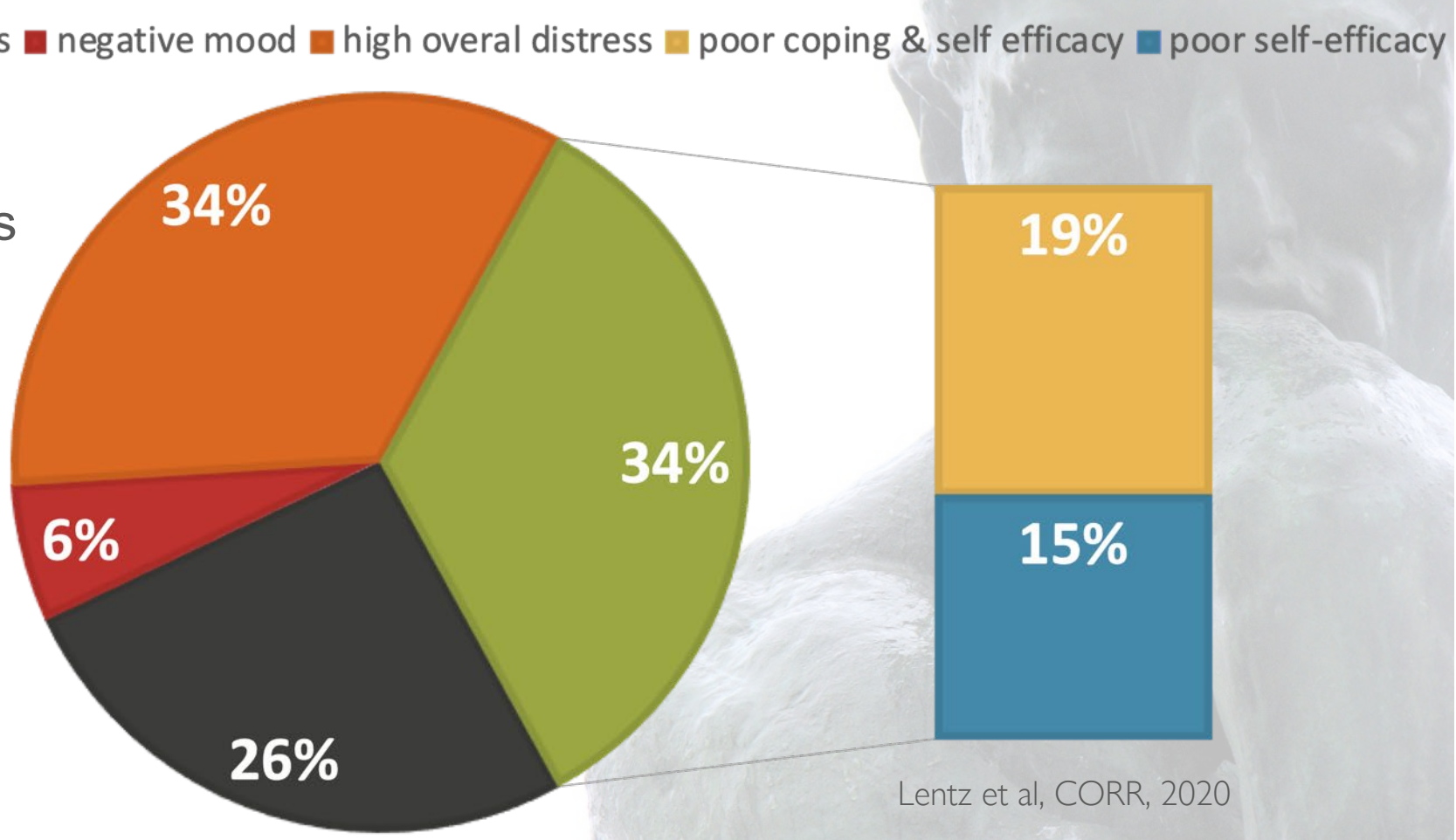




Psychological distress is common and heterogeneous

Psychological Distress Phenotypes

1. High distress
2. Low distress distress
3. **Fear avoidance (catastrophizing)**
4. Negative pain coping
5. Isolated negative mood

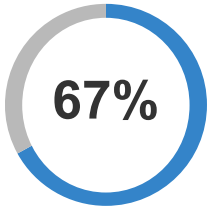


Lentz et al, CORR, 2020

DJD Care Today

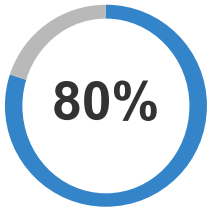
Who is the DJD patient?

Chronic disease
2/3 have psychologic distress



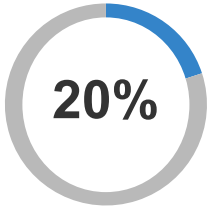
Who cares for them?

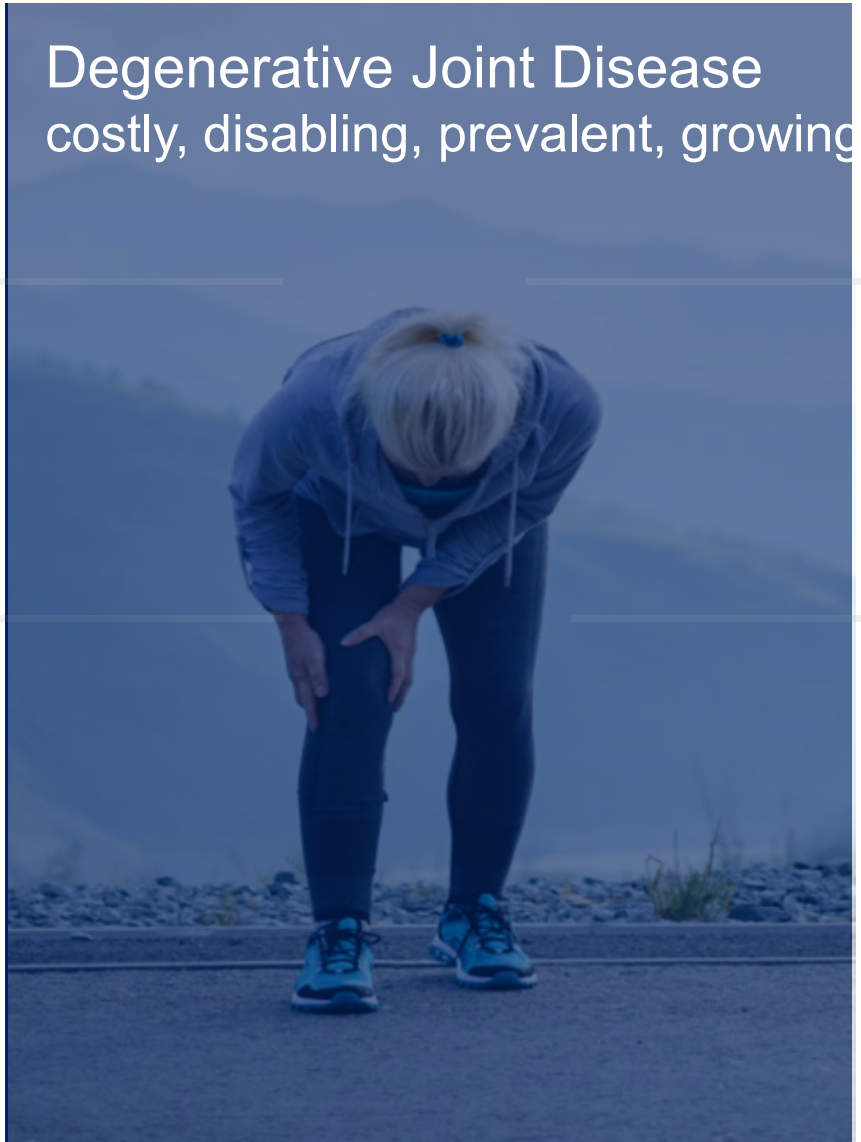
MSK experts may not have the skills or alignment for chronic disease management



How are they treated?

20% have a joint replacement
Disproportionate focus on surgery





Evidence-based care?

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Many DJD Guidelines

GUIDELINES

Care and management of osteoarthritis in adults: summary of NICE guidance

Philip G Conaghan,[1] John Dickson,[2] Robert L Grant,[3] on behalf of the Guideline Development Group

Osteoarthritis and Cartilage

OARSI Osteoarthritis Research Society International

OARSI guidelines for the non-surgical management of knee osteoarthritis

T.E. McAlindon †*, R.R. Bannuru †, M.C. Sullivan †, N.K. Arden ‡, F. Berenbaum §‖, S.M. Bierma-Zeinstra ¶, G.A. Hawker #, Y. Henrotin ††‡‡, D.J. Hunter §§, H. Kawaguchi ‖‖, K. Kwoh ¶¶, S. Lohmander ##, F. Rannou †††, E.M. Roos ‡‡‡, M. Underwood §§§

THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS EVIDENCE-BASED GUIDELINE ON

Treatment of Osteoarthritis of the Knee, 2nd Edition

David S. Jevsevar, MD, MBA
Gregory Alexander Brown, MD, PhD
Dina L. Jones, PT, PhD
Elizabeth G. Matzkin, MD
Paul A. Manner, MD, FRCSC
Pekka Mooar, MD
John T. Schousboe, MD, PhD
Steven Stovitz, MD
James O. Sanders, MD
Kevin J. Bozic, MD, MBA
Michael J. Goldberg, MD
William Robert Martin, III, MD
Deborah S. Cummins, PhD
Patrick Donnelly, MA
Anne Woznica, MLIS
Leeaht Gross, MPH

RACGP
Royal Australian College *of* General Practitioners

Guideline for the management of knee and hip osteoarthritis

Second edition

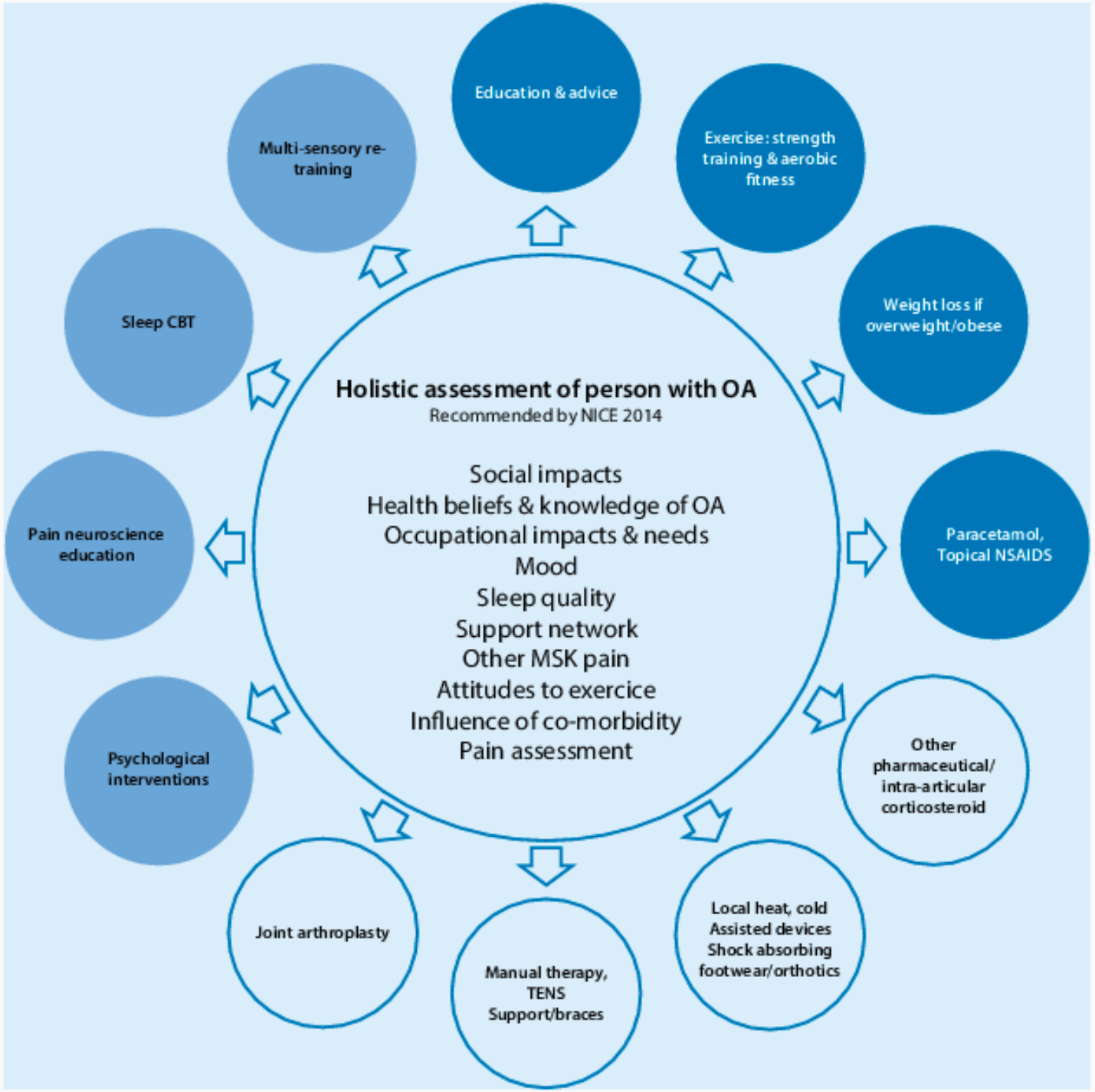
AAOS Clinical Practice Guidelines

Hip OA

- ⭐⭐⭐⭐ strong evidence
  - For PT
  - For steroid injections
  - For non-narcotic management
  - Against HA
- ⭐⭐⭐ moderate evidence
  - Worst outcomes with mental health disorders

Knee OA

- ⭐⭐⭐⭐ strong evidence
  - For rehabilitation, education & wellness activity
  - For NSAIDS
  - Against HA
  - Against Arthroscopy
- ⭐⭐⭐ moderate evidence
  - For weight loss



NICE Guidelines, 2014

Too little of recommended care is delivered
Limited codes for evidence-based treatments

Utilization from Knee OA Diagnosis to TKA

	Percentage of Patients	Total Cost	Percentage of Total Knee OA Cost
Treatment			
PT	16.7%	$1,511,448	6.9%
Knee Brace	6.5%	$434,096	2.0%
NSAID	23.1%	$232,394	1.1%
Tramadol	9.4%	$18,184	0.1%
Opioid	20.9%	$128,784	0.6%
CS Injection	58.6%	$2,006,268	9.1%
HA Injection	26.2%	$5,048,392	23.0%
Arthroscopic Debridement	0.4%	$97,066	0.4%
Imaging			
XR	94.9%	$1,897,371	8.6%
CT	3.3%	$158,131	0.7%
MRI	18.3%	$1,687,316	7.7%
Evaluation and Management			
E/M	98.1%	$6,028,927	27.4%
Total		$19,248,377	87.6%

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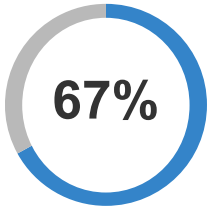
Warwick, et al, Arthroplasty Today, 2020

DJD Care today

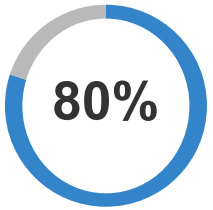
Why?

Who is the DJD patient?



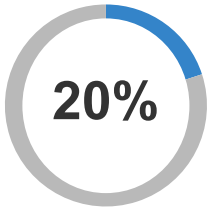
Chronic disease
2/3 have psychologic distress

Who cares for them?

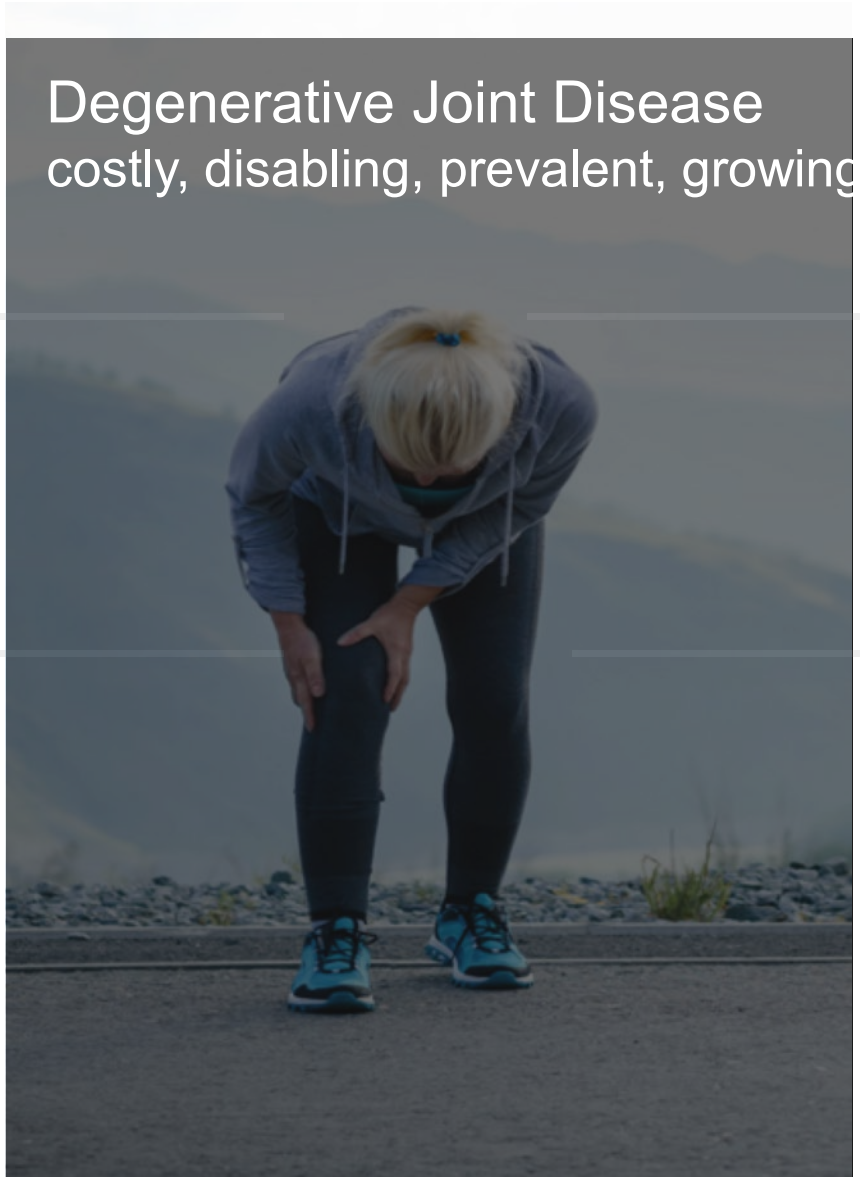


80% by orthopedic surgeons
Chronic disease cared for by procedural specialists

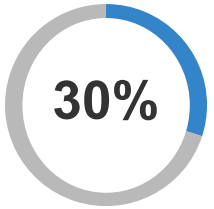
How are they treated?



20% have a joint replacement
Disproportionate focus on surgery

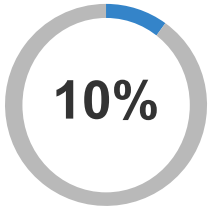


Evidence-based care?



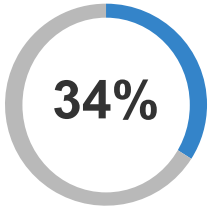
Limited alignment with guidelines
30% of spend is low value
Void of high value non-op care

Equity?



10% of patients account for half of non-operative spend

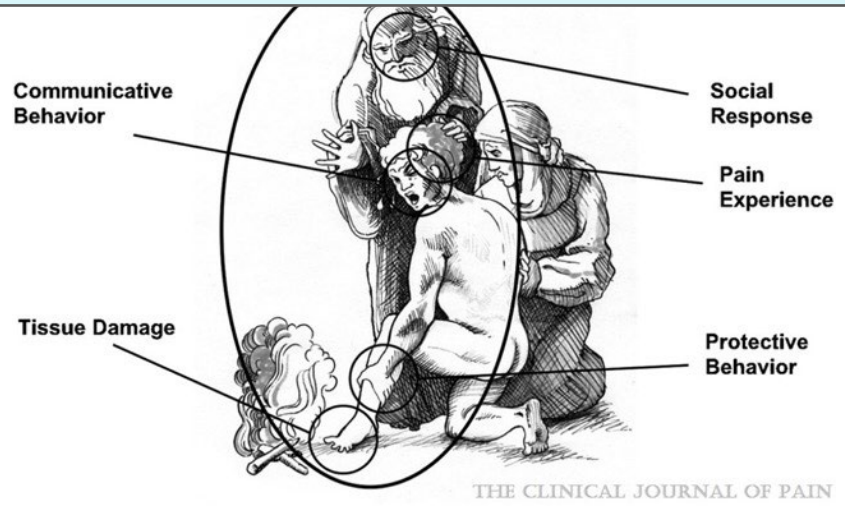
Appropriateness?

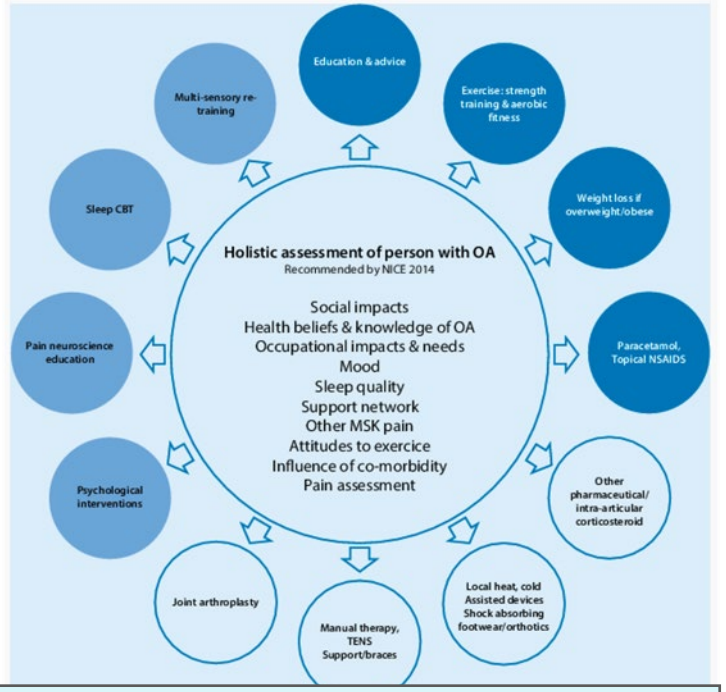


34% of TKA are not appropriate
44% are clearly appropriate

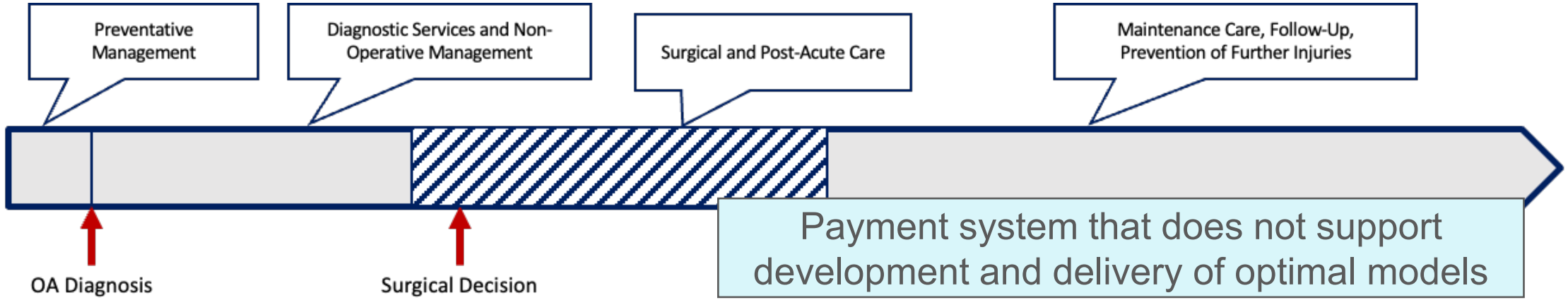
3 major influences

Biomedical view of disease





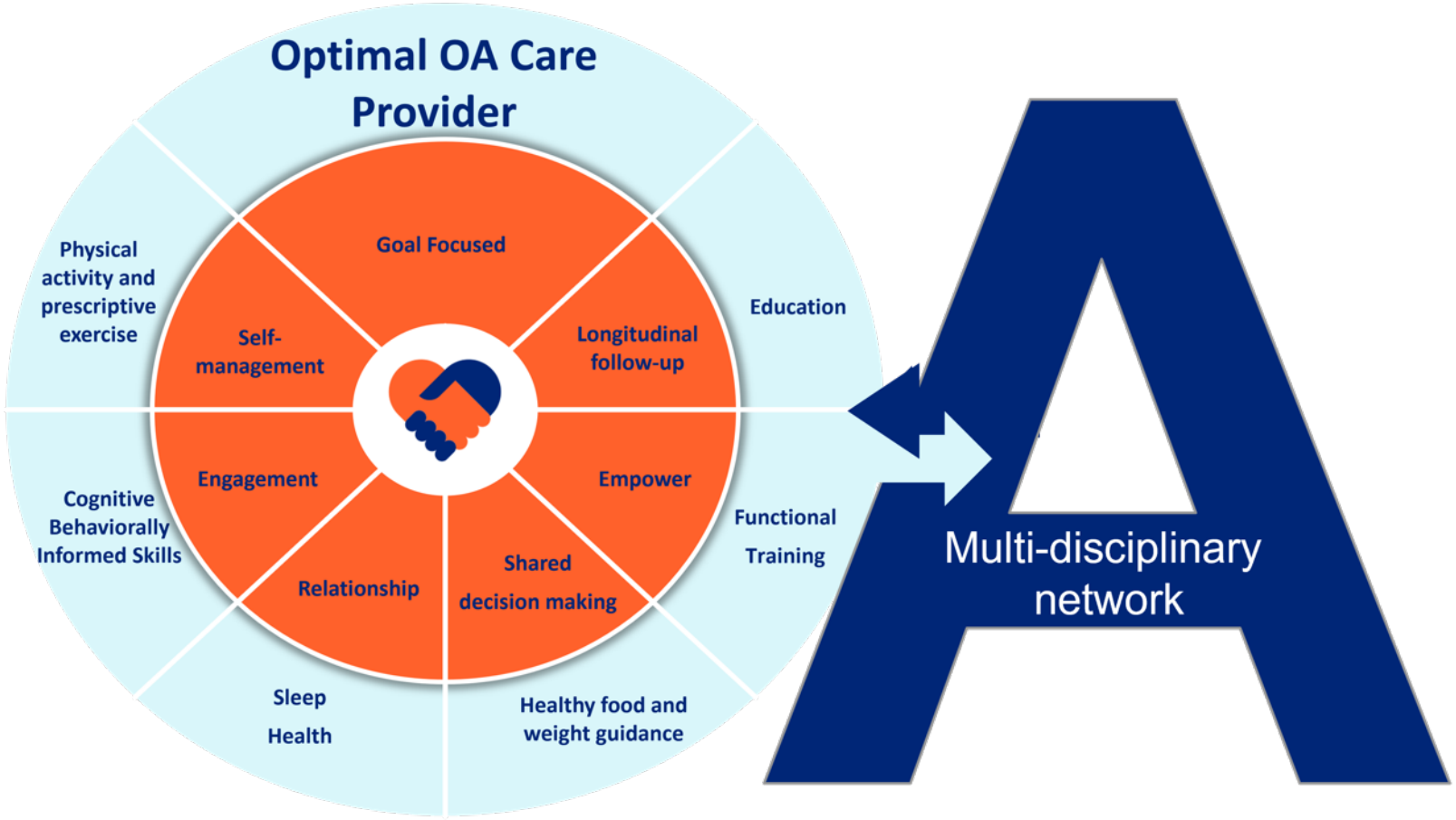
Complexity of delivering nonop care



Payment system that does not support development and delivery of optimal models

Optimal OA Care is our solution to this problem

- **Biopsychosocial approach**
- Condition-based care provided by a **multi-disciplinary provider**
- Collaborative care
- Measurement
- Guideline adherent care
- Infrastructure and technology
- Building culture and community
- **Self-management**



Diving deeper into the evidence

- *Sedentary lifestyle linked to develop and progression of OA*
- *Physical activity & exercise decreases pain & improves function*

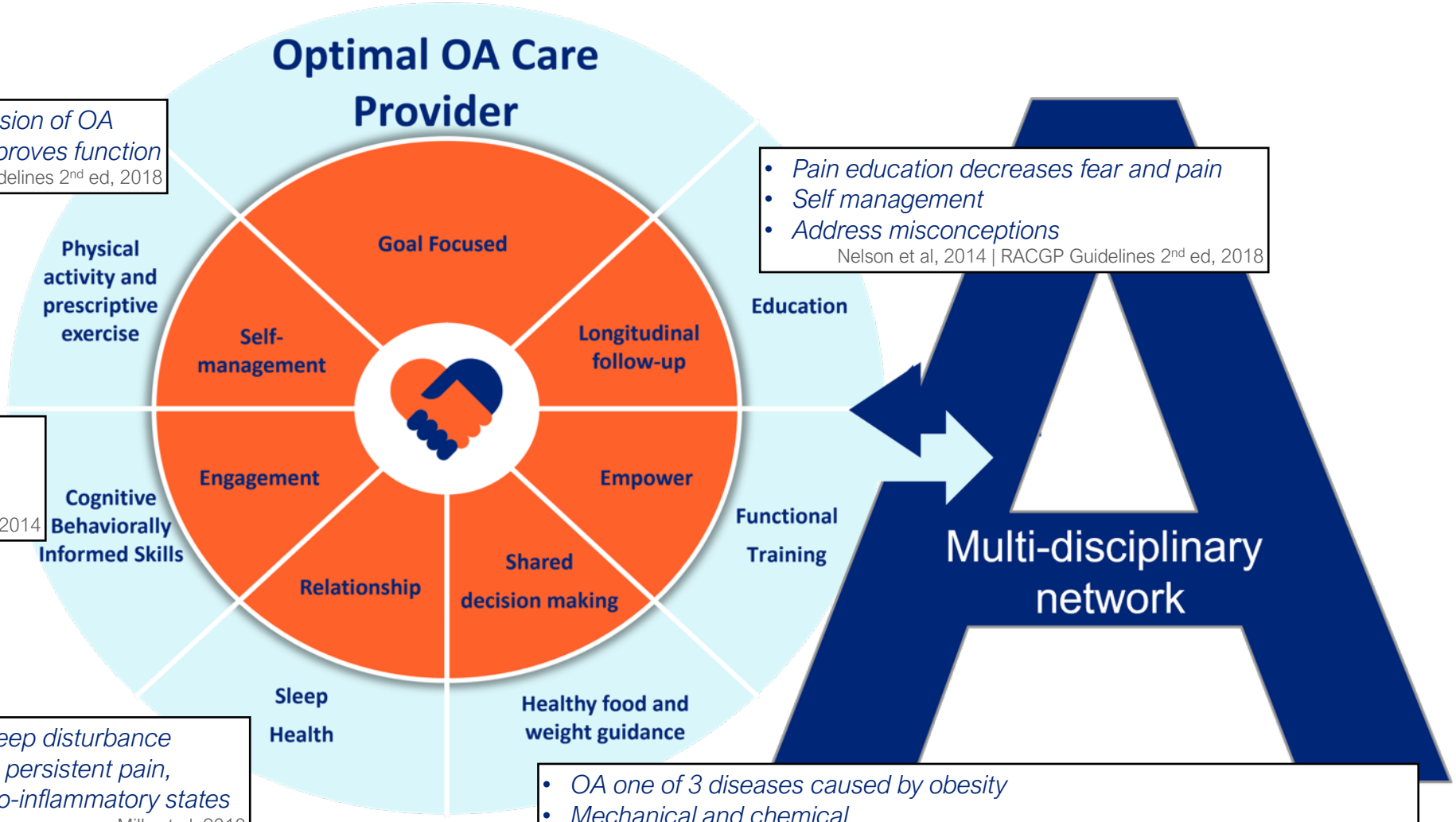
Mobarshii and Batt, 2017 | NICE Guidelines, 2014 | RACGP Guidelines 2nd ed, 2018

- *Decreases pain, increases self efficacy*
- *More effective when combined*
- *PTs can be trained to deliver CBT*

Hunt et al, 2013 | Ismail et al, 2018 | Nielson et al 2014

- *>50% with OA exhibit sleep disturbance*
- *Impaired sleep linked to: persistent pain, depression, disability, pro-inflammatory states*

Mills et al, 2018



- *Pain education decreases fear and pain*
- *Self management*
- *Address misconceptions*

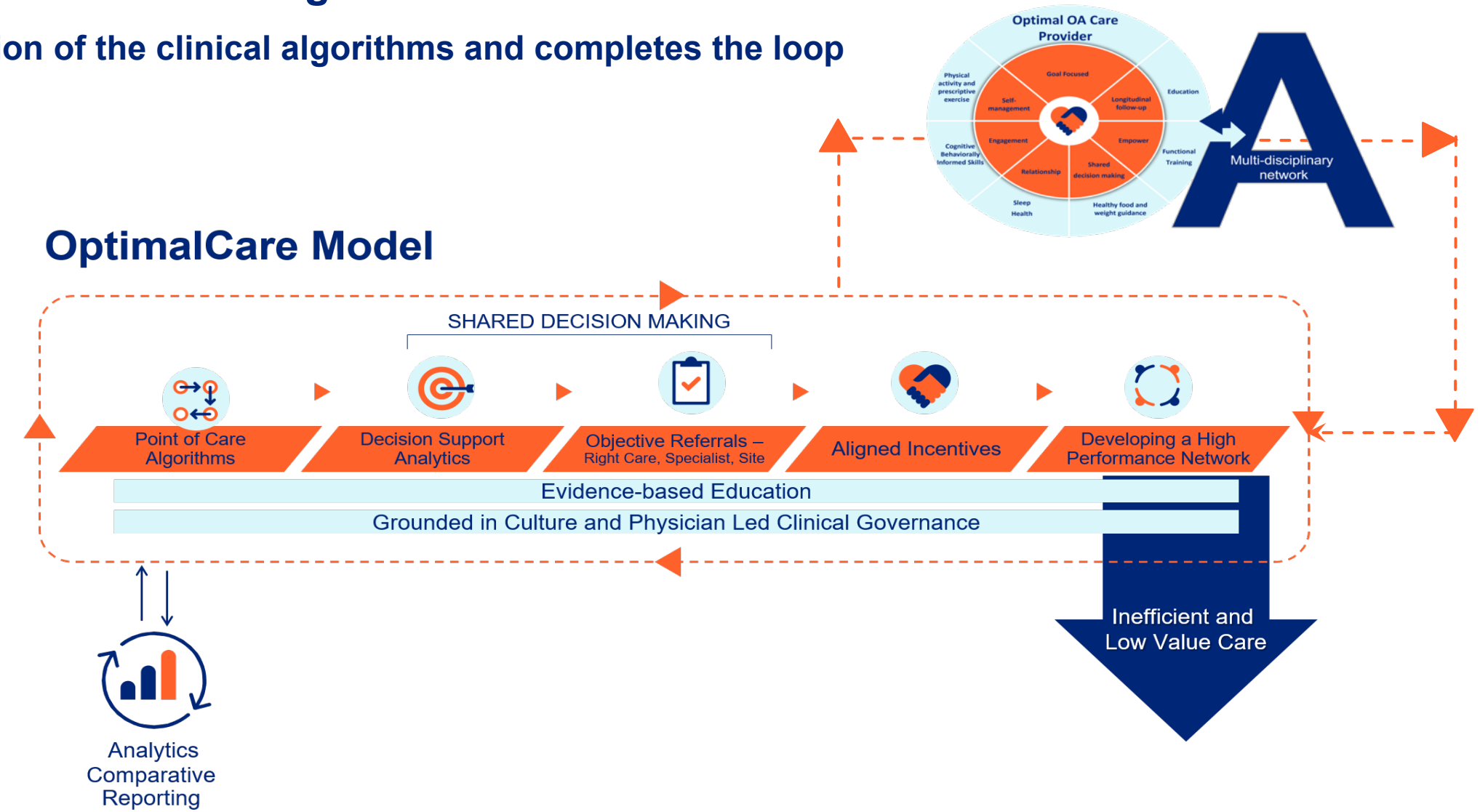
Nelson et al, 2014 | RACGP Guidelines 2nd ed, 2018

- *OA one of 3 diseases caused by obesity*
- *Mechanical and chemical*
- *5-10% weight loss can significantly impact pain*
- *Anti-inflammatory diets can decrease biomarkers of cartilage degradation*

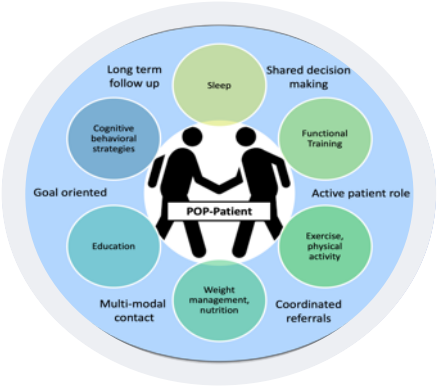
Mora et al, 2018 | Morales-Ivorra et al 2018

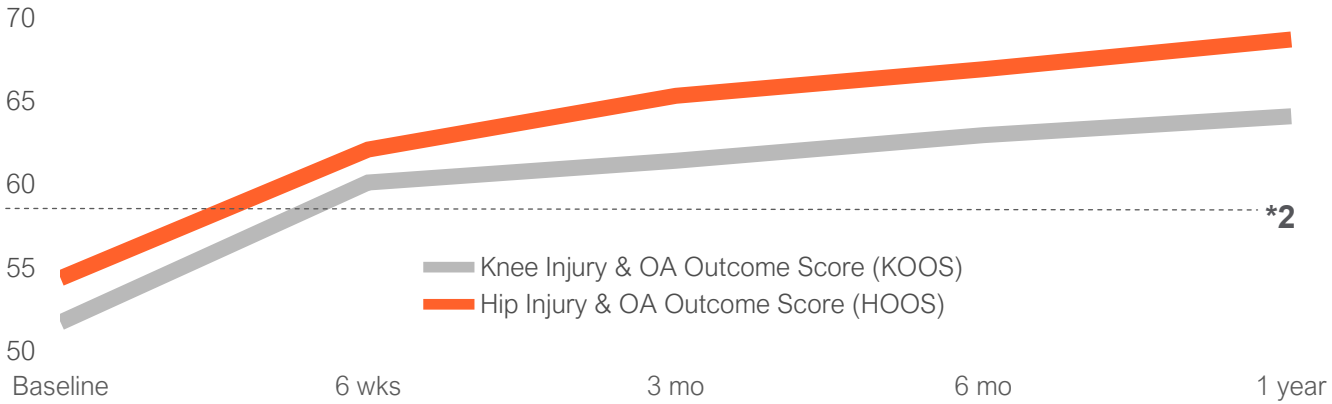
Optimal Care OA Program

Extension of the clinical algorithms and completes the loop



Optimal OA Care is inspired by the *Duke Joint Health Program*





2/3

Proportion of patients have functional outcomes scores above a threshold where joint replacement is unlikely to confer clinical benefit (72% knee, 67% hip)

74% of knee patients meet the minimal clinically important difference, 57% achieve substantial clinical benefit

Can physical therapists improve psychological distress? Yes! The average patient sees a 50% reduction in psychological distress. **Baseline distress is primary predictor of clinical benefit**

Pain scores improve between 2 and 3 points, a clinically significant change

50%

14-67%

Reduction in utilization and willingness to pursue joint replacement [1,2]

1. *Avg preoperative TJA score*
2. *58 threshold above where patients are too functional to benefit significantly from TJ*

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Myths and Truths

DJD Edition

Myth #1

Imaging is essential to diagnosis and appropriate treatment

NICE National Institute for Health and Care Excellence

1.1 Diagnosis

1.1.1 Diagnose osteoarthritis clinically without investigations if a person:
is 45 or over **and**
has activity-related joint pain **and**
has either no morning joint-related stiffness or morning stiffness that lasts no longer than 30 minutes. **[2014]**

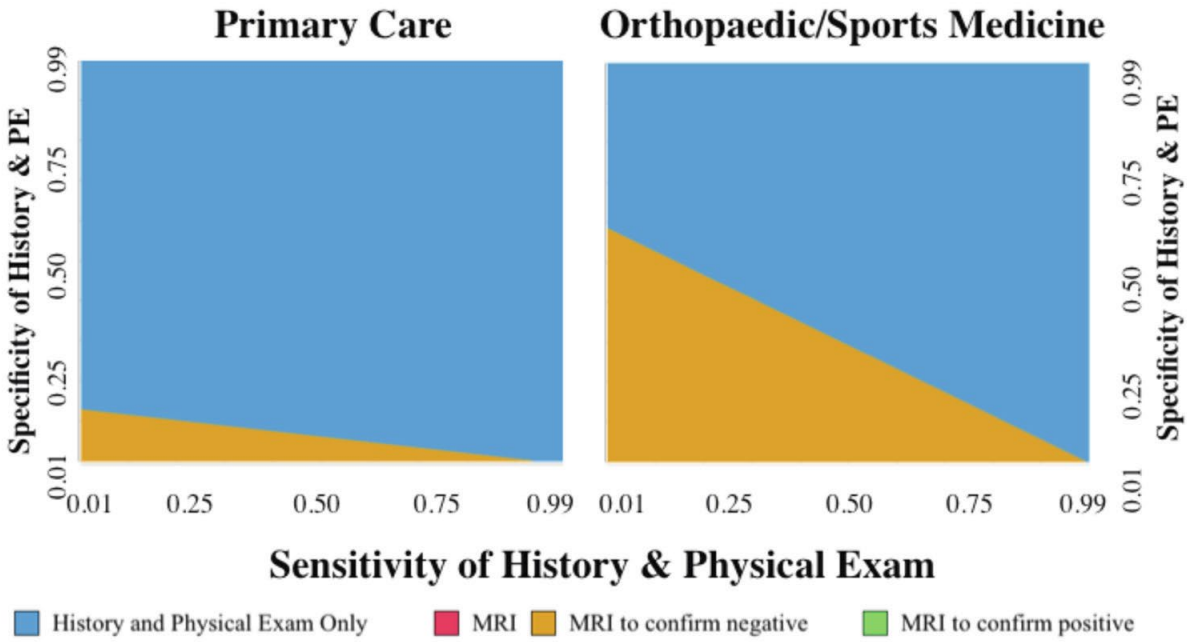
1.1.2Be aware that atypical features, such as a history of trauma, prolonged morning joint-related stiffness, rapid worsening of symptoms or the presence of a hot swollen joint, may indicate alternative or additional diagnoses. Important differential diagnoses include gout, other inflammatory arthritides (for example, rheumatoid arthritis), septic arthritis and malignancy (bone pain). **[2014]**

Myth #1

Imaging is essential to diagnosis and appropriate treatment

What about for suspected meniscus tears?

MRI increases the false positive rate and subsequently the risk of an unnecessary surgery



Mather et al, AJSM, 2014

Truth: Imaging is not essential and enables a narrow view of the disease

Myth #2

We know arthroscopy isn’t effective for arthritis but does have an important role for meniscus tears

Myth #2

We know arthroscopy isn't effective for arthritis but does have an important role for meniscus tears

JAMA Network Open

Original Investigation | Orthopedics

Effect of Physical Therapy vs Arthroscopic Partial Meniscectomy in People With Degenerative Meniscal Tears
Five-Year Follow-up of the ESCAPE Randomized Clinical Trial

Julia C. A. Noorduyn, MSc; Victor A. van de Graaf, MD, PhD; Nienke W. Willigenburg, PhD; Gwendolyne G. M. Scholten-Peeters, PhD; Esther J. Kret, MSc; Rogier A. van Dijk, MD, PhD; Rachelle Buchbinder, MD, PhD; Gillian A. Hawker, MD, PhD; Michel W. Coppieters, PhD; Rudolf W. Poolman, MD, PhD; for the ESCAPE Research Group

16 sessions of exercise-based PT non-inferior to arthroscopy

Comparable rates of radiographic OA progression

Arthritis & Rheumatology
Vol. 72, No. 2, February 2020, pp 273–281
DOI 10.1002/art.41082
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American College of Rheumatology
Empowering Rheumatology Professionals

Five-Year Outcome of Operative and Nonoperative Management of Meniscal Tear in Persons Older Than Forty-Five Years

Jeffry N. Katz,[1] Swastina Shrestha,[1] Elena Losina,[1] Morgan H. Jones,[2] Robert G. Marx,[3] Lisa A. Mandl,[3] Bruce A. Levy,[4] Lindsey A. MacFarlane,[1] Kurt P. Spindler,[2] Genevieve S. Silva,[1] METEOR Investigators, and Jamie E. Collins[1]

12 wks of strengthening-based PT

HR for TKA 2.0 in the intention to treat analysis
HR for 4.9 in the as-treated analysis

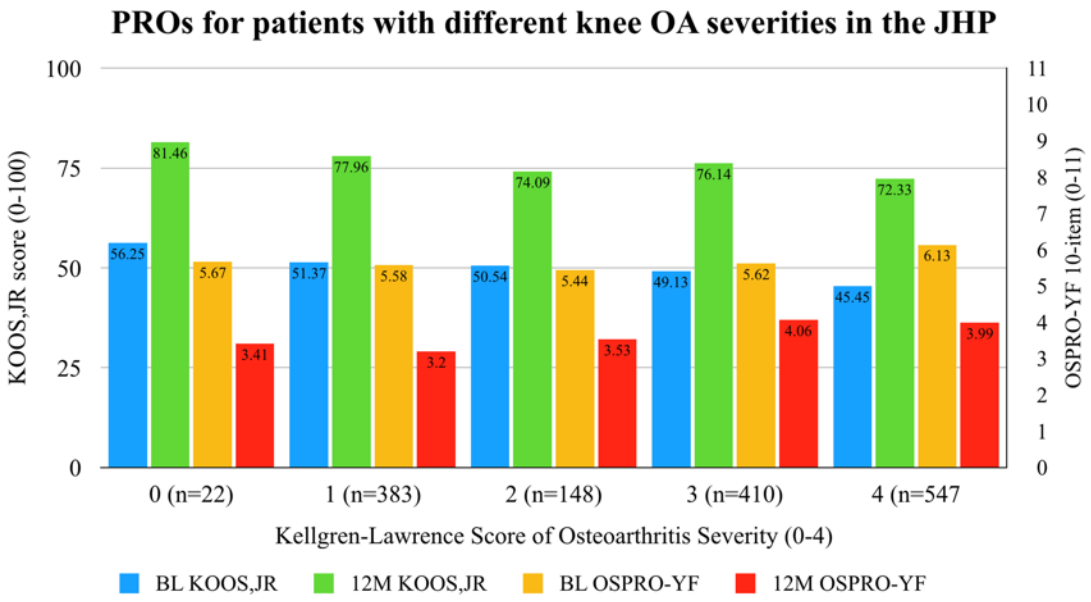
Truth: Degenerative meniscus tears are degenerative joint disease and evidence-based treatments are generally the same

Myth #3

Non-operative treatment is only effective for low severity DJD

Myth #3

Non-operative treatment is only effective for low severity DJD



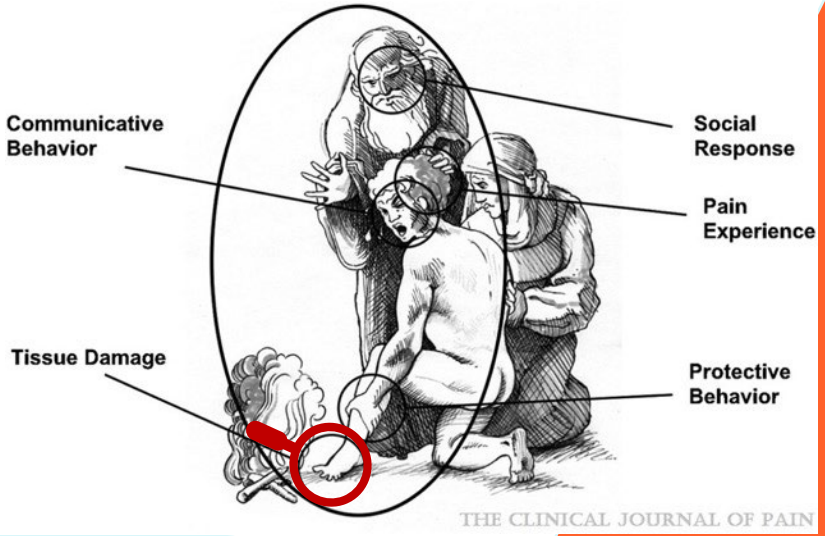
Whole person approach plus knee replacement produced clinically significant benefit in 90% of patients

Truth: Whole-person, evidenced based approach to DJD care produces equivalent outcomes for all grades of radiographic OA

Summary

The evidence and barriers to delivery are best explained by a narrow, biomedical view of DJD

- Misconceptions
- Incomplete evaluation
- Negative language
- Imaging



Joint replacement

Corticosteroid Injections
NSAIDS
Physical Therapy
Bracing (isolated cases)

Education
Exercise
Weight loss
Assessment/Measurement

Future developments should focus on treatments and delivery models consistent with the *biopsychosocial model*

- Combination treatments
- Increasingly precise and efficient messaging to inform and engage patients