
activities
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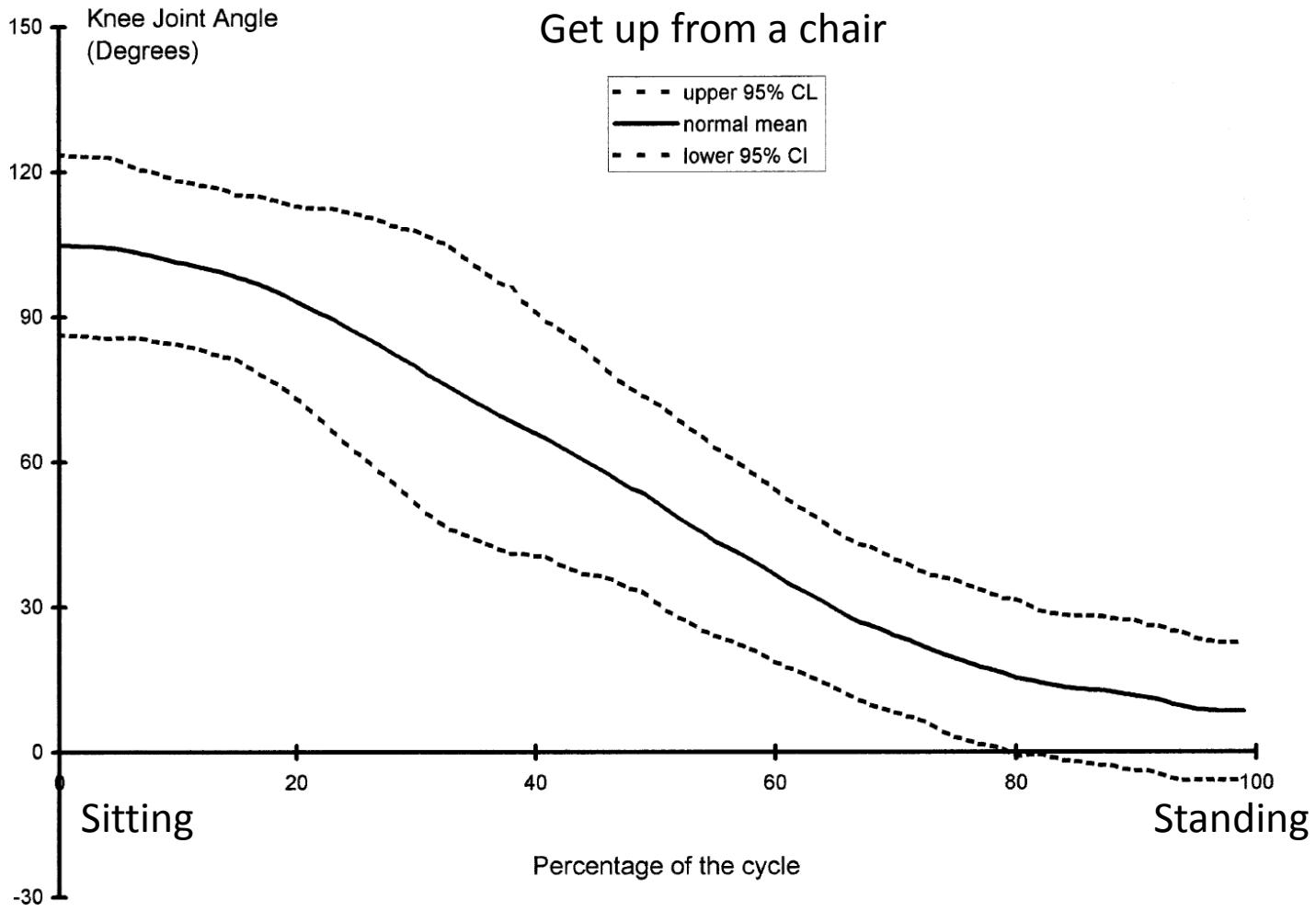
How much physical function do we need for activities of daily living, such as putting on shoes?

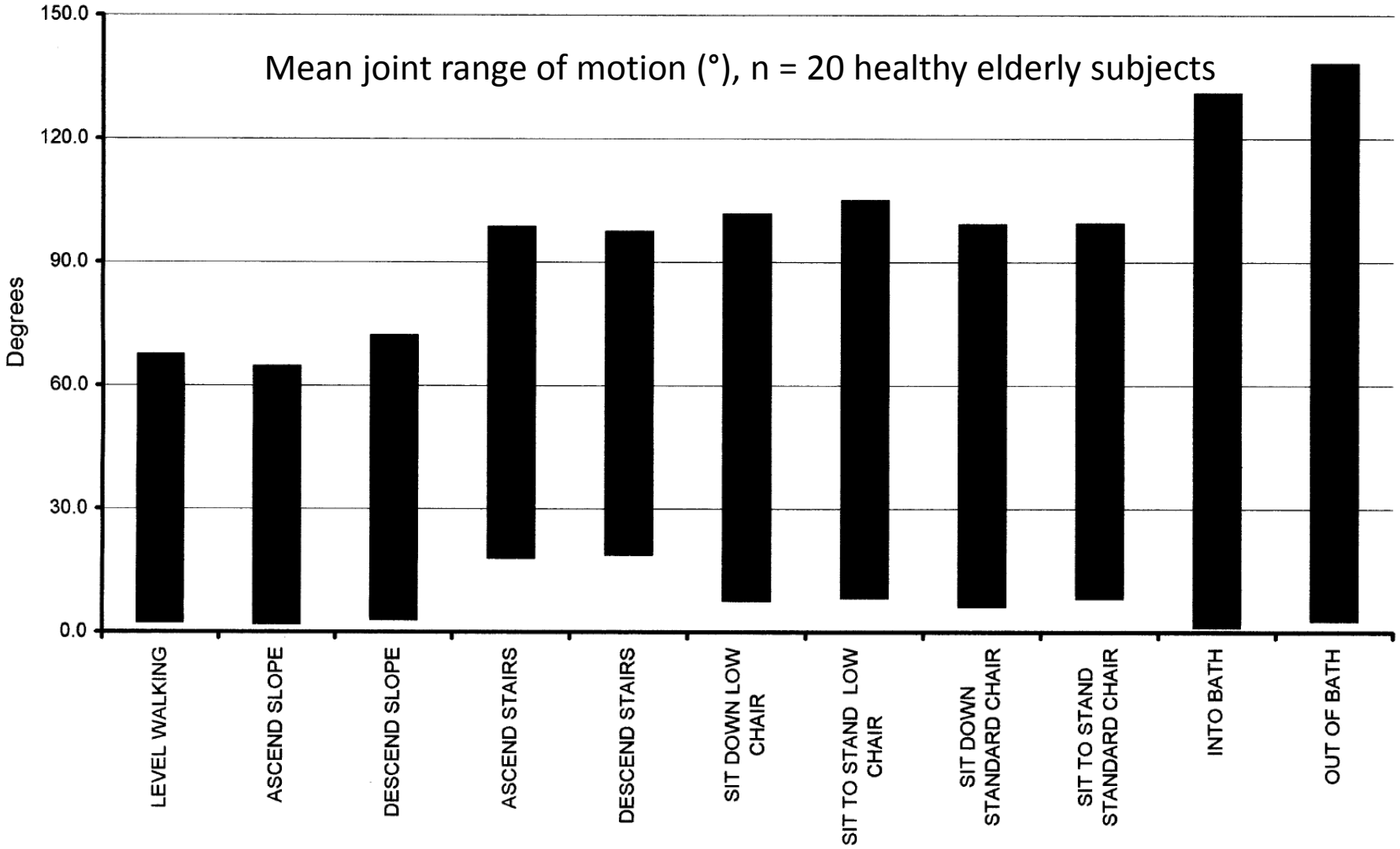
… or picking up something from the floor?

… or get up from a chair?

Biomechanical approach



Rowe et al 2000 Knee joint kinematics in gait and other functional activities measured using flexible electrogoniometry: how much knee motion is sufficient for normal daily life? Gait and Posture 12 (2000) 143–155



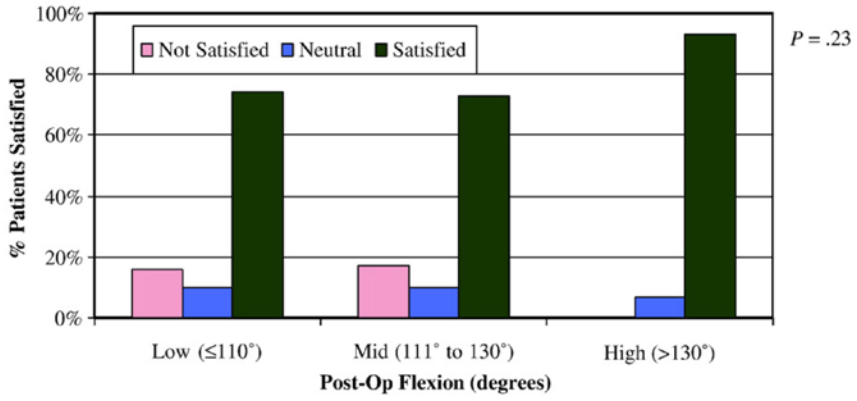
The mean knee joint range of motion used during 11 functional tasks by a group of 20 normal elderly subjects. From Rowe et al. 2000. Knee joint kinematics in gait and other functional activities measured using flexible electrogoniometry: how much knee motion is sufficient for normal daily life? Gait and Posture 12 (2000) 143–155

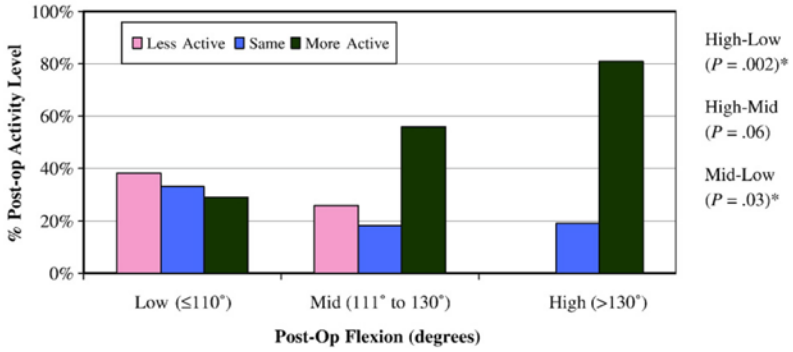
«Satisfaction» approach

Table 2. Results Summary

	High Flexion	Midflexion	Low Flexion	*P*
Knee Society score	93.1 ± 6.5	91.4 ± 12.4	87.7 ± 12.0	.54×
Positive satisfaction	93%	73%	74%	.24×
Expectations achieved	94%	68%	53%	.03
No functional limitations	93%	51%	52%	.009
Knee feels normal	87%	70%	43%	.01
More active	81%	55%	29%	.016

More than 130°: improved outcomes after TKA
Greater than 110° of flexion is needed to achieve satisfactory function for most patients.





Devers et al. 2011 Does Greater Knee Flexion Increase Patient Function and Satisfaction After Total Knee Arthroplasty? The Journal of Arthroplasty Vol. 26 No. 2 2011

«Ease of performance» approach

- Prompt: «Thinking about a standard, dining room chair with no arms – can you stand up from sitting on such a chair without any help at all? By help we mean aids/gadgets or another person.»

1 = Yes, easily

2 = Yes, with a little difficulty

3 = Yes, with a moderate amount of difficulty

4 = Yes, with a lot of difficulty

5 = I need help from a person

6 = Impossible

Methods and Sample

- Participants from the follow-up of the Somerset and Avon Survey of Health Study (SASH-Cohort study)
  - Cross-sectional data from all participants with knee or hip pain who accepted to participate in a clinical examination (n = 1117)

Methods and Sample

- Measurements:
  - The participants thought about performing several tasks and rated the difficulty of the performance

1 = Yes, easily
2 = Yes, with a little difficulty
3 = Yes, with a moderate amount
4 = Yes, with a lot of difficulty
5 = I need help from a person
6 = Impossible

Picking up Something from the Floor

- Prompt: «Can you pick up an object from the floor?.»

1 = Yes, easily

2 = Yes, with a little difficulty

3 = Yes, with a moderate amount

4 = Yes, with a lot of difficulty

5 = I need help from a person

6 = Impossible

Getting up from a Chair Without the Help of the Arms

1 = Yes, easily
2 = Yes, with a little difficulty
3 = Yes, with a moderate amount of difficulty
4 = Yes, with a lot of difficulty
5 = I need help from a person
6 = Impossible

What explains having difficulties getting up from a chair?

Age
Men report more difficulties!
Quadriceps Strength
Flexion of the knee: until 110° no problem, but if less than 110°: problems start increasing
Knee Pain
Hip Pain
Obese persons have a slightly higher odds, but this is just not statistically significant

What explains having difficulties putting shoes on?

Men report more difficulties!
Quadriceps Strength
Flexion of the knee: until 120° no problem, but if less than 120°: problems start increasing
Knee Pain
Hip Pain
Obese persons have a higher odds of having difficulties

What explains having difficulties picking up something from the floor?

Men report more difficulties!
Quadriceps Strength
Flexion of the knee: until 120° no problem, but if less than 120°: problems start increasing
Knee Pain
Hip Pain
Obese persons have a higher odds of having difficulties

Conclusion

- If knee flexion is below 110° for getting up from a chair or below 120 for picking something up from and putting on shoes, the more and more patients will report difficulties on these activities.


knee
extension
radiographic
flexion
passive
ROM
movement
participants
osteoarthritis
associated
adjusted
range
changes
crude
K/L
knees
motion
extension-deficit
flexion-deficit
joint
CI
pain

THANK YOU!