

Application of the Lumbar Motion Monitor Model in Hotel Housekeeping

Hotel Housekeeping

- Room Styles
 - King Checkout
 - King Stay Over
 - Double Checkout
 - Double Stay Over
- Number of Workers
 - 2 housekeeping employees cleaned two king checkouts

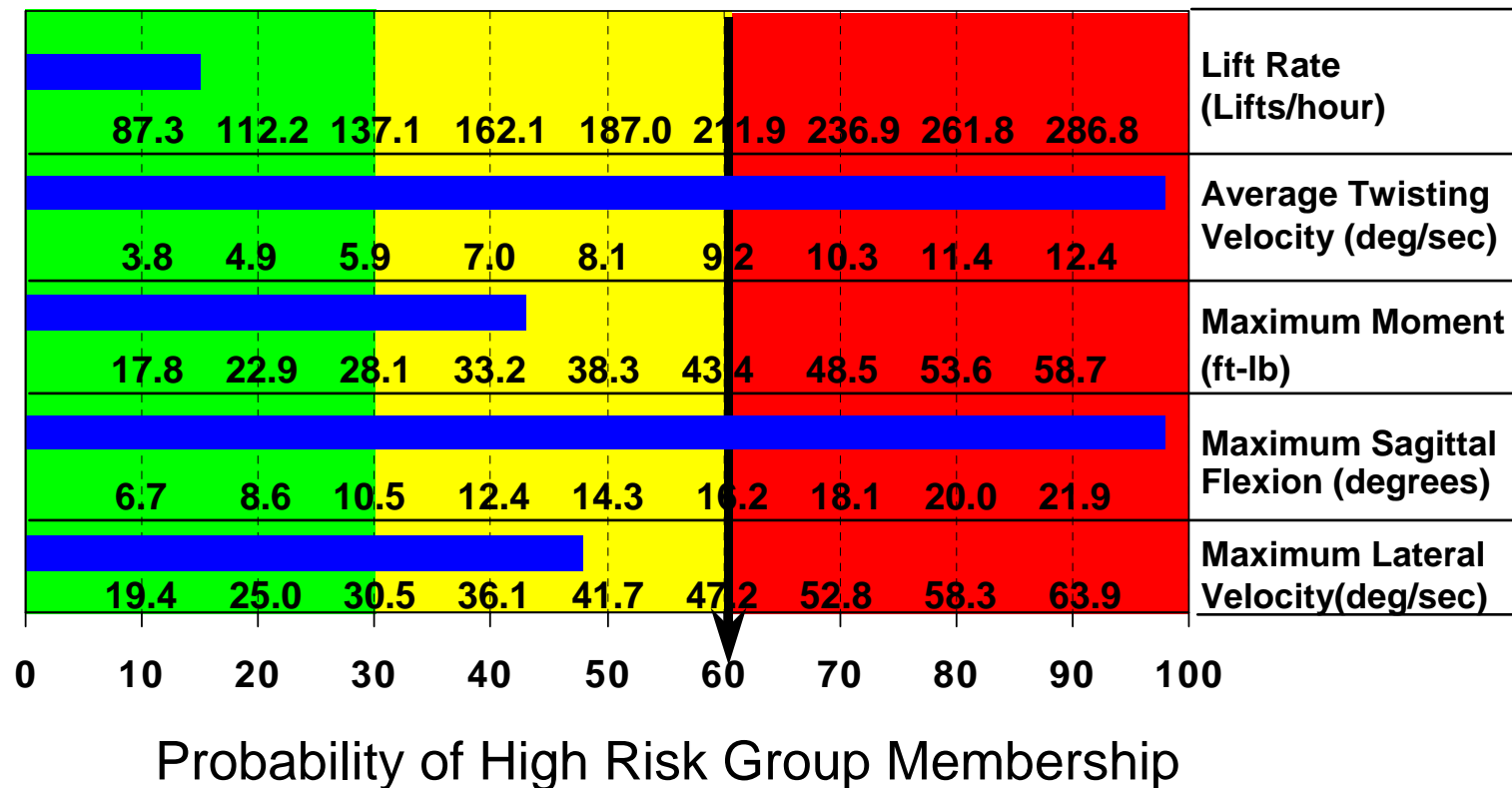
Bed Tasks

- Comforter Off
- Pillow Cases Off
- Sheets Off Bed
- Lift Mattress Foot
- Lift Mattress Head
- Sheets On Bed
- Tuck Sheet
- Pillow Cases On
- Pillows On Bed
- Comforter On

Room Cleaning Tasks

- Dust
- Clean Surface (Bar/Bathroom Counter)
- Replenish from Cart
- Check Drawers
- Towel Pickup
- Vacuum
- Push/Pull Cart
- Clean Mirror (2)
- Clean Toilet
- Clean Tub
- Clean Shower Tile
- Clean Floor (Bath)
- Fill Pillow Case
- Take Out Trash
- Iron/Board Away

Lumbar Motion Monitor (LMM) Risk Assessment



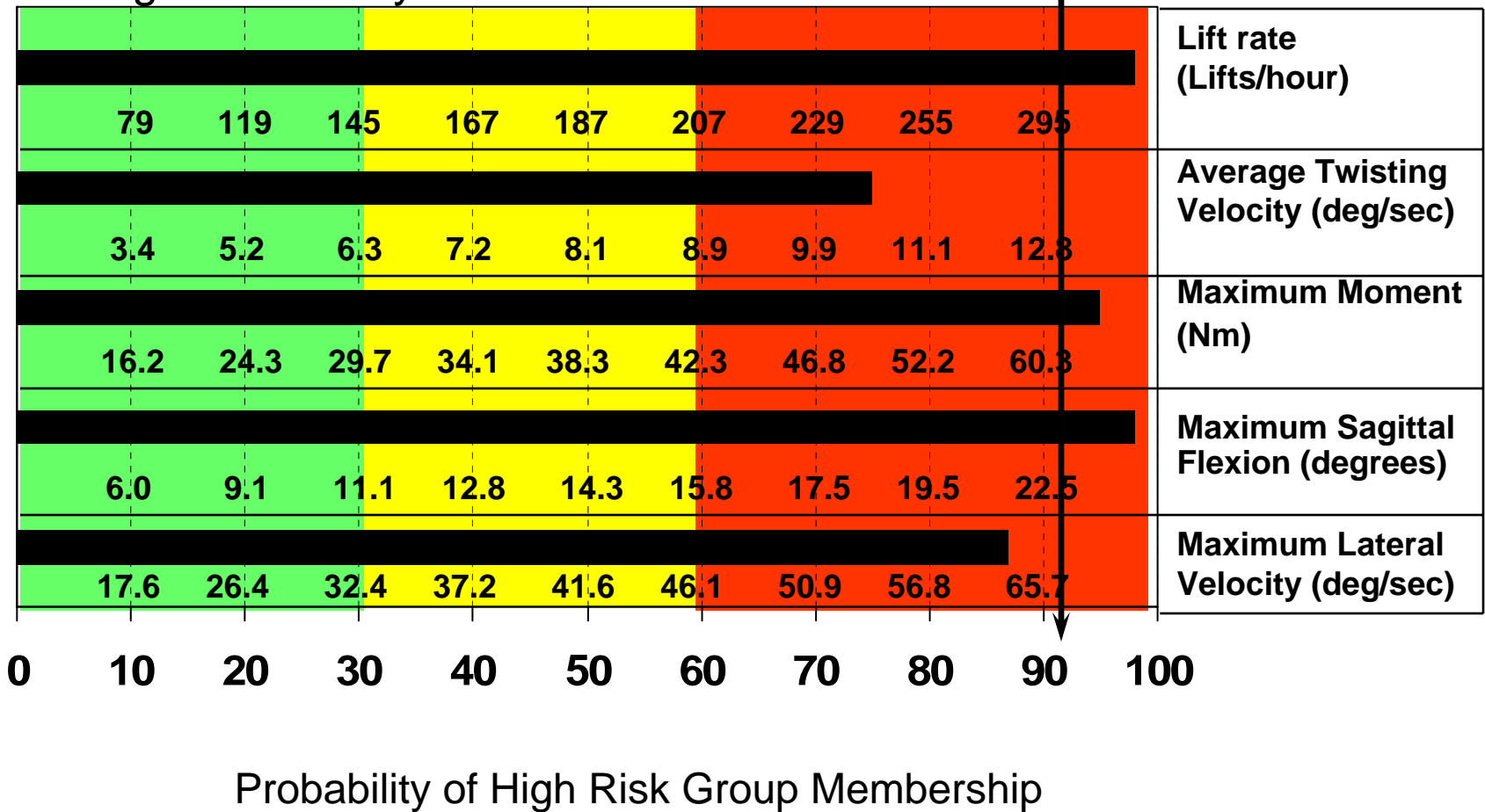
Hotel Housekeeping Risk Assessment

- Lift/hour = Exertions/hour
- Average # of Exertions/Room = 211
 - 26% of exertions were bed tasks
 - 29% of exertions were bathroom tasks
 - 20% of exertions were vacuum
- Exertions/hour = $211(14)/8$
- Exertions/hour = 369

Overall LMM Risk

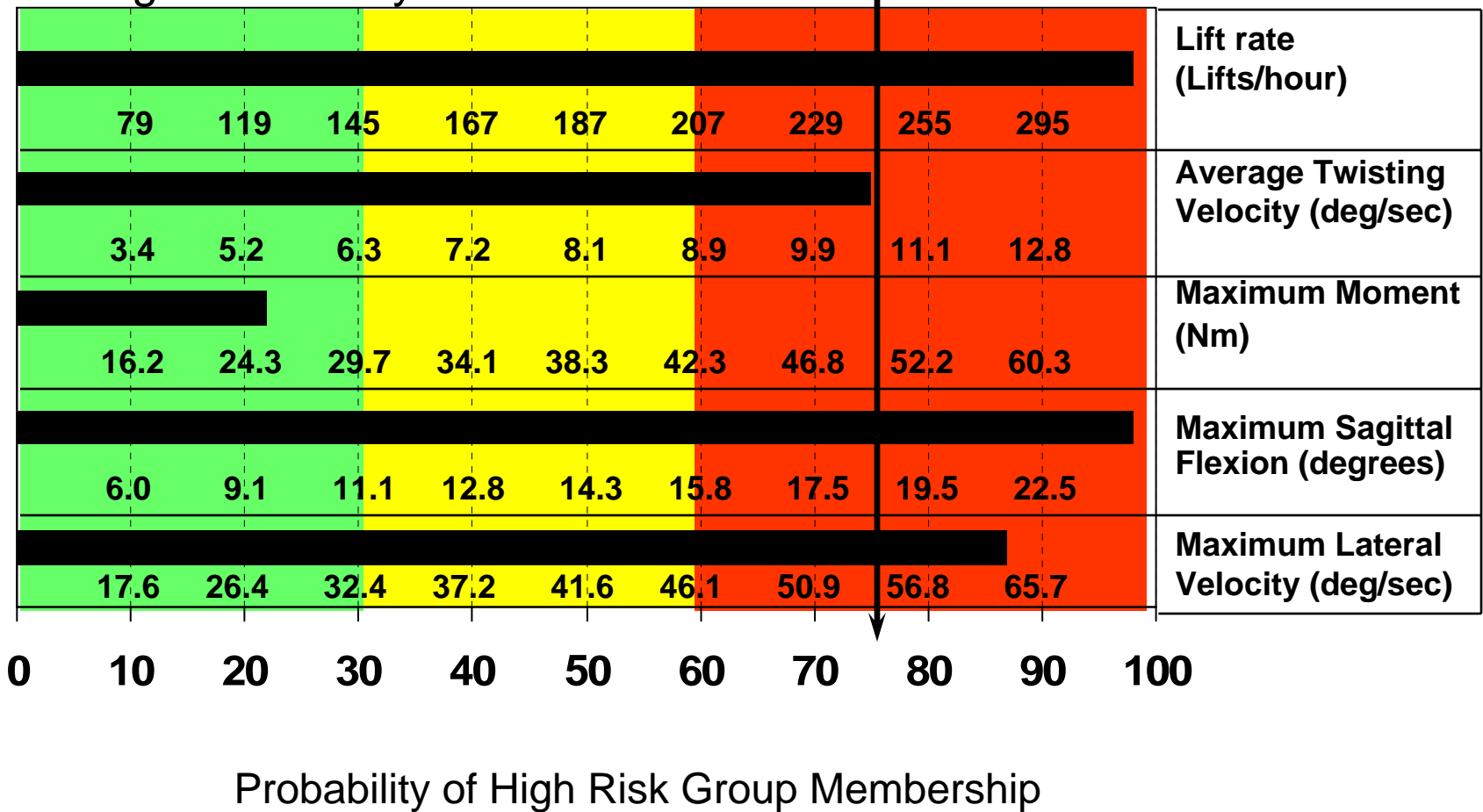
Rooms Style : King Checkout

Average Probability of Low Back Disorder Risk : 91%



Overall LMM Risk (No Push/Pull Cart)

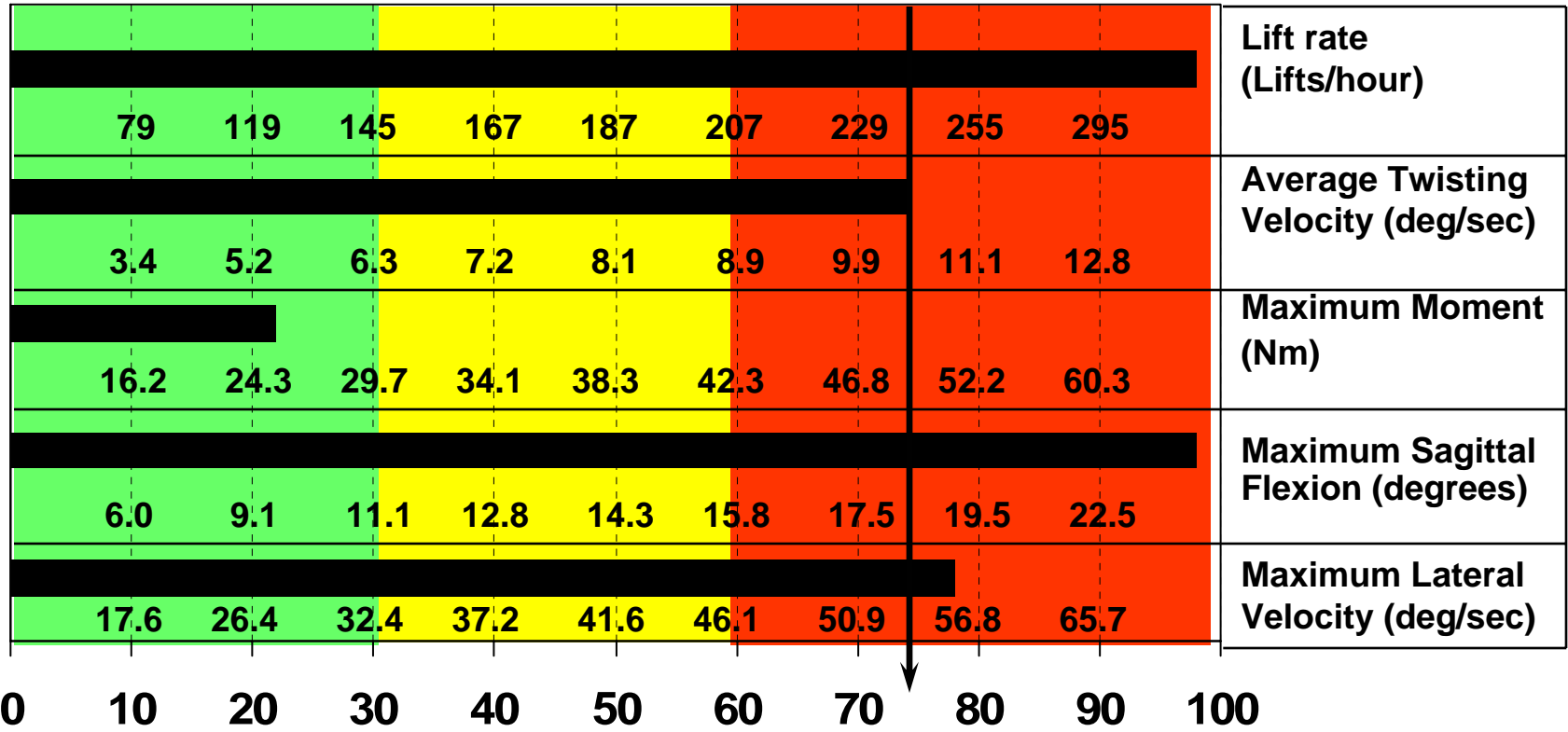
Average Probability of Low Back Disorder Risk : 76%



Bed Making Tasks

Task Risk: Overall Bed Making Tasks

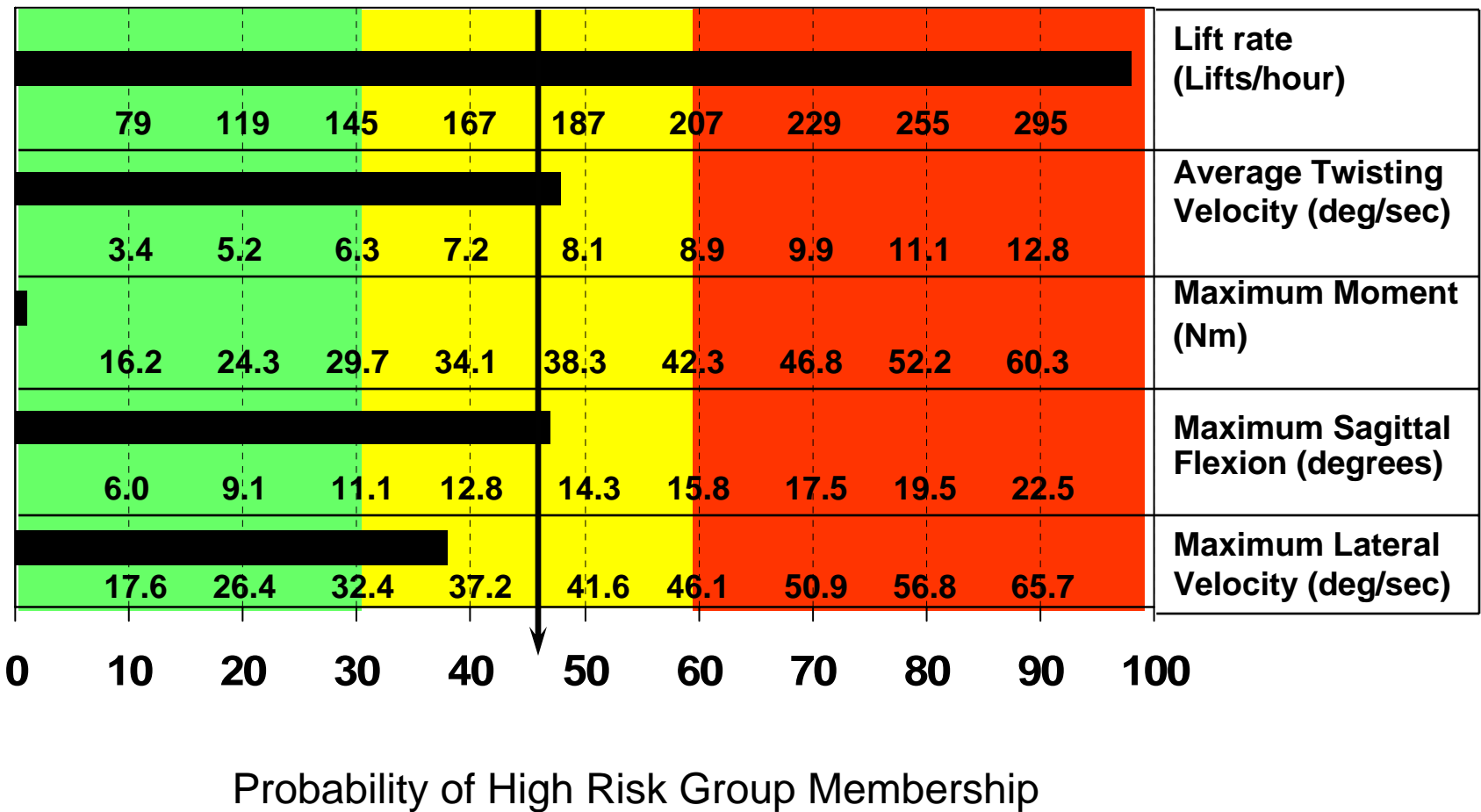
Average Probability of Low Back Disorder Risk : 74%



Probability of High Risk Group Membership

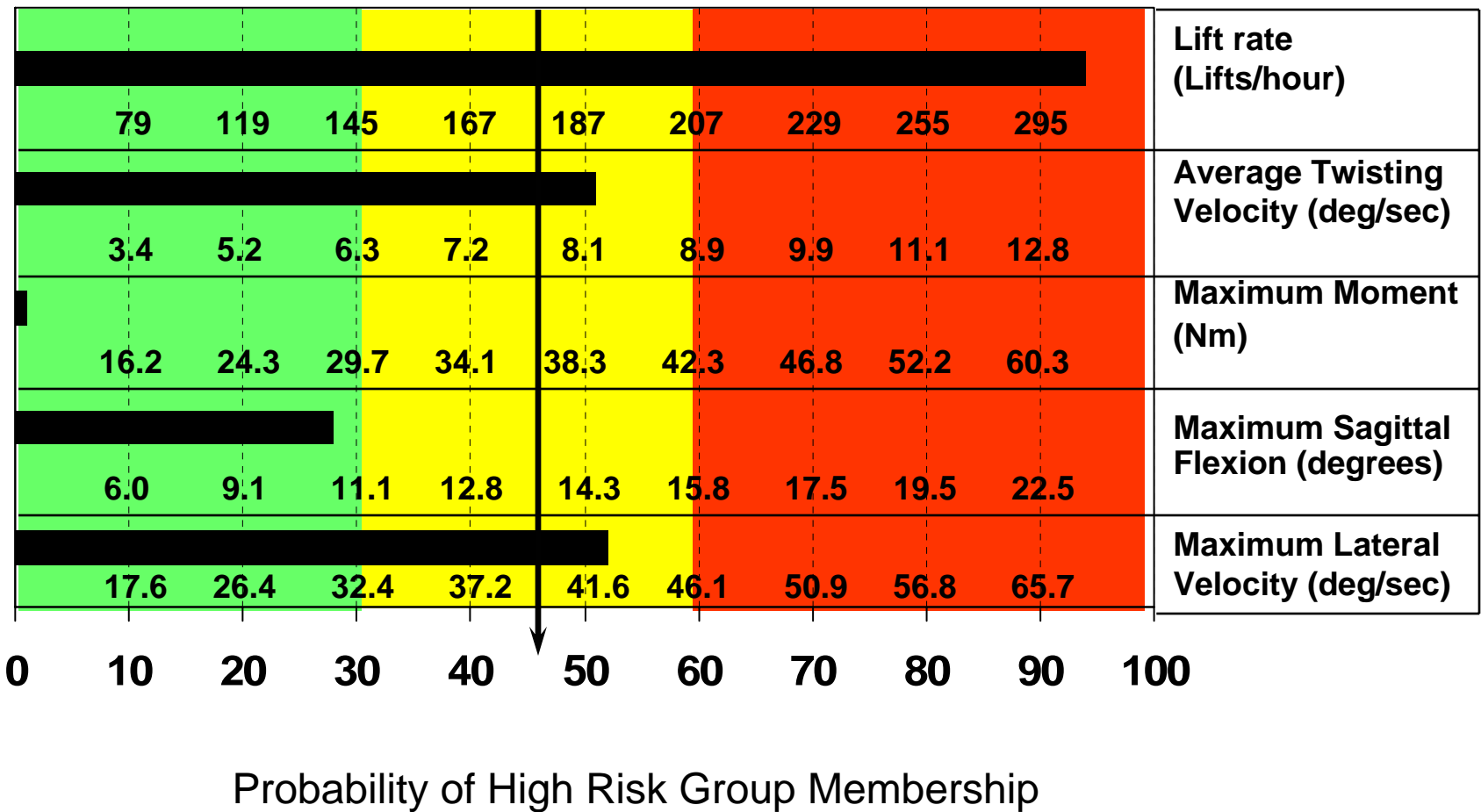
Task Risk: Pillow Cases Off

Average Probability of Low Back Disorder Risk : 46%



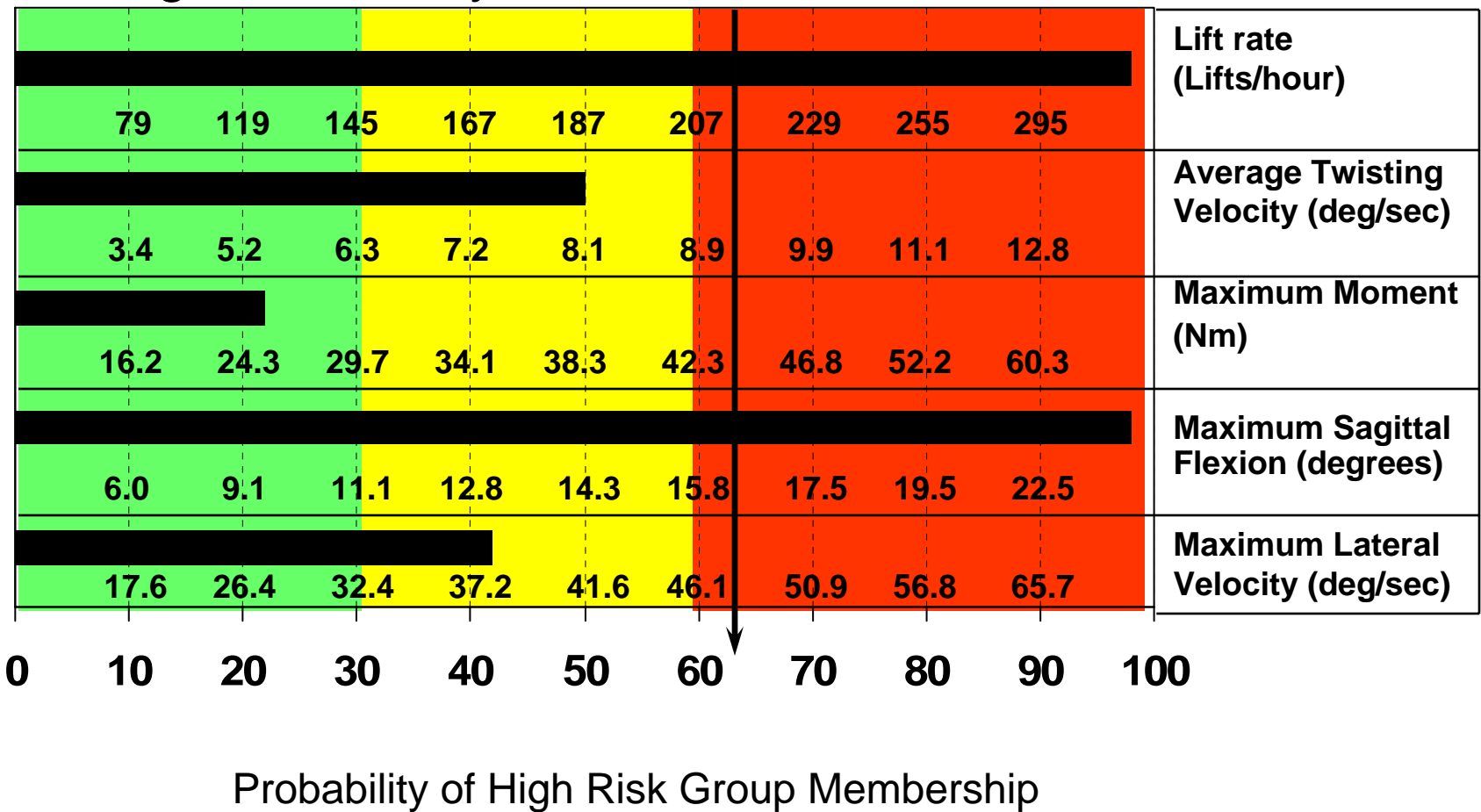
Task Risk : Sheet Off Bed

Average Probability of Low Back Disorder Risk : 46%



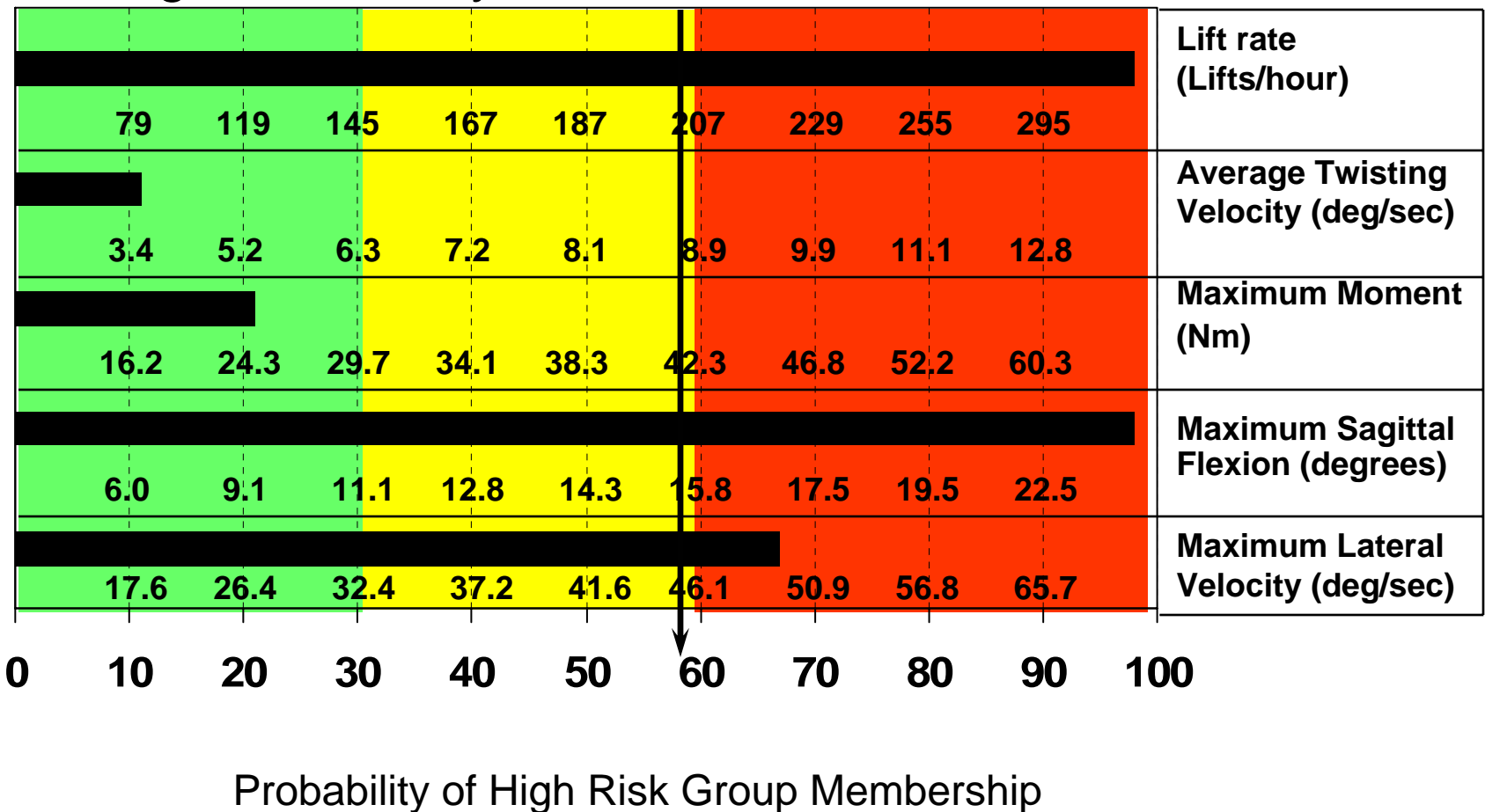
Task Risk: Lift Mattress Foot

Average Probability of Low Back Disorder Risk : 62%



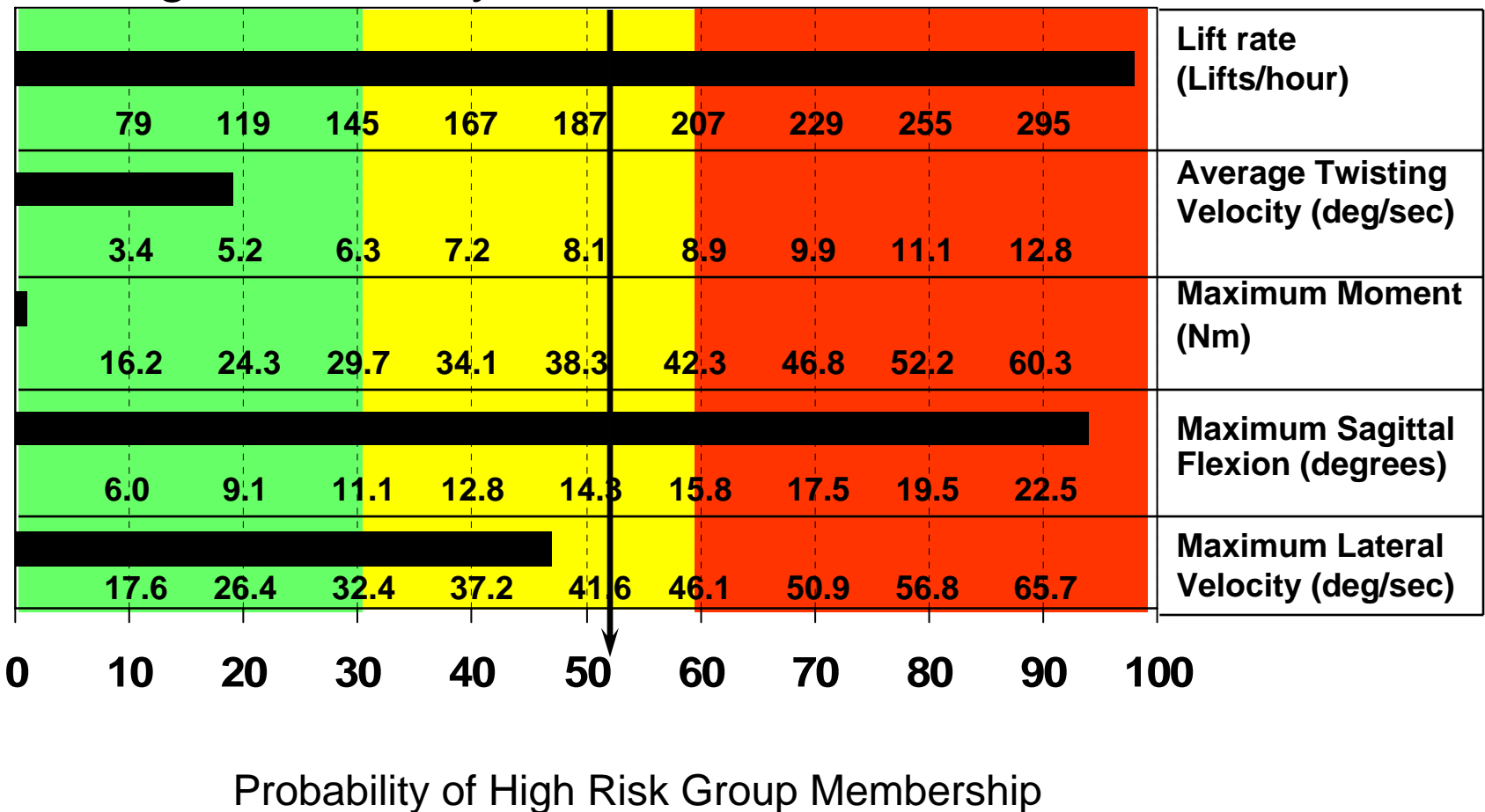
Task Risk: Lift Mattress Head

Average Probability of Low Back Disorder Risk : 59%



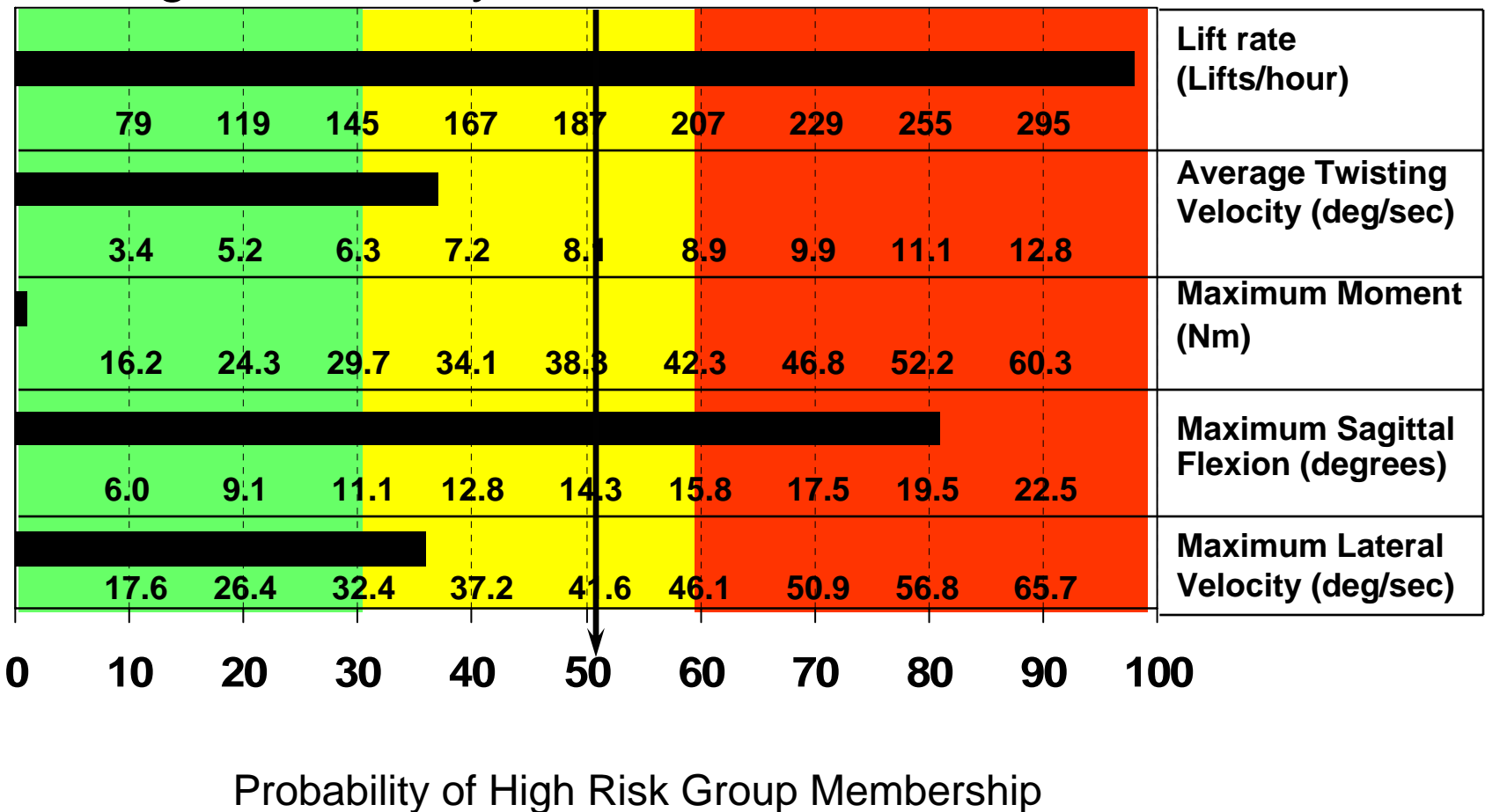
Task Risk: Sheet On Bed

Average Probability of Low Back Disorder Risk : 52%



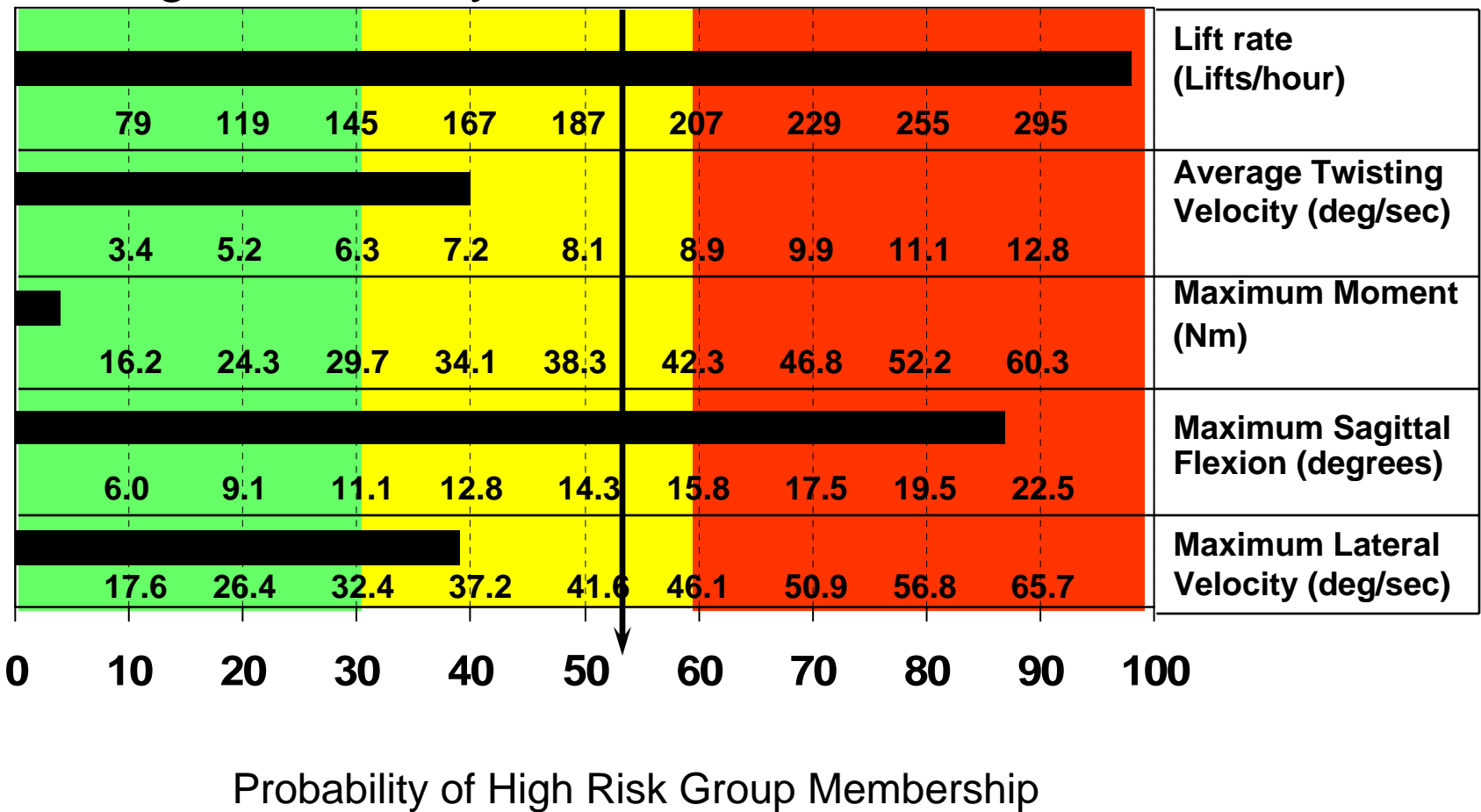
Task Risk: Pillow Cases On

Average Probability of Low Back Disorder Risk : 51%



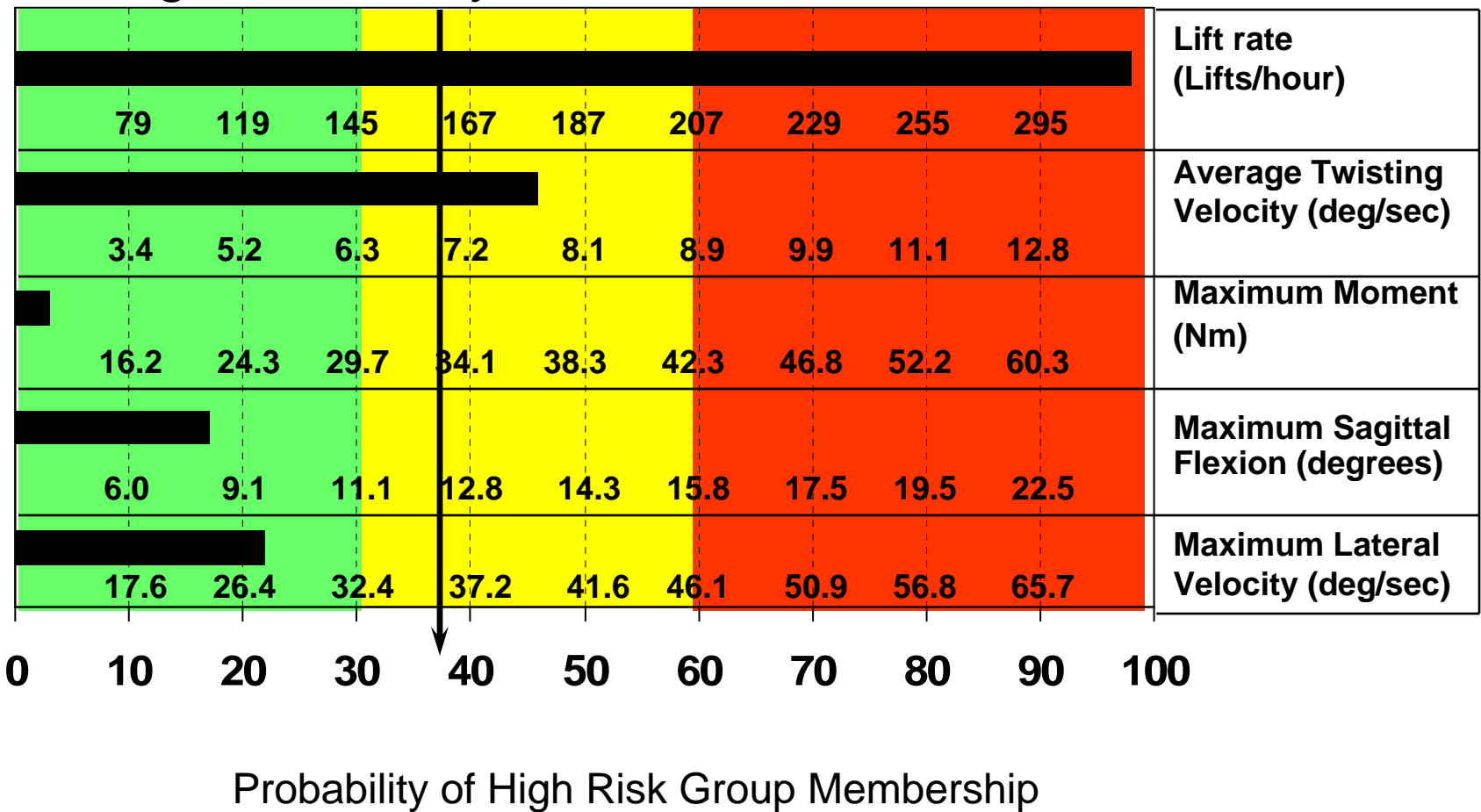
Task Risk: Comforter On Bed

Average Probability of Low Back Disorder Risk : 54%



Task Risk: Comforter Off Bed

Average Probability of Low Back Disorder Risk : 37%



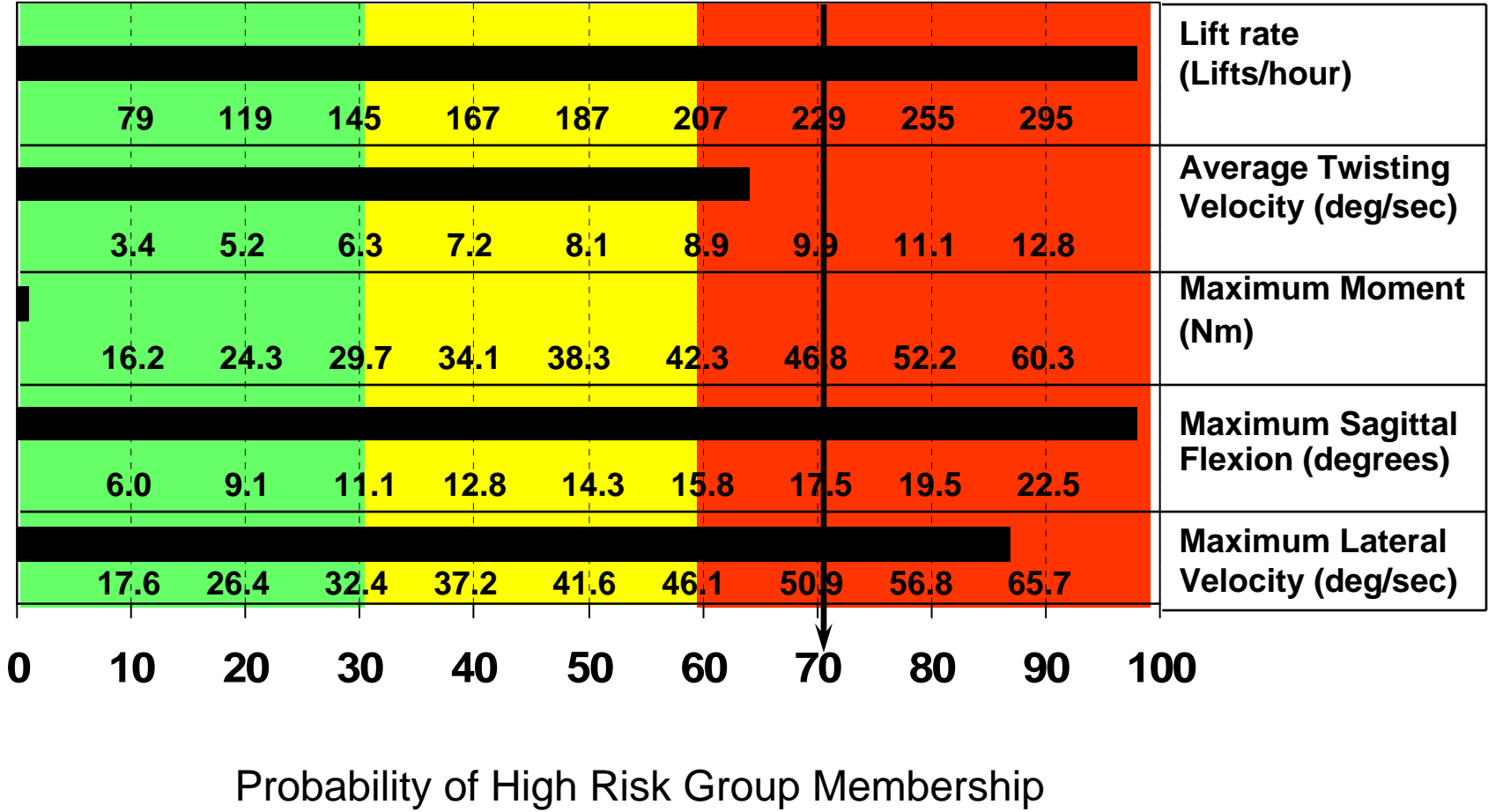
Summary of Bed Making Task Risk

- Pillow Cases Off 46%
- Sheet Off Bed 46%
- Lift Mattress Foot 62%
- Lift Mattress Head 59%
- Sheet On Bed 52%
- Pillow Cases On 51%
- Comforter On Bed 54%
- Comforter Off Bed 37%

Bathroom Tasks

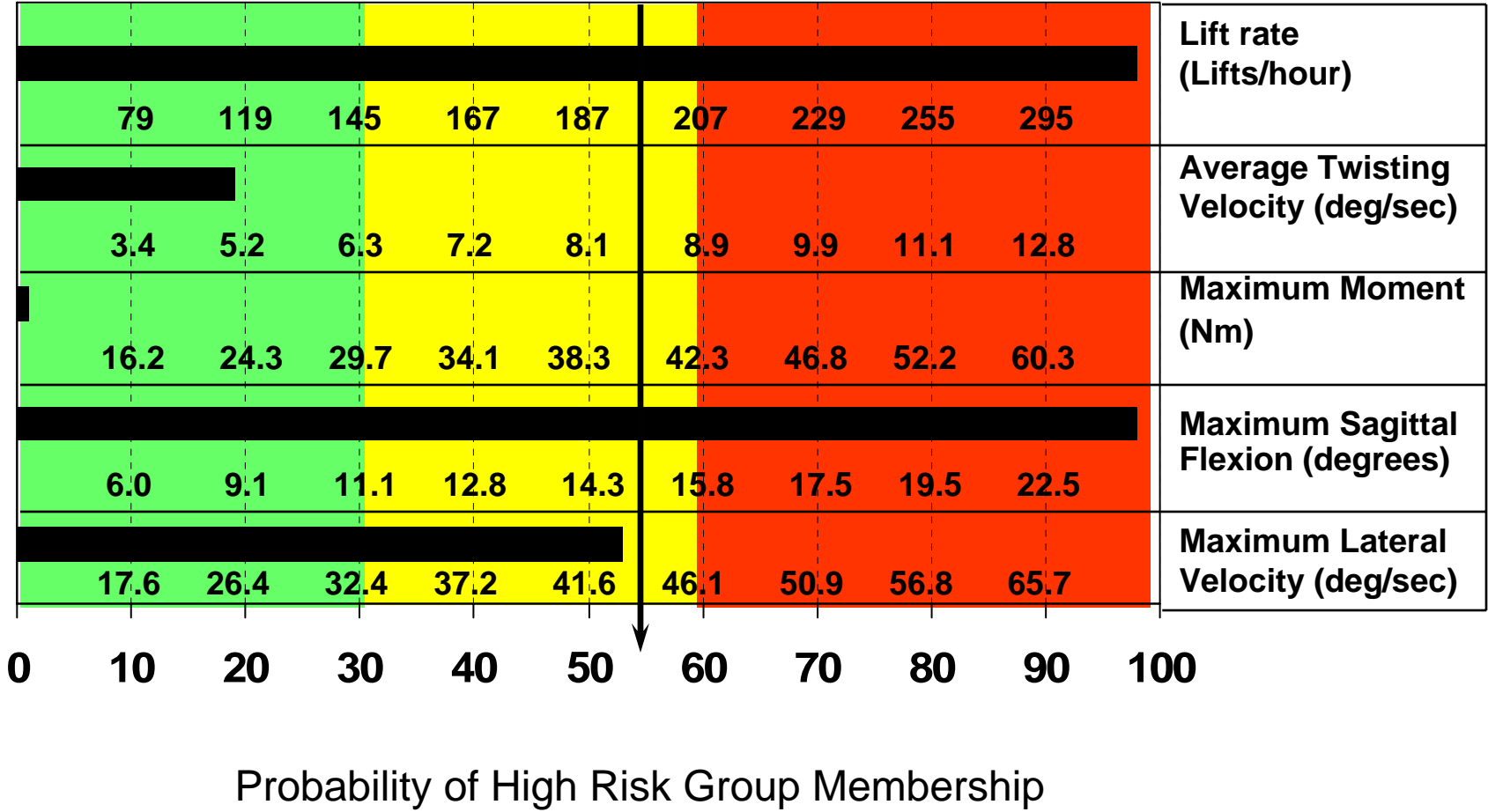
Task Risk: Overall Bathroom Tasks

Average Probability of Low Back Disorder Risk : 70%



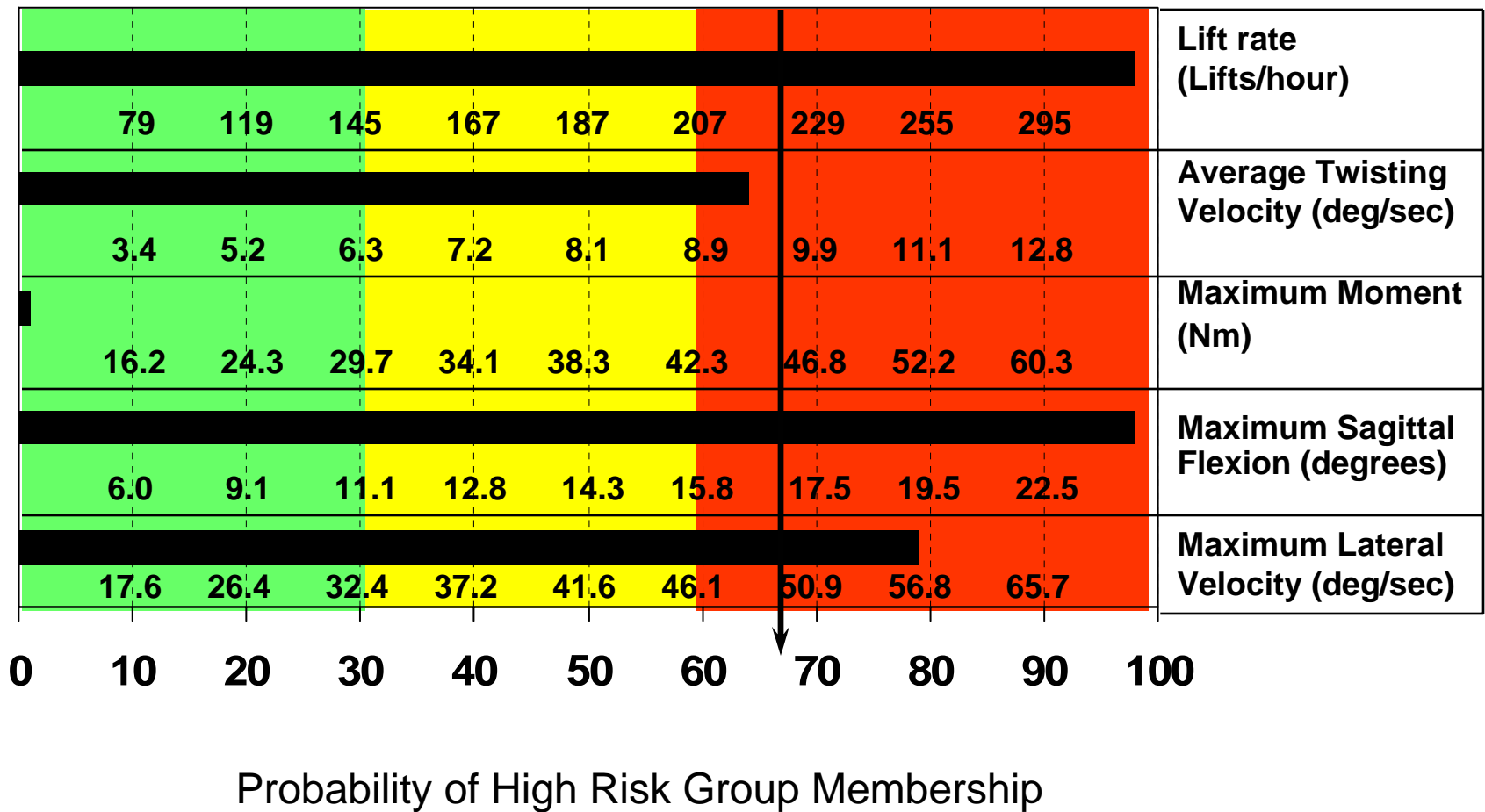
Task Risk: Cleaning Tub

Average Probability of Low Back Disorder Risk : 54%



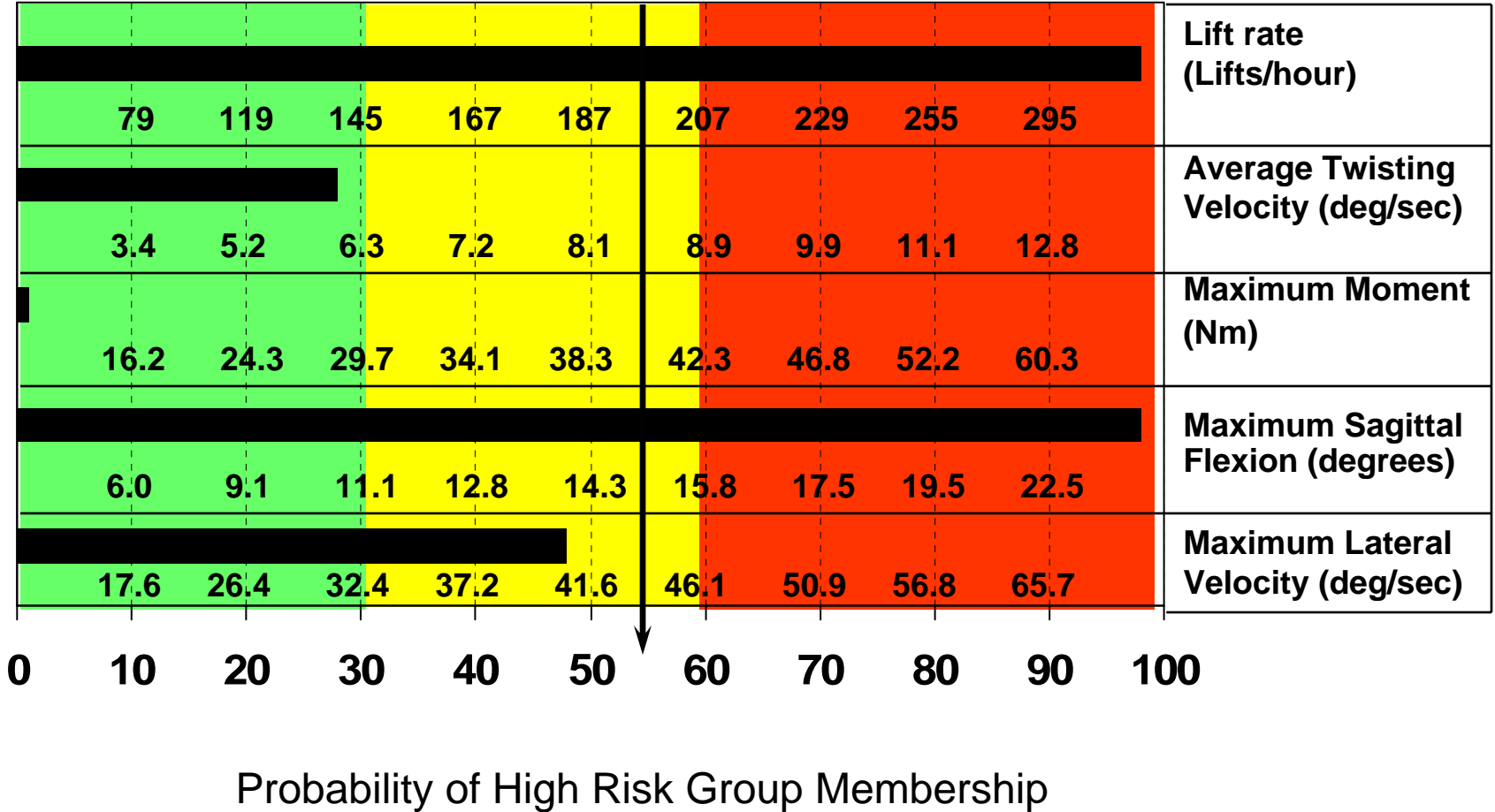
Task Risk: Clean Shower Tile

Average Probability of Low Back Disorder Risk : 68%



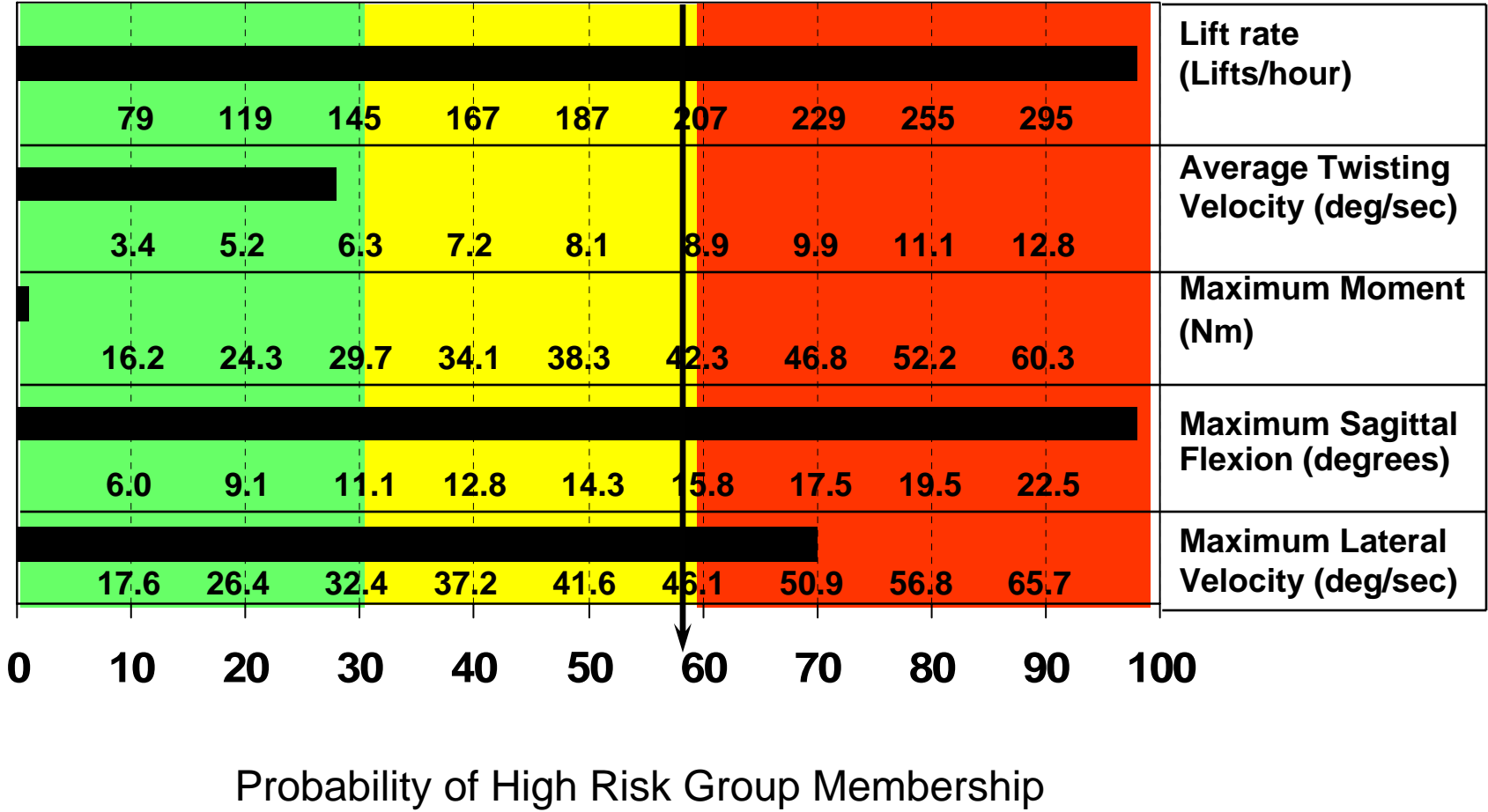
Task Risk: Clean Toilet

Average Probability of Low Back Disorder Risk : 54%



Task Risk: Clean Floor (Bath)

Average Probability of Low Back Disorder Risk : 59%



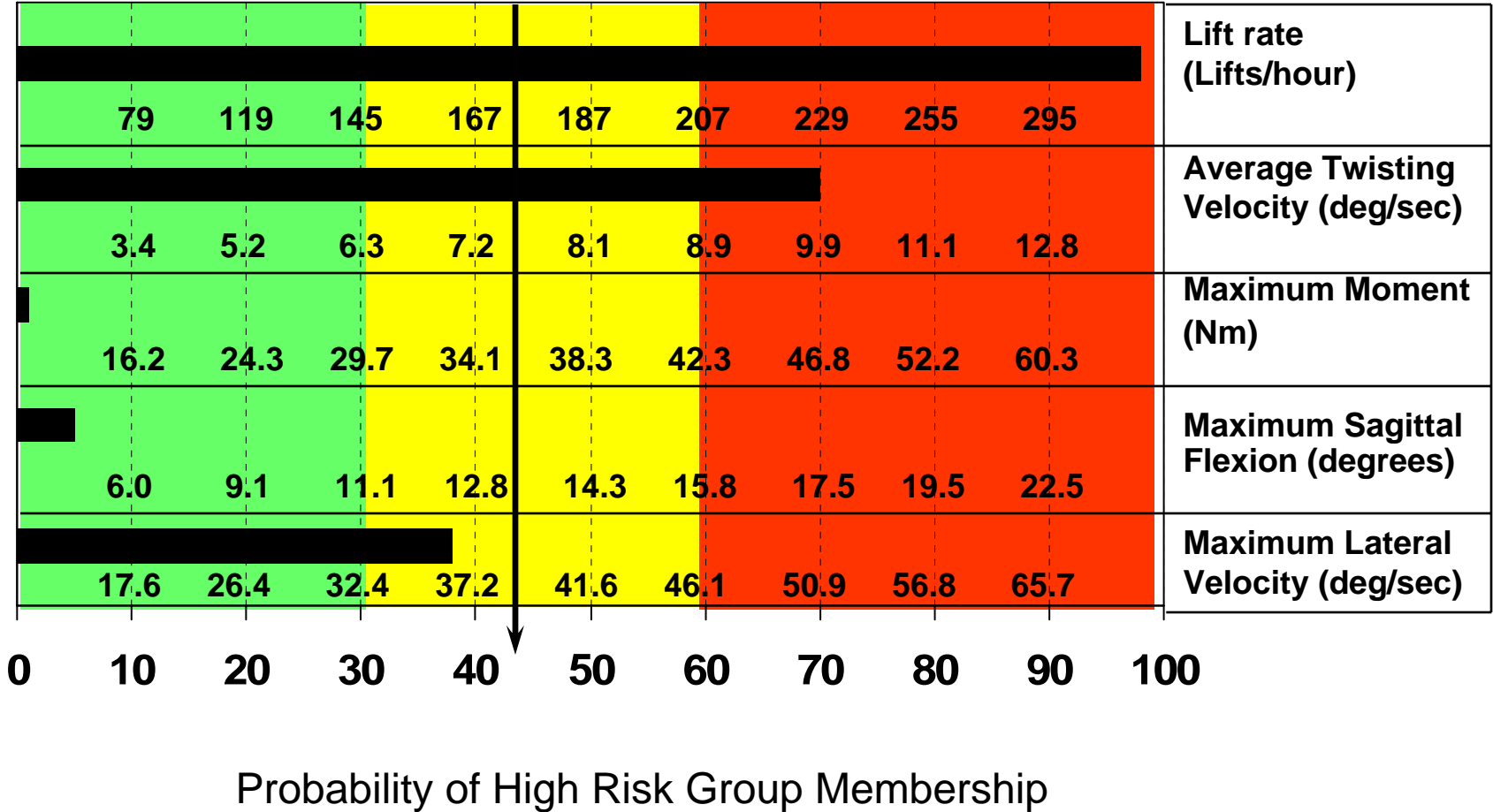
Summary of Bathroom Task Risk

- Clean Tub 54%
- Clean Shower Tile 68%
- Clean Toilet 54%
- Clean Floor (Bath) 59%

Bathroom and Bar Area

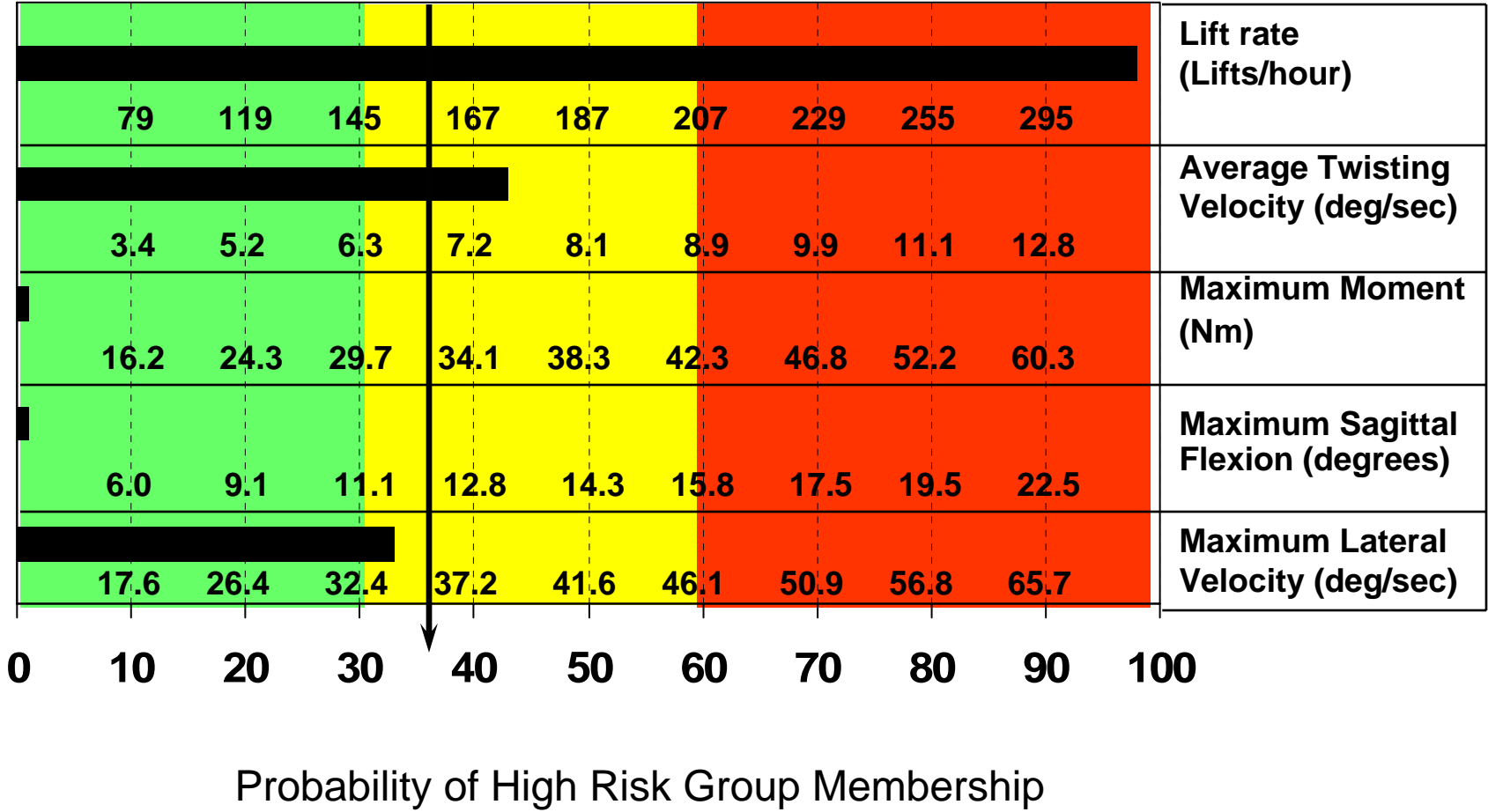
Task Risk: Clean Surface

Average Probability of Low Back Disorder Risk : 42%



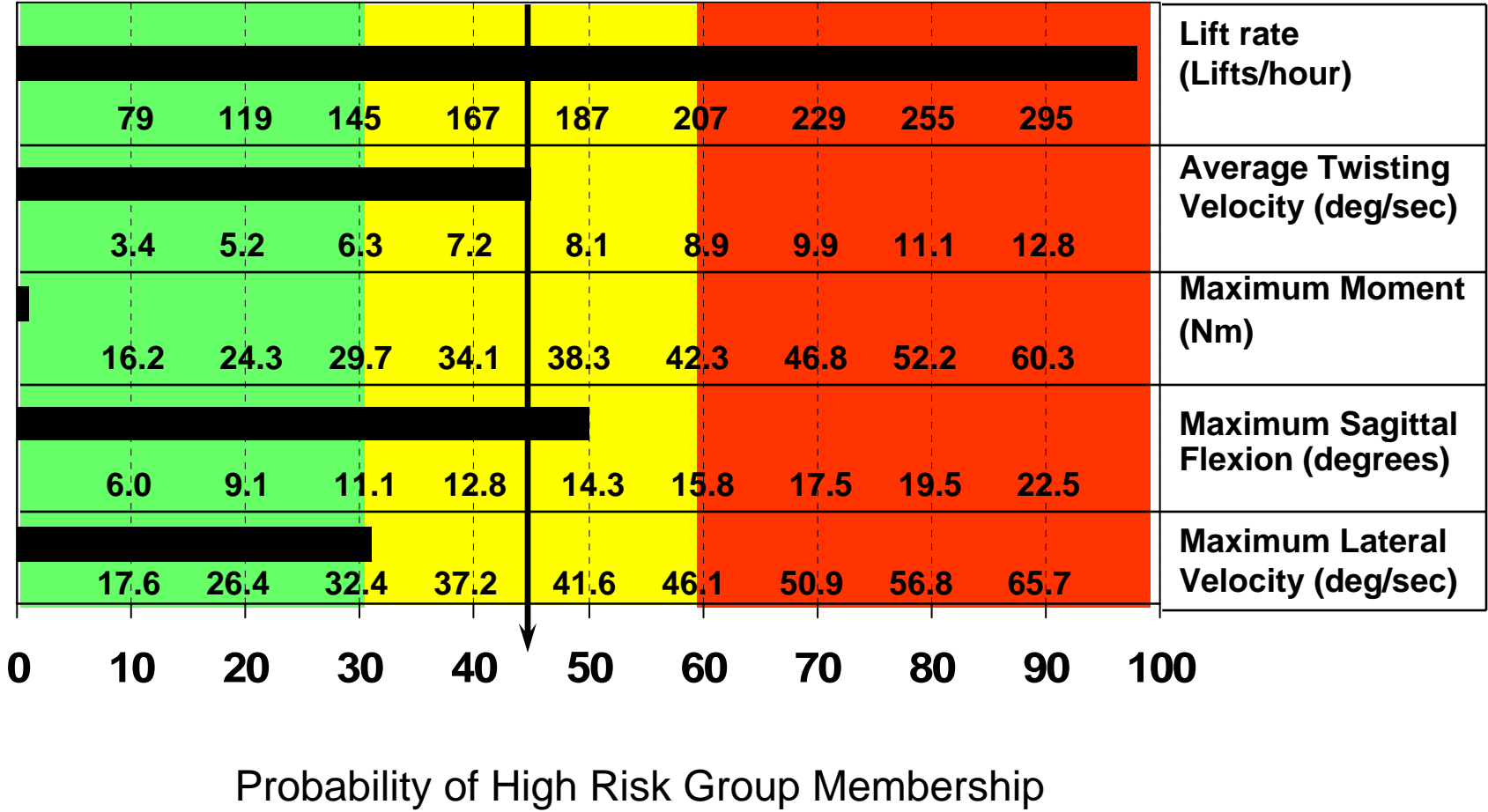
Task Risk: Clean Mirror

Average Probability of Low Back Disorder Risk : 35%



Task Risk: Re-stock from Cart

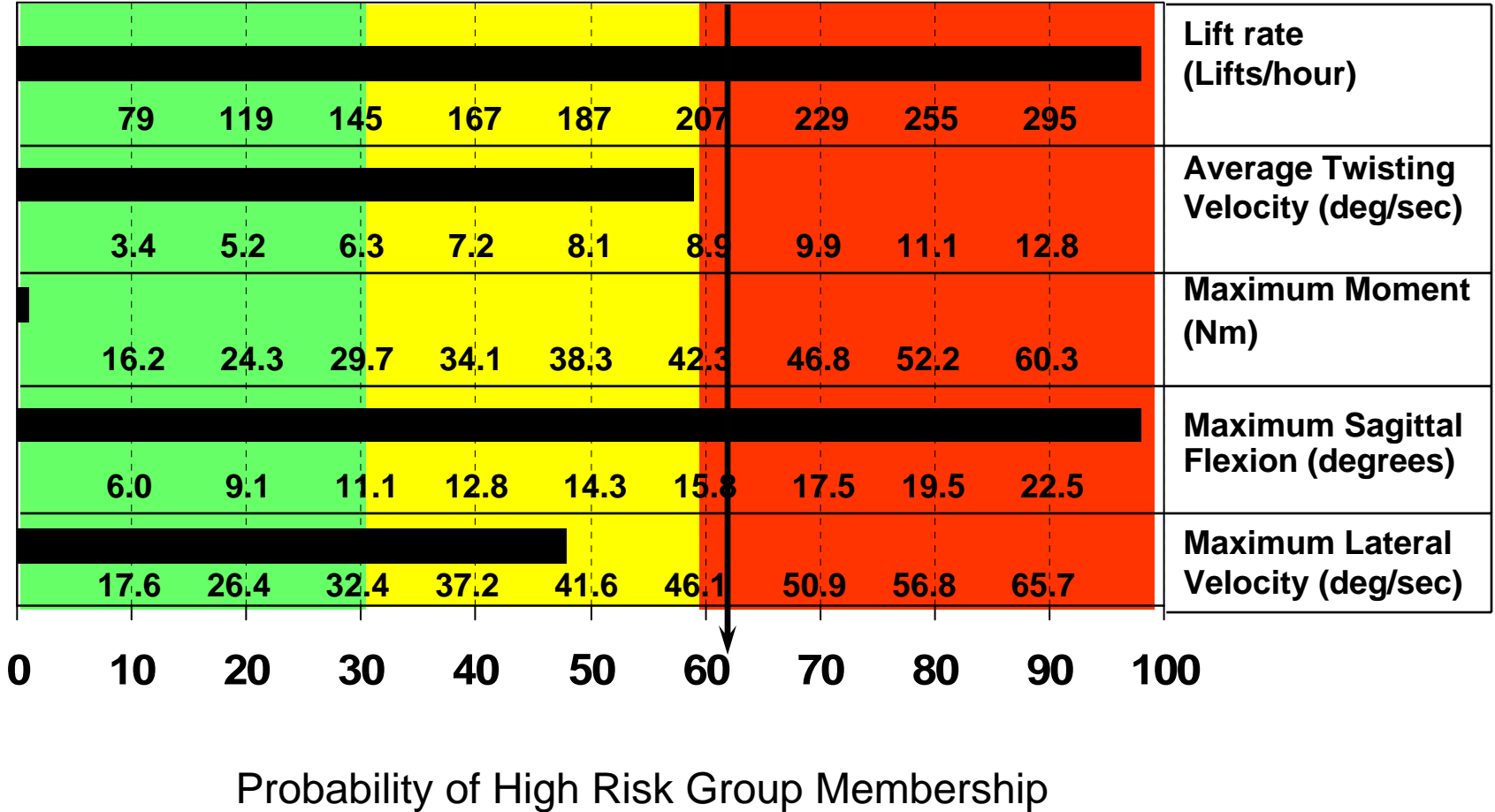
Average Probability of Low Back Disorder Risk : 45%



General Room Cleaning Tasks

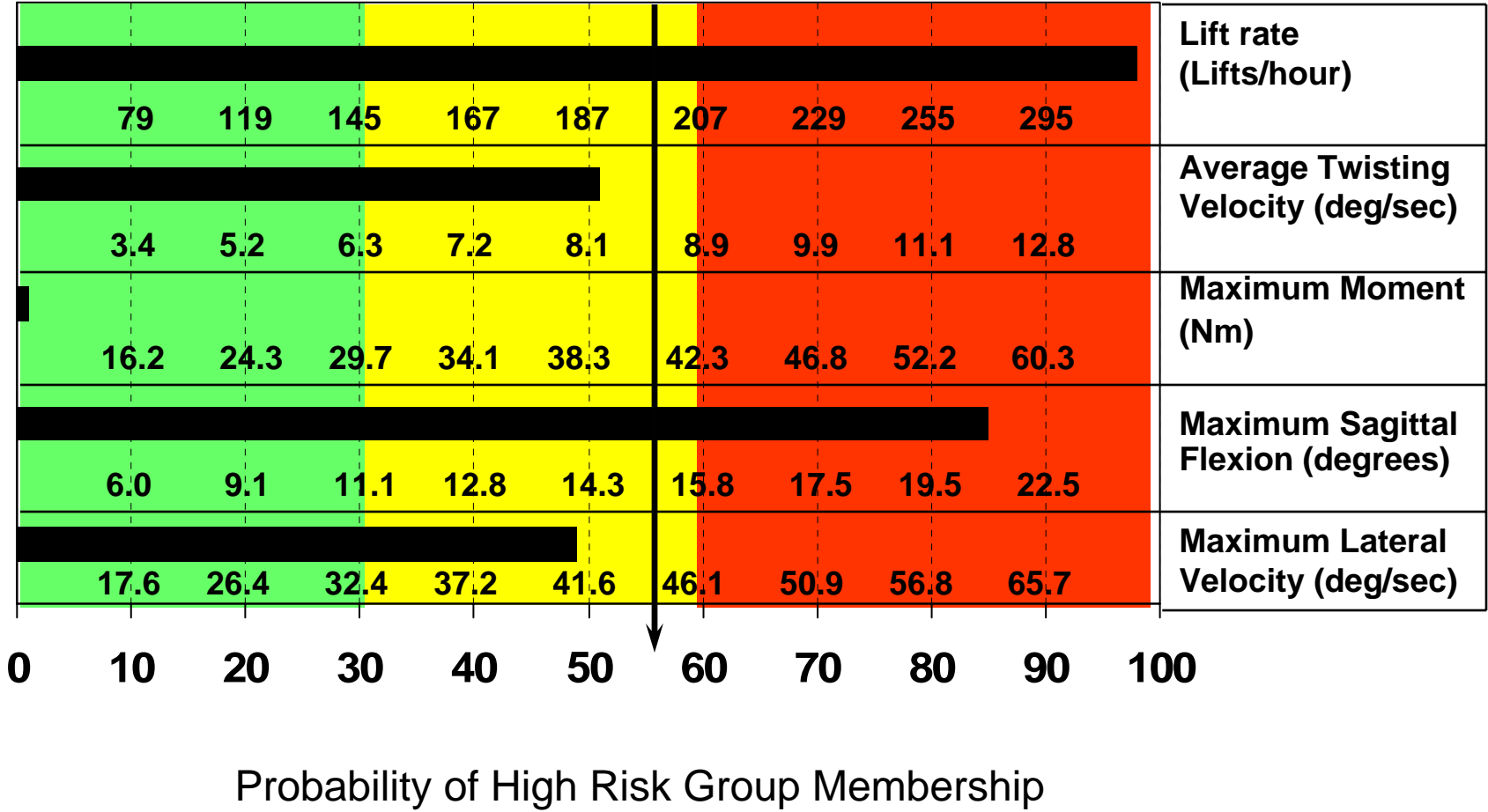
Task Risk: Vacuum

Average Probability of Low Back Disorder Risk : 61%



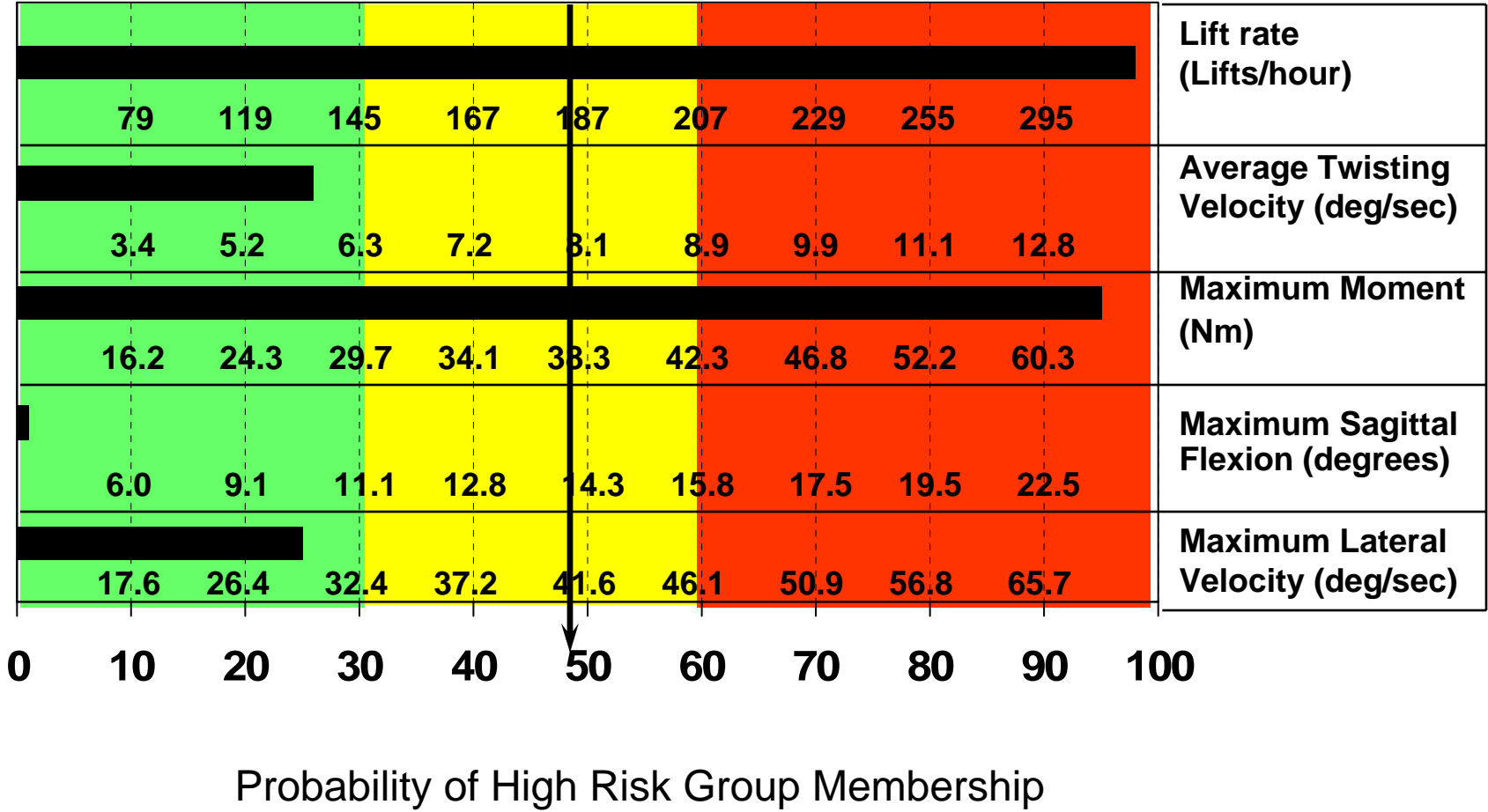
Task Risk: Dust

Average Probability of Low Back Disorder Risk : 57%



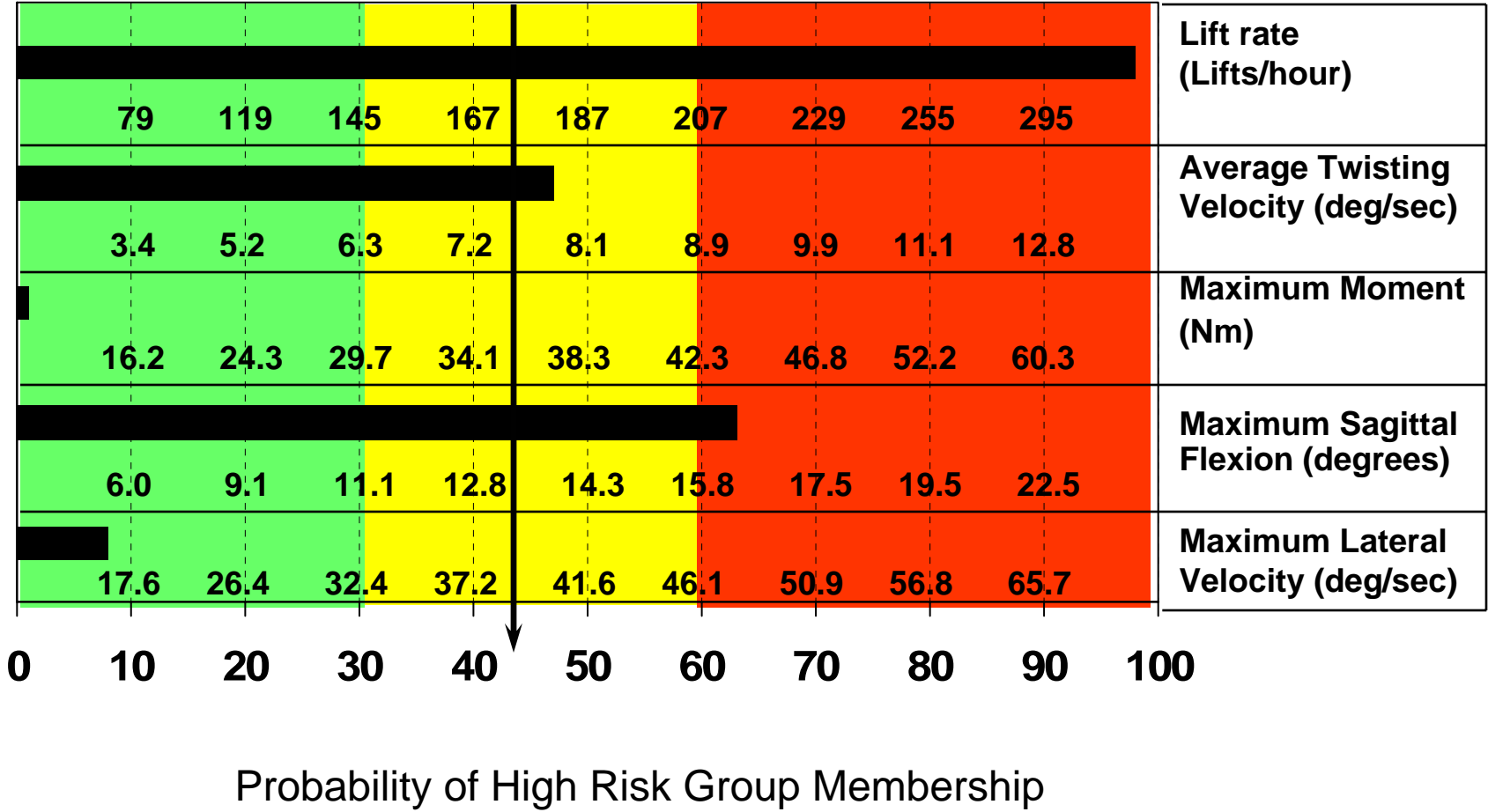
Task Risk: Push/Pull Cart

Average Probability of Low Back Disorder Risk : 49%



Task Risk: Drawer Check (only for checkout)

Average Probability of Low Back Disorder Risk : 43%



Summary of Risk Values as Function of Task

