



# Exercise Prescription Clinical Quick Reference

Alan Zhou, SPT

## Repetitions in Reserve (RIR)

Rate	Rest Time
10	Max effort
9.5	No more reps, could ↑ load
9	1 rep remaining
8.5	1-2 reps remaining
8	2 reps remaining
7	3 reps remaining
5-6	4-6 reps remaining
3-4	Light effort
1-2	Little to no effort

- RIR has been shown to be more accurate and appropriate than Borg RPE in assessing intensity<sup>3-5</sup>
- Current literature shows autoregulated training (using RIR/RPE/CR-10) produced equal or better outcomes than programming based on % of 1RM.<sup>6-9</sup>

## Daily Force Demands

<b>Walking</b>	2-3x BW through the <b>hip and knee</b> <sup>10-12</sup> 2-8x BW through joints in the <b>ankle and foot</b> <sup>13,14</sup>
<b>Stair Climbing</b>	2.5-3x BW through the <b>hip</b> and <sup>10</sup> 4-5x BW through the <b>knee</b> <sup>12,15</sup>
<b>Sports</b>	4-9x BW through the hip, knee, and foot depending on movement <sup>16</sup>

**Why These Matter:** To determine the baseline, set functional goals, appropriate exercise selection and loading, specificity

**Table 2**  
Relationship with percentage 1RM, repetitions performed and RIR-based RPE

RPE	Repetitions performed							
	1	2	3	4	5	6	7	8
10	<b>100<sup>a</sup>%</b>	95.0%	91.0%	87.0%	85.0%	83.0%	81.0%	79.0%
9.5	97.0%	93.0%	89.0%	86.0%	84.0%	82.0%	80.0%	77.5%
9	95.0%	91.0%	87.0%	85.0%	83.0%	81.0%	79.0%	76.0%
8.5	93.0%	89.0%	86.0%	84.0%	82.0%	80.0%	77.5%	74.5%
8	<b>91<sup>a</sup>%</b>	87.0%	85.0%	83.0%	81.0%	79.0%	76.0%	73.0%
7.5	89.0%	86.0%	84.0%	82.0%	80.0%	77.5%	74.5%	71.5%
7	87.0%	85.0%	83.0%	81.0%	79.0%	76.0%	73.0%	<b>70<sup>a</sup>%</b>

<sup>a</sup>These bolded values are the mean percentage 1RM values from sets performed in Zourdos et al. (48).

1RM = one repetition maximum; RPE = rating of perceived exertion; RIR = repetitions in reserve.

Training Goal	Strength	Power	Hypertrophy	Endurance
Load	60-80% 1RM	30-80% 1RM	70-85% 1RM	30-60% 1RM
Reps	~ 0-6	~ 0-6	~ 6-10	~ 12-30
Sets	1-4	1-3	1-3	4-7
Exercises	Multi-and single joint	Multi-joint	Multi-and single joint	Multi-and single joint
Exercise Order	Large → small Multi → single joint High → low intensity			various
Rest	3-5 min	5-8 min	1-2 min	< 1 min
Velocity	Moderate	Fast-very fast	Slow to moderate	Intentionally slow
Frequency	2-3x/week			

Adapted from Anemaet, 2016.<sup>1,2</sup>



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