Subjective reports of exercise intensity have historically been captured using standardized ratings of perceived exertion. Patient reported ratings on these scales are frequently applied to endurance exercise testing and have been validated in terms of their relationship to heart rate, VO2max and blood lactate. To date, limited research has been conducted on the application of this tool in resistance training and its utilization in exercise prescription.

### Inclusion Criteria
- Healthy subjects >19 years old
- Any form of resistance training used
- Resistance training focused on <15 repetitions
- Subjective rating reported with Borg, Modified Borg CR-10, or OMNI-RES scales
- Reported results with sufficient detail to allow for calculation of concurrent validity
- Studies written in English

### Methods
- Systematic Review
- Embase, Medline, Cochrane, and SportDiscus

Subjective reporting of RPE using standardized scales such as the Borg RPE scale can approximate %1RM in healthy populations across the adult lifespan. The application for individual rehabilitation remains to be seen since only healthy, non-pathological individuals were assessed in the studies included in this systematic review.

### Results
Most studies fit a regression line to their data, replicated here with lines over data points representing mean %1RM taken for each RPE tested. Data was collected for a variety of exercises and in varying test subject ages. The r² for each line indicates how accurately the linear model accounts for the correlation between RPE and %1RM.

- Older adults experienced a steeper rate of change in %1RM with each increase in RPE relative to the younger adults
- Among young adults, the corresponding %1RM was higher for any given RPE as the activity level or strength-training background of the test subject increased

### Conclusions
Subjective reporting of RPE using standardized scales such as the Borg RPE scale can approximate %1RM in healthy populations across the adult lifespan. The application for individual rehabilitation remains to be seen since only healthy, non-pathological individuals were assessed in the studies included in this systematic review.

### Clinical Relevance
- Due to the high correlation between RPE measurements and %1RM, a subjective RPE scale can be used to self-direct a resistance training program
- Populations for whom 1RM testing is impractical or unsafe, such as rehabilitation or untrained elderly patients, can still approximate %1RM based upon their subjective RPE
- Subjective RPE can also help account for external stress factors that impact performance, such as diet, sleep, and baseline fatigue from previous activity

### References available upon request.

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