Simple Squat Assessment: Post-Intervention Changes to Pain and Function

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ABSTRACT

Background: Squatting to toilet seat height is a movement pattern most people do daily. Simple verbal and tactile feedback while squatting can improve an individual's ability to squat safely and efficiently. The Simple Squat Assessment (SSA) is a screening and intervention tool used to assess an individual's ability to squat to toilet seat height.
Purpose: To determine if intervention through the SSA will improve function and decrease pain when squatting to toilet seat height.
Methods: 690 participants were enrolled in the SSA. Participants were asked to squat to toilet seat height (43cm) and were scored from 0-3 for function. Performance improvement was indicated if a participant received a score of 0 or 1. A score of 3 indicated the ability to squat under control, without assistance of hands, without pain, and with proper form. A score of 2 indicates the ability to squat under control, without pain, without assistance, but with improper form. A score of 1 indicates the individual must use hands for assistance to perform this test under control. A score of 0 indicates the individual is unable to perform or has increased pain rated from 0-10 on the pain scale. Pain scores were assessed using a 0-10 visual analog scale (VAS). Intervention consisted of verbal and tactile feedback to improve form. The participant was then re-tested, re-scored, and asked to re-evaluate their pain post-intervention.
Results: 690 participants (137 Males, 553 Females). (Males- 44.7±18.5yrs, Females- 47.9±17.0yrs). 565 individuals scored a 2 or 3 on the SSA. 125 individuals scored a 0 or 1 (110 participants-0, 15 participants-1) and were treated with intervention. 54.4% (68/125) of participants who scored a 0 or 1 were able to improve their score to a 2 or 3 post intervention. 77% (95/125) reported a decrease in pain through intervention.
Conclusion: Application of the SSA identifies those individuals who would benefit from simple intervention to reduce pain and improve form of a functional movement that all able individuals must perform daily. Squat mechanics can be improved in a short amount of time that can improve everyday movement.

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REFERENCES

1. Bushman TT, Grier TL, Canham-Chervak MC, Anderson MK, North JW, Jones BH. (2015). Pain on Functional Movement Screen Tests and Injury Risk. *J Strength Cond Res*. 2015;29(s11):S65-70. https://doi.org/10.1519/JSC.0000000000001040.
2. Hawker GA, Gignac MA, Badley E, Davis AM, French MR, Li, Y., et al. A longitudinal study to explain the pain-depression link in older adults with osteoarthritis. *Arthritis Care Res (Hoboken)*. 2010;63(10):1382–

1390. https://doi.org/10.1002/acr.20298.
3. Lezin N, Watkins- Castillo S. The Impact of Musculoskeletal Disorders on Americans: Opportunities for Action. 3rd ed. Rosemont, IL: Bone and Joint Initiative USA, 2016:1-12.
4. Schoene D, Wu SM, Mikolaizak AS, Menant JC, Smith ST, Delbaere K, Lord SR. Discriminative ability and predictive validity of the timed up and go test in identifying older people who fall: systematic review and meta-analysis. *J Am Geriatr Soc*. 2013;61(2):202–208. https://doi.org/10.1111/jgs.12106.
5. Wilkie R, Blagojevic-Bucknall M, Belcher J, Chew-Graham C, Lacey RJ, Mcbeth J. Widespread pain and depression are key modifiable risk factors associated with reduced social participation in older adults. *Medicine*. 2016;95(31). https://doi.org/10.1097/md.0000000000004111.