

Occupational Therapy Interventions for Adults with Hemiplegic Shoulder Injuries: A Systematic Review

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Research Question

Which OT interventions are most effective to improve function and reduce pain for adults with a hemiplegic shoulder?

Introduction

Stroke is the third-leading cause of combined death and disability worldwide (Feigin et al., 2019). The American Heart Association predicts a large increase in stroke prevalence over the next 30 years (Joynt Maddox et al., 2024). Shoulder hemiplegia is a major concern for stroke survivors and impacts functioning in a myriad of ways (Ase et al., 2025). New technologies can be used for rehab for stroke patients to improve outcomes. This systematic review examined and analyzed the strength of the evidence for occupational therapy interventions that improve function and reduce pain for adults with a hemiplegic shoulder.

Method

Out of 68 identified articles, six met the inclusion criteria for this systematic review. The articles were screened, assessed for quality, and evaluated for risk of bias by four independent reviewers following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

Multiple databases were searched through Hawai'i Pacific University's online library, including Academic Search Complete, CINAHL, and MEDLINE. Inclusion criteria included peer-reviewed articles published in English between 2021–2026 that examined occupational therapy interventions for adults with hemiplegic shoulder conditions following stroke. Search terms included occupational therapy intervention, occupational therapy, occupational therapy treatment, hemiplegic shoulder, upper limb, hemiplegic shoulder pain, shoulder subluxation, pain management, pain relief, pain control, pain reduction, and function.



Figure 1. Source ChatGPT



Figure 2. Source Powerpoint Stock Photos

Results

- Six studies met the inclusion criteria.
- Technology-assisted interventions included virtual reality, telerehabilitation, powered orthoses, bimanual training, and whole-body vibration therapy (see Figure 1).
- Most interventions demonstrated improvements in:
 - Upper-extremity motor function
 - Hand dexterity and functional performance
 - Occupational performance and participation in daily activities
- Evidence was limited by small sample sizes and lack of long-term follow-up.

Discussion

The evidence suggests that occupational therapy interventions, particularly technology-assisted approaches such as virtual reality (see Figure 2), telerehabilitation, wearable devices, and bimanual training can improve upper-extremity function and occupational performance after stroke. Although findings are promising, evidence for pain reduction remains limited. Small sample sizes, varied interventions, and limited long-term follow-up highlight the need for larger, high-quality studies.

Conclusion

Occupational therapy interventions demonstrated positive effects on upper-extremity function and occupational performance following stroke. Although the reviewed interventions show promising results, additional research is needed to better understand which approaches are most effective for reducing pain and improving long-term outcomes.

References

