Yoga for Burn Survivors: Impact on Range of Motion, Cardiovascular Function and Quality of Life

Christina Miller PT, DPT  
Lehigh Valley Health Network

Sandra M. Tremblay PT, MS, CWS, MSCS  
Lehigh Valley Health Network, Sandra.Tremblay@lvhn.org

Elizabeth Dideon-Hess LSW

Sigrid A. Blome-Eberwein MD  
Lehigh Valley Health Network, sigri.blome-eberwein@lvhn.org

Follow this and additional works at: https://scholarlyworks.lvhn.org/surgery

Part of the Other Medical Specialties Commons, and the Surgery Commons

Published In/Presented At
Background and Purpose:
As medical management of burns has improved, the survival rate has increased leading to a paradigm shift of examining the long-term outcomes in a burn injury. Post burn survivors often experience a decline in physical function after a burn injury, including decreased strength, cardiovascular endurance, joint range of motion and flexibility. This case series study examined the effects of a yoga practice on range of motion, cardiovascular function and quality of life of people after burn injury.

Methods:
- Subjects: 5 participants
  - Median age: 61
  - TBSA: 5%-65%
  - Hospital Length of Stay: 10 days- 4 months with bedrest and surgical interventions
- Yoga Intervention: 60 minute classes, 2 times per week for 8 weeks
  - All classes included a warm-up, hatha yoga, pranayama, and meditation
  - Classes were performed by a trauma certified yoga instructor

Outcomes:
- Cardiovascular
  - Significantly improved 6 Minute Walk Test distances (Figure 1)
  - Improved Oxygen Consumption (VO2 Max) post intervention (Figure 2)
- ROM Changes: Four of five of the participants had improvements in their burn joints. Remarkably even those participants who were 4.5, and even 12 years post-burn demonstrated 10-15 degrees improvement in their Active Range of Motion of some of their burn joints.
- Quality of Life:
  - A generalizable significant improvement in the SF36 Functional Score (Figure 3)
  - A non-generalizable significant improvement in the SF36 Emotional Score (Figure 4)
- Interesting to note that for every subscale score, with the exception of the physical functioning subscale score, the highest score occurred during phase 2

DISCUSSION:
Burn survivors, like others with critical illness and prolonged intensive care stays, experience decreased exercise capacity and weakness, in addition to the joint, muscular and skin limitations specific to burn. The results of this pilot study suggest that cardiovascular function can be improved with a 60-minute yoga intervention two times per week for eight weeks. This study also demonstrated a significant improvement in the functional score of the quality of life measure, as well as a significant improvement in the emotional score of the quality of life in these 5 participants. Anecdotal evidence suggests improved range of motion in our participants. Further research is necessary to evaluate the effectiveness of yoga in burn survivors.