

## Burn Injury and Employment

October is National Disability Employment Awareness Month (NDEAM). In this edition of reSearch, we explore the topic of employment and return-to-work in persons with burn injury. Many of us at some point in our lives have experienced a mild to moderate burn, for example a sunburn or a burn from touching a hot stove or item from the oven but what is a burn? According to the National Institute of General Medical Sciences, a burn is tissue damage caused by heat, chemicals, electricity, sunlight, or nuclear radiation. The most common burns are those caused by hot liquid or steam, building fires, and flammable liquids and gases ([https://www.nigms.nih.gov/education/pages/factsheet\\_burns.aspx](https://www.nigms.nih.gov/education/pages/factsheet_burns.aspx)). Burns are categorized by how deep (depth of skin layer) and how large of an area of the body they cover. Large burn areas may include areas of different depths of skin damage. There are main four types or “degrees” of burn injury: First-degree, second-degree, third-degree, and fourth-degree ([https://msktc.org/burn/factsheets/Understanding\\_Burn\\_Injury](https://msktc.org/burn/factsheets/Understanding_Burn_Injury)).

Burn injuries can lead to significant disabilities, with physical and psychological symptoms and complications that can limit a person’s ability to participate in work activities. Burn injury recovery is an ongoing process and many individuals with burn injury experience pain, fatigue, and itching ([https://msktc.org/burn/factsheets/Understanding\\_Burn\\_Injury](https://msktc.org/burn/factsheets/Understanding_Burn_Injury)). Other physical symptoms that may affect return to work after burn injury can include: continued wound care, neuropathic pain due to nerve regeneration as well as generalized pain, temperature intolerance, loss of strength and stamina, and sleep problems. In addition, individuals with burn injuries may face psychosocial barriers to returning to work such as depression, post-traumatic stress disorder (PTSD), anxiety, issues with body image/deformity, substance use disorders, and lack of social supports. Workplace safety may also be a factor particularly if the individual with burn injury was injured on the job.

Returning to work after burn injury is a multifaceted process. Individuals with burn injury should communicate with their healthcare providers to determine if they physically and psychologically ready to return work, work with human resources to determine the best way to return to work, and the work with the employer to receive the necessary accommodations based on their functional limitations (<http://burnrehab.washington.edu/am-i-ready-return-work>, and <https://msktc.org/burn/factsheets/Employment-After-Burn-Injury>). Gradual return to work may be physically and emotionally therapeutic during the healing process. Tools for returning to work may include: work conditioning programs, flexible schedules, and workplace accommodations. Work conditioning programs are designed to restore an individual’s physical capacity (stamina) and function over a period of time until they can fully return to their pre-injury position and/or duties. A flexible schedule or an abbreviated work week may also be helpful in regaining strength and stamina when returning to work (i.e., starting week on a Wednesday and ending on a Friday). Workplace accommodations may be extremely important in returning to work after burn injury. Accommodations may include: Adaptive equipment and work stations for tasks that require grasping, handling, and fingering; periodic rest breaks (from standing or sitting); temperature regulation (hot or cold air devices); as well as changes in uniform/dress to address issues with uncomfortable and/or heat restrictive clothing related to scarring, dry or itchy skin, and inability to sweat efficiently.

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Resources for returning to work after burn injury include the Burn Injury Model System Centers funded by the National Institute on Disability, Independent Living, and Rehabilitation Research provides evidence-based information on living with burn injury on a variety of topics including on employment after burn injury (<https://msktc.org/burn-topics/employment-after-burn-injury>); and as well as the Job Accommodation Network, which provides free, expert, and confidential guidance on workplace accommodations and disability employment issues including burn injury (<https://askjan.org/disabilities/Burn-Injury.cfm>).

This edition of reSearch provides a 10 year “snapshot” of burn injury, employment, and return to work in individuals with burn injury. The combined search terms for this edition of reSearch included: burn, burn injury, employment, model systems, return to work, vocational rehabilitation. A listing of over 100 additional descriptor terms between the NARIC and PubMed databases can be found at the end of this document. A search of the REHABDATA and PubMed databases resulted in 16 documents between 2009 to 2019, and 10 documents between 2010 and 2019; respectively.

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### NIDILRR Funded Projects Related to Burn Injury and Employment

In addition to document searches, we searched our NIDILRR Program Database to locate grantees/projects related to burn injury and employment. The search resulted in five currently funded Burn Injury Model System Centers as well as a Disability and Rehabilitation Research project, of which, four were related to employment. Additionally, there are two older projects related to burn injury and employment that have completed their project activities and are longer active. Project information and their publications are offered as additional resources for our patrons.

#### **Boston-Harvard Burn Injury Model System**

Project Number: 90DPBU0001  
Public Contact Phone: 617/952-6313  
Email: [BostonHarvardBIMS@partners.org](mailto:BostonHarvardBIMS@partners.org).  
<https://www.bh-bims.org>.

#### **Model Systems Knowledge Translation Center (MSKTC)**

Project Number: 90DP0082  
Phone: 202/403-6929  
Email: [ccai@air.org](mailto:ccai@air.org).  
<http://www.msktc.org>,  
<https://www.facebook.com/pages/Burn-Injury-Model-Systems/155712024448908>,  
[https://twitter.com/burn\\_ms](https://twitter.com/burn_ms).

#### **North Texas Burn Rehabilitation Model System (NTBRMS)**

Project Number: 90DPBU0002  
Public Contact Phone: 214/648-9540  
Email: [radha.holavanahalli@utsouthwestern.edu](mailto:radha.holavanahalli@utsouthwestern.edu).  
<http://www.utsouthwestern.edu/education/medical-school/departments/physical-medicine/model-systems/ntbrms>.

#### **Northwest Regional Burn Model System Center**

Project Number: 90DPBU0004  
Phone: 206/744-2866  
Email: [carrough@uw.edu](mailto:carrough@uw.edu).  
<http://burnrehab.washington.edu>.

*These projects have completed its research activities and is now closed.*

#### **Johns Hopkins University Burn Injury Rehabilitation Model System (JHU-BIMS)**

Project Number: H133A070045  
Phone: 410/550-9846  
Email: [lallen19@jhmi.edu](mailto:lallen19@jhmi.edu).  
<http://www.hopkinsmedicine.org/burn/research/index.html>.

#### **Measurement of Community Participation Using a Computer Adaptive Test (CAT) in Persons with Burn Injuries (PWB)**

Project Number: 90DP0055 (formerly H133A130023)  
Phone: 617/414-1418  
Email: [lck@bu.edu](mailto:lck@bu.edu).  
<http://sites.bu.edu/libre>.


A complete listing of current and completed burn injury model systems projects is available at <http://tinyurl.com/yyzq8kj9>.

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### ***Why do I see different grant numbers?***

In 2014, President Obama signed the [Workforce Innovation and Opportunity Act \(WIOA\)](#) into law. As part of WIOA, the institute changed its name from the National Institute on Disability and Rehabilitation Research (NIDRR) to the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) and moved from the Department of Education to the Administration for Community Living (ACL) at the Department of Health and Human Services. Approximately 250 active grants received new ACL grant numbers and all new grants funded under NIDILRR have only an ACL grant number. For more information about NIDILRR/ACL grant numbers please visit: <http://naric.com/?q=en/content/about-nidilrracl-grant-numbers-0>.

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 **Documents from NARIC's REHABDATA search listed are listed below:**

**2019**

(2019). ***Quick review of model system research: Impact of burn-related amputations on return to work: Findings from the burn injury model system national database.***

Project Number: 90DP0082

NARIC Accession Number: O21941

Available in full-text at <https://search.naric.com/research/rehab/download.cfm?ID=141291>.

ABSTRACT: This research brief summarizes a study that compared patient injury characteristics, quality of life (QOL), and employment status for those with and without amputation following a burn injury. The Burn Model Systems longitudinal database was used to identify eligible adult participants for the study. The SF-12 Health survey, a generic QOL instrument that measures health from the individual's perspective, was collected upon hospital discharge and 6 and 12

months after injury. Pre-burn employment status was also collected at discharge and post-burn employment status was requested during each follow-up. Statistical analyses were used to evaluate differences between those with an amputation and those who did not require an amputation. The study found that amputations were mainly linked to electrical injuries and contact with hot objects. At one year after injury, burn survivors requiring any level of amputation are nearly five times less likely to be employed than those who did not require amputation. Although amputation following a burn injury may inhibit return to work, those who did find work by one year, scored no differently on the SF-12 Health Survey when compared to those without amputation.

Acton, A., Cartwright, S., Kazis, L.E., Lee, A.F., Marino, M., Ni, P., Ryan, C.M., Saret, C., Schneider, J.C., Shapiro, G.D., and Sheridan, R.L. (2019). **Burn survivors injured as children exhibit resilience in long-term community integration outcomes: A life impact burn recovery evaluation (LIBRE) study.** *Burns*, 45(5), 1031-1040.

Project Numbers: 90DPBU0001, H133A120034, H133A130023

NARIC Accession Number: J81233

ABSTRACT: Study compared social participation of individuals burned as children with those burned as adults, by administering items from the large item pool used to calibrate the LIBRE profile. The life impact burn recovery evaluation (LIBRE Profile) is a questionnaire developed to comprehensively assess the social impacts of burns. Items from the LIBRE profile was administered to 601 adult burn survivors with at least 5 percent of their total body surface area burned or burns to critical areas (hands, feet, face, or genitals). Each item was answered on a 5-point Likert scale with higher scores denoting better outcomes. Mean scores for the 6 LIBRE profile scales (sexual relationships, family and friends, social interactions, social activities, work and employment, and romantic relationships) were compared between those burned as children (<18 years) and those burned as adults (≥18 years). Regression analyses were used to assess differences between groups with adjustment for demographic and clinical characteristics. Of the 597 burn survivors having complete data on age at injury, 165 (27.6 percent) sustained burn injuries as a child.

Those burned as children were more frequently female than those burned as adults and were also more frequently white non-Hispanic. Marital status and education level were similar in the two groups. Those who were burned as children had slightly higher scores on the social activities, work and employment and romantic relationships scales. However, these differences did not persist in adjusted regression analyses. Burn survivors who sustained injuries as a child fared at least as well as those burned as adults in a broad range of long-term social participation outcomes. The impact on long-term social participation outcomes of burn survivors was not significantly different between individuals with burns sustained during important developmental stages at young ages and those injured later in life.

Amtmann, D., Carrougher, G.J., Gibran, N.S., Herndon, D.N., Kowalske, K.J., Mandell, S.P., McMullen, K., & Schneider, J.C. (2019). **Impact of burn-related amputations on return to work: Findings from the Burn Injury Model System National database.**

*Journal of Burn Care & Research*, 40(1), 21-28.

Project Number: 90DP0029 (formerly H133A120024), 90DP0053 (formerly H133A130004)

NARIC Accession Number: J81597

Available in full-text at: <http://tinyurl.com/y6fpck8f>.

ABSTRACT: Study compared patient and injury characteristics, quality of life, and employment status for those with and without amputation using a national longitudinal database of people with burn injuries. The analyses included descriptive statistics of participant characteristics, injury and treatment variables, and several outcome measures routinely collected within the Burn Model System longitudinal injury database. Linear and logistic regression models were used to examine the impact of amputation on factors associated with return to work rates, and on SF-12 Physical Component Summary (PCS) and Mental Component Summary (MCS) scores over time. Of 2,682 participants, 180 individuals (6.7 percent) underwent at least one amputation. Amputations were associated with two injury etiologies: electrical injuries and contact with hot object. Employment at 12 months post burn was associated with working before injury. People with amputations were more likely to be unemployed 12 months than those without amputations. Amputation was a statistically significant predictor of SF-12

scores at 6 months for both the PCS and MCS scores. Findings suggest that amputations are relatively rare following burn injury and are more often associated with electrical and contact injuries. Individuals with amputations were less likely to be employed at 12 months post burn, while those who were employed before the injury were more likely to return to work regardless of amputation status.

## 2018

### *(2018). Headlines from the MSKTC: September 2018. Volume 81.*

Project Number: 90DP0082

NARIC Accession Number: O21975

Available in full-text at <https://search.naric.com/research/rehab/download.cfm?ID=141401>.

ABSTRACT: Newsletter from the Model Systems Knowledge Translation Center (MSKTC) provides information about spinal cord injury (SCI), traumatic burn injury (TBI), and burn injury model systems. In this issue: (1) Model Systems researchers to present at the American Congress of Rehabilitation Medicine (ACRM) Annual Conference; (2) Model Systems researcher receives ACRM Awards; (3) National Spinal Cord Injury Awareness Month; (4) SCI Model System researchers present at Academy of SCI Professionals (ASCIP) Conference and Expo; (5) SCI Model System researcher receives ASCIP Excellence Award; (6) SCI Model System researchers awarded Best Original Research Paper Award; (7) SCI Model System researchers present at the 57th International Spinal Cord Society Annual Scientific Meeting; (8) SCI Model System to exhibit at the SCI Awareness Month Exposition Fair; (9) TBI Model System researcher co-presents an Academy of Certified Brain Injury Specialists (ACBIS) course; (10) TBI Model System researchers publish in Journal of Head Trauma Rehabilitation; (11) TBI Model System publishes September Issue of TBI Updates; (12) Burn Model System Center researchers publish article in Journal of Burn Care & Research; (13) MSKTC is recruiting for a study involving interviews with individuals with a burn injury; (14) resource highlight: Employment after Burn Injury; and (15) upcoming conferences.

Acton, A., Armstrong, E.A., Dore, E.C., Jeng, J., Jette, A., Kazis, L.E., Kraft, C.T., Lee, A.F., Levi, B., Marino, M., Ryan, C.M., Schneider, J.C., Shapiro, G.D., and Trinh, N-H.T. (2018). **The associations of gender with social participation of burn survivors: A life impact burn recovery evaluation profile study.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 39(6), 915-922. Project Numbers: 90DPBU0001, H133A120034, H133A130023

NARIC Accession Number: J80526

ABSTRACT: Study explored gender-related differences in long-term social participation outcomes following burn injury. Specifically, this study analyzed data from 601 burn survivors who completed field testing of a new measure of social participation for burn survivors, the Life Impact Burn Recovery Evaluation (LIBRE) Profile. The LIBRE Profile evaluates six specific areas of community participation: Relationships with Friends and Family, Social Interactions, Social Activities, Work and Employment, Romantic Relationships, and Sexual Relationships. Differences in item responses between men and women were examined. Scores on the six LIBRE Profile scales were then compared between men and women using analysis of variance and adjusted linear multivariate regression modeling. Overall, men scored significantly better than women on four of the six LIBRE Profile scales: Sexual Relationships, Social Interactions, Work and Employment, and Romantic Relationships. Differences were not substantially reduced after adjustment for demographic characteristics and burn size. Results demonstrated that men scored better than women in most of the areas measured by the LIBRE Profile. These gender differences are potentially important for managing burn patients during the post-injury recovery period.

Carrougher, G.J., Fauerbach, J.A., Gibran, N.S., Herndon, D.N., Holavanahalli, R., McMullen, K., Roaten, K., Ryan, C.M., and Wiechman, S.A. (2018). **Reasons for distress among burn survivors at 6, 12, and 24 months post-discharge: A burn injury model system investigation.** *Archives of Physical Medicine and Rehabilitation*, 99(7), 1311-1317. Project Numbers: 90DPBU0003, 90DPBU0004, H133A120024, H133A130004  
NARIC Accession Number: J79144

ABSTRACT: Study examined whether important sources of distress identified by burn survivors at discharge and 6, 12, and 24 months after injury changed over time, and explored the effect of distress on physical and mental health outcomes over time. A total of 1,009 participants enrolled in the Burn Model Systems program were asked to rate on a 10-point Likert-type scale (0-no distress to 10-high distress) how much distress each of 12 pre-established issues was causing them at the time of each follow-up. The Medical Outcomes Study 12-Item Short-Form Health Survey was administered at each time point as a measure of health-related quality of life. The Satisfaction with Appearance Scale was used to understand the relation between sources of distress and body image. Finally, whether a person returned to work was used to determine the effect of sources of distress on returning to employment. It was encouraging that no symptoms were worsening at two years. However, financial concerns and long recovery time had two of the highest means at all time points. Pain and sleep disturbance had the biggest effect on ability to return to work. These findings can be used to inform burn-specific interventions and to give survivors an understanding of the temporal trajectory for various causes of distress. In particular, it appears that interventions targeted at sleep disturbance and high pain levels can potentially effect distress over financial concerns by allowing a person to return to work more quickly.

2017

Brych, S.B., Carrougher, G.J., Gibran, N.S., Mandell, S.P., & Pham, T.N. (2017). **An intervention bundle to facilitate return to work for burn-injured workers: Report from a burn model system investigation.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 38(1), e70-e78.

Project Number: H133A120024

NARIC Accession Number: J75430

ABSTRACT: Study evaluated the work-related outcomes of interventions aimed at returning injured workers to employment within 90 days of their insurance claims. The interventions include patient/family education focused on recovery rather than disability, employer contact and education by the vocational

rehabilitation (VR) counselor, physician recommendations for work accommodations, provision of employee status letters, and Activity Prescription Forms (APFs). The medical records of 338 adults with occupation-related burn injuries and receiving care at a single regional burn center from June 2010 to July 2015 were reviewed. Data on patient and injury characteristics and outpatient VR services provided were collected. The primary outcome of interest was the rate of patients who return to work (RTW). The VR counselor evaluated all patients. All patients received an employer letter(s) and APF documentation. Workplace accommodations were provided to more than 30 percent of patients. The RTW rate was 93 percent, with an average of 24 days from injury to RTW. In an intervention bundle involving the patient, employer, Workers' compensation, and the burn clinic staff, injured workers achieved a high rate of RTW. Although the authors could not correlate individual bundle components to outcome, they postulate that the combination of employer/employee/insurer engagement and flexibility contributed to the success of this program.

## 2016

Brych, S., & Wiechman, S.A. (2016). *Employment after burn injury. Burn Injury Model Systems Consumer Information from the Model systems Knowledge Translation Center (MSKTC)*.

Project Number: H133A060070

NARIC Accession Number: O18602

Available in full-text at: <https://search.naric.com/research/rehab/download.cfm?ID=119360>.

ABSTRACT: Fact sheet provides consumer information about returning to work after a burn injury. It offers tips to help make the process of returning to work easier, discusses worker's rights related to on-the-job injury, explains how vocational rehabilitation (VR) works and how to find a VR counselor, and describes the role of long-term disability. This publication is also available in Spanish (see accession number [O19031](#)). El artículo es disponible en español (mire al número de acceso O19031).

Johnson, K., & Krause, J. (2016). *El trabajo después de una lesión por quemadura. Burn Injury Model Systems Consumer Information from the Model systems Knowledge Translation Center (MSKTC)*.

Project Number: 90DP0012 (formerly H133A110004)

NARIC Accession Number: O19031

Available in full-text at: <https://search.naric.com/research/rehab/download.cfm?ID=121997>.

ABSTRACT: Fact sheet provides consumer information about returning to work after a burn injury. It offers tips to help make the process of returning to work easier, discusses worker's rights related to on-the-job injury, explains how vocational rehabilitation (VR) works and how to find a VR counselor, and describes the role of long-term disability. This document is also available in English (see accession number [O18602](#)). Esta publicación también está disponible en inglés (mire al número de acceso O18602).

Isometsa, E., Palmu, R., Partonen, T., Suominen, K., & Vuola, J. (2016). **Functioning, disability, and social adaptation six months after burn injury.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 37(3), e234-e243.

NARIC Accession Number: J74220

ABSTRACT: Study investigated the levels of and predictors for functioning, disability, and social adaptation 6-months after a burn injury. The overall level of functioning at 6 months postburn was assessed among 87 acute adult burn patients. Social and Occupational Functioning Assessment Scale (SOFAS) was used to evaluate functioning overall and the Sheehan Disability Scale (SDS) was used to assess the domains of working capacity, social life, and family life. The Social Adaptation Self-Evaluation Scale (SASS) was used to measure social adaptation. A structured clinical interview was used to assess mental disorders at baseline and 6 months after injury. The mean SOFAS score was 69.7, indicating some impairment in social and occupational functioning. The strongest independent predictors of SOFAS were mental disorders during follow-up, particularly major depressive disorder and delirium, but also length of stay and hand burn. Concerning disability (SDS), the authors found mild impairment in all three domains, the most in SDS work. The strongest predictor of SDS was major depressive disorder during follow-up and of SASS personality disorders. Six months after a burn injury, some difficulties in social and occupational functioning remained. Level of functioning was predicted strongly and consistently by mental disorders, particularly depression. Length of stay and hand burns also predicted functioning, more in a clinician's evaluation (SOFAS) than in self-reported measures (SDS and SASS).

2014

Bayley, M., Cassidy, J.D., Colantonio, A., Gomez, M., Jeschke, M., Kirsh, B., Kristman, V., Mansfield, E., Moody, J., Stergiou-Kita, M., & Vartanian, O. (2014). **Returning to work after electrical injuries: Workers' perspectives and advice to others.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 35(6), 498-507.

NARIC Accession Number: J70436

ABSTRACT: Study examined workers' experiences with returning to work, the challenges they experienced, and the supports they found most beneficial when returning to work after a workplace electrical injury. Semi-structured telephone interviews were conducted with 13 individuals who experienced an electrical injury at the workplace. Participants were recruited from specialized burns rehabilitation programs in Ontario, Canada. Interviews were transcribed verbatim and thematic analysis used to analyze the qualitative data. Information regarding workers' demographics, injury events, and occupational categories were also gathered to characterize the sample. Participants identified three distinct categories of challenges: (1) physical, cognitive, and psychosocial impairments and their effects on their work performance; (2) feelings of guilt, blame, and responsibility for the injury; and (3) having to return to the workplace or worksite where the injury took place. The most beneficial supports identified by the injured workers included support from family, friends, and coworkers; and the receipt of rehabilitation services specialized in electrical injury. The most common advice to others after electrical injuries included: (1) avoiding electrical injury, (2) feeling ready to return to work, (3) filing a Workplace Safety and Insurance Board injury/claims report, (4) proactive self-advocacy, and (5) garnering the assistance of individuals who understood electrical injuries to advocate on their behalf. Results suggest that immediate and persistent physical, cognitive, psychosocial, and support factors can affect individuals' abilities to successfully return to work after an electrical injury.

2012

Esselman, P., Fraser, R., Johnson, K., Mason, S.T., Schomer, K., & Truitt, A. (2012). **Return to work after burn injury: A systematic review.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 33(1), 101-109.

Project Numbers: H133A060070, H133A070045, H133A070047

NARIC Accession Number: J62737

ABSTRACT: This study identified factors that impact return to work (RTW) following burn injuries. A search was conducted of peer-reviewed studies published since 1970 and written in English that investigated predictors and barriers of returning to work among those with burn injuries were examined. From the 216 articles initially identified in the search, 26 studies were determined to meet inclusion criteria. Across studies, the mean age was 33.63 years, the mean total body surface area burned was 18.94 percent, and the average length of stay was 20 days. At 3.3 years (41 months) following burn injury, 72.03 percent of previously employed participants had returned to some form of work. Important predictors of RTW were identified as burn location, burn size, treatment variables, age, pain, psychosocial factors, job factors, and barriers. This systematic review suggests multiple conclusions. First, there is a significant need for attention to this area of study given that nearly 28 percent of all burn survivors never return to any form of employment. Second, the RTW literature is in need of coherent and consistent methodological practices, such as a sound system of measurement. Finally, this review calls for increased attention to interventions designed to assist survivors' ability to function in an employed capacity.

2011

Bassi, S., Ryan, C.M., & Schneider, J.C. (2011). **Employment outcomes after burn injury: A comparison of those burned at work and those burned outside of work.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 32(2), 294-301.

NARIC Accession Number: J60673

ABSTRACT: Study compared employment rates and barriers to return to work in subjects burned at work with those in subjects burned outside of work and examined the influence of electrical etiology on return to work outcomes. Demographic and medical data were collected for 197 burn survivors treated at a regional burn center outpatient clinic. Fifty percent of the subjects were burned at work. Documentation of barriers to return to work was reviewed and classified into eight categories. Return to employment was grouped into four time intervals: 0 to 3, 3 to 6, 6 to 12, and greater than 12 months after injury. Logistic

regression analysis was used to determine predictors of unemployment at greater than one year for subjects burned at work, outside of work, and those burned at work without electric injury. Electric etiology was seen only in those burned at work. Forty-four percent of subjects injured at work remained unemployed at one year compared with 22 percent of subjects injured outside of work. The most frequent employment barriers included pain, neurologic problems, and psychiatric problems for those burned at work and pain, neurologic problems, and impaired mobility for those burned outside of work. Significant predictors of unemployment at greater than 12 months included burn at work, pain, impaired mobility, other medical problems, and inpatient rehabilitation. When the electrical injury subjects are removed from the analysis, significant predictors of unemployment at 12 months include burn at work, pain, inpatient rehabilitation, and length of stay.

Esselman, P.C. (2011). **Community integration outcome after burn injury.** *Physical Medicine and Rehabilitation Clinics of North America*, 22(2), 351-356.

Project Number: H133A070047

NARIC Accession Number: J61474

ABSTRACT: Article reviews research on community integration after burn injury, with a focus on factors that impact a person's ability to return to work or school. A careful analysis of the potential barriers to return to activities can help focus a treatment team and provide appropriate support for a return to work or school plan. Psychological intervention is often an important component of a return to work or school plan. Vocational rehabilitation counselors and school reentry coordinators are valuable assets to coordinating with a treatment team and communicating with a workplace or school.

## 2010

Anderson, C., Bryant, E., Cope, N., Dimick, A., Kucan, J., Richards, R., & Sundance, P. (2010). **Systematic care management: A comprehensive approach to catastrophic injury management applied to a catastrophic burn injury population - clinical, utilization, economic, and outcome data in support of the model.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 31(5), 692-700.

NARIC Accession Number: J59514

ABSTRACT: Study examined the clinical, utilization, economic, and outcome data for patients with catastrophic burns who were managed through the systematic care management (SCM) model of care. The SCM model creates a virtual comprehensive burn care team that monitors and coordinates care delivery for each catastrophically burned patient from the date of injury until specific guaranteed outcomes and optimal recovery have been achieved. SCM provides a highly organized system of management throughout the spectrum of care that provides access to outcome data, consistent oversight, broader access to expert providers, appropriate allocation of resources, and greater understanding of total costs. Data from 209 workers' compensation catastrophic burn cases with a mean total burn surface area of 27.9 percent who were managed under the SCM model of care were analyzed. The data include treatment type, cost, return to work, and outcomes achieved. Mean duration of management to achieve all guaranteed outcomes was 20 months. Of the 209 injured workers, 152 (72.7 percent) achieved sufficient recovery to be released to return to work, of which 97 (46.8 percent) were both released and competitively employed. Assessment of 10 domains of functional independence indicated that 47.2 percent of injured workers required total assistance at initiation of SCM. However, at termination of SCM, 84 percent of those injured workers were fully independent in the 10 functional activities.

Ekselius, L., Kildal, M., & Oster, C. (2010). **Return to work after burn injury: Burn-injured individuals' perception of barriers and facilitators.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 31(4), 540-550.

NARIC Accession Number: J59076

ABSTRACT: Study explored burn-injured individuals' perception of factors seen as facilitators or barriers in the process of returning to work after a severe burn injury. Semi-structured interviews were prospectively conducted with 39 former burn injury patients. The participants were employed or studying at the time of injury and were interviewed on average 4.6 years after the burn. The interview data were analyzed with qualitative content analysis. Factors identified by the participants as facilitators and barriers to return to work (RTW) were sorted into five categories: (1) the individual, (2) social life, (3) health care and rehabilitation, (4) the workplace, and (5)



social welfare agencies. Facilitators were perceived to a great extent as individual characteristics, such as own ability to take action, setting up goals in rehabilitation, having willpower, being persistent, and learning to live with impairments. The possibility of getting modified work tasks or a change of workplace, when having physical or psychological impairments, was also seen as facilitating factors. Some barriers experienced as delaying RTW were difficulties when ceasing pain medication, limited knowledge of wound care at primary health care facilities, lack of individualized rehabilitation plans, and lack of psychological support during rehabilitation. Former burn injury patients emphasized psychological resources and capabilities as facilitators in the RTW process. The need in rehabilitation for a coordinator and for assessment of work capacity, and not solely a focus on impairments, is discussed.

## 2009

Bassi, S., Ryan, C.M., & Schneider, J.C. (2009). **Barriers impacting employment after burn injury.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 30(2), 294-300.

NARIC Accession Number: J56239

ABSTRACT: Study retrospectively reviewed the medical records of burn survivors treated at a regional burn center clinic from 2001 to 2007 to identify barriers to return to work (RTW) after injury. RTW data was grouped into 4 time periods: 0 to 3 months, 3 to 6 months, 6 to 12 months, and more than 12 months after injury. Documentation of barriers to RTW were classified into 8 categories: open wounds, impaired mobility, neurologic problems, pain, psychiatric issues, other medical issues, social issues, and undetermined. Of the 197 subjects who were employed at the time of injury, two-thirds (132) returned to work by 1 year. The most common barriers included pain, neurologic impairments, impaired mobility, and psychiatric issues. Pain was the most frequent barrier to return to work at all time intervals. Significant predictors of RTW at more than 1 year included length of hospital stay, inpatient rehabilitation, electric etiology, and burn at work. Impaired mobility was a statistically significant barrier and other medical issues showed a trend toward statistical significance in predicting RTW.

Chen, C-L., Chen-Sea, M-J., & Hwang, Y-F. (2009). **Factors related to return to work and job modification after a hand burn.** *Journal of Burn Care and Research (formerly Journal of Burn Care & Rehabilitation)*, 30(4), 661-667.

NARIC Accession Number: J56729

ABSTRACT: Study investigated the factors related to returning to work and job modification after a hand-burn injury. Demographic and burn-related data were obtained from patient charts and analyzed to determine the work status of former patients with burned hands and what influenced their returning to work. From 284 former patients with burns, 108 were interviewed by telephone about their work status. Logistic regression analysis was used to identify factors associated with having work, returning to work, the length of time required to return to work, and job modifications. Results indicated that returning to work was affected not only by burn-related factors but also by general demographic and employment factors. Having pre-burn employment increased the likelihood of having post-burn employment. Being the primary wage earner in a family increased the likelihood of having work and of a return to work post-burn. A longer stay in the hospital, burn injuries on both hands and trunk increased the time required to return to work. Being older and having a smaller percentage of total body burn area decreased the likelihood of returning to a job modified because of a burn injury.

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*Full-text copies of these documents may be available through NARIC's document delivery service.*

*To order any of the documents listed above, note the accession number and call an information specialist at 800/346-2742.*

*There is a charge of 5 cents for copying and shipping with a \$5 minimum on all orders.*

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*Documents from the National Library of Medicine PubMed search at [www.pubmed.com](http://www.pubmed.com) are listed below:*

## 2019

Dore, E., Kazis, L.E., Marino, M., Ni, P., Ryan, C.M., Saret, C.J., & Schneider, J.C. (2019). **Social participation of burn survivors and the general population in work and Employment: A life impact burn recovery evaluation (LIBRE) profile study.** *Journal of Burn Care & Research*, 40(5), 669-677. PMID: 31069384

Available in full-text: <http://tinyurl.com/y3dfm844>.  
ABSTRACT: INTRODUCTION: Work integration and retention after burn injury is a key outcome. Little is known about how burn survivors reintegrate into the workplace. This article compares scores on the Life Impact Burn Recovery Evaluation (LIBRE) Profile, a burn-specific measure of social participation, between burn survivors and general population samples, focusing on the Work and Employment domain. METHODS: Convenience samples of burn survivors and the U.S. population were obtained. Differences in demographic and clinical characteristics and LIBRE Profile scores were assessed. To examine work and employment, we compared family and friends, social activities, and social interactions scores among working vs nonworking burn survivors. RESULTS: Six hundred and one burn survivors (320 employed) and 2000 U.S. residents (1101 employed) were surveyed. The mean age ( $P = .06$ ), distributions of sex ( $P = .35$ ), and Hispanic ethnicity ( $P = .07$ ) did not differ significantly. Distributions of race ( $P < .01$ ) and education ( $P = .01$ ) differed significantly. The burn survivor sample had higher scores, demonstrating higher participation, for work and employment (mean = 49.5, SD = 9.42) than the general sample (mean = 46.94, SD = 8.94;  $P < .0001$ ), which persisted after adjusting for demographic characteristics. Scores on the three domains administered to all respondents were higher ( $P < .001$ ) for working than nonworking burn survivors. CONCLUSION: Distributions indicated higher social participation in the burn survivor sample than the general sample. Possible explanations include sample bias; resilience, posttraumatic growth, or response-shift of survivors; and limitations of using items in the general sample. Working burn survivors

scored higher than those not working. Future work can explore factors that mediate higher scores and develop interventions.

Espinoza, L.F., Gibran, N.S., Goldstein, R., Haddon, D.N., Kowalske, K., McMullen, K.A., Meyer, W.J., Ryan, C.M., Schneider, J.C., Silver, J.K., Simko, L.C., Slocum, C., Suman, O.E., & Zafonte, R. (2019). **Postacute care setting is associated with employment after burn injury.** *Archives of Physical Medicine and Rehabilitation*, 2019 Jul 3. pii: S0003-9993(19)30451-4. doi:10.1016/j.apmr.2019.06.007. [Epub ahead of print]. PMID: 31278926

ABSTRACT: OBJECTIVE: To examine differences in long-term employment outcomes in the postacute care setting. DESIGN: Retrospective review of the prospectively collected Burn Model System National Database. SETTING AND PARTICIPANTS: A total of 695 adult survivors of burn injury enrolled between May 1994 and June 2016 who required postacute care at a Burn Model System center following acute care discharge were included. Participants were divided into 2 groups based on acute care discharge disposition. Those who received postacute care at an inpatient rehabilitation facility (IRF) following acute care were included in the IRF group (N=447), and those who were treated at a skilled nursing facility, long-term care hospital, or other extended-care facility following acute care were included in the Other Rehab group (N=248). INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURES: Employment status at 12 months postinjury. Propensity score matching and logistic regression were utilized to determine the effect of postacute care setting on employment status. RESULTS: Individuals in the IRF group had larger burns and were more likely to have an inhalation injury and to undergo amputation. At 12 months postinjury, the IRF group had over 9 times increased odds of being employed compared to the Other Rehab group, using propensity score matching ( $P=.046$ ). CONCLUSIONS: While admitting patients with more severe injuries, IRFs provided a long-term benefit for survivors of burn injury in terms of regaining employment. Given the current lack of evidence-based guidelines on postacute care decisions, the results of this study shed light on the potential benefits of the intensive services provided at IRFs in this population.

2018

Björnhagen, V., Ekholm, J., Larsen, F., & Schüldt Ekholm, K. (2018). **Burn survivors' pulmonary and muscular impairment, exercise tolerance, and return-to-work following medical-vocational rehabilitation: A long-term follow-up.** *Journal of Rehabilitation Medicine*, 50(5), 465-471.

PMID: 29670997

Available in full-text at: [https://www.medicaljournals.se/jrm/content\\_files/download.php?doi=10.2340/16501977-2337](https://www.medicaljournals.se/jrm/content_files/download.php?doi=10.2340/16501977-2337).

**ABSTRACT: OBJECTIVE:** To follow up the long-term outcome in return-to-work (RTW) rate in burn-injury patients, and to determine the degree of impairment in pulmonary and muscular function and exercise tolerance. **DESIGN:** A prospective, longitudinal follow-up study without a control group. **PATIENTS:** Twenty-five burn-injury patients referred for medical-vocational rehabilitation. **METHODS:** Return-to-work rate was followed after completed medical-vocational rehabilitation. Pulmonary function was evaluated with spirometry, diffusing capacity and radio spirometry. Exercise capacity was determined using a bicycle ergometer. Muscle functions evaluated in the arms and legs were: isokinetic torque, isometric strength, endurance and muscular strength utilization. **RESULTS:** Return-to-work rate was 87 percent. During bicycle exercise tests the patients, on average, reached their expected workloads. The dominating lung function abnormality observed on lung scintigraphy was delayed wash-out time of inhaled radioactive xenon gas, suggesting airway obstruction. All tests of shoulder-flexor and knee-extensor muscle function showed large minimum-maximum differences. Mean isometric endurance of shoulder flexors was lower than mean of references, and isokinetic knee extensor torques were slightly lower. **CONCLUSION:** High return-to-work rates can be achieved after burn injury requiring hospital-ward care. Despite measurable impairments in muscle strength/endurance and pulmonary function in a substantial proportion of these patients, overall normal bicycle exercise capacity was observed except for a few cases.

2017

Acton, A., Espinoza, L.F., Jette, A., Kazis, L.E., Lee, A., Marino, M., Ryan, C.M., Schneider, J.C., Shapiro, G.D., & Shie, V.L. (2017). **Impact of work-related burn injury on social reintegration outcomes: A Life Impact Burn Recovery Evaluation (LIBRE) Study.** *Archives of Physical Medicine and Rehabilitation*, 2017 Nov 26. pii: S0003-9993(17)31383-7. doi: 10.1016/j.apmr.2017.10.022. [Epub ahead of print]. PMID: 29183751

**ABSTRACT: OBJECTIVE:** To examine differences in long-term social reintegration outcomes for burn survivors with and without work-related injuries. **DESIGN:** Cross-sectional survey.

**SETTING:** Community-dwelling burn survivors. **PARTICIPANTS:** Burn survivors (N=601) aged  $\geq 18$  years with injuries to  $\geq 5\%$  total body surface area or burns to critical areas (hands, feet, face, or genitals). **INTERVENTIONS:** Not applicable. **MAIN OUTCOME MEASURES:** The Life Impact Burn Recovery Evaluation Profile was used to examine the following previously validated 6 scale scores of social participation: Family and Friends, Social Interactions, Social Activities, Work and Employment, Romantic Relationships, and Sexual Relationships. **RESULTS:** Older participants, those who were married, and men were more likely to be burned at work ( $P < .01$ ). Burn survivors who were injured at work scored significantly lower on the Work and Employment scale score after adjusting for demographic and clinical characteristics ( $P = .01$ ). All other domain scale scores demonstrated no significant differences between groups. Individuals with work-related injuries scored significantly worse on 6 of the 19 items within the Work and Employment scale ( $P < .05$ ). These individuals were more likely to report that they were afraid to go to work and felt limited in their ability to perform at work. **CONCLUSIONS:** Burn survivors with work-related injuries report worse work reintegration outcomes than those without work-related injuries. Identification of those at higher risk for work reintegration challenges after burn injury may enable survivors, providers, employers, and insurers to better use appropriate resources to promote and target optimal employment outcomes.

Brych, S.B., Carrougher, G.J., Gibran, N.S., Mandell, S.P., & Pham, T.N. (2017). **An intervention bundle to facilitate return to work for burn-injured workers: Report from a burn model system investigation.** *Journal of Burn Care & Research*, 38(1), e70-e78. PMID: 28009697

Available in full-text at: <http://tinyurl.com/yy8m63q3>.  
ABSTRACT: Rates of return to work (RTW) after burn injury vary. A 2012 systematic review of the burn literature reported that nearly 28 percent of all adult burn survivors never return to any form of employment. These authors called for interventions designed to assist survivors' ability to function in an employed capacity. In 2010, our burn center outpatient clinic instituted an intervention aimed to return injured workers to employment within 90 days of their insurance claims. The interventions include patient/family education focused on recovery rather than disability, employer contact and education by the vocational rehabilitation (VR) counselor, physician recommendations for work accommodations, provision of employee status letters, and Activity Prescription Forms (APFs). The purpose of this study is to report on the effectiveness of these interventions. Following institutional review board (IRB) approval, medical records of adults with occupation-related burn injuries and receiving care at a single regional burn center from June 2010 to July 2015 were reviewed. Data on patient and injury characteristics and outpatient VR services provided were collected. The primary outcome of interest was the percentage of patients who RTW; 338 individuals met study entry criteria. The VR counselor evaluated all patients. All patients received an employer letter(s) and APF documentation. Workplace accommodations were provided to more than 30 percent of patients. RTW rate was 93 percent with an average of 24 days from injury to RTW. In an intervention bundle involving the patient, employer, Workers' compensation, and the burn clinic staff, injured workers achieved a high rate of RTW. Although we cannot correlate individual bundle components to outcome, we postulate that the combination of employer/employee/insurer engagement and flexibility contributed to the success of this program.

## 2016

Au, R.K., Cao, H.Y., Feng, Y.N., Li, K.C., Liao, L.R., Li-Tsang, C.W., Liu, C.S., Shen, X., Tang, D., & Yi, X.F. (2016). **Predictors of functional independence,**

**quality of life, and return to work in patients with burn injuries in mainland China.** *Burns & Trauma*, 4, 32.

PMID: 27826591

Available in full-text at: [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5096322/pdf/41038\\_2016\\_Article\\_58.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5096322/pdf/41038_2016_Article_58.pdf).

ABSTRACT: BACKGROUND: Burn injury may be associated with long-term rehabilitation and disability, while research studies on the functional performance after injuries, quality of life (QOL), and abilities to return to work of burn patients are limited. These outcomes are related not just to the degree and nature of injuries, but also to the socio-economical background of the society. This study aimed to identify the factors which might affect burn patients' abilities to reintegrate back to the society based on a sample in mainland China. METHODS: A retrospective study was conducted to collect data of demographic characteristics, medical data about burn injuries, physical and psychological status, and self-perceived QOL at the initial phase and upon discharge from a rehabilitation hospital, timing of rehabilitation, and duration of rehabilitation intervention. Four hundred fifteen patients with burn injuries were recruited in the study. Multiple linear regression and logistic regression were used to obtain a model to predict the functional abilities and the perceived QOL at discharge and their changes during rehabilitation, as well as the post-injury work status within six months after discharge. RESULTS: The functional performance at discharge and its change were significantly predicted by the functional abilities and QOL at the admission, duration of treatment, timing of rehabilitation, payer source, and total body surface area burned. The perceived QOL at discharge and its change were significantly predicted by the baseline QOL at admission and duration of treatment. The significant predictors of work status within six months post-discharge included age, education, payer source, total body surface area burned, perceived QOL, and bodily pain at admission. CONCLUSIONS: The present study identified a number of factors affecting the rehabilitation outcomes of people with burn injuries. Identification of these predictors may help clinicians assess the rehabilitation potential of burn survivors and assist in resource allocation. Policy makers should ensure that resources are adequate to improve the outcomes based on these factors.

## 2014

Colantonio, A., Kirsh, B., Mansfield, E., & Stergiou-Kita, M. (2014). **After the storm: The social relations of return to work following electrical injury.** *Qualitative Health Research, 24*(9), 1183-97.

PMID: 25097188

**ABSTRACT:** In this study, we explored the experiences of 13 individuals who had suffered an electrical injury at work and had subsequently returned to work. In this article, we report on the social, institutional, and relational elements that workers perceived to influence return to work experiences and the provision of workplace accommodations. These elements included (a) worker resources, (b) job characteristics, (c) workplace setting, (d) injury elements, (e) workers' compensation context, and (f) supports and advocacy provided. We conclude that the availability and provision of supportive accommodations are influenced by a multiplicity of interrelated factors including the legitimacy of resulting impairments following electrical injury, institutional structures (e.g., compensation and health care systems), the social relations of work, and broader labor market and economic contexts. Those workers who were vulnerable because of factors such as employment circumstances or labor market conditions were often poorly supported when returning to work following electrical injury.

## 2013

Grigorovich, A., & Stergiou-Kita, M. (2013). **Guidelines for vocational evaluation following burns: Integrated review of relevant process and factors.** *Journal of Occupational Rehabilitation, 23*(4), 476-503.

PMID: 23423804

**ABSTRACT:** **PURPOSE:** A systematic literature review was undertaken to gather evidence to develop a guideline for vocational evaluation following burn injuries (BI). This review aimed to identify the key processes evaluators should follow and the key factors they should consider when completing such evaluations. **METHODS:** Steps outlined in Cochrane Handbook of Systematic Review were followed including: development of review question; search strategies and selection criteria; quality appraisal; data extraction; analysis & synthesis; drawing conclusions. Four databases (Pubmed, Medline, CINHALL, PsycINFO)

and 14 websites were searched for relevant articles and studies (quantitative, qualitative), reviews and guidelines. Two reviewers independently completed reviews, performed quality assessments and extracted data into evidence tables. Using the ICF model and directed content analysis, key processes and factors were analyzed and synthesized across the evidence. **RESULTS:** A total of 138 articles were identified using the key words (e.g. burns, work). Studies, reviews and guidelines were retrieved if they focused on adults and discussed the processes relevant to vocational evaluation and/or factors associated with successful return to work (RTW) following a BI. Items were excluded if they did not address adults who had suffered a burn, the process of work or RTW, or challenges related to work after a BI. Using the above criteria 76 items were retrieved for full review. Fifty-six items remained after the quality appraisal. Results were integrated to develop the Evidence-based Framework for Vocational Evaluation Following Burn Injury. **CONCLUSIONS:** This framework outlines seven key processes relevant to vocational evaluation following burn injuries.

## 2012

Hahn, H. (2012). **Recovery from an eighty-percent total body surface area burn injury sustained at work.** [*Archives of Industrial Hygiene and Toxicology*] *Arhiv za higijenu rada i toksikologiju, 63*(2), 223-6.

PMID: 22728806

Available in full-text at: <https://content.sciendo.com/downloadpdf/journals/aiht/63/2/article-p223.xml>.

**ABSTRACT:** This article presents a case of severe burn injury at work involving 80 percent of body surface area and patient treatment and rehabilitation, which resulted in preserved working ability. The worker was injured by hot water and steam. After initial treatment in the intensive care unit, he underwent comprehensive clinical and outpatient rehabilitation that took 92 weeks, after which he returned to work. His working disability was 100 percent after the initial treatment in the intensive care unit, but rehabilitation improved it to 50 percent. It should always be kept in mind that even patients with serious or life-threatening injuries can be reintegrated into the workforce if patients, physicians, occupational physicians, and employers all work together.

2010

Cleland, H., Quinn, T., & Wasiak, J. (2010). **An examination of factors that affect return to work following burns: A systematic review of the literature.** *Burns*, 36(7), 1021-6.

PMID: 20395053

**ABSTRACT:** AIMS: To review the literature on return to work (RTW) in patients with burns. **METHODS:** Using a predetermined search strategy, we searched Ovid MEDLINE (1950 to January 2008) database to identify all English studies related to burn and work, rehabilitation, employment, return to work, occupation or vocational training. **RESULTS:** Twenty-one studies were identified with 3134 patients. An average of 66 percent of patients returned to work following their burn; with rates even higher in patients with lower total body surface area burns. Time taken to RTW ranged from 4.7 weeks to 24 months. Common barriers to RTW were extent and severity of the burn, longer length of stay in hospital and number of operative procedures. **CONCLUSIONS:** This review found that the severity of burn was the most significant barrier to RTW. Further research is required to explore physical and psychosocial interventions aimed at helping people with burns return to and sustain employment.

Dowda, D.J., & Li, F. (2010). **[Assessing factors that influence patients' perception in returning to work using the brief version of Burns Specific Health Scale].** *Chinese Journal of Burns [Zhonghua shao shang za zhi]*, 26(6), 416-9. [Article in Chinese].

PMID: 21223650

**ABSTRACT:** **OBJECTIVE:** To assess the factors that influence burn patients' perception in returning to work after discharge. **METHODS:** Twenty-four patients hospitalized from March 1, 2007 to February 28, 2009, older than 18 years, and with total burn surface area equal to or more than 10 percent TBSA were enrolled in the study. Data of physical and psychological health status (PPH) of in-patients including hand function, simple function abilities, heat sensitivity, treatment antipathy, body image, sexuality, interpersonal relationships, affect, and perception in returning to work at discharge and 3 and 6 months after discharge were collected using the brief version of Burns Specific Health Scale in the form

of questionnaire, which were analyzed coordinately. The correlation between returning to work and demographic data of patients were analyzed too. Data were processed with t test or Pearson correlation test. **RESULTS:** Respectively 19 and 16 valid questionnaires were sent back 3 and 6 months after discharge. No statistical difference was found between at discharge and 3 months after discharge in each item concerning PPH of patients (with t values from -4.87 to -2.16, P values all above 0.05). The perception of returning to work scored significantly higher 6 months after discharge than at discharge [(9 ± 5) score vs. (6 ± 3) score, t = -4.87, P < 0.001], which was positively correlated with affect, treatment antipathy, body image, and heat sensitivity (with r value respectively 0.9256, 0.8891, 0.7502, 0.6022, P values all below 0.05), and negatively correlated with length of stay, total burn surface area, and amount of workers compensation (with r value respectively -0.7000, -0.6844, -0.8003, P values all below 0.05). **CONCLUSIONS:** Patients' perception in returning to work is correlated with heat sensitivity, treatment antipathy, body image, affect, length of stay, total burn surface area, and amount workers compensation. Health professionals need to provide patients with ongoing education and necessary information to help them return to work.

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## Quick Looks

### ***Online Resources Related to Burn Injury and Employment***

The following are a selection of resources related to burn injury, employment, return to work, adaptive equipment, and workplace accommodations for persons with burn injury:

#### **American Burn Association (ABA)**

The ABA and its members are dedicated to improving the lives of everyone affected by burn injury by promoting and supporting burn-related research, education, care, rehabilitation, and prevention. Members consist of medical professionals (doctors and nurses), physical and occupational therapists, researchers, social workers, fire fighters, and hospitals with burn centers.

Phone: 312/642-9260

Email: <http://ameriburn.org/contact-us>.

<http://ameriburn.org>.

Public Resources:

<http://ameriburn.org/public-resources>.

***A Coordinated Rehabilitation Program May Help Workers with Burn Injuries Get Back to Work – Research In Focus from NARIC***

<http://tinyurl.com/y4crt8z3>.

#### **Job Accommodation Network (JAN)**

JAN is the leading source of free, expert, and confidential guidance on workplace accommodations and disability employment issues. JAN helps people with disabilities enhance their employability and shows employers how to capitalize on the value and talent that people with disabilities add to the workplace.

Toll Free: 800/526-7234 (V), 800/232-9675 (V)

TTY: 877/781-9403

Email: [jan@askjan.org](mailto:jan@askjan.org).

<https://askjan.org>.

*Employee's Practical Guide to Requesting and Negotiating Reasonable Accommodation Under the Americans with Disabilities Act (ADA):*

<https://askjan.org/publications/individuals/employee-guide.cfm>.

Accommodation and Compliance Series for Burn Injury: <https://askjan.org/disabilities/Burn-Injury.cfm>.

#### **Model Systems Knowledge Translation Center (MSKTC)**

MSKTC is a national center that helps facilitate the knowledge translation process to make research more meaningful to those with spinal cord injury, traumatic brain injury, and burn injury. The Center is funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) under grant number 90DP0082.

Phone: 202/403-5600

TTY: 877/334-3499

Email: [ccai@air.org](mailto:ccai@air.org).

<http://www.msktc.org>.

MSKTC Newsletter Archives:

<https://msktc.org/newsletter/archives>.

Living with Burn Injury (including Employment):

<https://msktc.org/burn>.

Burn Injury Resources (factsheets, videos, etc.):

<https://msktc.org/burn/burn-resources>.

Employment After Burn Injury:

<https://msktc.org/burn/factsheets/Employment-After-Burn-Injury>.

#### **Phoenix Society for Burn Survivors**

The Phoenix Society for Burn Survivors was founded in 1977 and serves as the leading national non-profit organization dedicated to empowering anyone affected by burn injury.

Toll Free: 800/888-2876

Email: [info@phoenix-society.org](mailto:info@phoenix-society.org).

<https://www.phoenix-society.org>.

Find Resources:

<https://www.phoenix-society.org/resources/all/P15>.

Resources Related to Employment:

<http://tinyurl.com/y35yksmm>.

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***Return to Work After Burn Injury –  
Northwest Regional Burn Model System***  
<http://burnrehab.washington.edu/work>.

**Returning to Work After Burn Injury: From  
Research to Vocational Rehabilitation Practice –  
A Webcast from the Center on Knowledge Translation  
for Disability & Rehabilitation Research**  
<https://ktdrr.org/training/webcasts/webcast25/index.html>.

**Vocational Rehabilitation (VR) Agencies by State**  
Every state has a vocational rehabilitation agency that is designed to help individuals with disabilities meet their employment goals. These agencies assist individuals with disabilities to prepare for, obtain, maintain, or regain employment.  
VR Offices by State: <https://www.askearn.org/state-vocational-rehabilitation-agencies>.





## *Search Terms for Burn Injury and Employment*

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| <ul style="list-style-type: none"> <li>📖 Access to Education</li> <li>📖 Accidents</li> <li>📖 Accommodation</li> <li>📖 Adjustment</li> <li>📖 Adolescents</li> <li>📖 Adults</li> <li>📖 Age Distribution/Factors</li> <li>📖 Amputations</li> <li>📖 Barriers</li> <li>📖 Burns/Classification/Complications/Injury/Therapy</li> <li>📖 Case Management</li> <li>📖 Children</li> <li>📖 Client Characteristics</li> <li>📖 Cohort Studies</li> <li>📖 Community Integration</li> <li>📖 Cross-Sectional Studies</li> <li>📖 Demographics</li> <li>📖 Disability Evaluation</li> <li>📖 Persons with Disabilities</li> <li>📖 Education</li> <li>📖 Electric Injuries</li> <li>📖 Employment/Reentry</li> <li>📖 Etiology</li> <li>📖 Family Life</li> <li>📖 Follow-Up Studies</li> <li>📖 Functional Independence/Limitations</li> <li>📖 Health Care/Indicators/Status</li> <li>📖 Injuries</li> <li>📖 Injury Severity Score</li> <li>📖 Intervention</li> <li>📖 Job Modification</li> <li>📖 Literature Reviews</li> <li>📖 Logistic Models</li> <li>📖 Longitudinal Studies</li> <li>📖 Mental Health</li> <li>📖 Model Programs</li> <li>📖 Multicenter Studies</li> <li>📖 Physiology</li> <li>📖 Occupational Injuries/Therapy</li> <li>📖 Outcomes</li> <li>📖 Pain/Management</li> <li>📖 Personality Assessment</li> </ul> | <ul style="list-style-type: none"> <li>📖 Physical Fitness</li> <li>📖 Postacute care</li> <li>📖 Practice Guidelines</li> <li>📖 Predictors</li> <li>📖 Prevalence</li> <li>📖 Prognosis</li> <li>📖 Program Evaluation</li> <li>📖 Prospective Studies</li> <li>📖 Psychological/Factors/Tests</li> <li>📖 Qualitative Analysis</li> <li>📖 Quality of Life</li> <li>📖 Recovery of Function</li> <li>📖 Reference Values</li> <li>📖 Rehabilitation</li> <li>📖 Respiratory Function</li> <li>📖 Return to Work</li> <li>📖 Risk Assessment/Factors</li> <li>📖 Service Delivery/Utilization</li> <li>📖 Sickness Impact Profile</li> <li>📖 Social Skills</li> <li>📖 Socioeconomic Factors</li> <li>📖 Statistics</li> <li>📖 Surveys and Questionnaires</li> <li>📖 Survivors</li> <li>📖 Time Factors</li> <li>📖 Treatment</li> <li>📖 Unemployment/Statistics</li> <li>📖 Vocational/Methods/Rehabilitation</li> <li>📖 Work Attitudes/Performance</li> <li>📖 Workers' Compensation</li> <li>📖 Workers with Disabilities</li> <li>📖 Workplace</li> <li>📖 Young Adults</li> </ul> |
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## *About reSearch:*

*reSearch* is an information product from the National Rehabilitation Information Center (NARIC). Each issue is based on real-world queries received by our information specialists from researchers, educators, and rehabilitation professionals around the world.

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 REHABDATA and the NIDILRR Program database


 Education Resources Information Center

 National Clearinghouse of Rehabilitation Training Materials

 Campbell and Cochrane Collaborations

 PubMed and other National Library of Medicine databases

 Agency for Health Care Policy and Research databases

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*- NARIC Information and Media Team*