Evidence Tables and References

6.5 Community Reintegration Following Stroke

*Canadian Best Practice Recommendations for Stroke Care 2011-2013 Update*

Last Updated: July 5, 2013
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Search Strategy

### Identification
Cochrane, Medline, and CINAHL, Clinicaltrials.gov, and National Guideline Clearing House were searched.

### Screening
Titles and Abstracts of each study were reviewed. Bibliographies of major reviews or meta-analyses were searched for additional relevant articles.

### Eligibility
- **Excluded articles:** Non-English, Commentaries, Case-Studies, Narratives, Book Chapters, Editorials, Non-systematic Reviews (scoping reviews), and conference abstracts.
- **Included Articles:** English language articles, RCTs, observational studies and systematic reviews/meta-analysis. Relevant guidelines addressing the topic were also included.

### Included
A total of 19 Articles and 4 Guidelines

Cochrane, Medline, and CINAHL, Clinicaltrials.gov, and National Guideline Clearing House were search using medical subject. Titles and abstract of each article were reviewed for relevance. Bibliographies were reviewed to find additional relevant articles. Articles were excluded if they were: non-English, commentaries, case-studies, narrative, book chapters, editorials, non-systematic review, or conference abstracts. Additional searches for relevant best practice guidelines were completed and included in a separate section of the review. A total of 19 articles and 4 guidelines were included and were separated into separate categories designed to answer specific questions.
## What existing clinical practice guidelines include Community Reintegration?

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<tr>
<th>Guideline</th>
<th>Recommendations</th>
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Good Practice Points:  
- Patients with stroke should be advised that they must not drive for at least one month after their stroke.  
- Patients with residual activity limitations at one month must inform the DVLA (particularly if there are visual problems, motor weakness or cognitive deficits) and can only resume driving if their physician/GP agrees, or after formal assessment.  
- When assessing whether a patient has made a satisfactory recovery, clinicians should be vigilant to possible executive function impairment.  
If there is doubt about a patient's ability to drive, patients should be referred to the local disabled drivers' assessment Centre (details available from the DVLA). *(Evidence Level D)* |
|                                                                           | **Returning to work** *(Section 5.6: Moving on After Stroke)*  
Good Practice Points:  
- Early in the rehabilitation pathway patients should be asked about vocational activities and liaison initiated with employers. Once work requirements are established patients should have appropriate assessments made of their ability to meet the needs of their current or potential employment.  
- NHS boards should consider providing a specific local expert therapist to provide advice to rehabilitation teams including signposting to relevant statutory services such as Disability Employment Advisors at Job Centres, organisations specifically providing opportunities for people with disabilities, eg Momentum, or voluntary services who can provide help and support, eg CHSS, Stroke Association, Disability Alliance *(see section 7.3)*.  
- People wishing to return to work should have access to advice on benefits, employment and legal rights and referral to social work if appropriate.  
- Employers should be encouraged to provide skills retraining and flexible work opportunities to people returning to work after a stroke.  
Good Practice Point:  
*(Section 2.3 Transfer from hospital to home)*  
- NHS boards should consider providing a specific local expert therapist to provide advice to rehabilitation teams including signposting to relevant statutory services such as Disability Employment Advisors at Job Centres, organisations specifically |
providing opportunities for people with disabilities, eg Momentum, or voluntary services who can provide help and support, eg CHSS, Stroke Association, Disability Alliance (see section 7.3).

Good Practice Point:
*(Section 4.4.2)*
- Stroke patients should have a full assessment of their cognitive strengths and weaknesses when undergoing rehabilitation or when returning to cognitively demanding activities such as driving or work.

**Sexuality**
Good Practice Point: Healthcare professionals should provide advice and information to patients and partners about sexuality and sex after stroke on an individualised basis.

**Leisure Activity**
*(Section 6.5: The Role of the Occupational Therapist)*
- Assessment: assessing skills for the performance of self-care (eg washing, dressing, feeding), domestic (eg shopping, cooking, cleaning), work and leisure occupations
*(Section 7.4: Provision of information (community))*
- Advise patients and carers of how they can access CHSS stroke services, Exercise after Stroke, day centres and other stroke or leisure clubs

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<tbody>
<tr>
<td><strong>Return to Driving</strong></td>
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<tr>
<td>1. Recommend all patients be given a clinical assessment of their physical, cognitive, and behavioral functions to determine their readiness to resume driving. In individual cases, where concerns are identified by the family or medical staff, the patient should be required to pass the state road test as administered by the licensing department. Each medical facility should be familiar with their state laws regarding driving after a stroke. [I]</td>
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<tr>
<td>2. Consider referring patients with residual deficits to adaptive driving instruction programs to minimize the deficits, eliminate safety concerns, and optimize the chances that the patient will be able to pass the state driving test. [I] (Working Group Consensus. Level of Evidence – 3, Quality of Evidence – Poor, Strength of Recommendation – I)</td>
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<tr>
<td><strong>Return to Work</strong></td>
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<tr>
<td>1. Recommend that all patients, if interested and their condition permits, be evaluated for the potential of returning to work. [C]</td>
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<tr>
<td>2. Recommend that all patients who were previously employed, be referred to vocational counseling for assistance in returning to work. [C]</td>
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<tr>
<td>3. Recommend that all patients who are considering a return to work, but who may have psychosocial barriers (e.g. motivation, emotional, and psychological concerns) be referred for supportive services, such as vocational counseling or psychological services. [C]</td>
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</table>
| **Sexuality**  
* (Section 7.11 Sexual Function)  |
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<tr>
<td>- Sexual issues should be discussed during rehabilitation and addressed again after transition to the community when the post-stroke patient and partner are ready (No level of evidence)</td>
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<tr>
<th><strong>Section 4.6 Assessment of Emotional and Behavioral State</strong></th>
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<td>- Brief, continual assessments of psychological adjustment should be conducted to quickly identify when new problems occur. These assessments should also include ongoing monitoring of suicidal ideation and substance abuse. Other psychological factors deserving attention include: level of insight, level of self-efficacy/locus of control, loss of identity concerns, social support, sexuality, and sleep. (No level of evidence)</td>
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</table>

| **Leisure Activity**  
* (Section 7.8 Recreational and leisure Activity)  |
|---|
| 1. Recommend that leisure activities should be identified and encouraged and the patient enabled to participate in these activities. [I]  
2. Therapy for individuals with stroke should include the development of problem solving skills for overcoming the barriers to engagement in physical activity and leisure pursuits.  
3. Individuals with stroke and their caregivers should be provided with a list of resources for engaging in aerobic and leisure activities in the community prior to discharge |

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**Clinical Guidelines for Stroke Management 2010.**  

**Return to Driving**  
1. All patients admitted to hospital should be asked if they intend to drive again. (GPP)  
2. Any patient who does wish to drive should be given information about driving after stroke and be assessed for fitness to return to driving using the national guidelines (Assessing Fitness To Drive) and relevant state guidelines. Patients should be informed that they are required to report their condition to the relevant driver licence authority and notify their car insurance company before returning to driving. (GPP)  
3. Stroke survivors should not return to driving for at least one month post event. A follow-up assessment (normally undertaken by a GP or specialist) should be conducted prior to driving to assess suitability. Patients with TIA should be instructed not to drive for two weeks. (GPP)  
4. If a person is deemed medically fit but is required to undertake further testing, they should be referred for an occupational therapy driving assessment. Relevant health professionals should discuss the results of the test and provide a written record of the decision to the patient as well as informing the GP. (GPP)  

Activities of Daily Living: “People faced with difficulties in community transport and mobility should set individualized goals and undertake tailored strategies such as……help to resume driving…..” (Grade B)  

**Return to Work**  
Stroke survivors who wish to work should be offered assessment (i.e. to establish their cognitive, language and physically abilities relative to their work demands), assistance to resume or take up work or referral to a supported employment
Sexuality
(Section 8.5: Sexuality)
a. Stroke survivors and their partners should be offered:
- the opportunity to discuss issues relating to sexuality with an appropriate health professional (GPP)
- written information addressing issues relating to sexuality post stroke (GPP)
b. any interventions should address psychosocial aspects as well as physical function

Leisure
(Section 8.3 Leisure)
Targeted occupational therapy programs can be used to increase participation in leisure activities. (Grade A)

Return to Driving
1. Recommend that all patients be given a clinical assessment of their physical, cognitive, and behavioral functions to determine their readiness to resume driving. In individual cases, where concerns are identified by the family or medical staff, the patient should be required to pass the state road test as administered by the licensing department. Each medical facility should be familiar with their state laws with regard to driving after a stroke. (I)
2. Recommend that medical staff consider referring patients with residual deficits to adaptive driving instruction programs to minimize the deficits, eliminate safety concerns, and ensure that patients will be able to pass the state’s driving test. (I)

Return to Work (Evidence Level C)
1. Recommend that all patients, if their condition permits, be encouraged to be evaluated for the potential of returning to work.
2. Recommend that all patients who were previously employed be referred to vocational counseling for assistance in returning to work.
3. Recommend that all patients who are considering a return to work but who may have psychosocial barriers (eg, motivation, emotional, and psychological concerns) be referred for supportive services, such as vocational counseling or psychological services.

Sexuality
Recommend that sexual issues be discussed during rehabilitation and addressed again after transition to the community when the post stroke patient and partner are ready.

Leisure Activity
(Section: Is the patient ready for community living)
Recommend that leisure activities be identified and encouraged and that the patient be enabled to participate in these activities.
# Evidence Summary

## Home Care and Outpatient Services

<table>
<thead>
<tr>
<th>Study/Type</th>
<th>Quality Rating</th>
<th>Sample Description</th>
<th>Method</th>
<th>Outcomes</th>
<th>Key Findings and Recommendations</th>
</tr>
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<tbody>
<tr>
<td>Fearon et al. 2012 Early Supported Discharge Trialists UK Cochrane review</td>
<td>NA</td>
<td>14 RCTs (1957) patients who had been admitted to hospital with clinical diagnosis of a stroke From 13% to 70% (median 34%) of patients were eligible for ESD services within each trial. The typical patient had an initial BI score of 14/20.</td>
<td>3 treatment contrasts were evaluated. The control condition in all trials was inpatient stroke rehabilitation 1) ESD using a multidisciplinary team which co-ordinated discharge from hospital, post discharge care and provided rehabilitation and patient care at home. Team on a regular basis to plan patient care (n=9). 2) ESD team co-ordination in which discharge home and the immediate post-discharge care was planned and supervised by a co-ordinated multidisciplinary team, but care was then handed over to existing community-based agencies who provided continuing rehabilitation</td>
<td><strong>Primary Outcomes:</strong> Death, physical dependency, place of residence <strong>Secondary Outcomes:</strong> ADL scores, extended ADL scores, subjective health status, mood, carer outcomes, patient/carer satisfaction Primary outcome assessment was conducted at 3 months (n=2), 5 months (n=1), 6 months (n=5), 7 months (n=1), 12 months (n=5).</td>
<td>Death: OR=0.91, 95% CI 0.67 to 1.25, p=0.58 Results from 14 trials included. Death/institutional care; OR=0.78, 95% CI 0.61 to 1.00, p=0.049. Results from 12 trials included. Death/dependency: OR=0.82, 95% CI 0.67 to 0.97, p=0.021. Results from 14 trials included. Barthel Index: SMD=0.03, 95% CI -0.08 to 0.15, p=0.56. Results from 9 trials included. Extended EADL scores: SMD=0.14, 95% CI 0.02 to 0.26, p=0.024. Results from 8 trials included. Subjective Health Status: SMD=0.0, 95% CI -0.10 to 0.11, p=0.93. Results from 12 trials included. Mood status (patient): SMD=-0.06, 95% CI -0.19 to 0.07, p=0.38. Results from 8 trials included. Satisfaction with services: OR=1.6, 95% CI 1.08 to 2.38, p=0.019. Results from 5 trials included.</td>
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<td>Outpatient Service Trialists 2003 UK Cochrane review</td>
<td>NA</td>
<td>14 trials (1,617 patients) including patients who were living at home prior to stroke and who were within 1 year of stroke onset. In 12 of the trials, patients were recruited following discharge from hospital. In 4 of these trials, patients had received a course of rehabilitation. In 2 studies, patients were recruited from home. The mean/median LOS in hospital was reported in 6 trials and varied from 7 to 85 days.</td>
<td>and support at home, typically using a non-multidisciplinary team approach (n=3). 3) No ESD team coordination-therapies were provided by uncoordinated community services or by health-care volunteers, (n=2)</td>
<td>Service interventions examined included those that were outpatient based (home-based n=2, day hospital or outpatient clinic n=12), therapy-based and provided the services of OT/PT or multidisciplinary staff, whose aim was to improve task-oriented behavior. The focus of treatment was ADL performance, leisure (OT) n=8; mobility (PT) n=2 and was provided by a multidisciplinary team in 4 trials. In most of the trials the comparison was usual or routine care.</td>
<td>Death/dependency sub groups (initial BI scores 10 to 20) OR=0.77, 95% CI 0.61 to 0.98 , p=0.06 (BI scores &lt;10) OR=0.86, 95% CI 0.69 to 1.07, p=0.17</td>
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<td>Primary outcome: Death or poor outcome (deterioration, dependency, need for institutionalization), Performance of ADL</td>
<td>Secondary outcomes: Death at end of scheduled follow-up, death or need for institutional care, death or physical dependence, EADL, mood Duration of follow-up was between 3 and 12 months</td>
<td>Death by end of scheduled follow-up: OR=1.10, 95% CI 0.76 to 1.59, p=0.60. Results from 14 trials included. Death or institutionalisation at end of scheduled follow-up: OR=0.81, 95% CI 0.54 to 1.21, p=0.30. Results from 6 trials included. Death or dependency at end of scheduled follow-up: OR=0.93, 95% CI 0.70 to 1.22, p=0.60. Results from 7 trials included. Death or poor outcome: OR=0.72, 95% CI 0.57 to 0.92, p=0.009 (favours treatment). Results from 12 trials included. ADL score: SMD=0.14, 95% CI 0.02 to 0.025, p=0.02 (favours treatment). Results from 12 trials included. EADL scores: SMD=0.17, 95% CI 0.04 to 0.30, p=0.01 (favours treatment). Results from 9 trials included.</td>
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<td>Fisher et al. 2011 UK Consensus panel document</td>
<td>NA</td>
<td>An international panel of experts assembled to assess the effectiveness of, and benefits of ESD. The panel included 10 of the authors whose RCTs had been included in the Cochrane ESD review.</td>
<td>A modified Delphi process (3 rounds) was used to determine who should be included in an ESD team and what features it should include. Consensus agreement was achieved if ≥75% of the panellists agreed or strongly agreed with a particular statement with the same criteria for disagree or strongly disagree.</td>
<td>Consensus regarding team composition Consensus regarding model of team work Consensus regarding interventions</td>
<td>Consensus agreement (&gt;75%) was established for 47 of the 56 statements that the panel voted on. There was strong agreement (i.e. 100% agreement) that the members of the team should have specialized stroke care knowledge that the team should be multidisciplinary, and should include: a physiotherapist, occupational therapist and a nurse. There was strong agreement that an ESD team should be hospital-based, organised by a team coordinator and each patient be assigned a key person to coordinate their care. There strong agreement that eligibility decisions should be based on whether the patient could safely return home and whether the patient lived within the local area and that hospital staff should identify patients for ESD.</td>
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<td>Bautz-Holter et al. 2002 Norway RCT</td>
<td>CA: ☒ Blinding: Assessor ☑ ITT: ☑</td>
<td>82 acute stroke patients with hospitalization within 6 days of stroke onset. Patients were eligible for inclusion if they were medical stability (Barthel ADL=5-19 72 hrs post stroke) and were home-</td>
<td>Participants were randomized to receive either early-supported discharge (n=42) or conventional hospital rehabilitation (n=40). Immediate preparation for discharge and co-ordination of</td>
<td>Primary Outcome: Nottingham Extended Activities of Daily Living. Secondary Outcome: General Health Questionnaire, Montgomery Aasberg Depression Rating Scale, mortality, patient and career satisfaction.</td>
<td>The median length of stay was 22 days for those in the early supported discharge group as compared to 31 days for those in the conventional care group (p=0.09). No significant differences were reported for the primary outcome at either the 3 or 6 month follow-up. A significant between group difference was</td>
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### Canadian Best Practice Recommendations for Stroke Care

#### Community Reintegration Following Stroke

2013

<table>
<thead>
<tr>
<th>Study/Type</th>
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<td>dwelling and not severely disabled prior to stroke onset.</td>
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<td>20.2% of patients screened were eligible for inclusion.</td>
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<td>community-based rehabilitation was provided for patients in the intervention group.</td>
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<td>Primary outcome assessment was conducted at 3 and 6 month follow-up</td>
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<td>reported in favour of the intervention group on the General Health Questionnaire at 3 months (p&lt;0.05; 95% CI for difference: -9.0, -1.0); this difference was no longer significant at the 6 month follow-up.</td>
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### Social Support

#### Ellis et al. 2010 Cochrane Review

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<th>Study/Type</th>
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<tr>
<td></td>
<td>N/A</td>
<td>16 RCTs were included in the analysis consisting of 4759 patients (2 of the studies were unpublished).</td>
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<td>Inclusion criteria: RCTs</td>
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<td>Exclusion criteria: studies that assess a service worker providing only one aspect of care.</td>
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<td>All trials involved interventions that assessed the impact of a comprehensive service (e.g. an individual providing information, emotional and social support, etc.) to patients and caregivers upon discharge from hospital for acute stroke compared to usual care. Trials were identified through online databases and a meeting of all identified trialist researchers. This group also helped identify possible subgroup analyses.</td>
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<td><strong>Primary outcomes</strong>: patient and caregiver subjective health status and patient extended activities of daily living.</td>
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<td><strong>Secondary outcome</strong>: Patient level (death, discharge destination, activities of daily living (ADL), level of dependency, depression or anxiety, participation, and satisfaction), caregiver level (extended ADL, mental health, stroke knowledge, service satisfaction).</td>
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<td><strong>Primary outcomes</strong>: There were no significant differences in patient (P=0.08) and caregiver subjective health status (P=0.37), or patient extended activities of daily living (P=0.16) between the intervention and control groups.</td>
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<td><strong>Secondary outcomes</strong>: There were no significant differences in the number of patient deaths (P=0.23), discharge destination (P=0.44), activities of daily living (P=0.39), dependency (categorical outcome P=0.47; dichotomous outcome P=0.16), depression (P=0.30), anxiety (P=0.39), or participation (P=0.59). Patients in the intervention group responded more favourably to the question related to feeling satisfied that “someone has really listened” (OR 1.58, 95% CI 1.14 to 2.19, P=0.006). There were no significant differences in caregiver extended ADLs (P=0.07) or caregiver mental health (P=0.67). Caregivers in the intervention group,</td>
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(whether the emphasis was on providing information, social support or coordination with other services), profession of the stroke liaison worker, patient variables (age, sex, functional status), and presence of a caregiver.

however, were more satisfied with the stroke education (OR 1.72, 95% CI 1.04 to 2.85) and information (OR 1.98, 95% CI 1.25 to 4.31) that they received; felt that they were really listened to (OR 2.56, 95% CI 1.52 to 4.31) and that they were not neglected (OR 2.62, 95% CI 1.44 to 2.62).

Subgroup analyses: Patients who received interventions that focused on providing information (P=0.02) experienced better subjective health scores compared to those receiving usual care. However, no significant differences were found for interventions that focused on the coordination of services (P=0.09) or social support (P=0.94).

Subgroup analysis based on level of dependence found that patients in the intervention group with a Barthel index of 15 to 19 experienced lower levels of dependency (P=0.006) and death or dependency when looking at interventions that focused on stroke coordination (P=0.002) compared to patients receiving usual care.

Key points: Patients and caregivers in the intervention groups appear to be more satisfied with the care. Subgroup analyses found that the success of a stroke liaison intervention may be dependent on the main focus of the intervention and the patients level of dependency.

| Glymour et al. 2008 | N/A | 272 patients admitted to hospital with stroke were included in the final analysis. Mean age: 70 years | Initial FIRST study was a randomized trial looking at the effects of social support on functional outcomes (Glass et al. 2004). | Outcomes: Mini Mental State Examination (MMSE) and a Cognitive battery of tests (digit span forward, boston diagnostic aphasia examination, immediate | Initial results from the FIRST study found no significant differences between the intervention and control group for number of social ties and level of emotional and instrumental support at 6 months after stroke (P>0.05) (Glass et al. 2004). |
### Study (Prospective Cohort)

**Inclusion criteria:** >45 years, patients with ischemic stroke or non-traumatic hemorrhagic stroke.

**Exclusion criteria:** Participants with missing social tie information, significant pre-stroke impairments, mild or severe stroke.

This study was based on the FIRST trial, but the sample was treated as a prospective observational cohort to determine whether the number and type of social ties (intimate, other personal and organizational ties), level of emotional support and level of instrumental support (using Barrera’s inventory of Socially supportive behaviours) influenced cognitive outcomes.

**Assessment time points:** Baseline (average of 7-10 days after stroke) and 6 months (average of 205 days after stroke).

**Final covariate model adjusted for:** age, education, sex, income, race, stroke type and location, diabetes, comorbidities, and baseline NIHSS score.

**MMSE:** *Social ties* ($\beta=0.21$, 95% CI -0.32 to 0.80; $\beta=0.22$, 95% CI -0.51 to 1.19), *emotional support* ($\beta=0.34$, 95% CI -0.09 to 0.89; $\beta=0.08$, 95% CI -0.79 to 0.32) and *instrumental support* ($\beta=0.11$, 95% CI -0.35 to 0.56; $\beta=0.019$, 95% CI -0.34 to 0.74) were not predictive of MMSE scores at 6 months after stroke or of changes in MMSE scores at 6 months.

**Cognitive battery:** *Social ties* were predictive of cognitive battery scores at 6 months ($\beta=0.21$, 95% CI 0.06 to 0.36) but not for change in scores at 6 months ($\beta=0.08$, 95% CI -0.06 to 0.22). Level of *emotional support* was predictive of cognitive battery scores at 6 months and change in scores at 6 months ($\beta=0.14$, 95% CI 0.03 to 0.31; $\beta=0.15$, 95% CI 0.07 to 0.30). *Instrumental support* was not predictive of cognitive battery scores at 6 months or change in scores at 6 months ($\beta=0.00$, 95% CI -0.14 to 0.12; $\beta=-0.05$, 95% CI -0.16 to 0.00).

**Key points:** Number of social ties and level of emotional support were predictive of cognitive functioning at 6 months after stroke. Level of emotional support was the only outcome predictive of changes in cognitive functioning scores from baseline to 6 months.

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| van den Heuvel et al. 2002 | N/A | 212 caregivers were included in the analysis (170 in the two intervention groups; 42 | Interventions consisted of either a group program (consisting of 8 weeks of meetings for a | Primary outcome: Knowledge confidence, coping strategies (Utrecht coping list) | Final covariate model controlling for caregiver age and physical functioning: Caregivers in the group program experienced greater confidence in |
|---|---|---|---|---|---|---|---|
| **Netherlands** | | | | | | | |

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**July 5th, 2013 12**
### Controlled study

| Smith et al. 2012 | CA: ☑ | 38 dyads (19 stroke survivors and 19 caregivers) were randomized to the intervention or control group. 32 dyads completed the intervention. | The intervention consisted of an 11 week web-based program directed at the caregiver that provided: education, guides, chat sessions, email and messaging systems and a resource room. The control group only received access to the resource room. | **Primary outcome:** Depression (Center for Epidemiologic Studies Depression Scale (CESD)). | **Secondary outcomes:** Perceived mastery (Mastery Scale), self-esteem (Self-Esteem scale), social support (Social support survey), treatment |
| | U.S. RCT | Blinding: Patient ☒ Assessor ☑ ITT: ☑ | | | **Results from the Intention to treat analysis:** Caregivers in the intervention group experienced statistically significant benefits for depression at one month ($F(1,29) = 6.13$, $P<0.01$). A greater percentage of caregivers in the intervention group also experienced a 50% decrease in depression scores compared to caregivers in the control group. |
| | | | | **Key Points:** The group support program offered benefits to caregivers in the form of increases in knowledge, increasing tendency to seek social support, and increases in the amount of social support. These programs appear to have the greatest impact on younger age female caregivers. |

- **Secondary outcomes:**
  - physical well-being (Short-Form 36), Social support and satisfaction (social support list interaction and discrepancy), assertiveness, and a comprehensive assessment of physical psychological and behavioural consequences of stroke (Sickness Impact profile-68 (SIP68))
  - **Time points for assessment:** Baseline, 1 month after the intervention, and 6 months after the one month assessment.

- **Results from the Intention to treat analysis:**
  - Caregivers in the intervention group experienced statistically significant benefits for depression at one month ($F(1,29) = 6.13$, $P<0.01$). A greater percentage of caregivers in the intervention group also experienced a 50% decrease in depression scores compared to caregivers in the control group.

- **Key Points:**
  - The group support program offered benefits to caregivers in the form of increases in knowledge, increasing tendency to seek social support, and increases in the amount of social support. These programs appear to have the greatest impact on younger age female caregivers.

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female caregiver (wife),
cognitively and
medically stable

Exclusion criteria: If either member of the
dyad was screened as depressed.

evaluation
(Credibility/Expectancy
Questionnaire)

Time points of assessments:
Baseline, at completion of
the intervention (11 weeks)
and at a one month follow-
up time point.

caregiver depression was associated with
increased mastery (P<0.05). Stroke
survivor’s level of depression decreased
with increased mastery (P<0.005) and self-
estee (P<0.01).

Program Evaluation: Caregivers in the
intervention group cited the program as
significantly more useful (t=2.26, P<0.05),
having greater benefits (t=2.42, P<0.03) and
were more comfortable recommending it to
other caregivers (t=3.33, P<0.004).

Key Points: Caregivers experience fewer
depressive symptoms at one month after
involvement in the intervention, likely due
to increased levels of mastery of skills.
They also report positive views regarding
the credibility and benefits of the program.
Stroke survivors did not appear to
experience lower levels of depression as a
result of the intervention.

### Return to Major Life Roles (Work, Sexuality, Leisure, Driving)

<table>
<thead>
<tr>
<th>Study/Type</th>
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<tbody>
<tr>
<td>Baldwin and Brusco 2011 Australia Systematic Review</td>
<td>N/A</td>
<td>6 retrospective single cohort studies (477 participants with stroke diagnosis).</td>
<td>Inclusion criteria included adults of working age, survived a stroke and participated in a vocational rehabilitation program (defined as medical, psychological, social, physical and/or occupational</td>
<td><strong>Primary outcome:</strong> return to work rates.</td>
<td>Return to work rates varied from 12% to 49%. (there was variability in prestroke vocational status). No RCTs assessing vocational rehabilitation programs; study quality deserves attention. Vocational rehabilitation programs varied in the setting, professionals involved, duration</td>
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<td>Hackett et al. 2012</td>
<td>N/A</td>
<td>Patients from Australian hospitals between October 2008 and June 2010, aged &gt;17 and &lt;65 years. Included participants with aphasia or cognitive impairment if a proxy was available.</td>
<td>Administration of telephone interviews to collect data on depression, anxiety, cognitive function, cognitive status, instrumental activities of daily living and fatigue. Hypothesis: Depression post-stroke would predict return to work. Assessment points: Baseline (28 days), 6 months and 12 months.</td>
<td>Primary outcome: returned to paid work at 1 year post stroke. Definition of work: any type of paid work within the month prior to stroke (&gt; than 1 hour work).</td>
<td>Return to work: 75% returned to work. Factors associated with return to work: (odds of returning to work) *Final multivariate model. Increased in females without illness that restricted activity before stroke (OR 5.89; CI 1.21-28.70). Increased in males without illness that restricted activity before stroke (OR 6.40; CI 1.46 – 28.03). Increased in males with illness that restricted activity before stroke (OR 8.92; CI 1.39-57.02). Decreased with increasing age (OR 0.94; CI 0.90-0.98). Decreased with no health insurance (OR 0.40; CI 0.18-0.89). Increased with Independence in activities of daily living at 28 days (OR 10.23; CI 4.11-25.46). Depression post-stroke was not a significant predictor of return to work (OR 2.31, 95% CI 0.87-6.12).</td>
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<tr>
<td>Stein et al. 2013</td>
<td>N/A</td>
<td>Sample came from a stroke rehabilitation research registry, consisting of patients. Email or postal questionnaire sent to patients in the registry. Consisted of established Sexual dysfunction Sexual dysfunction outcomes: *(no primary outcomes stated).</td>
<td>Outcomes measured: *(no primary outcomes stated).</td>
<td>Prevalence of sexual dysfunction: 100% of men and 58% of women (CSFQ-14 mean scores of 34.45±7.04 and 37.5±12.38 respectively).</td>
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</table>
### Key Findings and Recommendations

**Sexual functioning:** Decreased as a result of stroke in 42% of participants.

**Importance of sexual issues:** rated as moderately important, important or very important by 71% of participants.

**Importance of information about sexual dysfunction:** 75% wanted more information; 15.2% had asked or received information.

**Information provider:** 60% of participants preferred physicians to provide information on sexual issues.

**Medium of choice for information:** 30% preferred written material, 27% preferred face-to-face discussion.

**Timing of information:** 26.5% of patients preferred to receive information early during recovery (during rehabilitation or before discharge from hospital).
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<td><strong>Eriksson et al. 2012</strong>&lt;br&gt;Sweden&lt;br&gt;Prospective longitudinal study</td>
<td>NA</td>
<td>348 patients admitted to a stroke unit. 161 patients had a complete set of data. Mean age: 67 years (range 24-91 years). Inclusion criteria: stroke diagnosis. Exclusion criteria: None.</td>
<td>sexual dysfunction and a discussion of frequently asked questions about post-stroke sexuality, presented on the day before discharge from hospital to the patient and their spouse. Patients receiving the intervention were also given written information for future reference. The control group received the intervention after 1 month follow-up data was collected.</td>
<td>Taleporos).&lt;br&gt;Assessment points: Data collection occurred on the day before discharge (before the intervention), and at a one-month follow up visit for both the intervention and control groups.</td>
<td>month (Z=14.77, p&lt;0.001) and sexual intercourse per month (Z=11.51, p=0.001).&lt;br&gt;Patients receiving the intervention were more satisfied and more sexually active at 1 month following discharge from hospital. *use of convenience sample is of concern.</td>
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**Outcome Measures:**<br>Barthel Index, Katz ADL Index, extended version of the Katz ADL index, Occupational Gaps Questionnaire (includes 10 leisure activities), the Stroke Impact Scale and the LiSat-11.

**Prevalence of occupational gaps:** Mean number of gaps was 4 per person (median = 3), 87% reported at least one occupational gap. The greatest number of gaps (39%) was in the leisure domain; however, 31% of patients reported no gaps within the leisure domain.

**Correlation between occupational gaps and outcomes:** Low correlation between number of gaps and global life satisfaction (r=-0.41), satisfaction in the leisure domain (r=0.46), total BI score at 12 months (r=-0.41); moderate correlation with stroke recovery (-0.5), ADL at 12 months (r=-0.5), and SIS participation (r=-0.56).

No significant relationship found between occupational gaps and life satisfaction as hypothesized.
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| Walker et al. 2004   | NA             | 8 RCTs were included with 1143 patients. All trials involved community occupational therapy interventions. 481 patients received ADL therapy; 174 patients received leisure therapy; 488 routine care. Mean age of participants: 71.4 (SD 10.5) years. | Assess changes in outcome measures after community occupational therapy interventions. Subgroup analysis by type of intervention (ADL, Leisure therapy). Assessment time points: after intervention and at the end of the trial. | **Primary outcome:** Nottingham Extended ADL (NEADL) at the end of the intervention. **Secondary outcomes:** NEADL at the end of the trial, Barthel Index (BI), Rivermead ADL, General Health Questionnaire (GHQ), Nottingham Leisure Questionnaire (NLQ). | The NEADL score for patients who received the OT community intervention was greater by 1.30 points (adjusted for age and baseline dependency) at the end of the intervention compared to usual care. Subgroup analysis by type of intervention: 1. Leisure therapy  
   a. Increase in NLQ scores (WMD, 1.96 points, 95% CI 0.27-3.66)  
   b. No significant increase in NEADL scores. 2. ADL therapy  
   a. No significant increase in NLQ scores  
   b. Increase in NEADL score (WMD 1.61 points; 95% CI, 0.72-2.49)  
   *Note: Patients who were assessed for NEADL and NLQ through face-to-face interviews scored higher than those who assessed independently with postal questionnaire. |
<p>| Desrosiers et al. 2007 | CA: ☑ Blinding: Patient ☐ Assessor ☑ ITT: ☑ | 62 patients were randomized to the intervention group (n=33) or the control group (n=29). Mean age: 70.0 years. Inclusion criteria: patients with a clinical diagnosis of stroke, admitted to rehabilitation | Intervention involved 8-12, 60 minute, weekly education sessions. Completion of the program was identified when patients completed all 12 steps and were believed to have incorporated significant leisure activities in their life. | <strong>Leisure related outcomes:</strong> Participation in leisure (duration, number of activities) and satisfaction with leisure (Leisure Satisfaction Scale and two sections of the Individualized Leisure Profile). <strong>Primary outcomes:</strong> Perceived well-being and Participation in Leisure: Patients in the experimental group reported more time in active activities (MD 14.0, 95% CI 3.2-24.9, P=0.01) and involvement in a greater number of different activities (MD 2.9, 95% CI 1.1-4.8, P=0.002) than the control group at the end of the intervention. <strong>Satisfaction with Leisure:</strong> Patients reported increased satisfaction with leisure on the Leisure Satisfaction Scale (MD 11.9, 95% CI 4.2-19.5, P=0.003) in the | |</p>
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| Devos et al. 2011 | NA | 30 Studies – case series, cohort, RCT’s etc. (1,919 participants) included in systematic review.  
27 Studies – case series, cohort, RCT’s etc. were included in the meta-analysis.  
Inclusion criteria: had to include a pass/fail outcome for driving. | Control group received home visits from a recreational therapist following the same schedule as the intervention group.  
Assessment time points: baseline (before randomization) and after intervention. | distress (General Well-Being Schedule), depression (Center for Epidemiological Studies Depression Scale – CES-D), health related quality of life (Stroke-Adapted Sickness Impact Profile – SA-SIP30). | satisfaction of leisure needs and expectations on the individualized leisure profile scale (MD 6.9, 95% CI 1.3-12.6, P=0.02) but not on the satisfaction with use of spare time section (P=0.22) compared to the control group at the end of the intervention.  
**Depression, Well-Being, QOL:** Patients in the intervention group experienced fewer depressive symptoms (MD -7.2, 95% CI -12.5 to -1.9, P=0.01) but no changes in reported well-being or health related quality of life compared to the control group at the end of the intervention.  
*Leisure outcomes and depressive symptoms were improved for patients receiving weekly education and empowerment sessions.* |
| Belgium Systematic Review and Meta-analysis | | | | |

5 cognitive measures met the criteria for a large and significant effect in their ability to predict on-road performance: (positive effect size indicates that the pass group performed better than the fail group).  
1. Cube Copy (ES 1.54 (SD 0.77-2.32), p<0.0001)  
2. Road Sign Recognition (ES 1.22 (SD 1.01-1.44), p<0.0001). Cutoff score of 8.5 out of 12, Predictive accuracy of 76%, Sensitivity of 84% and Specificity of 54%.  
3. Compass ((ES 1.06 (SD 0.74-1.39), p<0.0001).  
4. Stroke Drivers Screening Assessment (SDSA) (ES 1.03 (SD 0.61-1.46), p<0.0001). Cutoff...
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<td>Mazer et al. 2003 USA RCT (Visual Information-processing training)</td>
<td>CA: ![ ] Blinding: Patient ![ ] Assessor ![ ] ITT: ![ ]</td>
<td>97 patients admitted to a rehabilitation hospital or referred to the driving evaluation. Mean age: 65.5 years (±11.4) for the experimental group; 66.5 years (±8.9) for the control group. Inclusion criteria: drove prior to stroke and had a desire to return to driving. Exclusion criteria: the presence of any condition listed by the Canadian Medical Association, significant vision problems or heart and/or seizure history.</td>
<td>Patients were randomly allocated to either the experimental (20 session training program with the Useful Field of View (UFOV) software program; n=47) or control (20 session training program with commercially available software programs; n=50) groups.</td>
<td><strong>Primary outcome</strong>: on-road driving evaluation (passed, failed, needed driving lessons). <strong>Measures</strong>: Visuoperceptual: Complex Reaction Timer, Motor-Free Visual Perception Test (MVPT), Single and Double Letter Cancellation Test, Money Road Map Test of Direction Sense, Trail Making Test Parts A and B, Bells test and Charron test. TEA: Test of Everyday Attention. UFOV: processing speed, divided attention, selective attention.</td>
<td>No difference in posttest on-road driving evaluation between the experimental and control groups. ($\chi^2=0.38$, $P=0.536$). No difference in visuoperception scores between experimental and control groups ($P&gt;0.05$). No difference in visuoperception scores between experimental and control groups ($P&gt;0.05$). Intervention group had a significantly better UFOV scores than control group (38% vs. 13% reduction) (no significance value reported).</td>
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<tr>
<td>Akinwuntan et al. 2005</td>
<td>CA: ![ ] Blinding:</td>
<td>83 patients admitted to a rehabilitation hospital who were within 3</td>
<td>Patients were randomly allocated to the experimental group (15</td>
<td><strong>Primary outcomes</strong>: performance in the on-road test and decision of driving</td>
<td>No significant differences between experimental and control groups for visual and neuropsychological tests for...</td>
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<tr>
<td><strong>USA</strong></td>
<td>RCT (Simulator-based program)</td>
<td>Patient ☒ Assessor ✓ ITT: ☒</td>
<td>months post-stroke and had been driving prior to stroke. Mean age: 54 years (±12) for the experimental group; 54 years (±11) for the control group. <strong>Inclusion criteria:</strong> within 3 months post-first stroke, pre-stroke driver, &lt;75 years. <strong>Exclusion criteria:</strong> history of epilepsy, or severe motor or sensory aphasia.</td>
<td>hours of driving-related training spread over 5 weeks at 1 hour per day, three times a week; n=42) or control (standardized training by performing driving related cognitive tasks; n=41) group.</td>
<td>fitness at follow-up. <strong>Other measures:</strong> Visual (monocular and binocular vision acuity and the kinetic vision test) and neuropsychological evaluations (UFOV test and components of the Stroke Driver Screening Assessment (SDSA)). Pretraining, postraining, and the pre-post-training difference ($P&gt;0.05$) except for pre-to post-training improvement in the road sign recognition test ($t=-2.79; P=0.0007$). Significant within group (for experimental and control groups) improvements in performance in kinetic vision and several neuropsychological tests ($P&lt;0.05$). Significant difference between experimental and control groups at follow-up for on-road assessment. (Pass vs. Fail, $\chi^2=5.04, P=0.03$). Drop outs and loss to follow-up: n=31.</td>
</tr>
<tr>
<td><strong>Crotty et al. 2009</strong></td>
<td>Australia</td>
<td>RCT (Visual Information-processing training)</td>
<td>37 participants from rehabilitation sites. Mean age: 65.6 (±13.1) years. <strong>Inclusion criteria:</strong> within 1 month post-stroke, wanted to return to driving, had minimum vision standards, drove before stroke and were recommended by physician to have a practical driving assessment. <strong>Exclusion criteria:</strong></td>
<td>Participants were randomly allocated to the intervention (Dynavision training 3 sessions per week for 6 weeks: n=13) or control (waitlist for the 6 weeks: n=13) group.</td>
<td><strong>Primary outcome:</strong> assessment of on-road ability at 6 weeks. <strong>Secondary outcomes:</strong> Abilities in Response Time Measures, Visual Scanning Analyzer and Adelaide Driving Self-Efficacy Scale (ADSES). No significant difference in the results of the on-road assessment between the control and intervention group ($P=0.223$). No significant differences between the control and intervention groups in the 3 secondary measures - Abilities in Response Time Measures, Visual Scanning Analyzer and ADSES. Drop outs and loss to follow-up: n=7.</td>
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</tbody>
</table>
## Study/Type | Quality Rating | Sample Description | Method | Outcomes | Key Findings and Recommendations
---|---|---|---|---|---
| | | insufficient peripheral vision, language abilities and requiring substantial driving modifications. | | |
## References


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