CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Transitions and Community Participation Following Stroke Evidence Tables
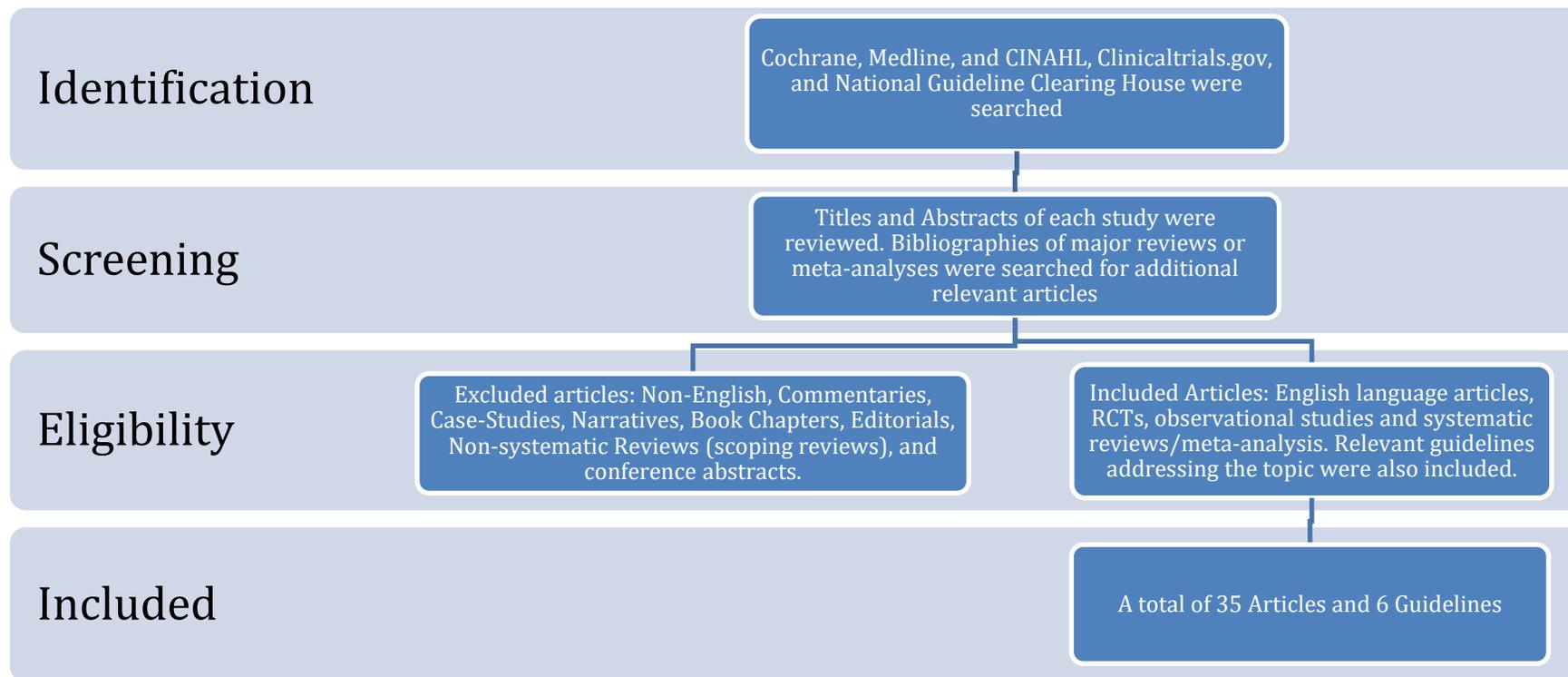
Community Participation Following Stroke

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on Behalf of the Canadian Stroke Best Practice Recommendations
Transitions and Community Participation Following Stroke Writing Group

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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 35 Articles and 6 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 35 articles and 6 guidelines were included and were separated into separate categories designed to answer specific questions.

Published Guidelines

Guideline	Recommendations
Clinical Guidelines for Stroke Management 2017. Melbourne (Australia): National Stroke Foundation. (Community Participation & Long-term Care	**Leisure** Weak Recommendation For stroke survivors, targeted occupational therapy programs including leisure therapy may be used to increase participation in leisure activities. **Return to work** Weak Recommendation • All stroke survivors should be asked about their employment (paid and unpaid) prior to their stroke and if they wish to return to work. • For stroke survivors who wish to return to work, assessment should be offered to establish abilities relative to work demands. In addition, assistance to resume or take up work including worksite visits and workplace interventions, or referral to a supported employment service should be offered. **Sexuality** Consensus-based recommendations Stroke survivors and their partners should be offered: • the opportunity to discuss issues relating to sexual intimacy with an appropriate health professional; and • written information addressing issues relating to sexual intimacy and sexual dysfunction post stroke. Any interventions should address psychosocial as well as physical function.
Intercollegiate Stroke Working Party. National clinical guideline for stroke, 5th edition. National Institute for Health and Clinical Excellence London: Royal College of Physicians, 2016.	**4.1.4.1 Recommendations (Work & Leisure)** A People with stroke should be asked about their pre-stroke work and leisure activities. B People who wish to return to work after stroke (paid or unpaid employment) should: – have their work requirements established with their employer (provided the person with stroke agrees); – be assessed cognitively, linguistically and practically to establish their potential for return; – be advised on the most suitable time and way to return to work, if return is feasible; – be referred through the job centre to a specialist in employment for people with disability if extra support or advice is needed; – be referred to a specialist vocational rehabilitation team if the job centre specialist is unable to provide the necessary rehabilitation. C Vocational rehabilitation programmes for people after stroke should include: – assessment of potential problems in returning to work, based on the work role and demands from both the employee's and employer's perspectives; – an action plan for how problems may be overcome; – interventions specifically designed for the individual which may include: vocational counselling and coaching, emotional support, adaptation of the working environment, strategies to compensate for functional limitations in mobility and arm function, and fatigue management; – clear communication between primary and secondary care teams and including the person with stroke, to aid benefit claims or to support a return to work. D People with stroke who wish to return to or take up a leisure activity should have their cognitive and practical skills assessed and receive support to pursue their activity.

Guideline	Recommendations
	4.14.1 Recommendations (Sex) A People with stroke should be asked, soon after discharge and at their 6-month and annual reviews, whether they have any concerns about sex. Partners should also have an opportunity to raise any problems. B People with sexual dysfunction after stroke who want further help should be: – assessed for treatable causes including a medication review; – reassured that sexual activity is not contraindicated after stroke and is extremely unlikely to precipitate a further stroke; – assessed for erectile dysfunction and the use of a phosphodiesterase type 5 inhibitor (e.g. sildenafil); – advised against the use of a phosphodiesterase type 5 inhibitor for 3 months after stroke and/or until blood pressure is controlled; – referred to a professional with expertise in psychosexual problems if sexual dysfunction persists. **4.1.3.1 Recommendations (Driving)** A People who have had an acute stroke or TIA should be asked about driving before they leave the hospital or specialist outpatient clinic. B People with stroke who wish to drive should: – be advised of the exclusion period from driving and their responsibility to notify the DVLA if they have any persisting disability which may affect their eligibility; – be asked about or examined for any absolute bars to driving e.g. epileptic seizure (excluding seizure within 24 hours of stroke onset), significant visual field defects, reduced visual acuity or double vision; – be offered an assessment of the impairments that may affect their eligibility, including their cognitive, visual and physical abilities; – receive a written record of the findings and conclusions, copied to their general practitioner. C People with persisting cognitive, language or motor disability after stroke who wish to return to driving should be referred for on-road screening and evaluation. D People who wish to drive after stroke should be informed about eligibility for disabled concessions (e.g. Motability, the Blue Badge scheme).
Winstein CJ, Stein J, Arena R, Bates B, Cherney LR, Cramer SC, Deruyter F, Eng JJ, Fisher B, Harvey RL, Lang CE, MacKay-Lyons M, Ottenbacher KJ, Pugh S, Reeves MJ, Richards LG, Stiers W, Zorowitz RD; on behalf of the American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and	**Sexual Function** An off to patients and their partners to discuss sexual issues ay be useful before discharge home and again after transition to the community. Discussion topics may include safety concerns, changes in libido, physical limitations resulting from stroke, and emotional consequences of stroke. (Class IIb. Level B evidence) **Recreational and Leisure Activity** - It is reasonable to promote engagement in leisure and recreational pursuits, particularly through the provision of information on the importance of maintaining an active and healthy lifestyle. (Class IIa. Level B evidence) - It is reasonable to foster the development of self-management skills for problem solving for overcoming barriers to engagement in active activities. (Class IIa. Level B evidence) - It is reasonable to start education and self-management skill development about leisure/recreation activities during and in conjunction with in-patient rehabilitation. (Class IIa. Level B evidence) **Return to Work** - Vocationally targeted therapy or vocational rehabilitation is reasonable for individuals with stroke considering a return to work. (Class IIa. Level C evidence)

Guideline	Recommendations
Council on Quality of Care and Outcomes Research. **Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American Heart Association/American Stroke Association.** *Stroke* **2016;47:e98–e169**	- An assessment of cognitive, perception, physical, and motor abilities ma be considered for stroke survivors considering a return to work. (Class IIb. Level C evidence) **Return to Driving** - Individuals who appear to be ready to return to driving, as demonstrated by successful performance on fitness-to-drive tests, should have an on-the-road test administered by an authorized person. (Class I. Level C evidence) - It is reasonable that individuals be assessed for cognitive, perception, physical, and motor abilities to ascertain readiness to return to driving according to safety and local laws. (Class IIa. Level B evidence) - It is reasonable that individuals who do not pass an on-the-road driving test be referred to a driver rehabilitation program for training. (Class IIa. Level B evidence) - A driving simulation assessment may be considered for predicting fitness to drive. (Class IIb. Level C evidence)
Classen S, Monahan M, Auten B, et al. Evidence-based review of interventions for medically at-risk older drivers. *Am J Occup Ther* **2014;68:e107-e114**	For clients with stroke, we recommend a graded simulator intervention (A) and multimodal training in traffic theory knowledge and on-road interventions (B); we make no recommendation for or against Dynavision, Useful Field of View, or visual–perceptual interventions (I). For clients with visual deficits, we recommend educational intervention (A) and bioptic training (B); we make no recommendation for or against prism lenses (I). (A=strongly recommend the intervention; B=recommend intervention is provided routinely; C= weak evidence that the intervention can improve outcomes; D=recommend not to provide the intervention; I=5 insufficient evidence to recommend for or against the intervention).
Scottish Intercollegiate Guidelines Network (SIGN). Management of patients with stroke: rehabilitation, prevention and management of complications, and discharge planning. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2010 June.	Return to Driving (Section 5.6: Moving on After Stroke) 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).

Guideline	Recommendations
	- 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
Management of Stroke Rehabilitation Working Group. VA/DoD clinical practice guideline for the management of stroke rehabilitation. Washington (DC): Veterans Health Administration, Department of Defense; 2010. p.p.70-72	Return to Driving 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] 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) Return to Work 1. Recommend that all patients, if interested and their condition permits, be evaluated for the potential of returning to work. [C] 2. Recommend that all patients who were previously employed, be referred to vocational counseling for assistance in returning to work. [C]

Guideline	Recommendations
	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] Sexuality *(Section 7.11 Sexual Function)* - 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) *(Section 4.6 Assessment of Emotional and Behavioral State)* - 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) 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
Topic specific guidelines	
Steinke et al. **European Heart Journal (2013) 34, 3217–3235, ESC Position Paper. Sexual counselling for individuals with cardiovascular disease and their partners. A Consensus Document From the American Heart Association and the ESC Council on Cardiovascular Nursing and Allied Professions (CCNAP).**	**Sexuality** All stroke survivors and their partners should be asked about intimacy and sexual function at the time of the stroke, and then at regular intervals during follow-up after their stroke (Class I; Level of Evidence B). Sexual activity is reasonable for patients after stroke (Class IIa; Level of Evidence B).
Classen S, Monahan M, Auten B, et al.	**Driving** For clients with stroke, we recommend a graded simulator intervention (A) and multimodal training in traffic theory knowledge and on-road interventions (B); we make no recommendation for or against Dynavision, Useful Field of View, or visual–

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Evidence-based review of interventions for medically at-risk older drivers. *Am J Occup Ther* **2014;68:e107-e114**	perceptual interventions (I). For clients with visual deficits, we recommend educational intervention (A) and bioptic training (B); we make no recommendation for or against prism lenses (I). (A=strongly recommend the intervention; B=recommend intervention is provided routinely; C= weak evidence that the intervention can improve outcomes; D=recommend not to provide the intervention; I=5 insufficient evidence to recommend for or against the intervention).

Evidence Tables

Leisure Activities

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Barclay et al. 2015 **Canada** **Cochrane review**	NA	5 trials (n=266), including adults recovering from stroke, who were living in the community, or were undergoing inpatient rehabilitation	Treatment contrasts included interventions to improve community ambulation vs. usual or no treatment. Programmes consisted of walking practice in a variety of settings and environments in the community (n=3), or an indoor activity that mimicked community walking (including virtual reality or mental imagery, n=2).	**Primary outcome:** Measures of participation (e.g., Nottingham Leisure Questionnaire, Subjective Index of Physical and Social Outcomes) **Secondary outcomes:** Measures of activity (e.g., gait speed), balance self-efficacy, health-related QoL	2 trials evaluated a participation-level outcome. The difference between groups was not statistically significant (SMD= 0.08, 95% CI -0.20 to 0.35, p=0.59; 198 participants). Mean duration of follow-up was 8 months. Interventions were not associated with significant differences in activity level measures of walking: Community walk test MD= -6.35, 95% CI -21.59 to 8.88, p=0.41. Results from 2 trials (45 participants) included, mean duration of follow-up was 0.5 months; Walking Ability Questionnaire MD=0.53, 95% CI -5.59 to 6.66, p=0.86. Results from 2 trials (45 participants) included. There were no significant differences between groups in gait speed, or the 6-minute walk test. There were no significant differences between groups for self-efficacy. Outcomes for other secondary outcomes were not reported.
Dorstyn et al. 2014 **Australia** **Systematic review**	NA	8 RCTs (n=615) including adults who participated in some form of group or individual intervention of leisure therapy following stroke that was delivered face-to-face and provided by a trained therapist.	All trials examined a community-based intervention focusing on leisure therapy, leisure therapy + physical activity or leisure education. Control groups were standard care or no intervention. A mean of 17 sessions were provided (mean duration 73 minutes each) for a mean of 23	**Primary outcome:** Effect size (Cohen's d)	All trials included participants within the first 12 months post stroke. 500 participants (81%) were diagnosed with a mild or moderate stroke involving a unilateral cerebral lesion. Significant effects (i.e., d>0.4) were noted at the end of the intervention for the outcomes of: Quality of Life (single trial, d=2.1, n=14); mood (depression, single trial, d=0.41, n=62); leisure activity (4 trials, d ranging from 0.81-1.23, n ranging from 44-62).

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			weeks. Compliance was 88% across trials.		A negative effect size (*d*= -0.51) was noted for the outcome of mobility and independence in a single trial (n=99).
Kim et al. 2014 **South Korea** **RCT**	CA: ☑ Blinding: Patient ☒ Therapist☒ Assessor☒ ITT: ☒	26 participants with hemiparesis following stroke > 6 months previously, with a gait speed of <0.8 m/sec, and who could ambulate 10 metres independently without an assistive device. Mean age was 50.5 years, 59% were men. Mean duration since stroke was 7.7 months.	Participants were randomized to a community walking training program (CWTP), which included walking in the real environment over uneven ground with obstacles for 30 minutes per day + standard rehabilitation vs. standard rehabilitation only (60 min/day, 5 /week, for 4 weeks.	**Primary outcomes:** Walking function (10-m walk test, 6-MWT, Community Walk Test), Stroke Impact Scale Assessments were conducted before and after the intervention period.	22 patients completed the program and assessments. Participants in the CWTP group achieved significantly greater improvement in all measures compared with the control group. 10-m walk test: 0.19 vs. 0.7 m/s, p<0.05 6MWT: 65.2 vs. 18.0 m, p<0.05 Community Walk Test: -13.5 vs. -2.9 minutes, p<0.05 SIS: 12.5 vs. 4.3, p<0.05.
Harrington et al. 2010 **UK** **RCT**	CA: ☑ Blinding: Patient ☒ Therapist☒ Assessor☑ ITT: ☑	243 participants who had returned to living in the community for at least 3 months following an acute stroke and felt capable of participating in the program. Mean age was 70 years. Median baseline Barthel Index scores were 19 (control group and 18 (intervention group)	Participants were randomized to a standard care (n=119) or an intervention group (n=124). The intervention was an 8-week (twice weekly) peer-volunteer facilitated exercise and education program, consisting of one hour of exercise (with qualified instructors) followed by a short break and 1 hour of interactive education, designed to be fun and non-didactic, encouraging group participation – these also included some goal-setting sessions,	**Primary outcomes:** Subjective Index of Physical and Social Outcome (SIPSO), Frenchay Activities Index (FAI), Rivermead Mobility Index (RMI) **Secondary outcomes:** Carer Strain Index, Functional Reach, Timed Up and Go, WHOQoL-Bref and Hospital Anxiety & Depression Scale Assessments were conducted at baseline, 9 weeks, 6 months and one year (postal survey)	61% of participants attended ≥12/16 sessions. Median baseline total SIPSO scores were significantly lower in the intervention group (13 vs. 10, p=0.004). There was significantly greater improvement in median perceived SIPS (physical) scores at both 9 weeks (p=0.022) and 1-year (p=0.024) evaluations associated with the intervention group. There were no significant between group differences on either the FAI or RMI at any of the assessment points. There was significantly greater improvement in the median psychological domain of the WHOQol-Bref score at 6 months associated with the intervention group (p=0.01). There were no significant between group differences on any of the other secondary outcomes. Drop-outs and losses to follow-up at 1 year: n=69.

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			social sessions and unstructured group discussion times. Family members and carers were encouraged to attend and help in the exercise sessions. Control group participants received standard care + an information sheet about local groups.		
Desrosier et al. 2007 **Canada** **RCT**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☒	62 participants residing in the community individuals with history of stroke within the past 5 years who were experiencing some limitations in leisure participation or satisfaction patients Mean age was 70 years.	Participants were randomized to an intervention group (n=33) or the control (n=29) groups. 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. Control group received home visits from a recreational therapist following the same schedule as the intervention group.	**Primary outcomes:** General Well-Being Schedule, Center for Epidemiological Studies Depression Scale (CES-D), Stroke-Adapted Sickness Impact Profile (SA-SIP30). **Leisure related outcomes:** Participation in leisure (duration, number of activities) Leisure Satisfaction Scale and two sections of the Individualized Leisure Profile. Assessments were conducted before and after the intervention.	At the completion of the study, participants in the intervention group reported significantly more time spent in active leisure activities (MD=14.0 minutes, 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). At the completion of the study, participants in the intervention group had gained significantly more points on the Leisure Satisfaction Scale (MD= 11.9, 95% CI 4.2-19.5, p=0.003) and in the satisfaction of leisure needs and expectations (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). Participants 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. Drop-outs and losses to follow-up: n=6
Walker et al. 2004 **UK**	NA	8 RCTs (n=1143) examining community-based occupational therapy interventions.	Interventions were targeted at improvement of ADL performance (n=5),	**Primary outcome:** Nottingham Extended ADL (NEADL) at the end of the intervention.	Adjusting for age and baseline dependency, the pooled NEADL and NLQ scores for patients in the intervention group were significantly higher at the end of the intervention (WMD= 1.30 points, 95% CI 0.47-2.13 and

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Meta-analysis		Mean age was 74 years (range=58.5-75.5 years).	leisure or ADL (n=2) and leisure (n=1). Participants in the control groups received routine care. The duration of the interventions ranged from 5 sessions to up to 5 months. Follow-up periods ranged from 4.5 months to 12 months	**Secondary outcomes:** NEADL at the end of the trial, Barthel Index (BI), Rivermead ADL, General Health Questionnaire (GHQ), Nottingham Leisure Questionnaire (NLQ).	WMD=1.51 points, 95% CI 0.24-2.79, respectively) and at the end of the trial ((WMD= 1.17 points, 95% CI 0.30-2.04 and WMD=1.80 points, 95% CI 0.41-3.21, respectively). The intervention was associated with decreased odds of a poor outcome in terms of ADL performance (OR=0.71, 95% CI 0.52-0.98), at the end of the intervention, but not at the end of the trial. The intervention was not associated with the odds of significant improvement in patient or carer GHQ. In subgroup analysis, participants in the intervention group leisure studies were associated with significant increases in NLQ scores Subgroup analysis by type of intervention: Leisure therapy trials: Significantly increased NLQ score (WMD=1.96 points, 95% CI 0.27-3.66, favours intervention group), but no significant increase in NEADL score (WMD=0.95 points, 95% CI -0.30-2.20). ADL therapy trials: No significant increase in NLQ score (0.55 points, 95% CI -0.87-1.96), but a significant increase in NEADL score (WMD= 1.61 points; 95% CI, 0.72-2.49, favouring intervention group).
Parker et al. 2001 **UK** **RCT** *Trial of Occupational Therapy & Leisure (TOTAL)*	CA: ☑ Blinding: Patient ☒ Therapist☒ Assessor☑ ITT: ☑	465 patients recruited from 5 hospitals who attended an outpatient clinic within 6 months of stroke onset and were living in the community. The median age was 72 years.	Participants were randomized to a leisure therapy group (n=153), an ADL group (n=156) and a control group (n=157). The two treatment groups received home-based occupational therapy (OT) for up to 6 months with a minimum of 10, ≥30 minute sessions. The ADL group goals were improved independence in self-care task while leisure	**Primary outcome:** General Health Questionnaire (GHQ), Nottingham Extended ADL (NEADL) Nottingham Leisure Questionnaire (NLQ) **Secondary outcomes:** International Stroke Trial outcome questions, Oxford Handicap Scale, Barthel Index, London Handicap Scale	At 6 months there were no significant differences among groups. Compared with the control group, the mean difference in scores associated with the leisure group were: GHQ -1.2 points, 95% CI -2.9-0.5 NLQ 0.7 points, 95% CI -1.1-2.5 NEADL 0.4 points, 95% CI -3.8-4.5 LHS 0.9 points, 95% CI -3.3-5.0 At 12 months, 78% responded to follow-up questionnaire. There were no significant differences on any of the outcomes among groups. Losses to follow-up and drop-outs: n= 135

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			group goals were to improve leisure activity. The control group received no treatment.	Assessments were conducted at baseline and by postal questionnaire at 6 months and 1 year	
Drummond & Walker 1995 **UK** **RCT**	CA: ☑ Blinding: Patient ☒ Therapist☒ Assessor☑ ITT: ☒	65 patients who had been admitted to a single stroke unit who were discharged to the community following their inpatient stay. Mean ages were 59 years (leisure group) and 69 years (ADL, control groups).	Participants were randomized to a leisure therapy group (n=21), an ADL group (n=21) or a control group (n=23). Following discharge from hospital, those in the leisure therapy and ADL groups received conventional occupational therapy by a therapist for a minimum of 30 minutes a week for the first 3 months and then 30 minutes every 2 weeks for the next three months. The treatment program for participants in the leisure group were tailored to each person's preferences and abilities. Participants in the control group received no additional services.	**Primary outcomes:** Total Leisure Score (TOTL), Total Leisure Activity score (TLA) Assessments were conducted at baselines, 3 and 6 months	At 3 months, TOTL and TLA scores among participants in the leisure therapy group were significantly higher (43.9 vs. 31.1 and 31.3, p<0.01 and 15.6 vs. 10.9 and 10.5, p<0.001). The 6-month pattern of results was similar. The difference remained significant at both 3 and 6 months after controlling for the effect of age. Losses to follow-up and drop-outs: n=5
Jongbloed & Morgan 1991 **Canada** **RCT**	CA: ☒ Blinding: Patient ☒ Therapist☒ Assessor☑ ITT: ☒	40 patients who had been discharged from 3 rehabilitation hospitals, who had sustained a stroke within the previous 15 months, who had a friend or relative who was willing	Patients were randomized to receive 5 one-hour visits over 5 weeks from an occupational therapy, who assisted patients in resuming former leisure therapy, engaging in new activities or both,	**Primary outcome:** 2 subscales of the Katz Adjustment Index-Level of Free-Time Activities and Level of Satisfaction with Free-Time Activities **Secondary outcomes:**	There were no significant differences between groups in the number of times 26 activities were performed weekly at either 5 or 18 weeks, or in the mean change scores between groups. There were no significant differences between groups in the number of satisfied persons at either 5 or 18 weeks. For most of the 26 activities, the number of satisfied persons was high.

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		to participate. Mean age was 69 years	or the same number of visits by an OT who asked questions about leisure activity involvement throughout the life span (control group).	MMSE, Barthel Index, Zung Depression Scale Assessments were conducted at baseline, 5 and 18 weeks.	

Sexuality

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Sansom et al. 2015 **Australia** **Pilot RCT**	CA: ☒ Blinding: Patient ☒ Assessor ☒ ITT: ☒	10 patients, ≥18 years, admitted for inpatient rehabilitation following stroke, who were able to communicate (FIM>4). Patients with severe cognitive issues, dementia, or unstable medical, neurological or psychiatric disorders, were excluded. Mean age was 66.3 years, 50% were men. 67% of participants were married or had a partner.	Participants were randomized to an intervention (n=4 patients, n=1 partner) or control (n=6 patients, n=1 partner). Those in the intervention group participated in a single 30-minute structured sexual rehabilitation session, conducted by a rehabilitation physician. The session was individualized, with content based on that of Song et al. 2011(described below). In addition, patients received a fact sheet. Participants in the control group received only the fact sheet.	**Primary outcome:** Sexual Function Questionnaire Short-Form (CSFQ-14) **Secondary outcomes:** Depression, Anxiety and Stress Scale, FIM, and Stroke and Aphasia Quality of Life scale–39-item generic version (SAQOL-39g) Outcomes were assessed at baseline and 6 weeks after the intervention.	At baseline, 92% of the participants had sexual dysfunction based on a CSFQ-14 score of ≤ 41 (women) or ≤ 47 (men). There were no significant differences between groups on the primary or secondary outcomes at 6 weeks. Median baseline CSFQ-14 scores (and changes in median scores at 6 weeks) were: Intervention: 23 (-3) Control: 27 (4)
Guo et al. 2015 **Canada**	NA	Stroke inpatients at a rehabilitation facility	A Plan-Do-Study-Act (PDSA) methodology was used to ensure patients had opportunity to discuss sexual health	**Primary outcome:** The percentage of patients each month documented to have the opportunity to	The percentage of patients given the opportunity to talk about sexual issues increased from 0% at months 1-3 to 80% at month 10 (end of the project).

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Quality improvement project			with one of their healthcare providers. The program included a reminder system, standardization of care processes for sexual health, patient-centred time points for the delivery of sexual health discussions, and the development of a sexual health supported conversation tool for patients with aphasia	discuss sexual health concerns during their inpatient stay	In month 9, 100% of patients had the opportunity to speak about sexual issues. Over the course of the study, the median was 55.5%.
Bugnicourt et al. 2014 **France** **Prospective Study**	N/A	104 patients <60 years, admitted to a hospital neurology department. Mean age was 48 years, 62% were men.	Patients were mailed a questionnaire one year after stroke to assess sexual functioning.	**Primary outcome:** Measure of sexual functioning ("Since your stroke, have you suffered from sexual impairment or lack of sexual satisfaction?") **Secondary outcomes:** HADS, modified Rankin scale, and current medications.	29% (30/104) of patients reported having experienced sexual dysfunction. Predictors of impaired sexual activity included: the presence of depression (OR=9.1, 95% CI 2.45-33.46, p=0.001) and use of ACE inhibitors (OR=6.0, 95% CI 2.11-17.28, p=0.001).
Stein et al. 2013 **USA** **Cross-sectional survey**	NA	Of 268 patients included in a stroke rehabilitation research registry, 35 (14.2%) patients agreed to participate and completed the survey. Mean age was 55.1 years. The majority of patients (81.5%) were contacted two or more years post stroke.	Email or postal questionnaire used to collect data related to sexual dysfunction, fatigue, depression and ability to perform ADL.	**Primary outcomes:** Changes in Sexual Functioning Questionnaire short form (CSFQ-14), Fatigue Assessment Scale (FAS), Beck Depression Inventory, Barthel Index **Additional questions:** Related to patients' preferences regarding counseling and information support for	100% of men and 58% of women met the criteria for sexual dysfunction. Mean CSFQ-14 scores were 34.45±7.04 for men and 37.5±12.38 for women. 42% of respondents indicated their sexual functioning was worse following stroke, 42% indicated no change and 5% indicated sexual functioning was improved. 71% of respondents (both men and women) rated sexual issues as moderately important, important or very important. 94% of respondents indicated that physical limitations impacted their sexual activity. 58.8% reported feeling less sexually desirable following stroke.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
				receiving information on sexuality post-stroke.	75% of respondents wanted more information related to sexual dysfunction, while 15.2% indicated they had already received such information. 60% of participants indicated a preference for physicians to provide information on sexual issues, while 45% preferred a nurse and 36.3%, a physical therapist. Printed materials and face-to-face discussion were preferred by 30% and 27% of respondents, respectively. 26.5% of respondents indicated a preference for receiving information early during recovery (e.g. during rehabilitation or before discharge from hospital).
Song et al. 2011 **Korea** **Controlled trial**	N/A	46 participants, (23 stroke patients and 23 spouses, recruited (convenience sample) from a hospital neurology department. Patients were included if they were cognitively intact, with a score >10 score on Barthel Index, and with no previous stroke hospitalizations. Mean age of stroke patients was 57.9 years, 83% were men.	Couples were assigned to an intervention (n=12) or a control group (n=11). The intervention consisted of a 40-50 minute session covering 5 topics (information about expected changes in sexuality post-stroke, information on what a health sexual life is, counseling on common fears associated with post-stroke sexuality, tips to prevent post-stroke 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	**Primary outcomes:** Sexual knowledge (Sexual Beliefs and Information Questionnaire SBIQ – Korean version), sexual satisfaction (Derogatis Sexual Functioning Inventory – DSFI), frequency of sexual activity (modified version of the sexual frequency scale developed by McCabe and Taleporos). Assessments were completed at a one-month follow up visit for both the intervention and control groups.	There was no significant increase in sexual knowledge between the control and experimental group (10.5 vs. 9.3, p=0.235). Couples in the intervention group reported significantly greater sexual satisfaction (mean SCIQ score 22.6 vs. 16.2, p=0.02), increased mean frequency of sexual activity per month (4.3 vs. 1.9, p<0.001) and a mean increase in the frequency of sexual intercourse per month (3.3 vs. 1.2, p=0.001), compared with couples in the control group.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			for future reference. The control group received the intervention after 1-month follow-up data was collected.		
Carlsson et al. 2007 **Sweden** **Prospective study**	NA	56 patients, <75 years admitted to a stroke unit following first-ever stroke, and their partners were recruited. Median age of patients and spouses were 60 and 59 years, respectively. Most patients had experienced mild stroke (median Barthel Index score at 1 week was 100).	Life satisfaction was assessed at 1 week and one year following stroke by both patients and spouses using the LiSat-9. The checklist contains items assessing: i) satisfaction with life as a whole, ii) health (I item), closeness (3 items), iii) spare time (2 items) and provision (2 items). Scores were compared with an age-matched "norm group".	**Primary outcome:** Proportion of patients and spouses who were satisfied across the 5 LiSat-9 domains, at one year following stroke	Compared with the norm group, both patients and spouses were significantly less satisfied with life across many domains of the LiSat-9. Compared with the norm group, a greater percentage of patients indicated they were not satisfied with life: Life as a whole (39% vs. 77%, p<0.05), ability in self-care (71% vs. 93%, p<0.05), sex life (34% vs. 58%, p<0.05), leisure time (38% vs. 71%, p<0.05), and vocation (45% vs. 67%, p<0.05) Compared with the norm group, a greater percentage of spouses indicated they were not satisfied with life: Life as a whole (64% vs. 77%, p<0.05), closeness with partner (67% vs. 86%, p<0.05), sex life (41% vs. 58%, p<0.05) and leisure time (52% vs. 71%, p<0.05). The proportion of couples in which both partners agreed they were satisfied was: leisure time 20%, sex life 25%, vocation/occupation 29%, life as a whole 30%, finances 47%, social contacts 48%, relationship with partner 60%, family life 66% and ability in self-care 66%.
Buzzelli et al. 1997 **Italy** **Prospective study**	NA	72 patients (57 men and 15 women) admitted to a single rehabilitation unit following first-ever stroke. Mean age was 64 years.	Patients and their partners were interviewed, separately at one month and one year following stroke, using a structured interview	**Primary outcome:** Rates of decline in sexual activity following stroke	At one year, 60 patients (83.3%) reported a decline in sexual activity, while 8 patients and their partners reported an increase in activity. No association was found between gender or side of lesion and decline in sexual activity. Duration of marriage was the only variable significantly predictive of weekly sexual performance. Age, education, disability and depression were not significant predictors. High levels of activity prior to the stroke event did not predict maintenance of sexual activity.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					Variables associated with disruption of sexual activity were: fear of relapse, belief that one must be healthy to have a sex life and partner who is "turned off" at the prospect of sexual activity with a "sick person".

Driving

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Assessing Fitness to Drive Following Stroke					
Yu et al. 2016 **Korea** **Prospective study**	NA	359 participants from The Psychosocial Outcomes In StrokE (POISE) Cohort Study, aged 18–65 years, with a recent (within 28 days) stroke. Mean age was 52 years.	Demographic, clinical, mental health, cognitive, and disability measures were obtained and used to identify independent predictors of return to driving.	**Primary outcome:** Predictors of return to driving one month following stroke	359 (82%) participants were driving prior to stroke. 26.7% of participants returned to driving after one month. Independent predictors of early return to driving were independence in ADLs (OR=30.1, 95% CI 3.85–234.45, p<0.001), not recalling being told to stop driving (OR=5.55, 95% CI 2.86–11.11, p<0.001) and returning to paid work (OR=3.93, 95% CI 1.94–7.96, p <0.001).
Barco et al. 2014 **USA** **Cross-sectional study**	NA	72 patients who had been driving for at least 10 years prior to stroke with a NIHSS score of 0-13. Mean age was 59 years. Mean time from stroke onset was 8.6 months	Development of a screening battery to predict on-road driving performance. Off-road candidate predictors included measures of vision, cognition and upper and lower-limb motor abilities	**Primary outcome:** (modified) Washington University Road Test Participants were evaluated when the referring physician believed the patient was clinically stable and ready to participate in a driving examination	45 participants passed the road test, 27 failed. A combination of the Snellgrove Maze Test and the Trail Making Test (part A) were the best predictors of passing the on-road test. ROC AUC=0.87, positive likelihood ratio=6.0, 95% CI 1.7-21.1
Hird et al. 2014 **Canada**	N/A	22 articles (n=1,413 participants) that assessed driving performance in stroke survivors using cognitive/neuropsychologic measures, on-road tests,	Narrative synthesis	**Primary outcomes:** Method of driving assessment and fitness to drive	In evaluation of fitness to drive, 16 studies included cognitive assessments, 17 studies involved on-road assessments, and 3 involved simulator assessments.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Systematic Review		and/or simulator technology.			12 studies reported that cognitive test results were predictive of driving, while 5 reported little or no predictive value. Of studies using on-road assessment, of 1,413 stroke patients,52.9% definitely passed, 26.0% definitely failed and 21.1% received conditional passes, passes with restrictions, borderline passes/fails, etc. In 2/3 studies that included simulator performance to assess driving performance, persons recovering from stroke did significantly worse (e.g., more accidents) compared with healthy controls. The authors concluded there is no consensus regarding a valid and reliable driving assessment for physicians currently available.
Devos et al. 2011 **Belgium** **Systematic Review and Meta-analysis**	NA	30 studies (1,919 participants) that assessed fitness to drive in participants following a stroke using an on-road evaluation scored as pass or fail. The median time from stroke onset was 8.8 months. Mean age of participants ranged from 51.4 to 71 years	Effect sizes (ES) associated with the determinants of driving ability, were calculated and pooled. ES>0.8 were considered clinically significant. Potential candidate variables included socio-demographic, visual and cognitive (perceptual, attention, memory and executive and higher order planning) functions.	**Primary outcome:** Fitness to drive (pass/fail)	Fitness to drive was not influenced by age, side of lesion, time to driving examination, driving experience, comorbidity, gender, education, aphasia, motor function, or by visual, perceptual or attention and memory functions. Fitness to drive was influenced by 5 cognitive measures (Cube Copy, Road Sign Recognition, Compass, Stroke Drivers Screening Assessment (SDSA), and Trail Making Test part B (TMT B). Effect sizes ranged from 0.81-1.54. Predictive accuracies ranged from 0.65-0.76 No off-road tests were found to determine crash risk at follow-up.
Interventions to Improve Driving Skills Following stroke					
George et al. 2014	NA	4 studies (n=245) including participants with all types of strokes, levels of severity and at all stages	Interventions examined included driving simulators (n=2) and skills	**Primary outcome:** Performance (pass/fail) during on-road assessment	No pooled analyses were conducted due to heterogeneity.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
USA Cochrane Review		post stroke, examining interventions to improve driving skills. Mean time from stroke to recruitment ranged from an average of 53 days to 1.4 years. Mean ages were 54, 66, 67 and 68 years in the included studies.	development using the Dynavision device (n=1) and Useful Field of View training (n=1). Control conditions included no intervention (n=2), and active interventions to train perceptual and cognitive skills (n=2). Mean total dose of the interventions was 15 hours, with a mean duration of 7.5 weeks). Sessions lasted an average of 40-60 minutes each.	**Secondary outcomes:** Visual attention, reaction time, visual scanning, self-efficacy, executive reasoning ability, and tests of visual perception, functional measures, physical measures of mobility, strength and co-ordination, and death. Assessments were conducted post intervention and at 6 months	Based on the results from a single trial, there was no significant difference in the mean on-road scores between groups at 6 months (MD=15.0, 95% CI -4.6 34.6, p=0.13). Participants in the intervention group had significantly higher scores on road sign recognition test (MD=1.69, 95% CI 0.51-2.87, p=0.0051). Results from a single trial included.
Crotty & George 2009 **Australia** **RCT**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☑	37 participants, recruited from 4 rehabilitation centres, who were drivers prior to stroke with no visual field impairments, binocular vision of minimum 6/12, and a minimum of 1 month post stroke. Mean age was 66 years. Median of 84 days from stroke onset.	Participants were randomly allocated to receive training with the Dynavision training system to train visuomotor abilities (3 sessions per week for 6 weeks; n=13) or control (waitlist for the 6 weeks; n=13) group.	**Primary outcome:** Assessment of on-road ability at 6 weeks. **Secondary outcomes**: Abilities in Response Time Measures, Visual Scanning Analyzer and Adelaide Driving Self-Efficacy Scale (ADSES).	There was no significant difference in the on-road assessment between groups (p=0.223). There were no significant differences between groups in any of the 3 secondary measures - Abilities in Response Time Measures, Visual Scanning Analyzer and ADSES. Dropouts and loss to follow-up: n=7.
Akinwuntan et al. 2005 **Devos et al. 2010 (5-year follow-up)** **USA**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☑	83 patients admitted to a rehabilitation hospital who were within 3 months of first-ever stroke and had been driving prior to stroke. Mean age was 54 years. Mean time since stroke was 53 days.	Patients were randomly allocated to receive driving simulator-based training in full-sized automatic gear transmission car (15 hours over 5 weeks at 1 hour per day, three times a week; n=42) or	**Primary outcomes:** Performance in the on-road test and decision of driving fitness at follow-up. Driving fitness was classified as "fit to drive", "temporarily unfit to drive" or "unfit to drive"	There were no significant differences between groups for any of the visual or cognitive at baseline, post training or pre- post-training difference, except for significantly greater pre- to post-training improvement in the road sign recognition test among participants in the intervention group (p=0.0007).

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
RCT			standardized training by performing driving related cognitive tasks (control condition, n=41).	**Other measures**: Visual (monocular and binocular vision acuity and the kinetic vision test) and cognitive tests (UFOV test and components of the Stroke Driver Screening Assessment (SDSA)). Assessments were conducted at baseline and 6 months	Participants in both groups demonstrated significant improvements from pre to post training assessments. Most subjects improved at least by one decision level. At follow-up, 73% of participants in the intervention group passed their on road assessment and could continue driving, compared to 42% of participants in the control group (p=0.03). Dropouts and loss to follow-up: n=31. **5-year outcomes** More participants who had received simulator training were considered fit to drive at 5-years (60% vs. 48%, p=0.36). 44 patients completed all assessments. 85% of those driving at 6 months continued to drive at 5 years. Among drivers, there was no increased risk of accident vs. pre-stroke; however, there was an increased risk of self-reported traffic tickets (RR=2.88)
Mazer et al. 2003 **USA** **RCT**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☒	97 patients admitted to a rehabilitation hospital or referred to the driving evaluation who drove prior to stroke and had a desire to return to driving. Mean age was 66 years. Participants were within an average of 66-90 days post stroke.	Patients were randomly allocated to either the 20 training sessions using the Useful Field of Vision (UFOV) software tool, which followed a standard training protocol designed according to participant's pre-test evaluation (n=47) or using same touch screen as the	**Primary outcome:** On-road driving evaluation (passed, failed, needed driving lessons). **Secondary outcomes:** UFOV, complex reaction timer, Motor-Free Visual Perception Test, Single and Dot Cancellation Tests, Money Road Map Test	Following the intervention, there was no significant between group difference in the proportion of participants who passed the on-road driving evaluation (39% vs. 32.6%, p=0.54). There were no significant differences between groups for any of the secondary outcomes. Dropouts and loss to follow-up: n=13.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			intervention, but which included computer games that did not require the same aspects of speed of visual processing (n=50).	of Direction Sense, Trail Making Tests Parts A and B, Bells test, Charron test, and Test of Everyday Attention Assessments were conducted at baseline and post intervention	

Return to Work

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Rates and predictors of return to work					
Edwards et al. 2018 **Canada** **Systematic Review**	NA	29 studies that included persons, aged 18-64 years recovering from stroke. Mean age ranged from 37 to 55 years, the majority of participants were male in most studies	Descriptive synthesis	**Primary outcomes:** Percentage of persons returning to work and common predictors of RTW	RTW was assessed at time points ranging from hospital discharge to 12 years. Overall frequency of RTW ranged from 7.3%1-74.5%, which included full and part-time work. Timing of RTW post stroke 0-6 months: 41% One year: 53% 1.5 years: 56% 2-4 years: 66% The most commonly-cited predictors and associated odds ratio ranges of RTW were: Independence in ADLs (1.0-15.7) Higher cognitive functioning (1.3-15.7) Fewer neurological deficits (0.4-4.7) White-collar job (1.6-3.0) Male (3.2-8.9)
Wang et al. 2014 **USA**	NA	42 studies published from 1974-2011 that assessed factors associated with	Factors found to be predictive of RTW were categorized	**Primary outcome:** Factors that were positively and negatively associated	**Demographic variables:** younger age (<55 years) was positively associated with RTW. The associations between RTW and gender, race, ethnicity, education and marital status remain

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Review		return to work following stroke	according to the ICF framework	with RTW based on quantitative and qualitative data.	unclear. LOS may be a negative predictor of RTW but may be confounded by stroke severity. **Body structures:** side and location of stroke were not good predictors of RTW. **Body functions:** Increasing stroke severity was the factor most strongly (inversely) associated with RTW. **Activity participation**: higher ADL function, the ability to walk and run and a good match between current capabilities and job tasks were positively associated with RTW. **Psychosocial and personal factors**: strong family support, stroke survivors who are realistic and flexible in their vocational goals, value work and are not fearful of failing are more likely to RTW. Depression was a negative factor for RTW. **Environmental factors:** the availability of vocational services, a flexible work environment and disability benefits were all positively associated with RTW. **Job factors:** white collar work, government employer and wages that exceed disability compensation levels are positive predictors of RTW.
Hackett et al. 2012 **Australia** **Prospective study**	NA	441 patients, recruited from 20 hospitals, aged 18-64 years, who had sustained a stroke within the previous 28 days. Patients with aphasia or cognitive impairment were also eligible if a proxy was available. Mean age was 52 years.	Telephone interviews were conducted to collect data on depression, anxiety, cognitive function, cognitive status, instrumental activities of daily living and fatigue. Information on the details of paid work was also collected.	**Primary outcome**: Returned to paid work at 1-year post stroke.	At the time of the stroke, 218 (52%) and 53 (13%) participants were engaged in full-time and part-time work, respectively. By one-year post stroke, 202 (75%) persons had returned to work. Factors associated with increased odds of RTW work were: independence in activities of daily living at 28 days (OR=10.23, 95% CI 4.11-25.46), male and female without illness that restricted activity before stroke

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			A multivariable model was developed to predict independent factors associated with RTW		Factors associated with decreased odds of RTW work were: no health insurance (OR=0.40, 95% CI 0.18-0.89) and increasing age (OR=0.94, 95% CI 0.90-0.98) Depression post-stroke was not a significant predictor of return to work (OR=2.31, 95% CI 0.87-6.12).
Hannerz et al. 2011 **Denmark** **Prospective study**	NA	19,985 persons included in the Danish Occupational Hospitalization Register who were 20-57 years, had sustained a stroke (ischemic, SAH, ICH) and were gainfully employed in the year preceding hospitalization.	Independent predictors of gainful employment, two years following stroke were sought. Potential variables included, gender, age, diagnosis, calendar year, occupational class self-employment and type of municipality	**Primary outcome:** Return to work at 2 years post stroke	62.1% of participants were employed 2 years post stroke. Factors associated with increased odds of RTW were higher occupational class (compared with persons in elementary occupations). Factors associated with decreasing odds of RTW were: stroke type (SAH OR=0.79, 95% CI 0.7-0.88 and ICH OR=0.39, 95% CI 0.35 to 0.43, compared with cerebral infarction, the reference standard), female (OR=0.79, 95% CI 0.74-0.84) and age 50-57 years (OR=0.61, 95% CI 0.57-0.65, compared with <50 years) and being self-employed (OR=0.87, 95% CI 0.78-0.96).
Trygged et al. 2011 **Sweden** **Retrospective study**	NA	7,081 patients, aged 40-59 years who had been discharged from hospital following first-ever stroke (SAH, infarction, ICH) and who worked prior to stroke. Patients with ischemic heart disease were excluded.	The association between return to work (1-4 years post discharge) and income and education variables was examined controlling for age, sex, stroke subtype and length of stay.	**Primary outcome:** Return to work at 4 years post stroke	4,867 (69%) persons returned to work. Independent predictors of RTW were higher levels of education (compulsory vs. University RR=1.13, 95% CI 1.04-1.22) and higher income (1st quartile vs. 4th RR=1.94, 95% CI 1.77-2.12). Compared with patients who had sustained an infarction, patients an SAH were more likely to RTW (RR=1.27, 95% CI 1.17-1.38). Increasing LOS was associated with a decreased likelihood of RTW (RR=0.82, 95% CI 0.80-0.85 per each 10-day increment). Across the different categories of stroke type (infarction, SAH and ICH) the odds of RTW were all

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					significantly increased with increasing levels of education and income.
Saeki et al. 2010 **Japan** **Prospective study**	NA	325 patients recruited from 21 hospitals following first-ever stroke, aged 15-64 years, who were actively employed at the time of stroke. Mean age was 55.1 years.	A multivariable model was developed to predict independent factors associated with RTW. Potential variables included age, gender, stroke subtype, occupation (white- or blue-collar), education level, marriage, previous alcohol consumption, hypertension, side and severity of hemiplegia, higher cortical dysfunctions (aphasia, agnosia, and apraxia), and ability to perform ADLs (evaluated by Barthel Index)	**Primary outcome:** Return to work at 18 months post stroke	138 persons (55%) had successfully returned to work at 18 months. Of the subjects who successfully returned to work, 50% returned to work within 100 days from stroke onset. Independent predictors of RTW were: male sex (OR=3.24, 95% CI 1.11-10.96), functional use of the affected hand (OR=4.66, 95% CI 1.40-19.53) and BI scores of 80-100 (OR=2.7, 95% CI 1.08-7.03)
Stroke survivors' experiences of RTW					
Hartke et al. 2011 **USA** **Qualitative study**	NA	12 stroke survivors (8 men, 4 women), mean age of 51 years, recruited by flyers posted in a rehabilitation hospital setting and through personal contact by the second author. Inclusion criteria were ≥ 3 months post stroke, ≥18 years, having returned to work or with intention to RTW, and only mild to moderate	In-depth interviews, which focused on their prior work experience and their thoughts about or efforts in returning to work. A list of suggested areas of discussion was provided including the purpose and meaning of work in their lives, what they considered to be successful	**Primary outcome:** To develop concepts and categories that identify and define important areas of concern for stroke survivors returning to work.	Four participants were unemployed and currently seeking to RTW, 6 were working part-time (3 for less than 6 months), and 2 were working full-time (1 for less than 6 months). 7 major themes were identified: financial, impairments as barriers, interpersonal support, therapy supporting RTW, organizational influences, work or job specific issues, and psychological issues. **Examples**

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
		cognitive and communication deficits	RTW, the risks and benefits of returning to work, reactions of others, and what had helped and hurt their efforts to RTW.		Financial: *"I think the biggest fear from the very beginning was, you know, how are we going to do it? I mean, because I was the main bread winner."* Impairments as barriers: "*I still have problems with numbers...time seems to go really, really fast. It seems to fl y by . . . For the first few weeks, . . . because we have these buildings, the A, B, and C buildings. I would get lost . . . and I recently have moved my office . . . so for the first three days after my move, I couldn't remember where my office was for sure. "* Interpersonal support: "*All the time, my friends always tell me not to go back because they said if you go back, the job is going to kill you. That's what they always be saying . . .They said you had two strokes. You go back, that going to be the third one. After that's going to be the one that kills you."* In contrast*, "My family wanted me to come back because they knew I loved my work. And it was never a question in my family that I should come back".* Therapy supporting RTW: This process also provided specific forms of advice and assistance, as noted in this comment by a survivor returning to administrative work in an office setting: *He told me to start slowly. He came and visited me in the workplace, talked to my boss. . . . I had a conversation about how I should approach things slowly . . . He was the one who suggested that computer for me with the, you know, program that would allow me to speak to the computer . . . He suggested the chair . . .* Work or job-specific issues: Some jobs/employers were more accommodating than others.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					I had to go back full blast. I didn't get no special treatment because I had a stroke. As a matter of fact, they loaded more on me...it's nothing light in housekeeping. You can do it or you can't do it. Psychological issues: Issues that emerged included performance anxiety and motivational and coping issues, willingness to accept limitations imposed by the stroke and their sense of confidence to re-enter the daily work world with them.
Alaszewski et al. 2007 **UK** **Qualitative study**	NA	43 participants, recruited from 3 stroke services, < 60 years, <3 months following their first stroke, without serious speech difficulties or cognitive impairment	After an initial meeting to obtain, a first interview was conducted, ideally within 3 months of the stroke, with additional meeting every 5 months thereafter for 15 months. Participants were invited to record a diary completing entries for a week each month.	**Primary outcome:** To describe participants' perceived barriers to and facilitators of a return to employment	All the participants completed the first interview, 38 completing the second, 34 the third and 33 did all four over the 18-month study period. 12 participants were not working at the time of their stroke. 13 (33%) participants who completed two interviews) had not returned to work during the study period, but expressed a desire to do so. 6 (15%) participants returned to work within 3 months and 9 (23%) participants returned to work immediately after stroke. All participants acknowledged the value and benefit of work and the costs of not working (financial and other aspects). Previous experience of serious illness and disability which had resulted in early retirement or incapacity benefit acted as a major barrier to working. In contrast, some participants had dealt with a major illness previously and tended to treat their stroke as another challenge they could and would deal with. Disability resulting from stroke was identified as a major barrier to RTW. Participants viewed their socio-economic environment, including family friends and work colleagues, as an important factor in their return to work. Those who felt that work colleagues or managers were not supportive and did not

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					recognize and support them, found return to work difficult.
Return to Work Interventions					
Ntsiea et al. 2014 **South Africa** **RCT**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☑	80 participants aged 18-60 years who were employed at the time of stroke, were <8 weeks since stroke onset, with Barthel Index scores of ≥12. Mean age was 45 years. Mean duration from stroke onset was 4.6 weeks.	Participants were randomized to a 6-week individualized workplace intervention program group (n=40) or a control group, which received usual care (n=40). The intervention program included an assessment component, designed to evaluate perception, visual discrimination, sequencing ability, numerical ability, reasoning and language ability, fine and gross motor coordination, eye hand coordination, measurement ability, and colour discrimination. It also included input from the employer or supervisor to discuss and develop a plan to overcome identified barriers.	**Primary outcome:** Return to work rates at 3 and 6 months post stroke **Secondary outcomes:** Barthel Index (BI), Modified Rivermead Mobility Index, Montreal Cognitive Assessment (MoCA) and Stroke Specific QoL Scale	At the time of stroke, 45% of participants were employed in white collar professions, and 55% in blue collar. At 3 months more persons in the intervention group had returned to work (27% vs. 12%, p=0.13). By 6 months, significantly more persons in the intervention group had returned to work (60% vs. 20%, p<0.001). Independent predictors of RTW were participation in the intervention (OR=5.2, 95% CI 1.8-15.0, p=0.002), 6-month BI score (OR=1.7, 95% CI 1.1-2.6, p=0.02), 6-month MoCA score (OR=1.3, 95% CI 1.1-1.6, p=0.02) and left hemiplegia (OR=4.4, 95% CI 1.5-12.5, p=0.005). Persons who returned to work had significantly higher mean SS QoL scores at 6 months compared with those who had not returned to work (227.9 vs. 218.2, p=0.05). There was no significant difference in SS QoL scores between groups at 3 months. Drop-outs and losses to follow-up: n=8
Baldwin and Brusco 2011 **Australia**	NA	6 retrospective studies (n=462) including adults of working age, who were recovering from stroke and had participated in a	Interventions included vocational counseling, worksite assessment, work trial assessment, job	**Primary outcome:** Frequency of return to work	Pre-stroke vocational status was reported in 3 studies and varied from 48% to 100%.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Systematic Review		vocational rehabilitation program	placement services, real or simulated work tasks, physical and occupational therapy and/or the development of a graded return-to work program. Interventions were delivered in the hospital, outpatient clinics and the community and all involved ≥one type of therapist (OT, PT social worker, counselor, vocational rehab specialists		Return to work after the completion of the interventions was reported in all studies and ranged from 12% to 49%.

Community-Based Palliative Care

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Gomes et al. 2013 **UK** **Cochrane review**	NA	23 studies including 37,561 participants with advanced stage cancer, HIV/AIDS, congestive heart failure, COPD and MS, and 4,042 family caregivers, evaluating the impact of home palliative care services on outcomes for adults with advanced	Trials compared home-based palliative care, which included 19 different models, most including a multidisciplinary team, with and without caregiver support vs usual care (which could include community care (primary or specialist care at home and in nursing homes), hospital care (inpatient and	**Primary outcome:** Death at home **Secondary outcomes:** Time the patient spent at home, satisfaction with care, pain, other symptoms, physical function, QoL, costs	The odds of an at home death from 3-24 months follow-up were increased significantly with home-based palliative care (OR=2.21, 95% CI 1.24-2.47). Results from 7 RCTs included. Pooled analyses from the secondary outcomes were not estimated

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		illness or their family caregivers, or both.	outpatient) and in some instances palliative or hospice care (or both)		
Hudson et al. 2008 **Australia** **Single-group intervention study**	NA	Adult primary caregivers of patients requiring palliative care due to malignant disease receiving home-based palliative care	Participants attended 3 caregiver group education sessions, over 3 weeks. Each session lasted 1.5 hours, delivered by members of a multidisciplinary team. The purpose of the programs was to prepare caregivers for their role	Caregivers completed a set of self-report questionnaires measuring caregiver competence, preparedness, optimism, rewards, social support, burden and information needs, at the start of the programme (T1), on completion (T2) and 2 weeks later (T3).	16 education programs were conducted. 74 caregivers attended the first session. 44 caregivers completed all data collection sets. The intervention significantly improved carers' perceptions of preparedness (p < 0.001), competence (p < 0.01), rewards (p < 0.05) and having needs met (p < 0.05) (from T1 to T2). The positive effects were maintained at T3.
Stevens et al. 2008 **UK** **Systematic review**	NA	7 studies that examined the palliative care needs of stroke patients. Study samples included patients, caregivers, and bereaved family members	Narrative synthesis	None stated *a priori*	Patients: the persistence of uncontrolled pain, incontinence, confusion and low mood were identified. Compared with persons dying from cancer, stroke patients suffered more gradual functional decline and were more likely to die in a hospital or nursing home, than at home Caregivers: difficulties accessing information, negative impacts on their personal lives and high levels of emotional distress were identified.
Brumley et al. 2007 **USA** **RCT**	CA: ☒ Blinding: Patient ☒ Assessor ☑ ITT: ☒	297 terminally ill patients with a life expectancy of <12 months, diagnoses of cancer, CHF or COPD, who had ≥1 visits to the ER in the previous year. All patients scored ≤70% on the Palliative Performance Scale	Patients were randomized to the In-home Palliative Care group (n=145) or to a usual care group (n=152). The intervention was a home-based program designed to provide treatment with a focus on enhancing comfort, managing symptoms and improving quality of patient's life until	Satisfaction with care (Reid-Gundlach Satisfaction with Care instrument), service utilization, site of death.	The percentage of patients who were very satisfied with care was significantly higher in the intervention group at 30 (93.1% vs. 80%) and 90 days (93.4% vs. 80.8%) following enrolment, but not at 60 days (92.3% vs. 87%). Patients in the intervention group had significantly fewer ER visits (20% vs. 33%) and fewer hospitalizations (36% vs. 59%). Intervention group assignment was associated with a reduction of 4.36 in hospital days and 0.35 ER visits. Costs of care were 33% less compared to usual care. ($12,670 vs. $20,222).

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			death. The program was delivered by an interdisciplinary team. Family support and education was also provided to the family and informal caregivers. Usual care included home health services, acute care services, primary care services and hospice care, as provided for by Medicare guidelines		75% of patients died during the study period. Significantly more patients in the intervention group died at home (71% vs. 51%, p<0.001).
Hudson et al. 2005 **Australia** **RCT**	CA: ☒ Blinding: Patient ☒ Assessor ☒ ITT: ☒	106 adults, primary informal caregivers, residing with a patient receiving palliative care services.	Participants were randomized to a psycho-educational intervention (n=54) or control group (n=52). Intervention consisted of 2 home visits by nurses with a phone call between visits. A guidebook and audiotape tape were provided and designed to provide information on caring for the dying patient and to provide self-care strategies and relaxation exercises. Those in the control group received usual care (access to 24-hr phone advice, emergency visits from nurses and at-home visits from MDs,	Preparedness for Caregiving Scale, Caregiver Competence Scale, Rewards of Caregiving Scale, HADS, mastery, self-efficacy. Assessments were conducted pre-intervention (T1), 5 weeks later (T2) and 8 weeks following the patient's death (T3)	Data collection was complete for 75 participants at T1 and T2, and for 45 participants at T1 and T3. From T1 to T2, there were no significant differences between groups on mean scores of preparedness, competence, self-efficacy or anxiety. There was a significant difference between groups in rewards score. The mean score of participants in the intervention group increased, while it decreased among those in the control group. From T1 to T3, there were no significant differences between groups on mean scores of preparedness, competence, self-efficacy or anxiety. There was a significant difference between groups in rewards score. The mean score of participants in the intervention group increased, while it decreased among those in the control group.

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			nurses and allied health		
Cameron et al. 2004 **Canada** **Single-group intervention study**	NA	58 adult informal caregivers of patients with advanced cancer (life expectancy 6-12 months) who were being treated primarily at home.	A one-time, hospital-based intervention, lasting approximately one hour, involving only the caregiver, designed to enhance problem-solving abilities and confidence in their role and to decrease emotional distress using problem-solving techniques.	The Social Problem-Solving Inventory – Short Form, Profile of Mood States (short version), Caregiver Assistance Scale and Caregiver Self-Efficacy Scale. Assessments were completed at baseline and 4 weeks following the intervention	47 participants completed the intervention and 41 completed the follow-up assessments. From baseline to follow-up, there was a significant decrease in the mean tension sub score of the Profiles of Mood States (1.5 to 1.2, p=0.024). From baseline to follow-up, there was a trend towards improvement in mean Self-efficacy scores (6.4 to 6.3, p=0.059) and the positive problem solving orientation sub scale of the Social Problem-Solving Inventory (12.3 to 13.7, p=0.054).

Abbreviations

CA: concealed allocation	CI: confidence interval	ITT: intention-to-treat
OR: odds ratio		

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