

COUTTS, E. and COOPER, K. 2021. Interventions, barriers and facilitators associated with return to work in adults following stroke: a scoping review protocol. [Protocol]. *JB I evidence synthesis* [online], 19(12), pages 3332-3339. Available from: <https://doi.org/10.11124/JBIES-20-00386>

Interventions, barriers and facilitators associated with return to work in adults following stroke: a scoping review protocol.

COUTTS, E. and COOPER, K.

2021

This is a non-final version of an article published in final form in COUTTS, E. and COOPER, K. 2021. Interventions, barriers and facilitators associated with return to work in adults following stroke: a scoping review protocol. [Protocol]. JBI evidence synthesis [online], 19(12), pages 3332-3339. Available from: <https://doi.org/10.11124/JBIES-20-00386>

1 **Return-to-work interventions, barriers, and facilitators for adults with and without communication**
2 **disorders following a stroke: a scoping review protocol**

3 Abstract

4 **Objective:** The purpose of this scoping review is to map what has been reported on interventions,
5 barriers, and facilitators for adults with and without communication disorders following a stroke to
6 return to work.

7 **Introduction:** Difficulties in returning to work following a stroke can have a significant impact on
8 people's lives, not only in terms of the individual's finances (and the economy as a whole), but also in
9 terms of the person's psychosocial adjustment, for example, their sense of role and purpose and their
10 self-esteem. This scoping review aims to map the literature examining interventional approaches,
11 barriers, and facilitators relevant to this topic.

12 **Inclusion criteria:** This review will include literature on the return to work for adults aged at least 16
13 years who have had a stroke. It will be restricted to research conducted in developed countries.

14 **Methods:** Databases that will be searched include MEDLINE, CINAHL, Embase, AMED, Cochrane
15 Library (controlled trials and systematic reviews), PEDRo, and OTSeeker. Gray literature or
16 unpublished studies will include OpenGrey and ProQuest Dissertations and Theses, as well as
17 professional bodies and organizations whose remit includes stroke and vocational rehabilitation. The
18 search will be limited to studies written in English since 2010. Titles and abstracts will be screened by
19 two independent reviewers and full-text articles assessed against the inclusion criteria by two
20 independent reviewers. Data will be extracted and the findings will be presented in tabular and
21 graphical form along with a narrative summary.

22 Keywords: aphasia; dysarthria; employment; vocational rehabilitation; work reintegration

23 Abstract word count: 242

24 Total manuscript word count: 2455

25 Introduction

26 It is generally accepted in modern developed countries that employment is beneficial to the individual
27 as well as to society. Not only is it of financial importance in order for individuals to live in material
28 comfort and be able to participate and progress in society, it also has a significant role in meeting
29 psychosocial needs.¹⁻³ In the foreword of her seminal report "Working for a healthier tomorrow," Dame
30 Carol Black states that "for most people, their work is a key determinant of self-worth, family esteem,
31 identity and standing within the community."^{2(p.4)} She also details the national economic burden of
32 sickness absence and health-related unemployment, estimated in the UK in 2008 to be over £100
33 billion, greater than the annual National Health Service budget for the UK at that time.²

34 “Return to work” throughout this study refers to return to paid employment, which could be at a
35 previous job, a previous job in a modified form, or a new job.⁴ While unemployment is associated with
36 poorer physical and mental health,¹ returning to work after an illness can “enhance recovery, self-
37 esteem, confidence, social identify and overall quality of life.”^{5(p.953)}

38 Evidence suggests that support to return to work (e.g. interventions, advice, information) should be
39 made available as soon as possible in order to minimize more significant return-to-work issues
40 associated with longer absences.⁶ This support should not only address the specific barriers to the
41 individual returning to the workplace, but also provide information on different options for work that are
42 most appropriate for that individual.² Such support could be provided by employers and charitable
43 organizations; it could also take the form of vocational rehabilitation, which has been defined as “a
44 multi-professional approach that is provided to individuals of working age with health-related
45 impairments, limitations, or restrictions with work functioning and whose primary aim is to optimize
46 work participation.”^{7(p.126)} Systems of vocational rehabilitation may vary across different countries
47 because of differences in health and social care services. The need for the development of a strong
48 evidence base in order to support the rehabilitation of working-age people and to inform policy and
49 the commissioning of health care services has also been stated.²

50 Stroke is known to be a major cause of disability. In 2016, there were 80.1 million stroke survivors
51 worldwide, and 13.7 million new stroke cases, leading to 116.4 million disability-adjusted life years.⁸ A
52 significant number of strokes occur in people of working age; for example, in the USA in 2009, 34% of
53 people hospitalized for stroke were under 65 years old.⁹ The question of returning to work is therefore
54 highly relevant to a significant proportion of stroke survivors, and this issue contributes significantly to
55 the considerable economic burden of stroke: in the USA in 2014–15, stroke-related costs were around
56 \$46 billion, with missed days of work contributing to this cost along with the direct cost of health care
57 and medicine.⁹ In the UK, the economic cost of stroke was estimated to total around £9 billion,¹⁰ with
58 loss of employment being a major factor.¹¹

59 Disabilities caused by stroke may be obvious and physical, such as reduced mobility or limited
60 movement in the upper limb on the affected side. However, other disabilities may be less apparent but
61 equally significant; for example, communication disorders such as aphasia (language processing
62 difficulties) and dysarthria (speech articulation difficulties) frequently result from a stroke. Estimates of
63 the prevalence of aphasia among stroke survivors range from 21% to 38%,⁵ and dysarthria is thought
64 to affect 20% to 30% of people who have had a stroke.¹² The ability to interact is highly important for
65 engagement in work activities, so any communication disturbance has the potential to form a
66 significant barrier to return to work.¹³ Indeed, a literature review found that return-to-work rates are
67 significantly lower for people with post-stroke aphasia (averaging 28% across the studies that were
68 examined) than they are for the general population of working-age stroke survivors (reported in the
69 review as 45%).⁵ Other less physically apparent but important factors hindering return to work include
70 cognitive difficulties and general fatigue. Such issues, in common with physical and communication

71 difficulties, may remain in the long term, and it is necessary for employers, as well the employee, to
72 be aware of this.¹⁴

73 Systematic reviews on various aspects of return to work post-stroke have been conducted in the past
74 10 years. The most recent focused on operational definitions and estimates of return to work (55
75 studies),¹⁵ and return-to-work interventions in ischaemic stroke patients (two studies).¹⁶ Two
76 qualitative reviews focused on barriers and facilitators to return to work,^{17,18} a further two focused on
77 the effectiveness of vocational rehabilitation,^{19,20} and one on the frequency and predictors of return to
78 work.⁴ Due to their specific focus and inclusion/exclusion criteria, there is a body of research not
79 included in these previous systematic reviews. Moreover, none of the previous reviews have
80 differentiated between people with and without communication difficulties.

81 A preliminary search of MEDLINE, CINAHL, Open Science Framework, and *JBI Evidence Synthesis*
82 identified that there are no scoping reviews, published or in-progress, on this topic to date. There is,
83 therefore, no review that currently provides a holistic overview of this broad, complex, and
84 heterogeneous topic. It would therefore be useful to identify gaps in the body of literature, by carrying
85 out a scoping review to map what is already known in this field from both qualitative and quantitative
86 research.²¹ The inclusion of gray literature, as well as systematic and narrative reviews, will further the
87 aim of providing a comprehensive map of the subject and the research conducted to date. This
88 scoping review is intended to inform a program of research on return to work for people with post-
89 stroke communication disorders. This essential first step will provide an overview of the literature on
90 return to work post-stroke in general, and will also identify evidence relating to post-stroke
91 communication disorders specifically. The knowledge gained from this scoping review will inform the
92 next stage of the research program: a systematic review (type and focus to be determined by this
93 initial scoping review) and primary research, which together will inform the design of an appropriate
94 intervention to support return to work in people with post-stroke communication disorders.

95 Review objectives

96 The specific questions to be addressed by this scoping review are:

97 i) What interventions for return to work for adults following a stroke have been reported in the
98 literature and what outcomes have been reported?

99 ii) What interventions for return to work for adults with post-stroke communication disorders have
100 been reported in the literature and what outcomes have been reported?

101 iii), What factors (eg, sociodemographic variables, symptom severity, access to services), barriers,
102 and facilitators are reported in the literature on return to work for adults following a stroke?

103 iv) What factors, barriers, and facilitators are reported in the literature on return to work for adults with
104 post-stroke communication disorders?

105 Inclusion criteria

106 Participants

107

108 The review will consider literature that includes adults (defined here as 16 years and above, as that is
109 the minimum school-leaving age in the UK) who have had a stroke and who were in work or actively
110 seeking work (where reported) at the time of their stroke. The World Health Organization (WHO)
111 definition of stroke is: “rapidly developing clinical signs of focal (or global) disturbance of cerebral
112 function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other
113 than of vascular origin.”^{22(p.10)} This includes ischemic and hemorrhagic strokes but excludes Transient
114 Ischemic Attacks (TIAs), which by definition last less than 24 hours. It will not include studies in which
115 the focus is on a comorbidity or disability impacting significantly on the individuals’ ability to work (eg,
116 a respiratory disorder, dementia, learning disability). It will also not include studies of acquired brain
117 injury (ABI) except where findings pertaining to stroke are analyzed separately from other types of
118 brain injury.

119 Concept

120 This review will consider all studies pertaining to return to work (as defined previously) following a
121 stroke. It will include explorations or descriptions of non-medical interventional approaches (including
122 the intensity/duration, the setting, and the personnel involved in delivery, as well as the outcomes
123 used to evaluate them), the factors (eg, sociodemographic variables, symptom severity, access to
124 services) reported to be associated with good or poor return to work outcomes, and the barriers and
125 facilitators (as experienced by all relevant stakeholders, including stroke survivors, health care
126 professionals, and employers) influencing return to work.

127 Context

128 The review will consider studies written in English from developed countries, which will be defined as
129 those rated as having Very High Human Development in the Human Development Index.²³ This is
130 because this scoping review will inform a research program in Scotland (United Kingdom), and while
131 generalizability cannot be assumed when other developed countries have different health and social
132 care systems, data are more likely to be comparable than with less-developed countries. Studies
133 covering all settings (hospitals, rehabilitation settings, and community) within these countries will be
134 considered.

135 Types of sources

136

137 All study designs will be considered, including qualitative, quantitative, and mixed-methods studies. In
138 addition, all types of reviews that meet the inclusion criteria will also be considered in order to provide
139 a map of previous syntheses, thereby helping to inform the next phase of this research program.

140 Furthermore, in order for a comprehensive map of the topic to be created, gray literature, such as text
141 and opinion papers, government, and professional guidelines and publications produced by charitable
142 organizations, will also be considered for inclusion. Conference abstracts, protocols, and trial
143 registrations will not be included.

144 We will include literature from 2010 to the present day. Although there is published literature on return
145 to work following stroke pre-2010, there was a substantial increase in studies after this date.
146 Therefore, the review will include the most contemporary literature, whilst remaining feasible to
147 conduct. We will also limit the review to studies published in English due to lack of translation
148 services.

149 Methods

150 The proposed scoping review will be conducted in accordance with JBI methodology.²⁴

151 Search strategy

152 The search strategy will aim to locate both published and unpublished studies. An initial limited search
153 of MEDLINE (Ovid) and CINAHL (EBSCOhost) was undertaken to identify articles on the topic. The
154 text words contained in the titles and abstracts of relevant articles, and the index terms used to
155 describe the articles were used to develop a full search strategy, as detailed in Appendix I. The
156 search strategy, including all identified keywords and index terms, will be adapted for each included
157 information source. The reference list of all studies selected for inclusion will be screened for
158 additional relevant studies.

159 Databases that will be searched include MEDLINE (Ovid), CINAHL (EBSCOhost), Embase (Ovid),
160 AMED (Ovid), JBI Evidence Synthesis, Cochrane Library (Controlled Trials and Systematic Reviews),
161 PEDRo, and OTseeker. The search for gray literature or unpublished studies will include OpenGrey
162 and ProQuest Dissertations and Theses, as well as the websites of international bodies (eg, the
163 World Health Organization, the World Stroke Organization), the government health departments of
164 the nine majority English-speaking countries, and these countries' professional bodies of the key
165 health professions involved in return to work (occupational therapy, physiotherapy, and speech and
166 language therapy), for example, the American Occupational Therapy Association (USA),
167 Physiotherapy New Zealand (New Zealand), and the Royal College of Speech and Language
168 Therapists (UK). It will also include a general internet search for relevant publications by charitable
169 bodies in the countries.

170 Study selection

171 Following the search, all identified citations will be collated and uploaded into Refworks (ProQuest
172 LLC, Ann Arbor, USA) and duplicates removed. Remaining citations will be exported to Covidence

173 (Veritas Health Innovation, Melbourne, Australia) for screening. Titles and abstracts will then be
174 screened by two independent reviewers (EC and KC) for assessment against the inclusion criteria for
175 the review. Conflicts will be resolved by discussion or with a third (independent) reviewer. Potentially
176 relevant studies will be retrieved in full and assessed in detail against the inclusion criteria by two
177 independent reviewers. Reasons for exclusion of full-text studies that do not meet the inclusion
178 criteria will be recorded and reported in the scoping review. Any disagreements that arise between the
179 reviewers at each stage of the study selection process will be resolved through discussion or with a
180 third reviewer. For gray literature, one reviewer (EC) will search for relevant items and list the online
181 access details for each. The second reviewer (KC) will then access each item and screen it against
182 the inclusion/exclusion criteria. Any conflicts will be resolved through discussion or with a third
183 reviewer. The results of the search will be reported in full in the final scoping review and presented in
184 a PRISMA-ScR flow diagram.²⁵

185 Data extraction

186 Data will be extracted from studies included in the scoping review by two independent reviewers using
187 a data extraction tool developed by the reviewers. The data extracted will include standard
188 information such as title, authors, year of publication, country of origin, and population. In addition,
189 specific details to be recorded will include research objectives/questions, type of research (eg,
190 quantitative/qualitative/mixed methods/systematic review), and aspect (eg, intervention, barriers and
191 facilitators, factors). A draft extraction table is provided (see Appendix II). The draft data extraction
192 tool will be modified and revised as necessary during the process of extracting data from each
193 included study. Modifications will be detailed in the full scoping review report. Any disagreements that
194 arise between the reviewers will be resolved through discussion or with a third reviewer. Authors of
195 studies will be contacted to request missing or additional data, where required. If there is no reply
196 after a follow-up email request, the data will be reported as unobtainable. The extracted data will be
197 collated in Microsoft Excel 2013 (Redmond, Washington, USA) to facilitate data presentation.

198 Data presentation

199 The extracted data will be presented using relational analysis to identify the relationships between the
200 concepts of interest in this review.²⁴ Barriers, facilitators, and factors that have been identified in the
201 eligible literature will be coded and categorized along with interventions and outcomes domains. Lists
202 of categories formulated in this way will be presented in a diagram representing how they relate to
203 each other. Descriptive summaries will accompany each of these aspects, and a descriptive
204 explanation of the diagram will also be provided. Systematic reviews will be presented separately for
205 two reasons: to avoid duplication, as many of their included studies will be included in this scoping
206 review, and in order to map the topics and types of systematic review that have been conducted to
207 date in order to inform which further systematic reviews may be indicated.

208 A parallel presentation will follow outlining the subset of eligible literature pertaining to communication
209 disorders.

210 Funding

211 EC is funded by an NHS Research Scotland Career Researcher Fellowship. This body will have no
212 influence on the content or findings of the review.

213 Acknowledgments

214 NHS Research Scotland for funding EC. Lyn Mair, clinical liaison librarian (NHS Grampian), for her
215 guidance with the literature search.

216 Conflicts of interest

217 There authors declare no conflict of interest.

218 References

- 219 1. Waddell G, Burton A. Is work good for your health and well-being? London: The Stationery
220 Office, 2006
- 221 2. Department for Work and Pensions and the Department of Health. Dame Carol Black's review
222 of the health of Britain's working age population: working for a healthier tomorrow. London:
223 Department for Work and Pensions and the Department of Health, 2008
- 224 3. National Institute for Health and Care Excellence (NICE). NICEimpact stroke [internet].
225 London: National Institute for Health and Care Excellence; 2019 [cited 2021 May 1]. Available
226 from: [https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/measuring-
227 uptake/NICE-Impact-stroke.pdf](https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/measuring-uptake/NICE-Impact-stroke.pdf).
- 228 4. Edwards JD, Kapoor A, Linkewich E, Swartz RH. Return to work after young stroke: a
229 systematic review. *Int J Stroke*. 2018;13(3):243-56.
- 230 5. Graham JR, Pereira S, Teasell R. Aphasia and return to work in younger stroke survivors.
231 *Aphasiology*. 2011;25(8):952-60.
- 232 6. Waddell, G, Burton, AK, Kendall, NAS. Vocational rehabilitation: what works, for whom, and
233 when? London: The Stationery Office, 2008
- 234 7. Escopizo R, Reneman MF, Ekholm J, Fritz J, Krupa T, Marnetoft S-U et al. A conceptual
235 definition of vocational rehabilitation based on the ICF: building a shared global model. *J*
236 *Occup Rehabil*. 2011;21:126-33.
- 237 8. GBD 2016 Stroke Collaborators. Global, regional, and national burden of stroke, 1990-2016:
238 a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Neurol*.
239 2019;18:439-58.
- 240 9. Centers for Disease Control and Prevention. Stroke facts [internet]. Atlanta: Centers for
241 Disease Control and Prevention; 2020 [cited 202 Dec 31]. Available from:
242 <https://www.cdc.gov/stroke/facts.htm>.

-
- 243 10. Coole C, Radford K, Grant M. Returning to work after stroke: perspectives of employer
244 stakeholders, a qualitative study. *J Occup Rehabil.* 2013;23:406-18.
- 245 11. NHS National Services Scotland. Scottish stroke improvement plan 2019 report [internet].
246 Edinburgh: NHS National Services Scotland; 2019 [cited 2020 May 1]. Available from:
247 [https://www.strokeaudit.scot.nhs.uk/Publications/docs/2019/Scottish-Stroke-Improvement-](https://www.strokeaudit.scot.nhs.uk/Publications/docs/2019/Scottish-Stroke-Improvement-Programme-2019-National-Report.pdf)
248 [Programme-2019-National-Report.pdf](https://www.strokeaudit.scot.nhs.uk/Publications/docs/2019/Scottish-Stroke-Improvement-Programme-2019-National-Report.pdf).
- 249 12. Mitchell C, Bowen A, Tyson S, Butterfint Z, Conroy P. Interventions for dysarthria due to
250 stroke and other adult-acquired, non-progressive brain injury. *Cochrane Database Syst Rev.*
251 2017;1(1):CD002088.
- 252 13. Niemi T, Johansson U. The lived experience of engaging in everyday occupations in persons
253 with mild to moderate aphasia. *Disabil Rehabil.* 2013;35(21):1828-34.
- 254 14. Morris J, Franklin S, Menger F, GD. Returning to work with aphasia: a case study.
255 *Aphasiology.* 2011;25(8):890-907
- 256 15. Duong P, Sauvé-Schenk K, Egan MY, Meyer MJ, Morrison T. Operational definitions and
257 estimates of return to work poststroke: a systematic review and meta-analysis. *Arch Phys*
258 *Med Rehab.* 2019;100:1140-52.
- 259 16. Brouns R, Valenzuela Espinoza A, Goudman L, Moens M, Verlooy J. Interventions to promote
260 work participation after ischaemic stroke: a systematic review. *Clin Neurol Neurosurg.*
261 2019;105458
- 262 17. Brannigan C, Galvin R, Walsh ME, Loughnane C, Morrissey EJ, Macey C, et al. Barriers and
263 facilitators associated with return to work after stroke: a qualitative meta-synthesis. *Disabil*
264 *Rehabil.* 2017;39(3):211-22.
- 265 18. Schwartz B, Claros-Salinas D, Streibelt M. Meta-synthesis of qualitative research on
266 facilitators and barriers of return to work after stroke. *J Occup Rehabil.* 2018;28:28-44
- 267 19. Baldwin C, Brusco NK. The effect of vocational rehabilitation on return-to-work rates post
268 stroke: a systematic review. *Top Stroke Rehabil.* 2011;18(5):562-72.
- 269 20. Wei X, Liu X, Fong KNK. Outcomes of return-to-stroke after stroke rehabilitation: a systematic
270 review. *Brit J Occup Ther.* 2016;79(5):299-308
- 271 21. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated
272 methodological guidance for the conduct of scoping reviews. *JB I Evid Synth.*
273 2020;18(10):2119-26.
- 274 22. Coupland AP, Thapar A, Qureshi MI, Jenkins H, Davies AH. The definition of stroke. *J Roy*
275 *Soc Med.* 2017;110(1):9-12.
- 276 23. United Nations Development Programme. Human development report 2019 [internet]. New
277 York: United Nations Development Programme; 2019 [cited 2020 June 23]. Available from:
278 <http://hdr.undp.org/en/content/human-development-index-hdi>.
- 279 24. Aromataris E, Munn Z, editors. *JB I Manual for Evidence Synthesis* [internet]. Adelaide: JBI;
280 2020 [cited 2021 March 3]. Available from: <https://synthesismanual.jbi.global>.

281

282 25. Tricco AC, Lillie E, Zarin, W, O'Brien KK, Colquhoun H, Levac D et al. PRISMA extension for
 283 scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467-
 284 73.

285 Appendix I: Search strategy

286 **Ovid MEDLINE**

287 Search conducted December 29, 2020

Search	Query	Records retrieved
#1	MH stroke OR MH aphasia/ or articulation disorders/ or dysarthria OR TX "stroke" OR TX "cerebrovascular accident" OR TX "CVA" OR TX "aphasia" OR TX "dysarthria"	330,161
#2	MH Return to work/or work engagement/ or work performance OR MH Rehabilitation, Vocational OR MH Employment OR MH Occupations OR TX "return* to work" OR TX "RTW" OR TX "back to work" OR TX "working age" OR TX "work reintegration" OR TX "work rehabilitation" OR TX "work participation" OR TX "work status" OR TX "vocation*" OR TX "occupational rehabilitation" OR TX "occupations" OR TX "job retention" OR TX "employment" OR TX "employer*" OR TX "employee*"	225,426
#3	1 AND 2	1608
#4	limit to (English language and year = "2010 – Current")	910

288

289

Appendix II: Data extraction instrument

Title	Author (year)	Country	Study focus Intervention Barriers Facilitators Factors	Sample Number Gender Demographic	For communication Dis? Y- sole Y- combined N	Name of RTW intervention	Intervention intensity/duration	Intervention setting	Intervention professionals involved	Primary outcome domain	Primary outcome measure	Secondary outcome domain	Secondary outcome measure	Barrier	Facilitator	Factor

RTW, return to work

Dis = disorders