



## 1 **Context**

2 Traumatic injury is a significant cause of early death and morbidity – particularly in  
3 the working population. Major trauma is the biggest cause of death in children and  
4 adults under the age of 40.

5 This guideline defines traumatic injury as any injury that requires admission to  
6 hospital at the time of injury. This could include musculoskeletal injuries, visceral  
7 injuries, nerve injuries, soft tissue damage, spinal injury, limb reconstruction and limb  
8 loss. Minor injuries can also lead to a hospital admission. This guideline does not  
9 cover the management of traumatic brain injury.

10 In England, 45,000 people are affected by very severe or major trauma every year.  
11 Half a million people experience less severe trauma, and a proportion of those will  
12 need hospital admission because of pre-existing conditions, disability, frailty, or  
13 because the functional impact of injuries and environmental factors means that they  
14 will not be able to manage in their own home.

15 Trauma affects all age groups, but there are 2 peaks: younger age and older age.  
16 People may have different rehabilitation needs that reflect different functional  
17 expectations and priorities. Trauma can negatively affect quality of life, both  
18 physically and mentally. It can lead to problems with mobility, pain, breathing,  
19 swallowing, eating, drinking, toileting, cognitive function, speech and communication,  
20 sensory problems, and can lead to depression, anxiety and other psychological  
21 difficulties. The impact of these problems may be influenced by pre-existing  
22 conditions.

23 After a traumatic injury, people need rehabilitation assessment and interventions that  
24 take account of any pre-existing conditions and focus on helping them regain  
25 optimum function and independence as quickly as possible.

26 This guideline focuses on people with complex rehabilitation needs after a traumatic  
27 injury. Complex needs cover multiple needs, and will involve coordinated

1 multidisciplinary input from 2 or more allied health professional disciplines, and could  
2 also include:

- 3 • vocational or educational social support for the person to return to their previous  
4 functional level, including return to work, school or college
- 5 • emotional, psychological and psychosocial support
- 6 • equipment or adaptations
- 7 • ongoing recovery from injury that may change the person's rehabilitation needs  
8 (for example, restrictions of weight-bearing, cast immobilisation in fracture clinic).
- 9 • further surgery and readmissions to hospital.

10 Currently, people who meet 'major trauma' criteria should have a rehabilitation  
11 assessment and prescription carried out during the hospital admission. Further  
12 assessments are performed over time to capture changing needs.

13 There are limitations in access to the appropriate rehabilitation services for people  
14 after trauma, which may be related to geography and age. There is significant  
15 variation in practice, with no national network of services.

16 Improvement in survival rates resulting from the introduction of major trauma  
17 networks in 2012 has led to an increased need for rehabilitation.

18 Military experience has shown better outcomes with improved rehabilitation, where  
19 early and intensive rehabilitation has been shown to improve function, pain, quality of  
20 life and mental health outcomes. It can also improve outcomes for carers of those  
21 affected by traumatic injury.

22 Costs to treat people after a traumatic injury are high in the acute phase, and there  
23 are also long-term care costs to the NHS through ongoing treatment. Social care  
24 costs may be high for people who need ongoing care and support in the community.  
25 There are wider costs to the community if people are unable to return to work or  
26 education. Rehabilitation may be able to reduce these costs through improving  
27 overall function. Interventions may improve outcomes at a number of stages.

28 There are several NICE guidelines about the assessment, treatment and  
29 management of specific injuries for adults and children. There is guidance about

1 service delivery, assessment and management of major trauma, and rehabilitation  
2 after critical illness and stroke. There are also guidelines about the transition  
3 between hospital and home, from children's to adults' services, and about home care  
4 services.

5 Complex rehabilitation needs that result primarily from traumatic brain injury are  
6 excluded from the guideline. However, the guideline includes holistic and  
7 multidisciplinary assessments for rehabilitation, and the coordination of services for  
8 people with complex traumatic injuries, 1 of which may be traumatic brain injury.

## 9 **How to use this guideline**

10 All the recommendations apply to all people with complex rehabilitation needs after a  
11 traumatic injury, regardless of age or the nature of the injury, unless:

- 12 • the recommendation specifically states that it is for adults only, or children and  
13 young people only **or**
- 14 • the recommendation or section of the guideline specifically states that it is for  
15 people with a particular injury.

16 The following sections provide a pathway from assessment through to goal setting,  
17 agreeing and coordinating the delivery of a rehabilitation plan and programmes of  
18 therapy, and coordinating and organising rehabilitation at and following discharge:

- 19 • [Assessment and early interventions for people with complex rehabilitation needs](#)
- 20 • [Multidisciplinary team rehabilitation needs assessment](#)
- 21 • [Setting rehabilitation goals](#)
- 22 • [Developing a rehabilitation plan and making referrals](#)
- 23 • [Rehabilitation programmes of therapies and treatments](#)
- 24 • [Principles for sharing information and involving family and carers](#)
- 25 • Coordination of rehabilitation care in hospital:
  - 26 – [From admission to hospital](#)
  - 27 – [When transferring between services and settings](#)
- 28 • [Coordination of rehabilitation care at discharge](#)
- 29 • [Supporting access and participation in education, work and community](#)
- 30 • [\(adjustment and goal settings\)](#)

- 1 • [Commissioning and organisation of rehabilitation services](#)

2 The rehabilitation therapies and interventions included in the following sections apply  
3 to ALL people with complex rehabilitation needs after a traumatic injury:

- 4 • [Physical rehabilitation](#)

- 5 • [Cognitive rehabilitation](#)

- 6 • [Psychological rehabilitation](#)

7 The following injury-specific sections should be read in conjunction with the sections  
8 on physical rehabilitation, cognitive rehabilitation and psychological rehabilitation:

- 9 • [Rehabilitation after limb reconstruction, limb loss or amputation](#)

- 10 • [Rehabilitation after spinal cord injury](#)

- 11 • [Rehabilitation after nerve injury](#)

- 12 • [Rehabilitation after chest injury](#)

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## 1 Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

### 2 1.1 Assessment and early interventions for people with 3 complex rehabilitation needs

4 1.1.1 Be aware that the severity of a person's [traumatic injury](#) does not  
5 necessarily correlate with the complexity of their rehabilitation needs, so  
6 assess the impact of the injury using a person-centred, individualised,  
7 holistic approach at all stages of their care pathway.

8 1.1.2 After a traumatic injury, assess the person's rehabilitation needs as an  
9 integral part of their care pathway from admission. This may include:

- 10 • discussing findings from early rehabilitation assessments with the  
11 person, and their family members or carers (as appropriate)
- 12 • helping the person, and their family members or carers (as  
13 appropriate), to think about preferred rehabilitation goals to inform  
14 decisions about medical or surgical options
- 15 • involving rehabilitation specialists (ideally including a consultant in  
16 rehabilitation) alongside acute care teams to discuss the implications  
17 for rehabilitation depending on different medical and surgical options.

18 1.1.3 All practitioners involved in the person's care should provide immediate  
19 psychological and emotional support for people who are mentally  
20 distressed and/or cognitively impaired after a traumatic injury. Request  
21 additional support and/or advice from psychology services as needed.

- 1 1.1.4 After a traumatic injury:
- 2 • Avoid delays in acute treatment so that rehabilitation can start as soon
- 3 as possible, for example, to maintain movement.
- 4 • Start rehabilitation when the person is ready and able to engage and
- 5 participate. For people who lack capacity to engage in making
- 6 decisions about their rehabilitation, follow the [NICE guideline on](#)
- 7 [decision making and mental capacity](#).
- 8 1.1.5 Provide access to rehabilitation therapies:
- 9 • before surgery, to maintain respiratory function and functional abilities
- 10 (if surgery is delayed) **and**
- 11 • as soon as possible after surgery (starting ideally no later than the
- 12 following day).
- 13 1.1.6 As soon as possible after the traumatic injury, assess how the person's
- 14 physical impairments might affect their ability to engage in activities of
- 15 daily living. Involve occupational therapy for:
- 16 • input and advice on therapies and referral for aids **and**
- 17 • equipment and adaptations.
- 18 1.1.7 Use equipment as appropriate to encourage movement (for example,
- 19 walking aids and transfer devices) and to protect the injury (for example,
- 20 splints or orthotics).
- 21 1.1.8 Ask about the person's diet and nutrition, including their weight, eating
- 22 habits and any use of health supplements such as vitamins and minerals
- 23 or high-calorie drinks.
- 24 1.1.9 Ensure that the initial assessment checks to see if the person can swallow
- 25 safely. Also see [recommendation 1.11.45](#) and the [NICE guideline on](#)
- 26 [nutrition support for adults](#).
- 27 1.1.10 Assess the person's risk of malnutrition using, for example, the Screening
- 28 Tool for the Assessment of Malnutrition in Paediatrics (STAMP) score in

- 1 children and young people under 16 years and, for example, the  
2 Malnutrition Universal Screening Tool (MUST) score for adults (see the  
3 [section on screening for malnutrition and the risk of malnutrition in hospital](#)  
4 [and the community in the NICE guideline on nutrition support in adults](#)).
- 5 1.1.11 Monitor the person's nutritional intake and weight throughout their hospital  
6 stay, provide nutrition support in line with the [NICE guideline on nutrition](#)  
7 [support for adults](#), and refer for a specialist dietitian review if needed.
- 8 1.1.12 Complete a safeguarding assessment for children, young people and  
9 vulnerable adults after a traumatic injury, taking into account any known or  
10 suspected non-accidental injury. (Also see the [NICE guidelines on child](#)  
11 [abuse and neglect](#) and [child maltreatment](#).)

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on assessment and early interventions for people with complex rehabilitation needs](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review A.1/A.2: Identification and assessment of rehabilitation needs after traumatic injury
- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury
- evidence review B.3: Psychological and psychosocial interventions for people with complex rehabilitation needs after traumatic injury
- evidence review B.4: Rehabilitation interventions relating to participation in society for people with complex rehabilitation needs after traumatic injury
- evidence review D.1 (service coordination): Inpatient settings for people with complex rehabilitation needs after traumatic injury.

## 12 **1.2 Multidisciplinary team rehabilitation needs assessment**

- 13 1.2.1 The multidisciplinary team should complete an individualised and holistic  
14 rehabilitation needs assessment involving the person, and their family  
15 members or carers (as appropriate), which should include:

- 1           • physical functioning (see the [section on assessing physical functioning](#))
- 2           • cognitive functioning (see the [section on assessing cognitive](#)
- 3           [functioning](#))
- 4           • psychological functioning (see the [section on assessing psychological](#)
- 5           [functioning](#)).

6   1.2.2    In addition to the holistic rehabilitation needs assessment in  
7            recommendation 1.2.1, the multidisciplinary team should complete  
8            specialist assessments for the following injuries:

- 9           • for limb injuries, see the [section on rehabilitation after limb](#)
- 10          [reconstruction, limb loss or amputation](#)
- 11          • for nerve injuries, see the [section on rehabilitation after nerve injury](#)
- 12          • for spinal injuries, see the [section on rehabilitation after spinal cord](#)
- 13          [injury](#)
- 14          • for chest injuries, see the [section on rehabilitation after chest injury](#).

15   1.2.3    Always think about whether the person may have had a head injury (see  
16            the [section on assessing cognitive functioning](#)). If this is a possibility, refer  
17            them for a specialist assessment with healthcare professionals with  
18            expertise in traumatic brain injury rehabilitation.

19   1.2.4    The multidisciplinary team involved in assessing people's rehabilitation  
20            needs in hospital should consist of healthcare professionals and  
21            practitioners with expertise in rehabilitation after traumatic injury.  
22            Depending on the nature of the injury, the setting for assessment and  
23            treatment, the age of the person and other pre-existing health or care  
24            issues, the multidisciplinary team could involve:

- 25          • surgeons, rehabilitation medicine specialists, intensive care specialists,  
26            elderly care specialists and/or paediatricians (as appropriate)
- 27          • allied health professionals such as occupational therapists,  
28            physiotherapists, dietitians and speech and language therapists
- 29          • practitioner psychologists
- 30          • specialist nurses

1           • a [trauma coordinator](#) and/or [rehabilitation coordinator](#)

2           • when planning discharge:

3                 – a social worker

4                 – a discharge coordinator.

5   1.2.5       The multidisciplinary team should assess the person’s rehabilitation needs  
6               as soon as possible after the traumatic injury, when measures are being  
7               taken to optimise their ability to engage in the assessment process. These  
8               measures include:

9           • pain management

10          • resolution of infections

11          • resolution of acute confusion or delirium

12          • consideration of psychological wellbeing

13          • making available hearing aids, glasses, dentures and other orthodontic  
14             appliances

15          • access to communication aids (if needed)

16          • having in place drug or alcohol dependence withdrawal management

17          • restarting long-term medications to maintain physical and mental  
18             health.

19   1.2.6       If a person lacks mental capacity, a rehabilitation needs assessment  
20               should be carried out in the person’s best interests. See the [NICE](#)  
21               [guideline on decision making and mental capacity](#).

22   1.2.7       As part of the rehabilitation needs assessment, the multidisciplinary team  
23               should ask about the person’s pre-injury activities, for example:

24          • the person’s background, personal history, relationships, work,  
25             education, hobbies and interests

26          • usual activities of daily living, including mobility and other physical  
27             activity

28          • motivational factors such as the person's lifestyle, previous ability and  
29             future aspirations.

- 1 1.2.8 The multidisciplinary team should allow adequate time to:
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- liaise with the clinical team managing any pre-existing, long-term conditions that may affect rehabilitation
  - complete the rehabilitation needs assessment, which should include a detailed and accurate analysis of the person's injuries, impairments, goals and likely rehabilitation needs **and**
  - discuss the findings together, to reduce the need to repeat questions and to improve the efficiency of the assessment process.

- 9 1.2.9 When discussing rehabilitation needs with people, and their family
- 10 members or carers (as appropriate):
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- be sensitive about the timing because pain, confusion, fatigue and trauma can make it more difficult for people to absorb and retain information
  - give people sufficient time to process information about their injuries and rehabilitation options, to help them adjust after the traumatic injury and engage more readily in the rehabilitation therapy
  - if people ask for information about the likely long-term prognosis, recognise that this may be difficult to predict and should only be discussed with the person after multidisciplinary team review.

- 20 1.2.10 Use validated tools (for example, the rehabilitation complexity scale
- 21 [RCS], patient categorisation tool [PCAT] or complex needs checklist
- 22 [CNC]), in the rehabilitation needs assessment to determine the need for
- 23 early referral to specialist rehabilitation units.

- 24 1.2.11 Regularly reassess (using clinical assessment and validated tools)
- 25 whether referral for specialised rehabilitation is still needed and what other
- 26 referrals may now be needed.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on multidisciplinary team rehabilitation needs assessment](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review A.1a: Initial identification and assessment of rehabilitation needs for adults after traumatic injury
- evidence review A.1b: Initial identification and assessment of rehabilitation needs for children and young people after traumatic injury
- evidence review A.2a: Ongoing identification and assessment of rehabilitation needs for adults after traumatic injury
- evidence review A.2b: Ongoing identification and assessment of rehabilitation needs for children and young people after traumatic injury
- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs
- evidence review B.4a: Rehabilitation interventions relating to participation in society for adults with complex rehabilitation needs
- evidence review B.4b: Rehabilitation interventions relating to participation in society for children and young people with complex rehabilitation needs
- evidence review D.2a (service coordination): Inpatient to outpatient settings for adults
- evidence review D.2b (service coordination): Inpatient to outpatient settings for children and young people
- evidence review D3.a (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for adults
- evidence review D3.b (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for children and young people
- evidence review D.4a: Support needs and preferences following discharge to outpatient or community rehabilitation services for adults

- evidence review D.4b: Support needs and preferences following discharge to outpatient or community rehabilitation services for children and young people.

## 1 **Assessing physical functioning**

2 1.2.12 As part of the rehabilitation needs assessment after a traumatic injury, the  
3 multidisciplinary team, including a physiotherapist with appropriate skills  
4 and competencies, should assess the person's pre-injury and current  
5 physical functioning, which should include:

- 6 • assessing pain management to enable physical rehabilitation activities  
7 to begin
- 8 • a comprehensive neuromusculoskeletal assessment to identify physical  
9 impairments such as nerve injury, muscle imbalance and  
10 proprioception problems
- 11 • assessing upper and lower limb function and the impact of the injury on  
12 the person's ability to move and use walking aids (if needed)
- 13 • assessing and recording the range of movement for each joint affected
- 14 • asking about any problems with balance or dizziness and other  
15 vestibular symptoms (either pre-existing or new), and considering  
16 assessment for benign paroxysmal positional vertigo (BPPV) and for  
17 head injury
- 18 • if the traumatic injury has been caused by a fall, asking about previous  
19 falls and considering a falls risk assessment in line with the [section on](#)  
20 [multifactorial risk assessment in the NICE guideline on falls](#)
- 21 • assessing ability to move from lying to sitting, and sitting to standing
- 22 • assessing trunk control and core stability (if relevant)
- 23 • assessing ability to move and level of aerobic fitness and/or exercise  
24 tolerance
- 25 • for children and young people, asking about previous developmental  
26 attainment and functioning.

27 1.2.13 Refer the person for a specialist assessment if the multidisciplinary team  
28 does not have appropriate skills or expertise to perform the assessment  
29 needed. Examples are:

- 1                   • to determine when and how splints and orthoses should be used,  
2                   taking into account that people with complex traumatic injuries may  
3                   need bespoke splints or orthoses  
4                   • if they have external fixation for lower limb fractures  
5                   • if they have sensory loss or nerve injury (see the [section on](#)  
6                   [rehabilitation after nerve injury](#)).
- 7 1.2.14    Assess the person for factors that may affect their ability to engage in  
8                   rehabilitation such as balance and coordination issues, [neurovestibular](#)  
9                   [disorders](#), or vision or hearing loss. Refer for specialist assessment and  
10                  management as needed. (Also see the [NICE guideline on falls](#).)

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on assessing physical functioning](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs.

## 11 **Assessing cognitive functioning**

- 12 1.2.15    Be aware that even if there has been no brain injury, problems with  
13                   cognitive functioning are common after a traumatic injury because of the  
14                   psychological shock and trauma.
- 15 1.2.16    As part of the rehabilitation needs assessment after a traumatic injury, the  
16                   multidisciplinary team should ask about any cognitive problems, for  
17                   example:
- 18                   • confusion
  - 19                   • disorientation
  - 20                   • slowed thinking and/or slowed processing of information

- 1           • withdrawal
- 2           • [traumatic amnesia](#)
- 3           • agitation
- 4           • communication changes (for example, withdrawal or selective mutism).
- 5 1.2.17   If a person has problems with cognitive functioning after a traumatic injury,
- 6           investigate for other causes such as:
- 7           • pre-existing cognitive impairment or dementia (see the [NICE guideline](#)
- 8           [on dementia](#))
- 9           • delirium (for example, alcohol or drug misuse, drug toxicity or opiate-
- 10          related confusion, infection or sepsis, or hypoxia; see the [NICE](#)
- 11          [guideline on delirium](#))
- 12          • behavioural problems or learning disabilities (see the [NICE guideline on](#)
- 13          [challenging behaviour and learning disabilities](#))
- 14          • traumatic brain injury (this may not show up on scans immediately and
- 15          further investigations will be needed if it is suspected).
- 16 1.2.18   If a person has problems with cognitive functioning after a traumatic injury
- 17           and the potential causes in recommendation 1.2.17 have been ruled out,
- 18           assess the person's:
- 19          • orientation to time, place, person and situation
- 20          • ability to follow simple instructions
- 21          • ability to recall information and communicate it correctly after a short
- 22          period of time.
- 23 1.2.19   If the assessment in recommendation 1.2.18 confirms difficulties with
- 24           cognitive functioning, refer the person to an occupational therapist,
- 25           practitioner psychologist (ideally a neuropsychologist) or a speech and
- 26           language therapist (as appropriate) for a specialist cognitive assessment.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on assessing cognitive functioning](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.2a: Cognitive interventions for adults with complex rehabilitation needs
- evidence review B.2b: Cognitive interventions for children and young people with complex rehabilitation needs.

## 1 **Assessing psychological functioning**

2 1.2.20 As part of the rehabilitation needs assessment after a traumatic injury, the  
3 multidisciplinary team should ask about psychological and psychosocial  
4 risk factors, for example:

- 5 • past or present mental health problems, such as anxiety or depression
- 6 • past or present mental illness or psychiatric treatment
- 7 • history of traumatic brain injury
- 8 • history of self-harm or suicide attempts
- 9 • any experience of domestic violence or abuse
- 10 • any safeguarding concerns (if the person is a child or a vulnerable  
11 adult)
- 12 • excessive alcohol consumption or recreational drug use
- 13 • the circumstances of the injury, for example, self-harm or a violent  
14 crime
- 15 • social factors that mean the person may need additional support, for  
16 example, if the person is homeless, a refugee or recent migrant, if they  
17 have difficulty reading or speaking English, or if they have learning  
18 disabilities or other needs.

19 1.2.21 As part of the rehabilitation needs assessment after a traumatic injury,  
20 look for indicators of psychological problems (including lack of  
21 engagement with rehabilitation) beyond that of an acute stress response  
22 (see [recommendation 1.13.1](#)). Take into account any psychological and  
23 psychosocial risk factors (see recommendation 1.2.20) and, if needed,  
24 refer the person for a psychological assessment with a practitioner

1 psychologist (with relevant expertise in physical trauma and rehabilitation)  
2 to inform their [rehabilitation plan](#) and goals.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on assessing psychological functioning](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.3: Psychological and psychosocial interventions for people with complex rehabilitation needs after traumatic injury.

### 3 **1.3 Setting rehabilitation goals**

4 Also see the [section on supporting access and participation in education, work and](#)  
5 [community \(adjustment and goal setting\)](#).

6 1.3.1 Agree short-term and long-term rehabilitation goals with the person, and  
7 their family members or carers (as appropriate), and review them regularly  
8 based on:

- 9 • what is most important to the person
- 10 • activities that are meaningful for the person and relate to what is  
11 important
- 12 • a strengths-based approach, which builds on positive function and  
13 ability
- 14 • the person's home circumstances
- 15 • the person's aspirations about returning to work or education, and their  
16 preferred timeframe
- 17 • an understanding that there may be setbacks as well as gains, so goals  
18 should be flexible.

19 1.3.2 When setting long-term rehabilitation goals, agree small steps so that  
20 progress can be monitored in a way that is meaningful and motivational  
21 for the person.

- 1 1.3.3 Members of the multidisciplinary team involved in setting rehabilitation  
2 goals should be skilled and competent in:
- 3 • helping people identify goals that are right for them
  - 4 • understanding how the psychological impact of trauma can affect goal  
5 setting and rehabilitation planning.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on setting rehabilitation goals](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

## 6 **1.4 Developing a rehabilitation plan and making referrals**

- 7 1.4.1 Use the rehabilitation needs assessment (see the [section on](#)  
8 [multidisciplinary team rehabilitation needs assessment](#)) and the person's  
9 rehabilitation goals (see the [section on setting rehabilitation goals](#)) to  
10 develop a [rehabilitation plan](#) for the person (this may be in the form of a  
11 rehabilitation prescription). The rehabilitation plan should include:
- 12 • information about the person's injuries
  - 13 • the person's short-term and long-term rehabilitation goals (see the  
14 [section on setting rehabilitation goals](#))
  - 15 • information about the person's needs and preferences
  - 16 • a suggested rehabilitation programme of therapies and treatments (see  
17 the [section on rehabilitation programmes of therapies and treatments](#))
  - 18 • how the rehabilitation programme of therapies and treatments will be  
19 delivered
  - 20 • information about referrals or sources of further information
  - 21 • any follow-up arrangements (especially when transferring to home or  
22 community settings)

- 1           • who the rehabilitation plan should be shared with (with the person's
- 2            consent) and details about any information that the person wants to
- 3            remain confidential
- 4           • details of a [rehabilitation coordinator](#) or [key worker](#), and the lead
- 5            healthcare professional involved in the person's care.

6    1.4.2    The rehabilitation plan should be:

- 7           • a tailored and individualised journey towards the person's agreed
- 8            goals, focusing on what is important to them
- 9           • developed with the person, and their family members or carers (as
- 10          appropriate)
- 11          • based on advice and input from all members of the multidisciplinary
- 12          team
- 13          • written in clear English
- 14          • a single document or file
- 15          • shared with the person, their families and carers (as appropriate), the
- 16          person's GP, and healthcare professionals involved in their ongoing
- 17          care
- 18          • regularly updated in partnership with the person to reflect their
- 19          progress, goals, ongoing needs and key contact information,
- 20          particularly at key points of transition in care.

21    1.4.3    Where it is not possible or appropriate for the person to have access to all

22            of the information in a rehabilitation plan, ensure that important

23            components of the plan are included in a summarised patient-held

24            document that is regularly updated with progress, appointment times and

25            contact details.

26    1.4.4    If there are aspects of the rehabilitation plan that the multidisciplinary

27            team cannot implement, the rehabilitation coordinator or another senior

28            member of the multidisciplinary team should make appropriate referrals

29            without delay, including referrals to [specialised rehabilitation services](#).

- 1 1.4.5 Manage the care of adults with fragility fractures of the femur within a  
2 specialist pathway involving orthogeriatricians. Also see the [NICE](#)  
3 [guideline on hip fracture](#).
- 4 1.4.6 If an older person with a traumatic injury is on a care pathway that does  
5 not routinely involve geriatrician support, consider referral to an  
6 orthogeriatrician, a surgical liaison or a perioperative physician (as  
7 appropriate).
- 8 1.4.7 For adults with a fragility fracture, assess bone health and refer as  
9 necessary, for example, to a specialist bone health clinic or outpatient  
10 service. Also see the [NICE guideline on osteoporosis](#).
- 11 1.4.8 If a traumatic injury has been caused by a fall, ask the person about  
12 previous falls, and consider a falls risk assessment and a referral to a  
13 community falls service (as appropriate). Also see the [section on](#)  
14 [multifactorial risk assessment in the NICE guideline on falls](#).
- 15 1.4.9 Assess all adults over 65 who have a traumatic injury for their risk of falls  
16 in line with the [recommendations on multifactorial risk assessment in the](#)  
17 [NICE guideline on falls](#).
- 18 1.4.10 Provide information about, or refer people to, services that may help  
19 prevent future injury, such as falls prevention, safeguarding services,  
20 violence prevention programmes, and condition-specific support  
21 organisations.
- 22 1.4.11 For people admitted to hospital with violent injuries related to suspected  
23 criminal activity, consider a violence prevention programme and follow-up  
24 as part of their rehabilitation plans. This could include psychological  
25 support (for example, counselling), substance abuse rehabilitation,  
26 employment or education training, group sessions, family development,  
27 social worker involvement, and rehousing, when needed.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on developing a rehabilitation plan and making referrals](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review A.1/A.2: Identification and assessment of rehabilitation needs after traumatic injury
- evidence review B.4: Rehabilitation interventions relating to participation in society for people with complex rehabilitation needs after traumatic injury
- evidence review D.1 (service coordination): Inpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury.

## 1 **1.5 Rehabilitation programmes of therapies and treatments**

### 2 **General principles for rehabilitation programmes**

3 1.5.1 Rehabilitation programmes of therapies and treatments should:

- 4 • form part of the person's [rehabilitation plan](#), and be tailored to their  
5 individual needs (see the [section on developing a rehabilitation plan  
6 and making referrals](#))
- 7 • focus on outcomes (for example, return to work, school or leisure  
8 activities) and be based on the person's short-term and long-term  
9 rehabilitation goals (see the [section on setting rehabilitation goals](#))
- 10 • include educational material to help people understand the nature of  
11 their injuries and to prepare them for any long-term or intensive periods  
12 of rehabilitation (for example, sleep, pacing activities and pain  
13 management)

- 1           • include (as appropriate) physical, cognitive and psychological therapies  
2           and treatments such as physiotherapy, exercise occupational therapy,  
3           psychology and orthotics, as well as injury-specific therapies and  
4           treatments; see the sections on:  
5           – [physical rehabilitation](#)  
6           – [cognitive rehabilitation](#)  
7           – [psychological rehabilitation](#)  
8           – [rehabilitation after limb reconstruction, limb loss or amputation](#)  
9           – [rehabilitation after spinal cord injury](#)  
10          – [rehabilitation after nerve injury](#)  
11          – [rehabilitation after chest injury](#)  
12          • include access to specialist services to address complex issues such  
13          as fertility and endocrine concerns  
14          • include (as appropriate) a combination of group and individual sessions  
15          as well as the development of a self-management rehabilitation  
16          programme (see the [section on supporting access and participation in](#)  
17          [education, work and community \[adjustment and goal settings\]](#))  
18          • include and document regular progress reviews and a final assessment  
19          to review outcomes, update the rehabilitation plan and detail any  
20          ongoing rehabilitation needs for onward referrals to GP, outpatient  
21          and/or community services  
22          • include post-programme follow-up, in person or virtually.
- 23 1.5.2   Tailor the start time, frequency, intensity and duration of the rehabilitation  
24           programme to have the most beneficial effect on the person's recovery  
25           (for example, a short period of intensive rehabilitation at an important time  
26           point might be better than weekly sessions over a long period).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on general principles for rehabilitation programmes](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs.

## 1 Intensive rehabilitation programmes

2 1.5.3 Consider an intensive (for example, 3-week) residential or outpatient  
3 rehabilitation programme for adults, young people and children with  
4 complex injuries and rehabilitation needs if such an intervention is likely to  
5 have a significant impact on change in function (for example, it could  
6 result in return to work or education and living independently).

7 1.5.4 When providing intensive rehabilitation programmes:

- 8
- offer education and learning materials (see the [section on guided self-managed rehabilitation](#)) to prepare people for intensive rehabilitation,  
9 for example, 1 week of remote learning followed by a (for example,  
10 3-week) residential or outpatient programme
  - answer questions, such as those relating to the person's injuries and  
11 rehabilitation
  - consider delivering rehabilitation therapies only during weekdays to  
12 allow for rest periods at weekends and time to review progress
  - communicate any changes to the rehabilitation plan with the local team  
13 following the intensive period of rehabilitation.
- 14
- 15
- 16
- 17

18 1.5.5 Start an intensive rehabilitation programme at the appropriate time for the  
19 person, taking into account:

- that the timing and nature of rehabilitation therapies and treatments will  
20 depend on issues such as bone and soft tissue healing, weight-bearing,  
21 and removal of weight-bearing restrictions
- 22

- 1                   • the person’s psychological and emotional wellbeing, levels of  
2                   adjustment and engagement with the rehabilitation process.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on intensive rehabilitation programmes](#).

Full details of the evidence and the committee’s discussion are in the [evidence reviews](#):

- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs.

### 3 **Guided self-managed rehabilitation**

4 1.5.6 Consider guided self-managed rehabilitation to allow the person to  
5 engage in rehabilitation in their own time and by their own schedule,  
6 working with rehabilitation healthcare professionals and practitioners, with  
7 regular reviews to check on progress, provide ongoing reassurance and  
8 answer queries.

9 1.5.7 As part of a self-management rehabilitation programme, consider  
10 providing a tailored package of online education and learning materials for  
11 people after a traumatic injury, which could include information on:

- 12 • movement and physical activity
- 13 • energy conservation and pacing
- 14 • sleep
- 15 • activities of daily living
- 16 • work, social activities and hobbies
- 17 • nutrition and diet
- 18 • pain management and medicines
- 19 • wound healing
- 20 • mental health
- 21 • local and national sources of information

- 1                   • peer support services.

2

3                   For people who cannot access the internet, explore alternative ways to  
4                   provide these materials.

5 1.5.8       If people are following a self-management rehabilitation programme,  
6                   consider arranging follow-up appointments and regular reviews with  
7                   rehabilitation healthcare professionals and practitioners to check on self-  
8                   managed progress, provide ongoing reassurance and answer new  
9                   queries.

10 1.5.9       For children, young people and vulnerable adults, offer additional support  
11                   to develop and deliver a self-management programme that takes into  
12                   account their own views and priorities.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on guided self-managed rehabilitation](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs
- evidence review B.3a: Psychological interventions for adults with complex rehabilitation needs
- evidence review B.3b: Psychological interventions for children and young people with complex rehabilitation needs
- evidence review B.4a: Rehabilitation interventions relating to participation in society for adults with complex rehabilitation needs
- evidence review B.4b: Rehabilitation interventions relating to participation in society for children and young people with complex rehabilitation needs

- evidence review D3.a (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for adults
- evidence review D3.b (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for children and young people
- evidence review D.4a: Support needs and preferences following discharge to outpatient or community rehabilitation services for adults
- evidence review D.4b: Support needs and preferences following discharge to outpatient or community rehabilitation services for children and young people.

## 1 **Monitoring progress against the rehabilitation plan, goals and** 2 **programme of therapies and treatments**

- 3 1.5.10 Monitor the person's progress after starting rehabilitation. Use tools such  
4 as patient-reported outcome measures (PROMs) and clinician-reported  
5 outcome measures (CROMs) for adults; parent- and child-reported  
6 measures (such as the pediatric quality of life inventory [PedsQL]) for  
7 children and young people; and consider tools that involve family  
8 members and carers.
- 9 1.5.11 Encourage people to record information about their injuries, treatments  
10 and rehabilitation therapy options (for example, using a diary as part of  
11 their rehabilitation plan) to assist discussions and shared decision making.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on monitoring progress against the rehabilitation plan, goals and programme of therapies and treatments](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury

- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury.

## 1 **1.6 Principles for sharing information and involving family and** 2 **carers**

3 1.6.1 Involve people, and their families and carers (as appropriate), in  
4 assessments, in planning their coordination of care and in making  
5 decisions at all stages of the rehabilitation process. This should include  
6 discussing medical or surgical treatment options, discussing findings from  
7 assessments, setting goals, discussing potential discharge destinations  
8 and examining the different rehabilitation options after discharge.

9 1.6.2 Encourage and support children and young people to be actively involved  
10 in decision making about their rehabilitation to the best of their ability.

11 1.6.3 Be aware that encouragement from family members, carers, friends and  
12 healthcare professionals can all have a positive effect on a person's  
13 rehabilitation after a traumatic injury, so involve the person's family  
14 members, carers and friends (as appropriate) as much as possible  
15 throughout the person's rehabilitation journey.

16 1.6.4 In discussions and when giving information to people, and their family  
17 members or carers (as appropriate), use clear language, and tailor the  
18 timing, content and delivery of information to the needs and preferences  
19 of the person. Information should be:

- 20 • specific to the person's injuries
- 21 • offered in face-to-face (in person or remotely by video link) discussions,  
22 and in a suitable format, for example, digital, printed, braille or Easy  
23 Read
- 24 • offered throughout the person's care
- 25 • individualised and sensitive
- 26 • supportive and respectful

- 1           • evidence-based and consistent between healthcare professionals.

2

3           For more guidance on communication, providing information (including  
4           different formats and languages) and shared decision making, see the  
5           [NICE guideline on patient experience in adult NHS services](#) and the  
6           [NICE guideline on shared decision making](#).

7 1.6.5     Be aware that if a person has severe and [complex rehabilitation needs](#)  
8           after a traumatic injury, if they have had a brain injury or if they have  
9           problems with cognitive functioning after a traumatic injury, information  
10          giving may need to be enhanced and reinforced by:

- 11           • repeating information on several occasions  
12           • providing information in a suitable format (for example, Easy Read)  
13           • giving information in the presence of family members or carers (as  
14           appropriate).

15 1.6.6     Be aware that people who lack mental capacity or who have care and  
16           support needs may be legally entitled to professional advocacy under the  
17           [Mental Capacity Act 2005](#) and/or the [Care Act 2014](#). Also see the [NICE](#)  
18           [guideline on decision making and mental capacity](#).

19 1.6.7     Advise carers about their right to a carer's assessment, an assessment for  
20           respite care, and other support (see the [NICE guideline on supporting](#)  
21           [adult carers](#) for recommendations on identifying, assessing and meeting  
22           the caring, physical and mental health needs of families and carers).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on principles for sharing information and involving family and carers](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review D.1 (service coordination): Inpatient settings for people with complex rehabilitation needs after traumatic injury

- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury
- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

1

## 2 **1.7 Coordination of rehabilitation care in hospital**

### 3 **From admission to hospital**

4 1.7.1 Where possible, provide continuity of staff throughout the person's  
5 rehabilitation pathway.

6 1.7.2 Assign a named [rehabilitation coordinator](#) or [key worker](#) to oversee the  
7 person's care as soon as possible and within 72 hours of admission.  
8 Ensure that the person knows who their rehabilitation coordinator or key  
9 worker is, and how they can be contacted.

10 1.7.3 The trauma team should agree the core members of the rehabilitation  
11 multidisciplinary team who will establish an injury management plan and  
12 start developing a [rehabilitation plan](#) and goals. See [recommendation](#)  
13 [1.2.4](#) for details of the multidisciplinary team after hospital admission.

14 1.7.4 A member of the rehabilitation multidisciplinary team should discuss the  
15 person's rehabilitation at daily trauma meetings or ward rounds.

16 1.7.5 Where assessment identifies the need for specialist rehabilitation (see the  
17 [section on multidisciplinary team rehabilitation needs assessment](#)),  
18 complete the referral to specialist rehabilitation units as soon as possible.

## 1 **When transferring between services and settings**

2 1.7.6 Make follow-up appointments with acute teams (if needed) for people  
3 moving from an acute unit to rehabilitation services, and ensure that the  
4 person is informed before they are transferred.

5 1.7.7 When people transfer between service providers or settings (for example,  
6 wards, hospitals and inpatient rehabilitation facilities), share information  
7 (with the person's consent) by providing a detailed verbal and written or  
8 online handover (for example, the rehabilitation plan and the person's  
9 progress against it) and let the person know this has been done. Ensure  
10 information is promptly communicated:

- 11 • to those coordinating and delivering rehabilitation in the new setting or  
12 service
- 13 • to the person, and family members and carers (as appropriate)
- 14 • to any other service providers involved in the person's care and  
15 support.

16 1.7.8 The detailed handover and report should include oral and online or printed  
17 information about:

- 18 • all of the person's injuries
- 19 • different treatment options and their benefits and risks
- 20 • the person's current rehabilitation plan and goals
- 21 • psychological approaches to managing pain and fatigue, if relevant
- 22 • beneficial activities, and activities to avoid
- 23 • how to manage activities of daily living, including self-care and re-  
24 engaging with everyday life
- 25 • plans for returning to work or school, housing and benefits, driving, if  
26 relevant
- 27 • how to recognise possible problems or complications, and what to do
- 28 • local support groups, opportunities to access peer support, online  
29 forums and national charities, and how to get in touch with them
- 30 • services that provide independent legal, financial, employment and  
31 welfare advice

- 1           • advice for the family or carers about
- 2           – what to expect and how to support the person at home
- 3           – the impact of the traumatic injury on family members and carers, and
- 4           how they can get support.
- 5 1.7.9     When people transfer between service providers or settings, discuss with
- 6           them:
- 7           • their expected recovery pathway
- 8           • what might happen if recovery is slower than expected
- 9           • the emotional impact of living with possible long-term symptoms and
- 10          treatments.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on coordination of rehabilitation care in hospital](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury
- evidence review D.1 (service coordination): Inpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury
- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

## 1 **1.8 Coordination of rehabilitation care at discharge**

### 2 **Discharge planning and a multidisciplinary approach**

3 1.8.1 Consider early, multidisciplinary, discharge planning to ensure appropriate  
4 and smooth discharge and transition to outpatient and community  
5 services.

6 1.8.2 Reassess the person's needs and review the [rehabilitation plan](#) before  
7 discharge to ensure that their needs are addressed alongside any long-  
8 term, existing health conditions or disabilities.

9 1.8.3 Be aware that family members and carers can play a key role in the  
10 smooth transition to outpatient and community services. If the person  
11 consents and their family members or carers agree, actively involve them  
12 in the transition process.

13 1.8.4 Give people information and support at the earliest opportunity if they  
14 need to apply for funded equipment for use after discharge from hospital  
15 (for example, wheelchairs) because applications can take time to process  
16 and may delay the person's discharge.

17 1.8.5 Advise people that further help with funding for equipment, assistive  
18 technology, environmental adaptations and other forms of support with  
19 rehabilitation might be available for their home, education and workplace  
20 settings (for example, through local authorities, the Education, Health and  
21 Care Plan, Access to Work Grants, and the Department for Work and  
22 Pensions).

23 1.8.6 Give people, and their family members or carers (as appropriate),  
24 information about services that provide independent legal, financial,  
25 employment and welfare advice (for example, the Citizens Advice  
26 Bureau).

27 1.8.7 If a person has significant ongoing and complex medical and therapy  
28 needs, offer a gradual and incremental return into the community, for  
29 example, transfer to a local hospital, a stepdown bed or a pre-discharge

1 visit to home, to reduce the distress of the sudden loss of support as an  
2 inpatient.

3 1.8.8 Where possible, arrange joint inpatient and community team home visits  
4 with the person before discharge, especially for people with significant  
5 ongoing needs.

6 1.8.9 If there are any concerns about how the person will manage at home after  
7 they are discharged, consider overnight or weekend visits home before  
8 discharge, depending on their needs, preferences and home  
9 circumstances.

10 1.8.10 When arranging overnight or weekend visits home, involve the person in  
11 discussing the possible risks and how to manage them, especially if they  
12 live alone.

### 13 **Planning for rehabilitation and other support following discharge**

14 1.8.11 If a person is likely to have continuing health and social care needs after  
15 discharge to home:

- 16 • inform relevant healthcare professionals, social care practitioners and  
17 education practitioners (as appropriate)
- 18 • establish the person's eligibility for funded social care support, including  
19 for families and carers
- 20 • use the NHS continuing healthcare checklist, to establish the person's  
21 eligibility for a full continuing healthcare assessment before discharge
- 22 • for children and young people, establish their eligibility for funded  
23 support through an education, health and social care plan.

24  
25 Also see the [NICE guideline on transition between inpatient hospital](#)  
26 [settings and community or care home settings for adults with social](#)  
27 [care needs](#).

28 1.8.12 Offer a multidisciplinary approach to meet the person's rehabilitation and  
29 social care needs that is coordinated, consistent and as integrated as

1 possible, to support the person, and their family or carer (as appropriate),  
2 through transfer from inpatient to outpatient rehabilitation services.

3 1.8.13 Document in the rehabilitation plan and handover report how rehabilitation  
4 after discharge will be delivered (see [recommendations 1.7.7 to 1.7.9](#) for  
5 what should be included). When transferring the person to outpatient and  
6 community settings (including home), also include:

- 7 • whether ongoing support and follow-up after discharge is needed, for  
8 example, community rehabilitation, referrals and review appointments
- 9 • when community rehabilitation appointments will be likely to take place.

10 1.8.14 For people who will have significant ongoing needs after discharge:

- 11 • arrange a pre-discharge planning meeting with community practitioners  
12 who will be involved in the person's rehabilitation, care and support (for  
13 example, therapists, social workers and care coordinators)
- 14 • encourage pre-discharge visits by community practitioners to meet the  
15 person, and their family or carer (as appropriate)
- 16 • consider organising a joint 'handover' appointment between the  
17 inpatient multidisciplinary team and community practitioners at the point  
18 of discharge.

19 1.8.15 Liaise with community teams (such as community and voluntary sector  
20 providers, physiotherapists and occupational therapists, education  
21 support, and special educational needs coordinators in schools and  
22 nurseries for children and young people) to agree a staged return to the  
23 workplace or education. (See also the [NICE guideline on transition  
24 between inpatient hospital settings and community or care home settings  
25 for adults with social care needs.](#))

26 1.8.16 When planning discharge, address potential barriers that may prevent the  
27 person accessing rehabilitation in the community. For example, ensure  
28 that they can travel to and access the location of treatments, and ensure  
29 that the timing and length of appointments will be manageable for them.

- 1 1.8.17 If a person cannot travel to rehabilitation appointments, offer telephone or  
2 video consultations, or rehabilitation in the person's home.
- 3 1.8.18 Consider arranging telephone or video consultations or rehabilitation in  
4 the person's home, rather than in a clinic or hospital setting (for example,  
5 if the person needs help to learn to live independently in their own home).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on coordination of rehabilitation care at discharge](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review A.1a: Initial identification and assessment of rehabilitation needs for adults after traumatic injury
- evidence review A.1b: Initial identification and assessment of rehabilitation needs for children and young people after traumatic injury
- evidence review A.2a: Ongoing identification and assessment of rehabilitation needs for adults after traumatic injury
- evidence review A.2b: Ongoing identification and assessment of rehabilitation needs for children and young people after traumatic injury
- evidence review B.4a: Rehabilitation interventions relating to participation in society for adults with complex rehabilitation needs
- evidence review B.4b: Rehabilitation interventions relating to participation in society for children and young people with complex rehabilitation needs
- evidence review D.2a (service coordination): Inpatient to outpatient settings for adults
- evidence review D.2b (service coordination): Inpatient to outpatient settings for children and young people
- evidence review D3.a (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for adults

- evidence review D3.b (service coordination): Barriers and facilitators to accessing rehabilitation services, including follow-up, following discharge to the community for children and young people
- evidence review D.4a: Support needs and preferences following discharge to outpatient or community rehabilitation services for adults
- evidence review D.4b: Support needs and preferences following discharge to outpatient or community rehabilitation services for children and young people.

## 1 **A single point of contact, key contact and key worker after discharge**

2 1.8.19 At discharge from hospital, provide people and their family or carers (as  
3 appropriate) with a [single point of contact](#) at the hospital for information,  
4 help and advice for a limited time period (for example, 3 months).

5 1.8.20 If people need ongoing rehabilitation and other health and social care  
6 support after discharge, the inpatient multidisciplinary team and  
7 community practitioners should agree who will be the key contact after  
8 discharge when contact with the hospital is no longer appropriate (see  
9 recommendation 1.8.21). This person may be a GP, rehabilitation  
10 physician, special educational needs coordinator, case manager, disability  
11 paediatrician or [neuro navigator](#).

12 1.8.21 If people have complex or long-term conditions or social care needs,  
13 consider appointing a [key worker](#) as a direct source of advice, support  
14 and signposting. This should be a healthcare or social care professional  
15 with knowledge and expertise about inpatient or community-based  
16 rehabilitation and support, including education or training support for  
17 children and young people.

18 1.8.22 For young people who are transitioning between children's and adults'  
19 services, see recommendations about the [role of the named worker in the  
20 NICE guideline on transition from children's to adults' services for young  
21 people using health or social care services](#).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on a single point of contact, key contact and key worker after discharge](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.4: Rehabilitation interventions relating to participation in society for people with complex rehabilitation needs after traumatic injury
- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury
- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

## 1 **1.9 Supporting access and participation in education, work** 2 **and community (adjustment and goal settings)**

3 Also see the [section on setting rehabilitation goals](#).

4 1.9.1 Help and support the person to adjust after a traumatic injury by asking  
5 them and their family members or carers (as appropriate) about:

- 6 • their life, hobbies, occupation, usual activities, and personal and family  
7 history, and finding out what is important to them
- 8 • their views and feelings about their injuries and rehabilitation options
- 9 • the support they think they will need by asking about their views and  
10 feelings
- 11 • allowing time for adjustment and considering this before starting any  
12 new rehabilitation therapies or interventions.

- 1 1.9.2 Support the person to achieve realistic rehabilitation goals for life skills,  
2 work-related training or education. Support should be tailored to the  
3 person's needs and may include:
- 4 • providing equipment and adaptations (for example, wheelchairs and  
5 seating)
  - 6 • increasing independence in activities of daily living (for example,  
7 personal care, dressing and bathing, housework, shopping, food  
8 preparation, eating and drinking, managing money, how to access  
9 carers' and disability benefits and grants, driving or using public  
10 transport)
  - 11 • work-related training (for example, careers advice and retraining)
  - 12 • access to education for children and young people (for example,  
13 special educational needs and disabilities [SEND] adjustments in  
14 school, or new school placements).
- 15 1.9.3 Revisit rehabilitation goals with the person at regular intervals and align  
16 them with ongoing emotional and psychological adjustment.
- 17 1.9.4 Give people information about opportunities for engaging in daily  
18 meaningful activity (for example, hobbies, social activities or voluntary  
19 work) while they are in the process of a staged return to work.
- 20 1.9.5 Adapt rehabilitation activities to promote social interaction and  
21 participation in the person's normal activities of daily living consistent with  
22 the person's lifestyle and preferences.
- 23 1.9.6 Provide information for the person's employer or education provider  
24 about:
- 25 • the person's rehabilitation needs **and**
  - 26 • how they can make adjustments to support the person's rehabilitation  
27 goals, for example, a staged or part-time return to work or education,  
28 and/or amended duties.

- 1 1.9.7 See the [section on workplace culture and policies in the NICE guideline](#)  
2 [on workplace health: long-term sickness absence and capability to work](#)  
3 for recommendations about vocational support and returning to work.
- 4 1.9.8 Provide information for early years settings or schools about the child or  
5 young person's rehabilitation needs, and the adjustments needed to  
6 enable their return to education, for example, a staged return.
- 7 1.9.9 Give children and young people, and their families and carers (as  
8 appropriate), information about educational support and return to school.
- 9 1.9.10 For young people who are starting to access support from adult  
10 rehabilitation services, see the [NICE guideline on transition from](#)  
11 [children's to adults' services for young people using health or social care](#)  
12 [services](#).
- 13 1.9.11 Community practitioners should offer emotional and psychological support  
14 to adults and their families and carers to help with lifestyle adjustments  
15 and the effects of the traumatic injury (for example, prolonged  
16 hospitalisations), and support their gradual return to work, education,  
17 social roles and leisure activities.
- 18 1.9.12 The [team around the child](#) should offer emotional and psychological  
19 support to children, young people and their families and carers to help  
20 with lifestyle adjustments and the effects of the traumatic injury (for  
21 example, prolonged hospitalisations), and support their gradual return to  
22 education, play, social and leisure activities.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on supporting access and participation in education, work and community \(adjustment and goal settings\)](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.3: Psychological and psychosocial interventions for people with complex rehabilitation needs after traumatic injury
- evidence review B.4: Rehabilitation interventions relating to participation in society for people with complex rehabilitation needs after traumatic injury
- evidence review D.3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury
- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

## 1 **1.10 Commissioning and organisation of rehabilitation services**

### 2 **Commissioning**

3 1.10.1 When planning, commissioning and coordinating the delivery of  
4 rehabilitation and related services (for example, social care and the  
5 voluntary sector), commissioners and providers should design services  
6 with whole care pathways in mind, from acute treatment and inpatient  
7 rehabilitation through to community provision, including specialised and  
8 non-specialised elements.

9 1.10.2 Ensure collaboration between commissioners from different  
10 commissioning bodies to ensure seamless provision, for example, to  
11 include specialist community, vocational and educational rehabilitation  
12 provision for people after a traumatic injury, including those transferring  
13 between children's and adults' services.

14 1.10.3 Ensure that it is clear locally who has overall designated commissioning  
15 responsibility for rehabilitation services.

16 1.10.4 Commissioners and providers should ensure that rehabilitation services  
17 for people after a traumatic injury:

- 18
- meet the needs of people of all ages and at all stages of rehabilitation

- 1                   • are developed in collaboration with the people who use rehabilitation  
2                   services and the healthcare professionals who work within them  
3                   • are outcome-focused and relevant for the people who use them.

4 1.10.5    Consider commissioning intensive (for example, 3-week) residential or  
5                   outpatient rehabilitation programmes for people of all ages in addition to  
6                   existing rehabilitation pathways, for example, as a tertiary service within  
7                   the trauma network.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on commissioning](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1a: Physical interventions for adults with complex rehabilitation needs
- evidence review B.1b: Physical interventions for children and young people with complex rehabilitation needs
- evidence review D.1a (service coordination): Inpatient settings for adults
- evidence review D.1b (service coordination): Inpatient settings for children and young people.

## 8   **Organisation**

9 1.10.6    Establish care networks (for example, trauma networks) and clear  
10                   guidance on coordination and communication between rehabilitation  
11                   settings and services to meet the needs of the local population across  
12                   different aspects of rehabilitation service commissioning.

13 1.10.7    Rehabilitation units should maintain an online directory of care pathways,  
14                   rehabilitation facilities and voluntary sector services (including recreational  
15                   facilities) so that practitioners have access to up-to-date information and  
16                   contact details to pass on to people with complex rehabilitation needs.

- 1 1.10.8 If community treatments and services remain uncertain at the point of  
2 discharge, give people and their families and carers (as appropriate)  
3 information about rehabilitation community and social services available in  
4 their local area and from national support networks, and how they can  
5 access these.
- 6 1.10.9 Offer networking opportunities between different rehabilitation, social care  
7 and related services to enhance inter-service awareness and working  
8 relationships.
- 9 1.10.10 Consider technology-enabled follow-up, support and rehabilitation  
10 sessions if people request more local, accessible therapy or if  
11 rehabilitation practitioners are not available in their area, for example, in  
12 rural areas.
- 13 1.10.11 Consider group rehabilitation sessions to allow people to interact with  
14 peers, share experiences and to provide valuable support.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on organisation](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review D.1 (service coordination): Inpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D3 (service coordination): Barriers and facilitators to accessing rehabilitation services following discharge to the community for people with complex rehabilitation needs after traumatic injury.

## 15 **Rehabilitation skills, knowledge and expertise in the workforce**

- 16 1.10.12 Ensure that staff working with people with complex rehabilitation needs  
17 have specialist skills, knowledge and expertise in the person's injuries, the

1 complexity of their rehabilitation needs and goals, and the stages of their  
2 recovery journey.

3 1.10.13 Ensure that hospital staff have access to supervision and training to  
4 develop their specialist knowledge in the management and rehabilitation  
5 of traumatic injuries.

6 1.10.14 Ensure that community rehabilitation practitioners have access to training  
7 expertise, advice or peer support from specialist services, especially  
8 where specific rehabilitation interventions or services are not widely  
9 available. For example, healthcare professionals such as speech and  
10 language therapists, practitioner psychologists and consultants with  
11 specialist knowledge of specific injuries and complex rehabilitation could  
12 work together with general rehabilitation staff working in community-based  
13 rehabilitation services.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation skills, knowledge and expertise in the workforce](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review D.2 (service coordination): Inpatient to outpatient settings for people with complex rehabilitation needs after traumatic injury
- evidence review D.4 (service coordination): Support needs and preferences following discharge to outpatient or community rehabilitation services for people with complex rehabilitation needs after traumatic injury.

14

## 1 **1.11 Physical rehabilitation**

### 2 **Physical rehabilitation – early interventions and principles**

3 1.11.1 Provide individualised exercises as soon as possible after a traumatic  
4 injury to maintain and improve muscle function, strength and range of  
5 movement.

6 1.11.2 If needed, provide aids, splints or orthotics to maintain range of movement  
7 or protect the injury (for example, an ankle-foot orthosis, knee brace or  
8 spinal orthosis).

9 1.11.3 Use clinical judgement and expertise to determine the frequency and dose  
10 of the prescribed exercises because this is vital to the success of the  
11 interventions, and will differ depending on the individual needs and goals.

12 1.11.4 Before starting weight-bearing exercises, be aware of the effects of low  
13 blood pressure (for example, postural hypotension or vasovagal syncope  
14 [fainting]) and monitor the person for hypotensive symptoms when starting  
15 therapy.

16 1.11.5 Minimise adverse effects of low blood pressure and loss of postural  
17 reflexes by:

- 18 • optimising the person's bed position and using strategies such as
- 19 thromboembolic stockings
- 20 • ensuring adequate hydration
- 21 • carrying out a medication review
- 22 • using abdominal binders and tilt tables.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on physical rehabilitation – early interventions and principles](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 1 **Early weight-bearing**

2 1.11.6 The surgical team should define the person's weight-bearing status at the  
3 earliest opportunity after a traumatic injury, and inform the rehabilitation  
4 multidisciplinary team, explaining the reasons for restricted weight-  
5 bearing, what limits should be put in place and for how long.

6 1.11.7 Start a programme of weight-bearing exercises, including exercises  
7 through play for children and young people, as soon as possible after a  
8 traumatic injury to encourage mobility and maintain postural reflexes,  
9 muscle mass, strength and function.

10 1.11.8 For people with lower limb injuries, start a programme of targeted weight-  
11 bearing exercises, including exercises through play for children and young  
12 people, to improve range of movement of the affected joint(s), improve  
13 muscle activation, and improve strength and balance. Aim to progress the  
14 person's function with weight-bearing tasks such as mobility, ability to  
15 move from sitting to standing, and ability to lateral step.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on early weight-bearing](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 16 **Aerobic and strengthening exercises**

17 1.11.9 As soon as possible after a traumatic injury, start a tailored exercise  
18 programme to help with reconditioning, fitness, strengthening, balance,  
19 proprioception and vestibular function, irrespective of the person's age,  
20 stage of rehabilitation or combination of injuries. The exercise programme:

- 1           • could be self-directed and/or delivered as one-to-one sessions or in a  
2           group  
3           • should include resistance training, core strengthening exercises, and  
4           general aerobic fitness  
5           • should include task-specific balance training if needed  
6           • should be incorporated into the usual play activities for children  
7           • should be tailored to the person's needs and goals (for example, the  
8           frequency of the sessions and the exercises involved).
- 9   1.11.10   Consider a continued programme of aerobic exercise when agreeing a  
10           [rehabilitation plan](#) and at appropriate points along the rehabilitation  
11           pathway.
- 12   1.11.11   For people with limited lower limb mobility or immobility after a traumatic  
13           injury, consider a programme of upper body aerobic training or seated  
14           exercises.
- 15   1.11.12   Tailor the aerobic exercise programme to the person's interests to help  
16           with personal commitment and adherence, and depending on the nature  
17           of their traumatic injuries.
- 18   1.11.13   Do not withhold aerobic exercise programmes from older people after a  
19           traumatic injury.
- 20   1.11.14   After discharge from hospital after a traumatic injury, offer people a home  
21           exercise programme that includes aerobic and strengthening exercises,  
22           and review their progress at outpatient clinics or [key worker](#) appointments.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on aerobic and strengthening exercises](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 1 **Gait training and re-education**

2 1.11.15 For people who are unable to weight-bear (because of clinical restrictions  
3 or pre-existing conditions), start an exercise programme as soon as  
4 possible after the traumatic injury to reduce the impact of non-weight-  
5 bearing and to optimise the transition to gait training when possible.

6 1.11.16 As soon as possible after a traumatic injury and once weight-bearing can  
7 begin, start a gait re-education programme that:

- 8 • aims to restore gait patterns
- 9 • includes passive stretches and range of movement exercises
- 10 • reduces the impact of non-weight-bearing on joints and muscles.

11 1.11.17 For people who need a non-weight-bearing period after a traumatic injury:

- 12 • assess muscle weakness and joint range of movement as soon as
- 13 possible after the non-weight-bearing period ends **and**
- 14 • start an exercise programme aimed at muscle strengthening and gait
- 15 progression.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on gait training and re-education](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 16 **Manual therapies and maintaining joint range of movement**

17 1.11.18 Provide a programme of passive, active assisted or active range of  
18 movement exercises for all affected joints.

19 1.11.19 Consider a programme of targeted stretching techniques in addition to the  
20 standard range of movement exercise programme in recommendation  
21 1.11.18.

- 1 1.11.20 If the person is unable to engage in range of movement exercises  
2 independently, consider using [controlled motion devices](#) to help with  
3 range of movement at the knee and ankle joints.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on manual therapies and maintaining joint range of movement](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

#### 4 **Splinting and orthotics**

- 5 1.11.21 Regularly review the use of splints (as part of donning [putting on] and  
6 doffing [taking off]), cautiously increasing the length of time the splint is in  
7 use to ensure that it is still appropriate and that there are not  
8 complications such as nerve injury or pressure sores.
- 9 1.11.22 For people with lower limb fractures or nerve injuries, consider an orthosis  
10 (for example, a dorsi-wedge in a moon boot or an ankle-foot orthosis) if  
11 there is a risk of loss of ankle range of movement.
- 12 1.11.23 For people with external fixation for lower limb fractures, carry out  
13 specialised splinting to maintain ankle range of movement.
- 14 1.11.24 Monitor the pressure effects on skin by orthoses or splints, particularly in  
15 people with reduced cutaneous sensation and/or recent skin graft or flaps.  
16 Seek advice from tissue viability services and/or plastic surgery specialists  
17 as needed.
- 18 1.11.25 Be aware that spinal orthoses, such as cervical collars and thoraco-  
19 lumbar spinal orthoses, may be poorly tolerated by some people,  
20 particularly older people or those with delirium, cognitive impairment or  
21 dementia.

- 1 1.11.26 If spinal orthoses are causing problems (such as pain, pressure sores, or  
2 swallowing or breathing difficulties) or are significantly affecting the  
3 person's ability to engage with rehabilitation, inform the relevant surgical  
4 team.
- 5 1.11.27 If splints or braces are used to immobilise and protect joints, avoid  
6 positions that may result in loss of function or complications in the future.
- 7 1.11.28 For people with upper limb injuries that affect range of movement in their  
8 hands and fingers, offer bespoke (thermoplastic) splints as early as  
9 clinically possible to maintain range of movement. Refer people with  
10 complex hand injuries to a hand therapy specialist, as appropriate.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on splinting and orthotics](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 11 **Management of swelling and oedema, and scars**

### 12 **Swelling and oedema management**

- 13 1.11.29 Discuss with people what swelling to expect after a traumatic injury.  
14 Explain to them how to monitor swelling on a daily basis, and advise them  
15 about signs or symptoms that they should seek medical advice for.
- 16 1.11.30 Start a programme of circulation exercises and elevate the person's  
17 affected limb to prevent and reduce swelling after a traumatic injury, for  
18 example, by using elevating leg rests for wheelchairs.
- 19 1.11.31 Consider providing compression bandaging under specialist supervision,  
20 for example, from a specialist in hand therapy.

1 **Scar management**

2 1.11.32 Help the person desensitise themselves to their injury by encouraging  
3 them to:

- 4
- look at the affected area
  - gently touch the affected area
  - move their affected limb.
- 6

7 1.11.33 For children and young people, keep their hospital bed as a 'safe' space,  
8 and carry out potentially painful scar management techniques such as  
9 massage, or other painful treatments, away from their bed if possible.

10 1.11.34 Reassure people that unpleasant sensations (for example, pain and  
11 itchiness) in the area of wounds or skin injuries are normal after a  
12 traumatic injury, and may change as recovery progresses.

13 1.11.35 Discuss and give people information about scar management such as  
14 keeping the wound out of direct sunlight for 1 year, and using  
15 recommended emollients.

16 1.11.36 Provide a massage programme for scar tissue after healing, to  
17 desensitise the affected area and increase tissue mobility.

18 1.11.37 Consider referral for specialist treatments for people with problematic  
19 scars such as hypertrophy or contracture across joints.

20 1.11.38 If the person's injuries and scars have had a significant psychological  
21 impact on them, consider referral to psychology services and/or signpost  
22 to appropriate support groups. See also the [section on assessing](#)  
23 [psychological functioning](#) and the [section on psychological rehabilitation](#).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on management of swelling and oedema, and scars](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 1 Nutritional supplementation

- 2 1.11.39 Monitor the person's intake of adequate food and drink to maintain weight,  
3 taking into account the effects of post-surgical anorexia, pain medications,  
4 constipation and nausea, and the increased calorific needs of healing.
- 5 1.11.40 Regularly and proactively review the person's nutritional needs and the  
6 dietary plan for effective rehabilitation. See recommendations in the [NICE  
7 guideline on nutrition support for adults](#).
- 8 1.11.41 Following assessment by a dietitian specialising in trauma care, consider  
9 supplementation of dietary protein for people who are frail, have  
10 gastrointestinal health issues or have multiple injuries.
- 11 1.11.42 Involve specialist dietitians when considering dietary protein requirements  
12 for people with severe kidney impairment.
- 13 1.11.43 For people with a fragility fracture, measure vitamin D levels and consider  
14 a supplement. Also see the recommendations in the [NICE guideline on  
15 osteoporosis: assessing the risk of fragility fracture](#) and the [NICE  
16 guideline on vitamin D: supplement use in specific population groups](#).
- 17 1.11.44 For people with severe burns, regularly monitor their weight and involve a  
18 dietitian specialising in trauma care if needed, for example, if the person's  
19 weight fluctuates or they are at risk of losing muscle mass and strength.
- 20 1.11.45 If there are concerns about safe swallowing and risk of aspiration (see  
21 [recommendation 1.1.9](#)), keep the person nil by mouth and carry out a  
22 swallowing assessment by an appropriately trained healthcare  
23 professional as soon as possible. If immediate assessment is not

1 available, maintain hydration and nutrition by non-oral means. Also see  
2 the [NICE guideline on nutrition support for adults](#).

3 1.11.46 Involve a dietitian and nutrition team for treatments to maintain nutritional  
4 supply, for example, a nasogastric tube, percutaneous endoscopic  
5 gastrostomy (PEG), radiologically inserted percutaneous gastrostomy  
6 (RIG) or total parenteral nutrition (TPN).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on nutritional supplementation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

## 7 **1.12 Cognitive rehabilitation**

8 1.12.1 Reassure people that most trauma-related problems with cognitive  
9 functioning are temporary.

10 1.12.2 Adapt rehabilitation therapy to the person's current cognitive function and  
11 emotional needs, taking into account any problems with motor  
12 development and skills, and any coexisting neurodevelopmental  
13 conditions.

14 1.12.3 If problems with cognitive functioning persist, get worse or recur, carry out  
15 further assessments to understand the cause.

16 1.12.4 If a person has problems with cognitive functioning after a traumatic injury,  
17 provide information:

- 18 • using clear language
- 19 • with the timing, content and delivery tailored to the person's needs and  
20 preferences
- 21 • in a suitable format (for example, Easy Read)

- 1           • with written plans to aid recall
- 2           • that uses pictures, symbols and objects of reference
- 3           • with calendar or diary prompts for sessions or appointments.
- 4   1.12.5   Share information with family members or carers (as appropriate) so they
- 5           can help the person understand the key messages and aid recall.
- 6   1.12.6   For children and young people:
- 7           • ask parents and carers if there are any pre-injury cognitive issues, for
- 8           example, any known special educational needs
- 9           • liaise with their education provider if information about their pre-injury
- 10          cognitive performance is needed
- 11          • inform education providers and teachers, including those in the hospital
- 12          setting, about the child or young person’s needs and any problems with
- 13          cognitive functioning.
- 14   1.12.7   Be aware that after a traumatic injury, people may present with
- 15          fluctuations in mental capacity, and that this may affect decision making.
- 16          See the [NICE guideline on decision making and mental capacity](#).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on cognitive rehabilitation](#).

Full details of the evidence and the committee’s discussion are in the [evidence review](#):

- evidence review B.2: Cognitive interventions for people with complex rehabilitation needs after traumatic injury.

## 17   **1.13    Psychological rehabilitation**

18   1.13.1   Reassure people that short-term psychological problems in the form of an

19          acute stress response are common after a traumatic injury. Symptoms

20          can last for 4 to 6 weeks and may include:

- 21          • disturbed sleep

- 1           • intrusive thoughts and memories
- 2           • nightmares
- 3           • flashbacks
- 4           • low mood
- 5           • anxiety.
- 6    1.13.2   Be aware that:
- 7           • there is an ongoing risk of low mood in people after a traumatic injury
- 8           • psychological problems and mental distress commonly accompany
- 9           ongoing emotional and psychological adjustments, for example, as a
- 10          result of life-changing injuries
- 11          • psychological problems and mental distress can recur or deteriorate
- 12          when a person is discharged home or transferred to another setting
- 13          • anxiety, depression and post-traumatic stress disorder (PTSD) can
- 14          occur or recur at any time after a traumatic injury.
- 15   1.13.3   Discuss psychological support with the person, and their family members
- 16          or carers (as appropriate), and offer psychological and emotional support
- 17          that is tailored to their rehabilitation goals, needs and preferences as part
- 18          of an overall rehabilitation treatment programme.
- 19   1.13.4   If the person's rehabilitation is adversely affected by their psychological
- 20          problems (for example, if the person is struggling to engage with the
- 21          rehabilitation process), refer them urgently to psychology services for
- 22          psychological assessment and treatment, ideally to a practitioner
- 23          psychologist with appropriate expertise with physical trauma and
- 24          rehabilitation.
- 25   1.13.5   Ask about thoughts of self-harm and suicide regularly, as part of
- 26          psychological assessment, and particularly at key milestones such as
- 27          hospital discharge and changes of setting.
- 28   1.13.6   The multidisciplinary team should regularly check for signs and symptoms
- 29          of anxiety, depression and PTSD when reviewing the person's progress
- 30          against rehabilitation goals and plans.

1 1.13.7 Treat PTSD, anxiety, depression in adults, and depression in children and  
2 young people as part of an overall coordinated rehabilitation treatment  
3 package, and in line with the NICE guidelines on:

- 4 • [post-traumatic stress disorder](#)
- 5 • [social anxiety disorder](#)
- 6 • [generalised anxiety disorder and panic disorder in adults](#)
- 7 • [depression in adults](#)
- 8 • [depression in adults with a chronic physical health problem](#)
- 9 • [depression in children and young people](#)
- 10 • [service user experience in adult mental health](#).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on psychological rehabilitation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.3: Psychological and psychosocial interventions for people with complex rehabilitation needs after traumatic injury.

11

## 12 **1.14 Rehabilitation after limb reconstruction, limb loss or** 13 **amputation**

14 This section covers specific rehabilitation for people after limb reconstruction, limb  
15 loss or amputation. The recommendations in this section should be read together  
16 with all the recommendations in the rest of the guideline apart from those specific to  
17 spinal cord injury, nerve injury or chest injury.

### 18 **Rehabilitation after limb-threatening injury – early assessment, decision** 19 **making and support**

20 1.14.1 Discuss limb reconstruction and/or amputation with the person, and their  
21 family members or carers (as appropriate), when making decisions about  
22 treatment pathways and assessing rehabilitation options. Recognise that,

1 for some people who have had a complex limb-threatening injury,  
2 amputation may be the option that best delivers the person's most  
3 important rehabilitation goals.

4 1.14.2 Members of a specialist multidisciplinary team (for example, limb  
5 reconstruction or prosthetic) alongside the trauma rehabilitation team  
6 should discuss the implications of the following, as part of assessing  
7 rehabilitation needs, as soon as possible with the person, and their family  
8 members or carers (as appropriate):

- 9 • rehabilitation pathways
- 10 • pain management
- 11 • recovery timescales
- 12 • long-term expectations
- 13 • impact on daily life, for example, work, hobbies, activities, education  
14 and play.

15 1.14.3 When amputation is being considered and if time permits before surgery,  
16 a member or members of the specialist multidisciplinary team with  
17 expertise in prosthetic prescription and rehabilitation should carry out a  
18 [pre-amputation rehabilitation assessment and consultation](#).

19 1.14.4 Offer psychological support before limb reconstruction or amputation (see  
20 the [section on psychological support](#)).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation after limb-threatening injury – early assessment, decision making and support](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

## 1 **Rehabilitation after limb reconstruction**

2 1.14.5 After limb reconstruction, start rehabilitation therapy as early as possible  
3 (ideally the day after surgery) to maintain range of movement. This may  
4 include:

- 5 • splinting
- 6 • exercise
- 7 • pain management
- 8 • swelling and oedema management
- 9 • hand therapy
- 10 • mobility
- 11 • positioning.

12 1.14.6 Avoid early rapid irreversible loss of range of movement after limb  
13 reconstruction by ensuring that the person carries out range of movement  
14 exercises for the affected joint and other joints to optimise recovery and  
15 avoid contractures.

16 1.14.7 Continue psychological and emotional support after limb reconstruction  
17 (see the [section on psychological support](#)).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation after limb reconstruction](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

## 18 **Rehabilitation after limb loss or amputation**

19 1.14.8 After limb loss or amputation, refer the person to the amputee and  
20 prosthetic rehabilitation service as soon as possible if the referral was not  
21 made before the surgery.

- 1 1.14.9 After limb loss or amputation, start rehabilitation therapy as early as  
2 possible and ideally the day after surgery. This may include:
- 3 • pain management (see the [section on pain management](#))
  - 4 • stump oedema and shaping (see the [section on residual limb oedema  
5 and shaping](#))
  - 6 • range of movement and strengthening exercises (see the [section on  
7 range of movement and strengthening](#))
  - 8 • functional independence and play for children (see the [section on  
9 functional independence](#))
  - 10 • psychological support (see the [section on psychological support](#)).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation after limb loss or amputation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for adults.

## 11 **Pain management after limb loss or amputation**

12 1.14.10 Plan analgesia with the person before surgery, and ensure that their pain  
13 is managed after surgery so that they can effectively participate in  
14 rehabilitation therapies.

15 1.14.11 Manage the different types of pain that can develop, for example,  
16 phantom limb pain, neurogenic pain, psychogenic pain, myogenic pain  
17 and complex regional pain, and refer the person to a specialist pain team  
18 if needed.

19 1.14.12 Consider mirror therapy to manage phantom limb pain in people who have  
20 had an amputation or limb loss after trauma.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on pain management after limb loss or amputation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

## 1 Residual limb oedema and shaping after limb loss or amputation

2 1.14.13 Manage stump oedema using elevation and compression therapy to  
3 reduce swelling and improve shaping in preparation for prosthetics fitting.

4 1.14.14 For people with a below-knee amputation, keep the limb elevated using a  
5 stump board when using a wheelchair.

6 1.14.15 Avoid residual limb swelling when using walking aids, for example, by  
7 using crutches or a frame with the limb in a dependent position.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on residual limb oedema and shaping after limb loss or amputation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

## 8 Range of movement and strengthening after limb loss or amputation

9 1.14.16 Maintain and improve range of movement after limb loss or amputation  
10 (particularly in hip flexors, hip abductors and knee flexors) by starting  
11 rehabilitation therapy that includes:

- 12
- exercise

- 1                   • mobility, including early walking aids (for example, amputee-specific
- 2                    early walking aids) after surgery when the wound has settled
- 3                   • positioning.

For a short explanation of why the committee made this recommendation, see the [rationale and impact section on range of movement and strengthening after limb loss or amputation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

#### 4 **Functional independence after limb loss or amputation**

5 1.14.17 Do not wait for prosthetics to be fitted before starting rehabilitation after

6 limb loss or amputation.

7 1.14.18 Ensure that wheelchairs:

- 8                   • are provided as early as possible
- 9                   • include appropriate accessories (for example, anti-tippers and stump
- 10                  boards)
- 11                  • are adjusted to accommodate the changes in the person's weight
- 12                  distribution after limb loss or amputation.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on functional independence after limb loss or amputation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

1 **Psychological support after limb loss, amputation or limb reconstruction**

2 1.14.19 Continue psychological support and ensure that the multidisciplinary team  
3 has access to a practitioner psychologist with appropriate expertise in  
4 physical trauma and rehabilitation, ideally with experience of working with  
5 people with limb loss, amputation or limb reconstruction.

6 1.14.20 For children, consider play or play therapy when offering psychological  
7 and emotional support.

8 1.14.21 For children and young people, the [team around the child](#) should actively  
9 monitor for any emerging emotional difficulties as the child or young  
10 person grows and develops (for example, moving schools, puberty and  
11 emotional relationships).

12 1.14.22 Take into account the long-term psychological impact of change in body  
13 image as a result of injury for all people and the psychological impact for  
14 children and young people as they grow.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on psychological support after limb loss, amputation or limb reconstruction](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

15 **Continuing rehabilitation after limb reconstruction, limb loss or**  
16 **amputation and after discharge**

17 1.14.23 When completing a [rehabilitation plan](#) (see the [section on developing a](#)  
18 [rehabilitation plan and making referrals](#)) for people after limb  
19 reconstruction, limb loss or amputation, ensure that the following are  
20 always included in the person's rehabilitation programme:

- 21
- exercise and mobility

- 1           • psychological and emotional support
- 2           • referral and signposting to support groups
- 3           • pin-site review (for limb reconstruction)
- 4           • frame adjustment (for limb reconstruction).

5   1.14.24   The specialist multidisciplinary team should offer psychological and  
6           emotional support to enable the person to adjust to their altered body  
7           image, manage pain and cope with the possibility that they may need  
8           further procedures. Psychological and emotional support should involve:

- 9           • listening carefully and validating feelings
- 10          • supporting reflection and reasoning around realistic goals and care
- 11          • supporting planning
- 12          • offering feedback about progress towards goals.

13   1.14.25   Carry out reviews of the rehabilitation plan (for example, equipment, home  
14           environment, clothing and footwear needs) at key points, for example:

- 15          • at discharge
- 16          • when an external-fixation frame is removed
- 17          • when weight-bearing status changes
- 18          • when prosthetics are changed
- 19          • when the person starts to go outside
- 20          • when the person starts to return to education, work or community  
21            activities
- 22          • if the person is readmitted because of complications.

23  
24           (Also see the [section on monitoring progress against the rehabilitation  
25           plan, goals and programme of therapies and treatments.](#))

26   1.14.26   For children and young people, monitor the impact of growth on the  
27           residual limb and prosthetic fitting, and refer without delay for specialist  
28           assessment when there are changes.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on continuing rehabilitation after limb reconstruction, limb loss or amputation and after discharge](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.1: Specific programmes and packages in amputation for people with complex rehabilitation needs after traumatic injury.

## 1 **1.15 Rehabilitation after spinal cord injury**

2 This section covers specific rehabilitation for people after spinal cord injury. The  
3 recommendations in this section should be read together with all the  
4 recommendations in the rest of the guideline apart from those specific to limb injury,  
5 nerve injury or chest injury.

6 These recommendations focus on the rehabilitation and supportive needs of people  
7 with spinal cord injury who are not currently in a regional specialist spinal cord injury  
8 centre. See also the [NICE guideline on spinal injury: assessment and initial  
9 management](#).

### 10 **Rehabilitation after spinal cord injury – referral, assessment and general 11 principles**

12 1.15.1 For people with a spinal cord injury:

- 13
- ensure that contact with the regional specialist spinal cord injury centre  
14 is made in line with the [recommendations on communication with  
15 tertiary services in the NICE guideline on spinal injury](#) and
  - refer using the national spinal injuries database within 24 hours of the  
16 diagnosis.  
17

18 1.15.2 Seek advice from the regional specialist spinal cord injury centre outreach  
19 team throughout the person's inpatient stay to support their rehabilitation.

20 1.15.3 A healthcare professional with appropriate clinical skills should complete  
21 an assessment using an American Spinal Injury Association (ASIA) chart

1 as soon as possible after a spinal cord injury, and repeat this as clinically  
2 indicated.

3 1.15.4 Refer children and young people with a spinal cord injury:

- 4 • to specialist play services to support their emotional and physical
- 5 development and wellbeing
- 6 • to education services to support their ongoing educational
- 7 development.

8 1.15.5 For children and young people, monitor growth and nutrition throughout  
9 the rehabilitation process.

10 1.15.6 When discharge planning for children and young people after a spinal  
11 cord injury, ensure that meetings take place early and involve the child or  
12 young person and their parents and carers (as appropriate), together with  
13 the local education authority, specialist play services and multidisciplinary  
14 team.

15 1.15.7 After hospital discharge, consider ongoing contact between the  
16 rehabilitation team and the person, and their family members and carers  
17 (as appropriate), with education and a structured review of progress in  
18 rehabilitation as part of outpatient follow-up. This could be offered by  
19 telephone or video link.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation after spinal cord injury – referral, assessment and general principles](#).

Full details of the evidence and the committee’s discussion are in the [evidence review](#):

- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

1 **Bladder and bowel function**

2 1.15.8 Assess and manage bladder function after a spinal cord injury as follows:

- 3
- 4 • protect upper renal function at all times by maintaining safe bladder  
5 emptying (inserting a urinary catheter if necessary), and ensuring that  
6 people understand and use bladder management techniques as a key  
7 part of their rehabilitation
  - 8 • identify acute kidney injury in line with the [NICE guideline on acute  
9 kidney injury](#)
  - 10 • identify renal tract stones.

11 (Also see the [NICE guideline on urinary incontinence in neurological  
12 disease.](#))

13 1.15.9 Regularly assess and manage bowel function after a spinal cord injury as  
14 follows:

- 15
- 16 • assess anal tone and sensation
  - 17 • start and review a bowel management plan that includes laxatives,  
18 enemas, suppositories and manual evacuation, depending on the level  
and severity of the spinal injury.

19 1.15.10 Keep the person nil by mouth until their bowel function has been  
20 assessed because of the risk of neurogenic bowel stasis and aspiration  
21 pneumonia. Avoid unnecessary delays to assessing bowel function to  
22 avoid prolonged periods of nil by mouth.

23 1.15.11 For younger children, ask their parents and carers (as appropriate), about  
24 their pre-injury continence skills, and take their age and ability into  
25 account when assessing and managing bladder and bowel function.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on bladder and bowel function](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

## 1 **Respiratory function**

2 1.15.12 Keep the person nil by mouth until their risk of aspiration has been  
3 assessed (see [recommendation 1.11.45](#)).

4 1.15.13 Assess and manage respiratory function (taking into account age and  
5 ability for children and young people) as follows:

- 6 • use spirometry to measure vital capacity in line with the [NICE guideline](#)  
7 [on spinal injury](#)
- 8 • consider prophylactic respiratory support with, for example, active cycle  
9 of breathing techniques, incentive spirometry, intermittent positive  
10 pressure breathing (IPPB) or non-invasive ventilation (NIV), to maintain  
11 forced vital capacity (FVC) and prevent chest complications
- 12 • consider use of cough-assist techniques or devices.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on respiratory function](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

## 13 **Preventing complications**

14 1.15.14 Consider potential critical care management for people with a high-level  
15 spinal injury.

16 1.15.15 Assess skin and pressure care after a spinal cord injury as follows:

- 1                   • start a 24-hour positioning and turning programme and use a pressure  
2                   mattress if appropriate or indicated **and**  
3                   • give information about skin protection for people with sensory deficits.
- 4   1.15.16   Be aware of the risk of autonomic dysreflexia, and treat it as a medical  
5                   emergency.
- 6   1.15.17   Be aware that most people who have had a spinal cord injury will develop  
7                   [orthostatic hypotension](#), which can affect their participation in  
8                   rehabilitation. Consider interventions to maintain blood pressure, for  
9                   example, graduated positioning, abdominal binders, medicines and  
10                  compression stockings.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on preventing complications](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

## 11   **Maintaining mobility and movement**

- 12   1.15.18   For people with a spinal cord injury who are using a spinal orthosis (for  
13                   example, cervical collar or thoraco-lumbar spinal orthosis), regularly  
14                   assess them for complications such as pain, pressure sores, swallowing  
15                   or breathing difficulties (particularly in older people or those with dementia  
16                   or delirium).
- 17   1.15.19   If spinal orthoses are causing side effects or are significantly affecting the  
18                   person's engagement with rehabilitation, inform the relevant surgical  
19                   team.
- 20   1.15.20   Maintain joint range of motion after a spinal cord injury and consider early  
21                   use of splints and orthoses.

- 1 1.15.21 Seek specialist advice about hand splints for people with a higher level  
2 cervical spinal injury to maintain tenodesis grasp and release ability where  
3 indicated; for example, do not splint into wrist extension if there is C6  
4 involvement.
- 5 1.15.22 Consider interventions (for example, progressive sitting, tilt table) to  
6 increase mobility and aid early sitting as soon as possible after a spinal  
7 cord injury.
- 8 1.15.23 Consider additional techniques and specialised equipment (for example,  
9 functional electrical stimulation, gait orthoses, bodyweight-supported gait  
10 training and robotic devices) to promote mobility, upper limb function and  
11 independent walking.
- 12 1.15.24 Assess people's needs and refer them to specialist services without delay  
13 if assistive technology, such as environmental control systems, is needed.
- 14 1.15.25 For adults, treat spasticity to prevent losing range of joint movement and  
15 avoid contractures.
- 16 1.15.26 For adults, consider oral antispasmodic medicines or botulinum toxin A  
17 targeted muscle injections to treat spasticity, depending on the clinical  
18 circumstances.
- 19  
20 In July 2021, botulinum toxin A was an off-label use for some of the  
21 available brands. See individual summaries of product characteristics and  
22 [NICE's information on prescribing medicines](#).
- 23 1.15.27 For children and young people, assess spasticity and follow the  
24 recommendations in the [NICE guideline on spasticity in under 19s](#).
- 25 1.15.28 Be aware that pre-pubertal children have a high risk of early or late onset  
26 kyphoscoliosis, so monitor their spinal shape and curvature at regular  
27 intervals and refer early for specialist assessment if needed.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on maintaining mobility and movement](#).

Full details of the evidence and the committee's discussion are in the [evidence reviews](#):

- evidence review B.1 Physical interventions for people with complex rehabilitation needs after traumatic injury
- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

## 1 **Low mood and psychological support**

2 1.15.29 Be aware that there is significant risk of low mood and psychological  
3 trauma for people with spinal injury, and that this may have an impact on  
4 rehabilitation.

5 1.15.30 Consider psychological support after spinal cord injury, and ensure that  
6 the multidisciplinary team has access to a practitioner psychologist with  
7 appropriate expertise in physical trauma and rehabilitation, ideally with  
8 experience of working with people with spinal cord injury.

9 1.15.31 For children and young people, the [team around the child](#) should actively  
10 monitor for any emerging emotional difficulties as the child or young  
11 person grows and develops (for example, moving schools, puberty and  
12 emotional relationships).

13 1.15.32 Take into account the long-term psychological impact of change in body  
14 image as a result of injury for all people and for children and young people  
15 as they grow.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on low mood and psychological support](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.2: Specific programmes and packages in nerve injury for people with complex rehabilitation needs after traumatic injury.

## 1 **1.16 Rehabilitation after nerve injury**

2 This section covers specific rehabilitation for people after nerve injury. The  
3 recommendations in this section should be read together with all the  
4 recommendations in the rest of the guideline apart from those specific to limb injury,  
5 spinal cord injury or chest injury.

### 6 **General principles**

7 1.16.1 Be aware that nerve injuries may be hidden, particularly if the person:

- 8 • has multiple injuries
- 9 • has a cognitive impairment (for example, a learning disability or  
10 dementia)
- 11 • has a head injury
- 12 • is in critical care (adults) or paediatric intensive care (children and  
13 young people)
- 14 • has a pre-existing neurological condition or injury
- 15 • has a complex fracture.

16 1.16.2 If nerve injury is suspected, assess the peripheral nerves of the affected  
17 limb to identify the involved nerve and functional deficit (see also the  
18 [section on assessing physical functioning](#)).

19 1.16.3 Be aware of the risk to tissue viability if there is sensory or motor loss  
20 secondary to peripheral nerve injury.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on general principles](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.2: Specific programmes and packages in nerve injury for people with complex rehabilitation needs after traumatic injury.

1

## 2 Therapies and referral

3 1.16.4 After nerve injury, start rehabilitation therapy to maintain range of  
4 movement and regain function. This may include:

- 5 • splinting
- 6 • exercise (passive and active range of movement)
- 7 • pain management
- 8 • sensory interventions (including mirror therapy, electrical stimulation  
9 and hand therapy)
- 10 • hydrotherapy (where available)
- 11 • functional or [vocational therapy](#).

12 1.16.5 Regularly assess for signs of nerve recovery and review the programme  
13 of therapy as needed.

14 1.16.6 If there are no signs of nerve recovery 6 weeks after the injury or if  
15 subsequent recovery is not as expected, consider nerve conduction or a  
16 specialist opinion to help determine prognosis and guide future therapy  
17 and management.

18 1.16.7 For people who have a poor prognosis for recovery after rehabilitation  
19 therapy and nerve conduction studies, consider referral to a specialist  
20 peripheral nerve injury service, for example, for surgery.

21 1.16.8 Be aware that people recovering from nerve injury may experience low  
22 mood, anxiety and lack of motivation because recovery may be a lengthy  
23 and ambiguous process (for example, because of uncertainty about the  
24 long-term prognosis).

25 1.16.9 Consider psychological support after nerve injury, and ensure that the  
26 multidisciplinary team has access to a practitioner psychologist with

1 appropriate expertise in physical trauma and rehabilitation, ideally with  
2 experience of working with people with nerve injury.

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on therapies and referral](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.2: Specific programmes and packages in nerve injury for people with complex rehabilitation needs after traumatic injury.

### 3 **1.17 Rehabilitation after chest injury**

4 This section covers specific rehabilitation for people after chest injury. The  
5 recommendations in this section should be read together with all the  
6 recommendations in the rest of the guideline apart from those specific to limb injury,  
7 spinal cord injury or nerve injury.

8 1.17.1 Start rehabilitation after chest injury as soon as possible to optimise  
9 respiratory function and prevent deconditioning.

10 1.17.2 Assess pain regularly and provide adequate analgesia to allow people to  
11 be able to breathe deeply, cough, start moving around early and  
12 participate in rehabilitation activities.

13 1.17.3 If oral or intravenous analgesia is inadequate to enable people to breathe  
14 deeply, cough or start engaging in rehabilitation, consider early neuraxial  
15 (for example, epidural catheter) or regional (for example, paravertebral,  
16 erector spinae plane or serratus anterior blocks) analgesia delivered by an  
17 appropriately qualified healthcare professional.

18 1.17.4 Encourage people with chest trauma to start moving around as soon as it  
19 is safe to do so, to optimise respiratory function and prevent  
20 deconditioning.

- 1 1.17.5 Offer a range of rehabilitation therapies to prevent atelectasis and  
2 promote deep breathing and secretion clearance. Therapies may include:
- 3 • supported cough to brace chest wall
  - 4 • active cycle breathing technique
  - 5 • incentive spirometry
  - 6 • portable intermittent positive pressure breathing devices.
- 7 1.17.6 Be aware that stiffness of the upper limbs is a common complication of  
8 chest and rib injury on the affected side.
- 9 1.17.7 The multidisciplinary team should discuss the risks and benefits of the use  
10 of spinal orthoses in people with a combination of spine injury and rib  
11 fracture.
- 12 1.17.8 Prevent stiffness of the upper limbs with range of movement exercises  
13 and advice about maintaining function. Encourage children to play to  
14 maintain their range of movement.
- 15 1.17.9 Give people information about what they can do to help themselves return  
16 to their normal activities of daily life (for example, how to increase their  
17 exercise tolerance), and how to seek help if they are worried about  
18 problems such as:
- 19 • pain
  - 20 • shortness of breath
  - 21 • fatigue
  - 22 • cough.
- 23 1.17.10 Assess adults presenting with rib fractures for their risk of fragility fracture  
24 in line with [NICE's guideline on osteoporosis](#).
- 25 1.17.11 If people have complex chest injuries that affect communication and  
26 swallowing skills, consider referral to speech and language therapy.

- 1 1.17.12 Consider assessing children and young people with rib fractures for bone  
2 density disorder and for the possibility of non-accidental injury (see  
3 [recommendation 1.1.12 on safeguarding](#)).

For a short explanation of why the committee made these recommendations, see the [rationale and impact section on rehabilitation after chest injury](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.4: Specific programmes and packages in chest injury for people with complex rehabilitation needs after traumatic injury.

4

## 5 **Terms used in this guideline**

### 6 **Complex rehabilitation needs**

7 Complex rehabilitation needs cover multiple needs due to traumatic injury or injuries  
8 (polytrauma), and will involve coordinated multidisciplinary input from 2 or more  
9 allied health professional disciplines.

### 10 **Controlled motion device**

11 A device that gently flexes and extends the knee joint (usually after surgery) to allow  
12 the joint to bend without the person needing to exert any effort. Sometimes called a  
13 continuous passive motion machine.

### 14 **Key worker**

15 A key worker is a named member of clinical staff (for example, a senior nurse,  
16 physiotherapist or occupational therapist) assigned at each stage of the care  
17 pathway who coordinates the person's rehabilitation and care; this may continue  
18 post-discharge. They act as a single point of contact for the person and their family  
19 and carers, and will support liaison with other services, such as social care. The  
20 person who fulfils this role may be different along the pathway, for example, following  
21 hospital discharge. This role may also be performed by case managers or case

1 coordinators, who would coordinate care as well as liaise with insurers and legal  
2 teams, particularly following discharge.

3 For major trauma, the role of key worker is defined further in [recommendation 1.6.3](#)  
4 [in the NICE guideline on major trauma: service delivery](#).

### 5 **Neuro navigator**

6 Neuro navigators act as advocates and care coordinators for people with  
7 neurological problems (for example, following traumatic brain injury) and help  
8 facilitate smooth transitions between hospitals, specialist neurological rehabilitation  
9 services, and community services.

### 10 **Neurovestibular disorders**

11 Dizziness or problems with balance caused by damage to parts of the inner ear and  
12 brain that process the sensory information involved with controlling balance and eye  
13 movements.

### 14 **Orthostatic hypotension**

15 Low blood pressure on changing position from lying to sitting and sitting to standing.

### 16 **Pre-amputation rehabilitation assessment and consultation**

17 This follows the principles of the initial rehabilitation assessment in the [section on](#)  
18 [assessment and early interventions for people with complex rehabilitation needs](#),  
19 and also takes into account implications for rehabilitation such as recovery  
20 timescales, quality of life and goal setting for different surgical options that may  
21 include amputation of all or part of the limb or reconstructive surgery of the limb.  
22 Decisions about surgical interventions would affect the kind of rehabilitation  
23 interventions and therapies the person would need, the timescales involved and their  
24 personal goals.

### 25 **Rehabilitation coordinator**

26 Rehabilitation coordinators are rehabilitation specialists, for example,  
27 physiotherapists, occupational therapists or physicians who play an active role in the  
28 multidisciplinary team and are usually responsible for decisions about rehabilitation  
29 treatment options at the beginning of the pathway, including referral or transfer to

1 other services. They offer clinical advice but are less proactive in the coordination of  
2 care than a trauma coordinator or key worker.

### 3 **Rehabilitation plan**

4 This may be in the form of a rehabilitation prescription. It may also come in different  
5 versions such as the rehabilitation passport, which is a patient-held document, and  
6 may be a simplified version of the plan – it is carried with the person and used to  
7 document information about injuries and rehabilitation treatments in an accessible  
8 format.

### 9 **Single point of contact**

10 A single point of hospital contact following discharge may be a key worker, nurse  
11 coordinator or a rehabilitation coordinator, or it may simply be a link to a unit, team or  
12 person that formed part of the person's rehabilitation care while in hospital. The point  
13 of contact may not be able to offer advice directly but can seek information and input  
14 from others if this is needed for a defined period post-discharge.

### 15 **Specialised rehabilitation services**

16 Specialised elements of care pathways would include options for people with  
17 complex rehabilitation needs, for example, level 1, level 2a and level 2b units within  
18 a local area.

### 19 **Team around the child**

20 A group of professionals who work with an individual child or young person with a  
21 disability or complex needs who come together to share information and agree a  
22 plan – along with parents – to meet the child's needs. The emphasis should be on  
23 the needs of the child and the aim is to provide joined-up support.

### 24 **Trauma coordinator**

25 In major trauma centres, this person would work closely with the multidisciplinary  
26 team to coordinate the patient pathway, including rehabilitation, from admission to  
27 discharge, particularly for people with highly complex traumatic injuries and  
28 rehabilitation needs. Sometimes this role is performed by a nurse and is sometimes  
29 called a nurse coordinator. This role may also include the responsibilities of a key  
30 worker, liaising with family and carers, especially in the early stages of the pathway.

## 1 **Traumatic amnesia**

2 Disorientation, confusion and memory problems that occur immediately after a  
3 traumatic brain injury.

## 4 **Traumatic injury**

5 This includes multiple, major and severe injuries, sometimes referred to as  
6 polytrauma, and any musculoskeletal, visceral, nerve, soft tissue, spinal or limb  
7 injury that requires admission to hospital at the time of injury.

## 8 **Vocational therapy**

9 Focuses on the rehabilitation interventions needed to help people with long-term  
10 health conditions or disabilities return to or stay in work, education or training. This  
11 may involve adapting working conditions, job roles or retraining.

## 12 **Recommendations for research**

13 The guideline committee has made the following recommendations for research.

### 14 **Key recommendations for research**

#### 15 **1 Effectiveness of intensive rehabilitation in adults**

16 What is the effectiveness of intensive rehabilitation programme in adults with  
17 complex rehabilitation needs after a traumatic injury?

For a short explanation of why the committee made this recommendation, see the [rationale section on intensive rehabilitation programmes](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

#### 18 **2 Effectiveness of intensive rehabilitation in children and young people**

19 What is the effectiveness of intensive rehabilitation programme in children and young  
20 people with complex rehabilitation needs after a traumatic injury?

For a short explanation of why the committee made this recommendation, see the [rationale section on intensive rehabilitation programmes](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

### 1 **3 Thoracic lumbar sacral orthoses in older people**

- 2 What are the benefits and harms of using thoracic lumbar sacral orthoses in older
- 3 people with thoraco-lumbar vertebral fractures?

For a short explanation of why the committee made this recommendation, see the [rationale section on splinting and orthotics](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.1: Physical interventions for people with complex rehabilitation needs after traumatic injury.

### 4 **4 Self-management materials**

- 5 What is the effectiveness of rehabilitation programmes combined with self-
- 6 management materials, compared with rehabilitation programmes alone in people
- 7 with complex rehabilitation needs after a traumatic injury?

For a short explanation of why the committee made this recommendation, see the [rationale section on guided self-managed rehabilitation](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review B.3: Psychological and psychosocial interventions for people with complex rehabilitation needs after traumatic injury.

## 1 **5 Length of bed rest after spinal cord injury**

2 What is the effectiveness and cost effectiveness of short-term bed rest compared  
3 with long-term bed rest on functional outcomes in people with complex rehabilitation  
4 needs after traumatic injury that involves the spinal column or spinal cord injury?

For a short explanation of why the committee made this recommendation, see the [rationale section on intensive rehabilitation programmes](#) and the [rationale section on maintaining mobility and movement](#).

Full details of the evidence and the committee's discussion are in the [evidence review](#):

- evidence review C.3: Specific programmes and packages in spinal cord injury for people with complex rehabilitation needs after traumatic injury.

## 5 **Rationale and impact**

6 These sections briefly explain why the committee made the recommendations and  
7 how they might affect services.

## 8 **Assessment and early interventions for people with complex** 9 **rehabilitation needs**

10 [Recommendations 1.1.1 to 1.1.12](#)

## 11 **Why the committee made the recommendations**

12 Rehabilitation can be a long journey, and people will need different interventions and  
13 will aim for different endpoints. Because of this, the committee agreed that  
14 healthcare professionals should think about each person's individual rehabilitation  
15 needs and what is important to them, and take into account their personal strengths,  
16 lifestyle and goals, rather than being primarily driven by the nature of the injury.

17 Psychological and emotional support is important immediately after the injury, to help  
18 the person come to terms with their experience and engage with rehabilitation  
19 assessment, early interventions and goal-setting discussions.

1 There was evidence that avoiding delays in acute treatment can improve the  
2 effectiveness of early rehabilitation interventions. In the committee's view, early  
3 assessments and interventions are also important so that healthcare professionals  
4 have up-to-date information and can plan and start rehabilitation promptly. Nutritional  
5 assessment (including swallowing safety) is an important part of this, because it is  
6 often overlooked and is an important part of soft tissue healing.

7 The person's longer-term rehabilitation goals should be taken into account when  
8 discussing treatment options because these can affect decisions made about the  
9 timing and nature of rehabilitation. For example, if a person has upper and lower limb  
10 injuries, they might not have surgical treatment of their upper limb injuries because  
11 they want to use crutches to help with weight-bearing during rehabilitation for their  
12 lower limb injuries.

### 13 **How the recommendations might affect practice**

14 The recommendations will not involve a major change in practice and are consistent  
15 with existing NICE guidelines. Healthcare professionals might need to spend more  
16 time assessing how traumatic injuries affect all aspects of a person's life, and  
17 explaining the implications of different medical and surgical treatments on  
18 rehabilitation. Spending time on initial assessment and early treatment immediately  
19 after a traumatic injury will lead to a better tailored rehabilitation plan and goals,  
20 which will save time later on. Generally, all professionals involved in the person's  
21 care following a traumatic injury will already be equipped to provide psychological  
22 and emotional support.

23 [Return to recommendations](#)

### 24 **Multidisciplinary team rehabilitation needs assessment**

25 [Recommendations 1.2.1 to 1.2.11](#)

### 26 **Why the committee made the recommendations**

27 There was no evidence in this area, so the committee made recommendations  
28 based on their knowledge and experience. They agreed that a comprehensive  
29 approach to needs assessment is vital to meet all aspects of the person's care  
30 needs, including personal history, usual activities and potential motivations. They

1 also highlighted injuries that may need to be assessed by specialists who are better  
2 equipped to meet complex care needs.

3 The committee specified the healthcare professionals who should be members of the  
4 multidisciplinary team. These members of the multidisciplinary team do not  
5 necessarily have to be available all the time, but should be able to contribute when  
6 needed.

7 The committee suggested ways to help people engage in the assessment process  
8 because people can have problems with engagement after a traumatic injury. The  
9 timing of the needs assessment is also an important aspect of this, because pain,  
10 fatigue and confusion can make it difficult for people to understand what is  
11 happening. They may need more time than normal to process information and adjust  
12 after the trauma. This is particularly important for people with cognitive impairment or  
13 brain injuries.

14 The committee agreed that time was needed for members of the multidisciplinary  
15 team to work with clinical teams to fully understand the person's rehabilitation needs  
16 and in particular consider the impact of pre-existing conditions so that this could  
17 inform a tailored rehabilitation programme. The committee were keen to highlight the  
18 importance of validated outcome tools and checklists because these can help  
19 identify people who need to be referred to a specialist service early, which can  
20 prevent delays in rehabilitation.

## 21 **How the recommendations might affect services**

22 It is standard practice to have multidisciplinary teams conduct needs assessments.  
23 Staff might need additional training on how to use assessment tools, and some extra  
24 time might be needed as a result of the recommendations. However, this will be  
25 offset by the benefits of appropriate and timely care, increased care coordination,  
26 and better outcomes. Overall, the recommendations reinforce current practice and  
27 are in line with other guidance.

28 [Return to recommendations](#)

## 29 **Assessing physical functioning**

30 [Recommendations 1.2.12 to 1.2.14](#)

## 1 **Why the committee made the recommendations**

2 The committee discussed the importance of assessing physical functioning as part of  
3 the rehabilitation needs assessment after a traumatic injury. There was no evidence  
4 in this area, so the committee agreed, based on their knowledge and experience,  
5 that the assessment should include both pre-injury and current levels of physical  
6 functioning to inform rehabilitation goals. Referrals to specialists may be needed as  
7 part of this. The person's current level of physical functioning will serve as a baseline  
8 for initial rehabilitation needs and to monitor changes.

## 9 **How the recommendations might affect services**

10 The recommendations are not expected to have a large resource impact or be  
11 difficult to implement, although extra time might be needed to complete the  
12 comprehensive assessment. There may also be more referrals to specialist services.  
13 However, the involvement of specialist services at the assessment stage will identify  
14 needs earlier and reduce unmet care needs.

15 [Return to recommendations](#)

## 16 **Assessing cognitive functioning**

17 [Recommendations 1.2.15 to 1.2.19](#)

## 18 **Why the committee made the recommendations**

19 There was no evidence in this area. However, the committee believed that  
20 recommendations are needed because problems with cognitive functioning are  
21 common after a traumatic injury (even without brain injury). The committee also  
22 highlighted some of the cognitive problems the multidisciplinary team should  
23 consider as part of the rehabilitation needs assessment, because these may not  
24 show up on scans immediately.

## 25 **How the recommendations might affect services**

26 The recommendations reflect current practice, but where there are regional  
27 variations, practice may need to be amended. Some extra time might be needed to  
28 complete the comprehensive assessment. There may also be more referrals to

1 specialist services. However, the involvement of specialist services at the  
2 assessment stage will identify needs earlier and reduce unmet care needs.

3 [Return to recommendations](#)

#### 4 **Assessing psychological functioning**

5 [Recommendations 1.2.20 and 1.2.21](#)

#### 6 **Why the committee made the recommendations**

7 There was no evidence in this area, so the committee made recommendations  
8 based on their knowledge and experience. They recommended asking about past  
9 risk factors to help inform future rehabilitation goals, and current risk factors to help  
10 form a baseline for initial rehabilitation needs and monitor changes.

11 Some people may need additional support because they react to trauma in different  
12 ways, have different barriers to rehabilitation, and may have different responses to  
13 psychological and psychosocial interventions. Because of this, the committee  
14 recommended referral to a practitioner psychologist with trauma and rehabilitation  
15 experience when needed.

#### 16 **How the recommendations might affect services**

17 The recommendations reflect current practice, but where there are regional  
18 variations, practice might need to be amended. Some extra time might be needed to  
19 complete the comprehensive assessment, and there might also be more referrals to  
20 specialist services. However, the involvement of specialist services at the  
21 assessment stage will identify needs earlier and reduce unmet care needs.

22 [Return to recommendations](#)

#### 23 **Setting rehabilitation goals**

24 [Recommendations 1.3.1 to 1.3.3](#)

#### 25 **Why the committee made the recommendations**

26 Based on qualitative evidence, the committee highlighted the need to agree patient-  
27 focused short- and long-term goals with people. They also recommended that these

1 goals are reviewed regularly, to ensure a flexible approach that takes people's  
2 concerns into account.

3 Agreeing small steps as part of long-term rehabilitation goals ensures that efforts are  
4 consistently made towards achieving these goals.

5 The committee highlighted skills and competencies needed by the multidisciplinary  
6 team, to ensure that staff have the right training.

### 7 **How the recommendations might affect services**

8 The recommendations reflect current practice, but where there are regional  
9 variations, practice might need to be amended. Some additional professional time  
10 might be needed to explore psychological and psychosocial risk factors.

11 [Return to recommendations](#)

### 12 **Developing a rehabilitation plan and making referrals**

13 [Recommendations 1.4.1 to 1.4.11](#)

### 14 **Why the committee made the recommendations**

15 There was convincing qualitative evidence on patient education, communication  
16 between settings and follow-up. Combining this with their own knowledge and  
17 experience, the committee recommended several key components of a successful  
18 and comprehensive rehabilitation plan. This should be a single document that can be  
19 shared between people undergoing rehabilitation, families or carers, and healthcare  
20 professionals. It should be an evolving document, detailing a person's rehabilitation  
21 journey and changes in goals and needs. The committee reflected that it is not  
22 always possible or appropriate for people to have access to all of a rehabilitation  
23 plan, and therefore recommended that a patient-held document be provided if this is  
24 the case.

25 The committee agreed that preventing recurrence of traumatic injury should form an  
26 essential component of the rehabilitation plan. Prevention is covered in several other  
27 NICE guidelines, so the committee made recommendations to supplement and refer  
28 to these guidelines.

1 There was strong qualitative evidence from both healthcare professionals and  
2 people undergoing rehabilitation that reducing delays leads to better coordination of  
3 care and rehabilitation outcomes. Based on this, the committee made a  
4 recommendation on referrals for parts of the plan that the multidisciplinary team  
5 cannot implement themselves. The committee also used their experience to  
6 recommend that older people have access to orthogeriatricians, surgical support or  
7 perioperative physicians. This is important because the needs of older people with  
8 traumatic injuries are complex, and it will prevent delays further on in rehabilitation.

9 Limited evidence showed that violence intervention programmes might reduce  
10 hospital admissions. There was also convincing economic evidence that such  
11 programmes represent value for money. The committee agreed that the  
12 effectiveness evidence combined with economic evidence was sufficient to support a  
13 recommendation on violence reduction interventions.

#### 14 **How the recommendations might affect services**

15 Practitioners should already be producing these rehabilitation plans, but some extra  
16 time might be needed to ensure they fulfil the expectations set out in these  
17 recommendations. However, this will be offset by reducing problems with the  
18 suitability of the plan further down the line, as the more it is tailored for the person,  
19 the more effective at helping the person achieve their goals it will be. The  
20 recommendations outline good practice points and should make practice more  
21 consistent. Having a clear rehabilitation plan will make the whole process more  
22 efficient and potentially reduce the amount of extra support people need (for  
23 example, asking the team for more information because they do not understand the  
24 rehabilitation plan).

25 Currently, violence reduction interventions are mainly funded by the voluntary sector,  
26 so the recommendation on these may represent a change in practice. However, any  
27 cost increase will be offset by a potential reduction in future NHS and personal social  
28 service costs (for example, readmissions as a result of violent crime).

29 [Return to recommendations](#)

## 1 **General principles for rehabilitation programmes**

### 2 [Recommendations 1.5.1 and 1.5.2](#)

### 3 **Why the committee made the recommendations**

4 Evidence showed that rehabilitation programmes should be tailored to a person's  
5 needs and rehabilitation goals to maximise their effectiveness. There is no 'one-size-  
6 fits-all' programme. Instead, they should be multidisciplinary and developed in  
7 conjunction with healthcare professionals and people undergoing rehabilitation, to  
8 ensure they are relevant to a person's everyday life. The committee used their  
9 knowledge and experience to recommend the content of rehabilitation programmes.  
10 There was also evidence on education materials, showing that they can help people  
11 learn about their trauma and rehabilitation in their own time, increasing their  
12 engagement in the process.

### 13 **How the recommendations might affect services**

14 The recommendations reinforce current practice and should not be difficult to  
15 implement. Education materials on rehabilitation already exist in healthcare settings,  
16 but they might need to be changed into a suitable format for people undergoing  
17 rehabilitation.

### 18 [Return to recommendations](#)

## 19 **Intensive rehabilitation programmes**

### 20 [Recommendations 1.5.3 to 1.5.5](#)

### 21 **Why the committee made the recommendations**

22 There was no evidence on what to include in an intensive rehabilitation programme.  
23 Based on their own experience and expert testimony, the committee made a  
24 recommendation on general good practice principles.

25 There was also no evidence relating to the timing or intensity of rehabilitation. The  
26 committee were aware, based on own experience and expert testimony, that  
27 delivering rehabilitation at the right time and providing short blocks of intensive  
28 rehabilitation might improve patient outcomes, leading to a quicker recovery and  
29 return to work. They gave the example of a 3-week residential rehabilitation

1 programme because economic modelling indicated that this type of programme  
2 could be cost effective. However, the committee agreed that an intensive  
3 rehabilitation programme would be appropriate only for the most severe injuries and  
4 complex needs, when a significant impact on rehabilitation outcomes is likely. Such  
5 an approach to rehabilitation may also reduce the health and social care costs  
6 associated with longer-term care and rehabilitation.

7 The expert witness supported the use of education materials before intensive  
8 rehabilitation starts, to prepare people for the programme.

9 Length of bed rest after spinal cord injury varies throughout different NHS trusts, and  
10 is an area that the committee were keen to standardise. However, because of the  
11 lack of evidence identified, they were unable to make any strong recommendations  
12 and made a [research recommendation on the optimal length of bed rest](#) to inform  
13 future guideline updates.

#### 14 **How the recommendations might affect services**

15 The recommendations are in line with current practice and should have little impact  
16 on resources. Intensive rehabilitation is already available for some people (for  
17 example, people who have lost a limb). Because rehabilitation services are already  
18 being carried out, intensive rehabilitation could be delivered through service redesign  
19 and repurposing of existing funds and resources rather than introducing them as  
20 completely new resources. Intensive rehabilitation would potentially represent value  
21 for money as per the economic model. Also, only a small group of people with the  
22 most severe injuries would be eligible for an intensive rehabilitation programme.

23 On education, existing materials for guided self-management rehabilitation could be  
24 used for intensive rehabilitation. This has the potential to reduce the amount of extra  
25 support people need, freeing up professionals for other work.

26 [Return to recommendations](#)

#### 27 **Guided self-managed rehabilitation**

28 [Recommendations 1.5.6 to 1.5.9](#)

## 1 **Why the committee made the recommendations**

2 Evidence showed that self-management programmes are appreciated because they  
3 give people the flexibility to perform exercises at times most suitable for them. The  
4 committee used their experience and knowledge to recommend several possible  
5 components of a self-management programme.

6 Guided self-management rehabilitation was identified in the qualitative literature, as  
7 well as expert witness testimony and committee experience, but not in the  
8 quantitative literature. The committee made a [research recommendation on self-](#)  
9 [management rehabilitation interventions](#) to better inform future guideline  
10 development.

## 11 **How the recommendations might affect services**

12 Guided self-managed rehabilitation is not provided consistently across the country.  
13 In areas where it is not currently provided, extra professional time might be needed  
14 for planning, particularly for children, young people and vulnerable adults. There may  
15 also be costs from adopting self-managed rehabilitation programmes to different  
16 settings.

17 For trusts that do not like sharing their content using external content-sharing  
18 services, there may be costs from hosting programme content on their own server.  
19 However, much of the content could be standardised for most people using guided  
20 self-managed rehabilitation, so the costs for creating the plans would be mostly  
21 one-off. These programmes could be developed at a national level, reducing costs to  
22 individual services.

23 Guided self-managed rehabilitation programmes have the potential to reduce the  
24 amount of extra support people need, freeing up professionals for other work.

25 [Return to recommendations](#)

## 26 **Monitoring progress against the rehabilitation plan, goals and** 27 **programme of therapies and treatments**

28 [Recommendations 1.5.10 and 1.5.11](#)

## 1 **Why the committee made the recommendations**

2 In the committee's experience, rehabilitation plans and goals can only be helpful to  
3 people if progress is monitored consistently and accurately. There are many tools  
4 that can be used for this; the choice depends on the person's rehabilitation goals and  
5 the type of trauma. Because of this variation, the committee did not recommend  
6 specific measurement tools.

7 For some people, family members and carers will need to be involved in monitoring  
8 progress (for example, for young children or vulnerable adults). The paediatric  
9 professionals on the committee recommended paediatric quality of life inventory  
10 (PedsQL), a validated measurement tool for this population. Another way to monitor  
11 progress is to use the person's own views. There was some evidence that supported  
12 asking people to record information to assist discussions and shared decision  
13 making while describing subjective measurements that are hard to quantify (for  
14 example, their motivation to continue rehabilitation).

## 15 **How the recommendations might affect services**

16 The recommendations reflect current practice, but where there are regional  
17 variations, practice might need to be amended. Some additional professional time  
18 may be needed to complete tools to monitor progress (for example, patient-reported  
19 outcome measures [PROMs]).

20 [Return to recommendations](#)

## 21 **Principles for sharing information and involving family and carers**

22 [Recommendations 1.6.1 to 1.6.7](#)

## 23 **Why the committee made the recommendations**

24 One theme that appeared throughout the evidence was the importance of giving  
25 clear and consistent verbal and written information to people undergoing  
26 rehabilitation. Evidence showed that this communication should be tailored to a  
27 person's injury, needs and goals. If information was too general, people felt poorly  
28 prepared and less supported by healthcare staff and services.

1 People should be given sufficient time to process information in order for them to  
2 adjust after trauma and explore their rehabilitation options thoroughly. This is  
3 particularly important for people with cognitive impairment or brain injuries, and they  
4 may need professionals to repeat information to them.

5 Along with good evidence, the committee used their knowledge and experience to  
6 highlight the central role that families, carers and friends can have in encouraging  
7 and supporting people through rehabilitation.

## 8 **How the recommendations might affect services**

9 The recommendations reinforce current practice and are in line with current  
10 guidance and legislation. Some extra time might be needed to consistently involve  
11 people and their families and carers in planning. Services might need to develop  
12 multiple templates for different communication formats. However, this will be offset  
13 by the benefits of people understanding their options, increased engagement and  
14 potentially better outcomes.

15 [Return to recommendations](#)

## 16 **Coordination of rehabilitation care in hospital**

17 [Recommendations 1.7.1 to 1.7.9](#)

## 18 **Why the committee made the recommendations**

19 The committee agreed with the evidence that multidisciplinary teams should be  
20 formed early. Evidence showed that delays in rehabilitation can cause poorer  
21 outcomes. In order to reduce this, the committee recommended that referrals to  
22 specialist rehabilitation services be made as soon as possible. Similarly, the  
23 committee recommended follow-up appointments with acute teams when people  
24 move to rehabilitation units, to further reduce delays.

25 There was conflicting evidence on how people feel about receiving information from  
26 many different specialists. This may be confusing to people, and specialists may  
27 have difficulty prioritising different clinical perspectives. The committee believed that  
28 named rehabilitation coordinators or key workers are needed to help reduce this

1 confusion. These should be assigned within 72 hours of admission because this is  
2 the time limit for starting a trauma prescription for major trauma patients.

3 There was evidence that providing continuity of staff enhances coordination by  
4 building trust and rapport between healthcare staff and the people they are caring  
5 for. However, the committee were aware that this is not always possible.

6 There was good evidence about the importance of prompt and consistent  
7 communication when transferring people between inpatient settings. Using their  
8 experience and knowledge, the committee agreed recommendations to improve  
9 communication between settings.

10 Evidence showed that coordination is improved when a person is educated in their  
11 rehabilitation, because they are more engaged. The evidence also showed that  
12 coordination is improved when family members and carers receive this information,  
13 because they frequently act as a support network for people undergoing  
14 rehabilitation. The committee understood the important role that families and friends  
15 can fulfil, but were aware of the potential safeguarding concerns around this issue.  
16 Therefore, they recommended that this information is only provided to additional  
17 people if appropriate, and only with a person's consent.

18 The committee agreed that families and carers be advised about the support that is  
19 available to them at a time that can be confusing and distressing.

## 20 **How the recommendations might affect services**

21 Multidisciplinary teams are a standard way of working. Having a named rehabilitation  
22 coordinator might lead to an increased workload for the coordinator, but this should  
23 be limited by daily conversations within the team and by delegating responsibilities.  
24 Key workers are already routinely assigned to people with complex health and social  
25 care needs.

26 There may be more referrals to specialist rehabilitation services earlier in the  
27 rehabilitation pathway, but this would be offset by timely care and better outcomes.  
28 Most services have established processes and templates for handover. Where this is  
29 not the case, services will have to spend time creating them. Additionally, technology

1 might need to be updated to ensure systems are compatible with those used by  
2 other services.

3 [Return to recommendations](#)

## 4 **Coordination of rehabilitation care at discharge**

5 [Recommendations 1.8.1 to 1.8.18](#)

### 6 **Why the committee made the recommendations**

7 Discharge home from inpatient settings is often a time of great stress and  
8 apprehension for people with a traumatic injury because they are facing a large  
9 reduction in monitoring and support from healthcare staff. The recommendations  
10 emphasise the importance of making sure that plans are in place, eventualities are  
11 covered and people have all the information they need.

12 There was evidence that early planning for discharge is needed to take into account  
13 the person's needs and preferences, contact relevant services to arrange necessary  
14 adjustments, and allow enough time to reassess the rehabilitation plan before  
15 discharge. This also gives time to address any potential barriers the person might  
16 face in using community rehabilitation services.

17 There was good evidence on the importance of providing adequate information to  
18 people and their families or carers before discharge. This should not be limited to  
19 immediate medical information, but should be as comprehensive as possible. The  
20 committee used the evidence and their own knowledge and experience to identify  
21 information that should be provided. Evidence also showed that including family  
22 members and carers in discharge planning can lead to a smoother transition back  
23 into the community. The committee agreed that it is important to include family and  
24 carers, but they should only be involved if all parties consent.

25 There was good evidence, supported by the committee's knowledge and experience,  
26 that people who have help with organising their access to rehabilitation services are  
27 more likely to use them. In the committee's experience, complex funding is a barrier  
28 to receiving equipment that a person may need once discharged. Similarly, there are  
29 many different services that a person may need to work with after a traumatic injury  
30 (for example, legal services and welfare advice). In order to prevent delays in

1 discharge, information should also be provided as soon as possible, to avoid delays  
2 in the application process.

3 There was evidence that people can find a gradual return home helpful, beginning  
4 with overnight or weekend visits home before final discharge. This allows people to  
5 adjust to being in their home with their new needs, identifying areas that might need  
6 further rehabilitation and multidisciplinary team input before permanently going  
7 home. The committee acknowledged that this is not appropriate for everyone, but  
8 should be discussed as part of discharge planning. Home visits were also identified  
9 as being good practice to highlight any potential risks and allow people to have a  
10 fully informed discussion about what would benefit them.

11 The need for flexibility in rehabilitation appointments after discharge was a key  
12 theme in the evidence, because people face certain barriers to access (for example,  
13 time constraints, or travel to and from rehabilitation appointments). The committee  
14 agreed that arranging rehabilitation sessions at home rather than in a clinic or  
15 hospital can help, by decreasing travel and waiting times. Based on the evidence  
16 and their experience, the committee also recommended alternative consultation  
17 formats (for example, phone or video), to increase the flexibility of rehabilitation  
18 appointments.

### 19 **How the recommendations might affect services**

20 Additional time might be needed to compile information and discuss it with people  
21 and their support networks. However, by giving comprehensive information before  
22 discharge, there will be a decreased need to contact healthcare professionals with  
23 rehabilitation questions, and potentially reduced visits and readmissions to inpatient  
24 services.

25 Additional professional time might be needed to cover early discharge planning,  
26 checking access to community rehabilitation services, and organising home visits.  
27 The recommendations imply more coordination between inpatient teams and other  
28 health and social care services, which will take more time. However, this additional  
29 time spent will result in patients feeling more supported, increasing their confidence  
30 in services and improving outcomes. There is a potential resource impact from

1 staggering discharge through overnight or weekend visits home. However, this would  
2 only be needed in exceptional cases.

3 Telephone or video consultations may result in a greater uptake of some services,  
4 because people may find remote attendance easier. However, services would have  
5 planned to provide in-person consultations for these people anyway, so there should  
6 be no overall resource impact.

7 [Return to recommendations](#)

## 8 **A single point of contact, key contact and key worker after** 9 **discharge**

10 [Recommendations 1.8.19 to 1.8.22](#)

### 11 **Why the committee made the recommendations**

12 There was good evidence that people benefit from having a single point of contact  
13 after discharge from hospital (for example, a discharge coordinator, a phone line or  
14 an email contact). Having a team or a professional as a single point of contact can  
15 build rapport and trust, increasing the person's confidence in accessing outpatient  
16 and community rehabilitation services. It also reduces communication delays or  
17 duplication. This contact can also provide injury-specific information and information  
18 about local rehabilitation services, help people organise their rehabilitation, and  
19 advocate for them. This should be provided for a limited time period after discharge  
20 in order to provide a secure and safe transition of care. The committee gave an  
21 example of 3 months, which was designed to encompass the transition period while  
22 still providing a stimulus to ensure healthcare is properly transferred to the  
23 appropriate setting.

24 Based on both the evidence and their own experience, the committee recommended  
25 appointing a key contact or key worker for people with continued or complex health  
26 and social care needs after discharge. Because of the increased level of support  
27 these people might need, a one-to-one relationship will increase trust and rapport,  
28 which will benefit patients and healthcare professionals.

## 1 **How the recommendations might affect practice**

2 Multiple healthcare professionals within the team have access to the relevant patient  
3 information and could therefore act as a point of contact, and so this would not need  
4 additional resources. Having a single point of contact may reduce the workload of  
5 case managers that are routinely assigned to people with complex healthcare and  
6 social care needs.

7 Key worker roles would be filled by existing healthcare or social care professionals.  
8 However, there may be more pressure on their time.

9 [Return to recommendations](#)

## 10 **Supporting access and participation in education, work and** 11 **community after discharge (adjustment and goal settings)**

12 [Recommendations 1.9.1 to 1.9.12](#)

## 13 **Why the committee made the recommendations**

14 There was evidence showing that people appreciate psychological and emotional  
15 support to adjust to social roles (for example, parenting or other family roles,  
16 relationships, intimacy), access meaningful activities for day-to-day living, and return  
17 to work, education and training. This is in line with the committee's own knowledge  
18 and experience. In the committee's experience, it is difficult to predict the outcome of  
19 rehabilitation, and making realistic goals is essential (for example, some people will  
20 not be able to return to the same type of work and will need retraining). The  
21 committee agreed that it is beneficial for people to continue with their normal  
22 activities and hobbies as part of their rehabilitation therapy. Even if adjustments are  
23 needed, this improves participation in social activities, counteracts the social  
24 isolation people may feel after traumatic injury, and makes rehabilitation goals more  
25 tangible. And the longer a person is not undertaking their everyday activities, the  
26 more difficult it is for them to return to the same level as before their injury.

27 There was good evidence on the importance of providing adequate information to  
28 people and their families before discharge. Evidence also showed that people often  
29 rely on family, carers and friends to help them navigate the multiple appointments  
30 and services needed during rehabilitation.

## 1 **How the recommendations might affect services**

2 More time might be needed to develop a rapport with people, to find out what goals  
3 are most important to them and to tailor support needs to them. Additional time may  
4 also be needed in order to provide information to employers or education providers.

5 All team members involved in the care of an individual provide emotional and  
6 psychological support, so this would not be an additional cost.

7 [Return to recommendations](#)

## 8 **Commissioning**

9 [Recommendations 1.10.1 to 1.10.5](#)

## 10 **Why the committee made the recommendations**

11 The qualitative and quantitative evidence identified aspects of planning,  
12 commissioning and coordinating that were important to the successful delivery of  
13 rehabilitation services. The committee agreed that rehabilitation services should  
14 collaborate and use joined-up commissioning approaches to provide a whole  
15 pathway rehabilitation. Based on their knowledge and experience, and limited  
16 qualitative evidence, the committee identified general principles that commissioners  
17 and providers should consider when planning, commissioning and coordinating  
18 rehabilitation services. Because these services will have different commissioners,  
19 collaboration and good communication will be needed.

20 There was no evidence on intensity of rehabilitation, so the committee took expert  
21 witness testimony on this. They expanded on the points raised by the expert witness  
22 to recommend providing an intensive rehabilitation programme. The committee  
23 recommended commissioning this as a tertiary service because it would only be  
24 appropriate for some people. This way, the service would be best designed to meet  
25 the needs of their local population.

26 Based on the qualitative evidence and their experience, the committee agreed that it  
27 is essential for an identified commissioner to have overall responsibility for local  
28 rehabilitation services, to avoid confusion and subsequent commissioning and  
29 budget errors.

## 1 **How the recommendations might affect services**

2 The recommendations are in line with current practice and should have little impact  
3 on resources. Where practice differs, there may be some resource implications,  
4 because services will need to set up frameworks for more collaborative and  
5 integrated commissioning. Intensive rehabilitation is already commissioned for some  
6 patient groups (for example, people who have lost a limb).

7 [Return to recommendations](#)

## 8 **Organisation**

9 [Recommendations 1.10.6 to 1.10.11](#)

## 10 **Why the committee made the recommendations**

11 There was qualitative evidence showing that establishing care networks and  
12 pathways between different settings encourages conversation, allows services to  
13 share advice and support each other, and can help identify gaps in local provision.

14 There was qualitative evidence on the usefulness of an electronic directory of care  
15 pathways, rehabilitation facilities and voluntary sector services. Some trauma units  
16 already have these in place, but directories are often out of date or incomplete.

17 Accessing this information is also often difficult.

18 There was qualitative evidence showing the importance of community and social  
19 services for overall rehabilitation and recovery. Non-medical rehabilitative services  
20 are wide-ranging and can include social care, housing, home adaptation, transport,  
21 and sports and recreational facilities. The committee made a recommendation to  
22 make sure that people and their families or carers know these other services exist.

23 There was qualitative evidence showing that continuity of care increases when  
24 various professionals involved are aware of other areas of rehabilitation and can  
25 network with each other. There was also qualitative evidence on the importance of  
26 professionals in generalised medical settings having access to networking  
27 opportunities. This allows greater familiarity between professionals and improves  
28 cooperation.

1 There was qualitative evidence showing that technology and telehealth can be  
2 suitable methods of improving flexibility and availability of specialist appointments.  
3 This can be particularly useful in rural areas, because qualitative evidence showed  
4 that these areas are underserved by specialist rehabilitation services. However, not  
5 everyone has the equipment needed for remote consultations, so they cannot  
6 completely replace face-to-face consultations.

7 There was qualitative evidence showing that socialising and interacting with peers  
8 can promote rehabilitation uptake and counteract isolation. In the committee's  
9 experience, group rehabilitation sessions are a good way for people to get peer  
10 support. This was supported by expert witness testimony. However, peer support  
11 might not be suitable for everyone (for example, some people may feel discouraged  
12 if they are not progressing at the same rate as others).

### 13 **How the recommendations might affect services**

14 More resources may be needed to establish care networks and pathways. However,  
15 there are already examples of this in the NHS. Some trauma units already have  
16 electronic directories of care pathways, rehabilitation facilities and voluntary sector  
17 services. Services may need to do more to keep these up to date.

18 Most professionals already have opportunities for networking. However, practice  
19 may need to change for some services where this is not the case (for example, in  
20 rural areas).

21 Telehealth is becoming more common and does not need any specialist equipment.

22 Group rehabilitation sessions may represent a change in practice for some services.

23 [Return to recommendations](#)

### 24 **Rehabilitation skills, knowledge and expertise in the workforce**

25 [Recommendations 1.10.12 to 1.10.14](#)

### 26 **Why the committee made the recommendations**

27 The evidence identified a disparity in access to specialist rehabilitation services,  
28 depending on location (for example, rural areas are underserved) and individual

1 needs (for example, if a person is not able to leave their home). A lack of  
2 rehabilitation knowledge within non-specialist healthcare services adversely impacts  
3 a person's trust in their rehabilitation services. The committee agreed that training is  
4 needed to address this. Community rehabilitation practitioners in general healthcare  
5 services should also have access to specialist rehabilitation support. This would not  
6 need to be full time, and could be provided remotely. Peer support and networking  
7 opportunities are also recommended. These will improve communication between  
8 professionals in different areas of healthcare and improve coordination for people  
9 undergoing rehabilitation.

## 10 **How the recommendations might affect services**

11 Specialist rehabilitation professionals might need to spend more time providing peer  
12 support to general services. This could be done in low-cost ways, for example, virtual  
13 meetings. If non-specialist healthcare professionals are better supported, people's  
14 needs are more likely to be met locally and there will be less pressure on specialist  
15 services. Time and resources might be needed to provide more training for non-  
16 specialists. However, this will also reduce demand on specialist services.

17 [Return to recommendations](#)

## 18 **Physical rehabilitation early interventions and principles**

19 [Recommendations 1.11.1 to 1.11.5](#)

## 20 **Why the committee made the recommendations**

21 There was conflicting evidence on the frequency and intensity of prescribed  
22 exercises because of the wide range of possible exercises, wide range of trauma  
23 and wide range of populations covered by the evidence. The committee agreed,  
24 based on their knowledge and experience, that healthcare professionals should set  
25 the frequency and intensity of rehabilitation exercises depending on the person's  
26 rehabilitation goals, but that these should be started as soon as possible. The  
27 committee also highlighted the importance of minimising the effects of low blood  
28 pressure when undergoing physical rehabilitation. This risk is increased because the  
29 person would need to change positions to perform certain rehabilitation exercises.

## 1 **How the recommendations might affect services**

2 The recommendations reflect current practice, but where there are regional  
3 variations, practice might need to be amended.

4 [Return to recommendations](#)

## 5 **Early weight-bearing**

6 [Recommendations 1.11.6 to 1.11.8](#)

## 7 **Why the committee made the recommendations**

8 The committee agreed with the evidence and current practice that weight-bearing  
9 exercises should be started as soon as possible. In their experience, this is important  
10 to encourage mobility and maintain postural reflexes, muscle mass, strength and  
11 function.

12 Decisions about weight-bearing should be led by the surgical team because it will be  
13 affected by any potential surgeries. However, bed rest can be harmful to muscle  
14 function, skin integrity, postural reflexes and respiratory function (especially in older  
15 people), and should be avoided as far as possible for most people with traumatic  
16 injury. The surgical team should communicate when a person is able to weight-bear  
17 as early as possible to keep bed rest to a minimum and so that weight-bearing can  
18 start without delay.

19 Lower limb injuries will affect a person's mobility, which affects their ability to  
20 participate in weight-bearing rehabilitation exercises to a greater extent than upper  
21 limb injuries, so the committee recommended a targeted weight-bearing programme.  
22 This programme should aim to progress the person's function with weight-bearing  
23 tasks such as mobility, ability to move from sitting to standing, and ability to lateral  
24 step (which is particularly important for people to maintain independence after  
25 discharge).

## 26 **How the recommendations might affect services**

27 The recommendations reflect current practice and are not expected to need  
28 additional resources to implement. Some additional time might be needed for  
29 communication between medical and surgical teams.

1 [Return to recommendations](#)

## 2 **Aerobic and strengthening interventions**

3 [Recommendations 1.11.9 to 1.11.14](#)

### 4 **Why the committee made the recommendations**

5 There was evidence showing the importance of aerobic and strengthening exercises  
6 in rehabilitation after traumatic injury. These exercises lead to better rehabilitation  
7 outcomes in several different trauma populations. The committee supplemented this  
8 evidence with their own knowledge and experience to recommend several aspects  
9 that healthcare professionals should consider when designing aerobic and  
10 strengthening rehabilitation programmes. The recommendations cover general  
11 components rather than specific exercises because the evidence did not clearly  
12 show which exercises were best, and because the recommendations need to be  
13 applicable to a wide range of traumatic injuries. The committee also recommended  
14 tailoring aerobic and strengthening exercises to each person's interests, to make the  
15 exercises more enjoyable and to encourage people to take part.

16 The committee agreed that the exercise programme should begin as early as  
17 possible to limit the loss of muscle tone and physical fitness. Evidence showed that  
18 upper body aerobic training can improve rehabilitation outcomes in people with lower  
19 limb injuries. The committee discussed how for older people, fitness and  
20 strengthening programmes can help to optimise respiratory function, increase  
21 endurance when doing rehabilitation exercises, and improve mobility.

22 Finally, the committee stressed that these exercise rehabilitation programmes should  
23 be continued after people are discharged home, to ensure that their physical  
24 strength and fitness does not stagnate or decrease. Regular reviews should be  
25 carried out during rehabilitation appointments in order to gauge whether the  
26 programme components are still appropriate for people's rehabilitation needs, and to  
27 change them if not.

## 1 **How the recommendations might affect services**

2 The recommendations are not expected to have a significant resource impact or be  
3 difficult to implement. However, extra time may be needed to tailor exercise  
4 programmes to each person's preferences.

5 Currently, some physiotherapists do not offer aerobic exercise programmes to older  
6 people who are frail. For these physiotherapists, there will be a change in practice  
7 and there may be a greater uptake of aerobic exercise in older people. Older people  
8 would already be working with a physiotherapist, so this will only change the type of  
9 exercise used and there will be no additional costs for services.

10 [Return to recommendations](#)

## 11 **Gait training and re-education**

12 [Recommendations 1.11.15 to 1.11.17](#)

## 13 **Why the committee made the recommendations**

14 Although there was evidence to show that gait re-education did not improve  
15 rehabilitation outcomes, the committee disagreed with these findings. In their  
16 knowledge and experience, gait re-education is a very effective rehabilitation tool,  
17 particularly for muscle strengthening. In people who are not mobile, gait re-education  
18 can still be introduced early but should be focused on reducing the impact of non-  
19 weight-bearing. This will maintain the current level of functioning and mobility, so  
20 people are ready to undertake weight-bearing gait re-education as soon as possible.

## 21 **How the recommendations might affect services**

22 At some hospitals, physiotherapists do not get patients into their physiotherapy unit  
23 until they can weight-bear fully. These physiotherapists will need to change their  
24 practice. Overall, the recommendations are not expected to have a significant  
25 resource impact or be challenging to implement.

26 [Return to recommendations](#)

## 27 **Manual therapies and maintaining joint range of movement**

28 [Recommendations 1.11.18 to 1.11.20](#)

## 1 **Why the committee made the recommendations**

2 There are a variety of range of movement exercises that can be used for  
3 rehabilitation, with different levels of assistance depending on ability. Controlled  
4 motion devices should be considered if people are not able to perform exercises  
5 independently. The committee agreed that range of movement is particularly  
6 important during rehabilitation. Targeted stretching is a good method of preventing  
7 loss of movement, particularly after exercises, when muscles tighten as a response  
8 to activation.

## 9 **How the recommendations might affect services**

10 The committee were aware of the potential resource impact of recommending  
11 specific controlled motion devices to assist range of motion. Generally, these devices  
12 are rarely used (and mostly only in hospitals to help with knee injury). However, once  
13 acquired, these devices can be used by multiple people. Overall, the  
14 recommendations are not expected to have a large resource impact or be difficult to  
15 implement.

16 [Return to recommendations](#)

## 17 **Splinting and orthotics**

18 [Recommendations 1.11.21 to 1.11.28](#)

## 19 **Why the committee made the recommendations**

20 Evidence showed a benefit from orthoses in rehabilitation after trauma. No evidence  
21 was found on splinting. The committee combined the available evidence with their  
22 experience and knowledge to recommend several specialised splint and orthoses,  
23 and to warn about positions known to cause complications and loss of function later  
24 on in recovery.

25 Because of their complexity, the committee recommended bespoke splints for  
26 people with hand injuries, as well as referral to a hand therapy specialist. 'Off-the-  
27 rack' splints can be ill-fitting and cause lost range of movement in the hands and  
28 fingers.

1 Regular review of splints is recommended because splinting can have adverse  
2 effects if not monitored carefully (for example, pressure sores). This risk is increased  
3 in people with reduced skin sensation and recent skin graft or flaps, so splints and  
4 orthoses may be contraindicated and specialist advice may be needed.

5 Evidence showed that spinal orthoses can help improve patient rehabilitation  
6 outcomes, and they are used in current practice. However, in the committee's  
7 experience, not all trauma populations see a benefit (for example, older people) and  
8 spinal orthoses can cause adverse events if improperly fitted. Healthcare  
9 professionals should be aware that these devices may be poorly tolerated and know  
10 when to discuss problems with the surgical team. Because of these issues with the  
11 evidence, the committee made a [research recommendation on spinal orthoses for  
12 older people](#).

### 13 **How the recommendations might affect services**

14 The recommendations reflect current practice. Splints and orthoses are commonly  
15 used and are all low cost. Bespoke splints are easily made in a treatment room and  
16 would not need any additional resources.

17 [Return to recommendations](#)

### 18 **Management of swelling and oedema, and scars**

19 [Recommendations 1.11.29 to 1.11.38](#)

### 20 **Why the committee made the recommendations**

#### 21 **Swelling and oedema management**

22 Swelling is a common side effect of traumatic injury, but there are symptoms that will  
23 need treatment from healthcare professionals (for example, signs of deep vein  
24 thrombosis). No evidence was found, so the committee used their knowledge and  
25 experience to recommend a programme of elevation and exercises to prevent and  
26 reduce any swelling associated with trauma. Compression bandages can be used to  
27 help this. However, providing appropriate compression is a skill. Therefore, the  
28 committee recommended specialist supervision for this.

## 1 **Scar management**

2 No evidence was found on the psychological aspects of scarring after traumatic  
3 injury. Based on their experience, the committee recommended several measures to  
4 encourage people to adjust to their new appearance, reassure them of expected  
5 recovery sensations and provide information about scar management. For children  
6 and young people, the committee recommended performing any painful treatments  
7 away from their hospital bed. This encourages them to associate their bed with  
8 security, an important factor in their hospital experience.

9 Evidence was found for massage as a treatment for scar tissue. This will help  
10 desensitise the area, and increase tissue mobility (and therefore maintain range of  
11 movement).

12 In the committee's experience, scar management knowledge is not very prevalent in  
13 non-specialist healthcare settings. Therefore, they recommended referring people to  
14 specialist services if they have scars of skin grafts that need complex treatment (for  
15 example, contracture across joints that limits movement).

## 16 **How the recommendations might affect services**

17 The recommendations reflect current practice, but where there are regional  
18 variations, practice might need to be amended.

19 [Return to recommendations](#)

## 20 **Nutritional supplementation**

21 [Recommendations 1.11.39 to 1.11.46](#)

## 22 **Why the committee made the recommendations**

23 The evidence for nutritional supplementation was of very low quality. However, the  
24 committee agreed that there is a lack of awareness about the nutritional risks and  
25 needs following traumatic injury. People need more calories after traumatic injury, to  
26 help with healing. However, they often have complications that can affect eating  
27 habits or nutrient absorption. To address these issues and the lack of awareness  
28 around nutritional supplementation, the committee made recommendations based on  
29 their own experience.

1 The committee made a specific recommendation for people with severe burns  
2 because they are at increased risk of losing significant muscle mass, weight and  
3 strength for a prolonged period, because of the long-lasting effect of the  
4 hypermetabolic response.

### 5 **How the recommendations might affect services**

6 The recommendations are in line with current practice and will not need additional  
7 resources to implement.

8 [Return to recommendations](#)

### 9 **Cognitive rehabilitation**

10 [Recommendations 1.12.1 to 1.12.7](#)

### 11 **Why the committee made the recommendations**

12 There was no evidence in this area. However, in the committee's experience,  
13 trauma-related cognitive functioning problems can be upsetting for people and affect  
14 their decision making and participation. Because of this, the committee believed it is  
15 important to reassure people that these problems are usually temporary. When  
16 problems are not temporary, the committee recommended adapting rehabilitation  
17 therapy to take account of this and to help the person participate in therapy and  
18 assessments.

19 As another aspect of helping people with cognitive difficulties to participate, the  
20 committee highlighted information needs and formats to use. The committee were  
21 also keen to emphasise the need to share this information with the person's family or  
22 carers, because they can play an important part in helping the person understand  
23 and recall key messages.

24 The committee agreed on additional steps to follow for children and young people, to  
25 ensure that their education providers accommodate their changing needs.

### 26 **How the recommendations might affect services**

27 The recommendations reflect current practice, but where there are regional  
28 variations, practice might need to be amended.

1 [Return to recommendations](#)

## 2 **Psychological rehabilitation**

3 [Recommendations 1.13.1 to 1.13.7](#)

### 4 **Why the committee made the recommendations**

5 The committee used their knowledge and experience to make recommendations on  
6 psychological rehabilitation. They highlighted the importance of reassuring people  
7 that the acute stress response is common and normally temporary, because it can  
8 be very distressing. Outside of the acute stress response, the committee identified  
9 several other psychological issues, to raise awareness among professionals and  
10 encourage good practice.

11 Because of low quality evidence, the committee based the recommendations on  
12 psychological support on their own experience. They agreed that ‘one size does not  
13 fit all’ within psychological and psychosocial therapies and felt it was important to  
14 offer psychological and emotional support that is tailored to a person’s rehabilitation  
15 goals, needs and preferences.

16 The committee recommended that any treatment for psychological disorders should  
17 form part of a complete rehabilitation package, and not be kept separate. This will  
18 allow better communication and coordination of physical and mental healthcare.

19 No evidence of benefit was found for family support interventions. However, in the  
20 committee’s experience, involving family can be beneficial.

### 21 **How the recommendations might affect services**

22 The recommendations reinforce current practice and refer to existing NICE  
23 guidelines, so should not need additional resources to implement. Most team  
24 members specialising in the management of major trauma are equipped to provide  
25 psychological and emotional support. Being more aware of psychological problems  
26 may result in more referrals to psychology services.

27 [Return to recommendations](#)

1 **Rehabilitation after limb-threatening injury – early assessment,**  
2 **decision making and support**

3 [Recommendations 1.14.1 to 1.14.4](#)

4 **Why the committee made the recommendations**

5 There was no evidence in this area. The committee agreed based on their  
6 experience who should be involved from the multidisciplinary team and what the  
7 discussions needed to cover.

8 Although no evidence was identified, the committee recommended psychological  
9 support before limb amputation because of the life-changing nature of the  
10 procedures. Psychological and emotional support can improve outcomes after  
11 surgery (such as emotional wellbeing and pain management).

12 The committee recommended involving limb reconstruction and prosthetic specialists  
13 early on, because amputation and limb reconstruction can be life-changing and  
14 traumatic.

15 **How the recommendations might affect services**

16 The recommendations reflect current practice, but where there are regional  
17 variations, practice might need to be amended.

18 [Return to recommendations](#)

19 **Rehabilitation after limb reconstruction**

20 [Recommendations 1.14.5 to 1.14.7](#)

21 **Why the committee made the recommendations**

22 There was no evidence, but based on their own experience, the committee agreed  
23 that rehabilitation should start as early as possible after surgery to reduce the risk of  
24 complications that may delay the person's recovery, and to maintain range of  
25 movement after limb reconstruction. Because of the complexity of limb  
26 reconstruction, the committee did not recommend a specific programme but  
27 suggested certain interventions that could be used to accomplish this.

1 The committee also agreed that psychological support should continue after limb  
2 reconstruction surgery, to help the person adjust to their appearance and manage  
3 pain.

#### 4 **How the recommendations might affect services**

5 The recommendations reflect current practice, but where there are regional  
6 variations, practice might need to be amended.

7 [Return to recommendations](#)

#### 8 **Rehabilitation after limb loss or amputation**

9 [Recommendations 1.14.8 and 1.14.9](#)

#### 10 **Why the committee made the recommendations**

11 There was no evidence but based on their own experience, the committee agreed  
12 that rehabilitation should start as early as possible after surgery to reduce the risk of  
13 complications that may delay the person's recovery. People should usually be  
14 referred to the amputee and prosthetic rehabilitation team before their surgery, but  
15 the committee acknowledged that sometimes there is not enough time so they would  
16 need to be referred afterwards.

17 The committee also agreed that psychological support should continue after limb  
18 loss and amputation to help the person adjust to their appearance and manage pain  
19 (for example, mirror therapy).

#### 20 **How the recommendations might affect services**

21 The recommendations reflect current practice, but where there are regional  
22 variations, practice might need to be amended. More people being referred to  
23 amputee and prosthetic rehabilitation before surgery may cause an initial increase in  
24 referrals.

25 [Return to recommendations](#)

#### 26 **Pain management after limb loss or amputation**

27 [Recommendations 1.14.10 to 1.14.12](#)

## 1 **Why the committee made the recommendations**

2 The committee agreed that pain management should be discussed before surgery  
3 because pain after limb loss or amputation can be difficult to treat, and managing  
4 pain effectively after surgery can increase participation in the rehabilitation process.  
5 Additionally, people with poor perioperative pain control have an increased risk of  
6 phantom limb pain in the long term. There was also evidence that mirror therapy is  
7 an effective and inexpensive non-pharmacological treatment for phantom limb pain  
8 after limb loss or amputation.

## 9 **How the recommendations might affect services**

10 The recommendations enforce current practice and are not expected to be difficult to  
11 implement. Mirror therapy is relatively cheap and easy to implement. There may be  
12 an increased level of referrals to specialised pain management teams, depending on  
13 the complexity of pain management plans. However, this will be offset by increased  
14 participation in rehabilitation after surgery and therefore better outcomes.

15 [Return to recommendations](#)

## 16 **Residual limb oedema and shaping after limb loss or amputation**

17 [Recommendations 1.14.13 to 1.14.15](#)

## 18 **Why the committee made the recommendations**

19 There was no evidence so the committee based the recommendations on their  
20 knowledge and experience. They highlighted the benefit of elevation and  
21 compression therapy in managing stump oedema by reducing swelling and  
22 facilitating prosthetics fitting. They also agreed that:

- 23 • limb swelling should be avoided when using early walking aids because this can  
24 delay prosthetics fitting and rehabilitation
- 25 • stump boards on wheelchairs can provide support to keep the limb elevated for  
26 people with a below-the-knee amputation.

## 27 **How the recommendations might affect services**

28 The recommendations reflect current practice, but where there are regional  
29 variations, practice might need to be amended.

1 [Return to recommendations](#)

## 2 **Range of movement and strengthening after limb loss or** 3 **amputation**

4 [Recommendation 1.14.16](#)

### 5 **Why the committee made the recommendation**

6 The committee used their knowledge and experience to recommend providing range  
7 of movement exercises to help prevent complications and optimise functional  
8 outcomes.

### 9 **How the recommendation might affect services**

10 The recommendation reflects current practice, but where there are regional  
11 variations, practice might need to be amended.

12 [Return to recommendations](#)

## 13 **Functional independence after limb loss or amputation**

14 [Recommendations 1.14.17 and 1.14.18](#)

### 15 **Why the committee made the recommendations**

16 Although there was some evidence identified about waiting until prosthetics had  
17 been fitted before starting rehabilitation, this disagreed with the committee's  
18 knowledge and experience. They argued that the best way to maintain and improve  
19 the person's range of movement after limb loss or amputation is by starting  
20 rehabilitation therapy as early as possible. Rehabilitation should not be delayed by  
21 waiting for prosthetics to be fitted because the maintenance and improvement of  
22 range of movement will help prevent complications and optimise functional  
23 outcomes.

24 The committee also agreed that wheelchairs should be provided early, along with  
25 appropriate accessories such as anti-tippers and stump boards. Wheelchairs should  
26 be adjusted to accommodate the changes in the person's weight distribution after  
27 limb loss or amputation. By providing appropriately fitted and adjusted wheelchairs  
28 as early as possible, a person's independence and mobility will be increased and

1 they will be better able to engage in activities of daily living. There was no evidence,  
2 so the committee used their knowledge and experience to make the  
3 recommendation.

#### 4 **How the recommendations might affect services**

5 There might be an increased number of referrals to physiotherapists and  
6 occupational therapists in order for wheelchairs to be individually fitted and adjusted.  
7 However, the committee discussed that the increased mobility and independence will  
8 result in an increased engagement with rehabilitation, leading to better rehabilitation  
9 outcomes. Overall, the recommendations reflect current practice, but where there  
10 are regional variations, practice might need to be amended.

11 [Return to recommendations](#)

#### 12 **Psychological support after limb loss, amputation or limb 13 reconstruction**

14 [Recommendations 1.14.19 to 1.14.22](#)

#### 15 **Why the committee made the recommendations**

16 Although there was no evidence, the committee used their experience and  
17 knowledge to discuss how continuing psychological support after limb reconstruction,  
18 loss or amputation can help the person come to terms with their appearance and  
19 manage pain.

20 The committee recommended actively monitoring children and young people for  
21 emerging emotional and psychological impact. This is because childhood and young  
22 adulthood is a period of change for anyone, and children who have had limb  
23 reconstruction, loss or amputation may experience it differently to the general  
24 paediatric population (for example, altered body image may become more important  
25 during puberty).

#### 26 **How the recommendations might affect services**

27 The recommendations reflect current practice, but where there are regional  
28 variations, practice might need to be amended.

1 [Return to recommendations](#)

## 2 **Continuing rehabilitation after limb reconstruction, limb loss or** 3 **amputation and after discharge**

4 [Recommendations 1.14.23 to 1.14.26](#)

### 5 **Why the committee made the recommendations**

6 The rehabilitation plan should be reviewed at key points to ensure it is updated with  
7 any changes in the person's goals, circumstance or needs. For children and young  
8 people, physical growth may cause complications around the residual limb or  
9 prosthetic fitting. The committee recommended referral to specialist assessment  
10 when this occurs, in order to prevent any adverse effects.

11 Based on their experience, the committee recommended psychological and  
12 emotional support after trauma to help a person adjust to their altered body image,  
13 manage pain and cope with the possibility of further procedures.

### 14 **How the recommendations might affect services**

15 The recommendations reflect current practice, but where there are regional  
16 variations, practice might need to be amended.

17 [Return to recommendations](#)

## 18 **Rehabilitation after spinal cord injury – referral, assessment and** 19 **general principles**

20 [Recommendations 1.15.1 to 1.15.7](#)

### 21 **Why the committee made the recommendations**

22 The committee discussed their experience with early treatment of traumatic spinal  
23 cord injury in emergency departments and how this can affect rehabilitation. Studies  
24 involving spinal cord injury treatment in the emergency department were not included  
25 in the evidence reviews because of an existing [NICE guideline on spinal injury:  
26 assessment and initial management](#). However, the committee highlighted several  
27 areas of acute treatment that can affect rehabilitation after traumatic injury.

1 Because of competing clinical interests, certain aspects of spinal cord injury  
2 management are often overlooked in emergency healthcare settings. The committee  
3 highlighted the importance of timely contact with regional specialist spinal cord injury  
4 centres and the national spinal injuries database to establish a partnership of care  
5 with specialist healthcare professionals that will continue throughout the  
6 rehabilitation journey. An American Spinal Injury Association (ASIA) chart should  
7 also be completed early to identify a current reference point for future assessments.

8 The committee reflected on the additional issues that people encounter after spinal  
9 cord injury because of the chronic nature of the injury and resulting disabilities.  
10 External support networks are very important during spinal cord injury rehabilitation,  
11 with family members (and carers or friends, if appropriate) being invited into  
12 healthcare discussions and rehabilitation goals. Vocational, educational, recreational  
13 and home adjustments may be needed after discharge. By starting these  
14 conversations and arrangements early in the rehabilitation process, any  
15 modifications can be in place and rehabilitation can be better tailored to an  
16 individual, creating a smoother transfer back into the community. Ongoing contact  
17 with hospital rehabilitation teams should be maintained to ensure a continued  
18 progress review to inform outpatient rehabilitation planning.

19 The committee discussed the additional complications that children and young  
20 people might experience after spinal cord injury because they are still growing.  
21 Spinal growth patterns, skeletal growth and nutrition need to be closely monitored in  
22 children and young people. Complications in any of these areas can cause additional  
23 barriers to rehabilitation, and will become more difficult (if not impossible) to treat as  
24 the child or young person stops growing.

## 25 **How the recommendations might affect practice**

26 The recommendations reinforce current practice and are in line with the NICE  
27 guideline on spinal injury. The benefits of increased care coordination will offset the  
28 extra time that professionals might need to follow the recommendations. ASIA charts  
29 can be difficult to administer reliably, and staff with appropriate skills should  
30 complete assessments, potentially resulting in some extra training costs.

31 [Return to recommendations](#)

## 1 **Bladder and bowel function**

### 2 [Recommendations 1.15.8 to 1.15.11](#)

#### 3 **Why the committee made the recommendations**

4 The committee agreed that bladder and bowel management is important because  
5 the medical consequences from undetected bladder and bowel malfunction can be  
6 severe. Complications include renal tract damage, bowel perforation and respiratory  
7 distress. The committee used their knowledge and experience to recommend  
8 several measures to monitor and maintain bladder and bowel function. Although  
9 keeping people nil by mouth is a common practice while assessing bowel function,  
10 the committee highlighted that delays in this assessment should be minimised in  
11 order to prevent issues with nutrition and discomfort during rehabilitation.

#### 12 **How the recommendations might affect practice**

13 There is variation in bladder and bowel management, so the recommendations  
14 should lead to greater consistency and improve care. Monitoring bladder and bowel  
15 function will involve additional time, but should have benefits in reducing  
16 complications, avoiding delays in starting and continuing rehabilitation, and  
17 improving patient outcomes.

### 18 [Return to recommendations](#)

## 19 **Respiratory function**

### 20 [Recommendations 1.15.12 and 1.15.13](#)

#### 21 **Why the committee made the recommendations**

22 Maintaining respiratory function is essential after a spinal cord injury because the  
23 injury may have damaged the chest muscles used in respiration. Without treatment,  
24 this could lead to respiratory failure and severe complications. It can also delay  
25 rehabilitation until the person is clinically stable enough to start it, and may mean  
26 they also need chest physiotherapy to be added to their care plan. Respiratory  
27 function should be assessed in line with the NICE guideline on spinal injury to  
28 determine baseline function and mark progress. The committee highlighted that  
29 children and young people can find it difficult to complete these assessments

1 (particularly forced vital capacity [FVC]), and these should be performed and  
2 interpreted in accordance with their age and ability. The committee used their  
3 experience to recommend several protective interventions to assist with respiratory  
4 function after spinal cord injury.

## 5 **How the recommendations might affect services**

6 Monitoring respiratory function after a spinal cord injury will involve additional time,  
7 but should have benefits in preventing complications caused by compromised  
8 respiratory function, avoiding delays in starting and continuing rehabilitation, and  
9 improving outcomes. Prophylactic respiratory support will potentially reduce the need  
10 for additional chest rehabilitation further down the pathway.

11 [Return to recommendations](#)

## 12 **Preventing complications**

13 [Recommendations 1.15.14 to 1.15.17](#)

## 14 **Why the committee made the recommendations**

15 The extended periods of bed rest and immobilisation following spinal cord injury can  
16 lead to a wide variety of complications, which can delay rehabilitation. There was no  
17 evidence so the committee based the recommendations on their knowledge and  
18 experience.

19 Skin management is a particular area of concern because of decreased mobilisation  
20 coupled with reduced physical sensation. People can develop deep pressure ulcers  
21 very quickly, which need to be treated before rehabilitation can start.

22 Blood pressure monitoring is important after spinal cord injury because people are at  
23 risk of developing autonomic dysreflexia (in high-level spinal cord injury) and  
24 orthostatic hypotension. Autonomic dysreflexia has severe consequences (for  
25 example, strokes, encephalopathy, brain haemorrhages and heart attacks) and  
26 should be managed as a medical emergency. Orthostatic hypotension has less severe  
27 complications but, because it is triggered when changing positions, can affect  
28 engagement with rehabilitation exercises.

## 1 **How the recommendations might affect services**

2 The recommendations reinforce current practice and should not need additional  
3 resources to implement. Additional education might be needed for healthcare  
4 professionals on the best way to inform people with spinal cord injury about skin and  
5 pressure management.

6 [Return to recommendations](#)

## 7 **Maintaining mobility and movement**

8 [Recommendations 1.15.18 to 1.15.28](#)

## 9 **Why the committee made the recommendations**

10 The committee agreed that it is important to maintain mobility and range of motion  
11 after a spinal cord injury. However, they also recognised that the large variety of  
12 spinal cord injury disabilities and needs means that this should be considered on a  
13 case-by-case basis. Because of this complexity, the committee stressed that  
14 specialist advice should be sought when needed (for example, the appropriateness  
15 of wrist splints for people with a spinal cord injury involving C6). Spinal orthoses  
16 have conflicting results in different people, and can hinder certain rehabilitation  
17 programmes. Therefore, the committee recommended referring to surgical teams in  
18 these cases, to explore other avenues of treatment.

19 There was some evidence on the benefit of specialist equipment and rehabilitation  
20 techniques to maintain mobility and range of motion. The committee agreed that  
21 these should be considered on a case-by-case basis, aligning interventions with  
22 rehabilitation needs and goals.

23 Spasticity is an important area to treat for people with spinal cord injury, to prevent  
24 losing range of joint movement and contractures. There was some evidence on  
25 baclofen and botulinum toxin A to manage spasticity after a spinal cord injury.

26 Length of bed rest after spinal cord injury varies throughout different NHS trusts, and  
27 is an area that the committee were keen to standardise. However, because of the  
28 lack of evidence identified, they were unable to make any strong recommendations

1 and made a [research recommendation on the optimal length of bed rest](#) to inform  
2 future guideline updates.

### 3 **How the recommendations might affect services**

4 More people with spinal cord injury might be referred to specialist services. Any  
5 additional cost will be offset by more people achieving their long-term rehabilitation  
6 goals because of earlier specialist input. There might be some additional costs for  
7 training healthcare staff, and some services might need to procure specialist  
8 equipment to help with mobility, upper limb function and independent walking.  
9 Although some equipment, like robotics, can be expensive, the committee agreed a  
10 range of effective interventions. There is flexibility within the recommendations about  
11 the use of a range of assistive devices and techniques.

12 [Return to recommendations](#)

### 13 **Low mood and psychological support**

14 [Recommendations 1.15.29 to 1.15.32](#)

### 15 **Why the committee made the recommendations**

16 There was conflicting quantitative evidence on using psychosocial interventions after  
17 spinal cord injury, with some studies reporting beneficial outcomes and some finding  
18 no difference. The committee argued that this was low quality evidence, and that  
19 their experience and expertise agreed with the beneficial impact of psychological  
20 interventions. However, because they have already made recommendations on  
21 psychological interventions for rehabilitation after traumatic injury, they used this  
22 section of the guideline to make recommendations that are specific to people with  
23 spinal cord injury.

24 People with spinal cord injury have increased rates of low mood and psychological  
25 trauma, and this can affect engagement with rehabilitation. Access to a psychologist  
26 with experience in traumatic spinal cord injury and rehabilitation is not guaranteed  
27 outside of specialised spinal units, so the committee made a recommendation to  
28 address this. Active monitoring is recommended for children and young people  
29 because childhood and young adulthood is a period of change for anyone, and  
30 children and young people with a spinal cord injury could be affected in different

1 ways to the general paediatric population (for example, altered body image  
2 becoming more important during puberty).

### 3 **How the recommendations might affect services**

4 The recommendations reinforce current practice and should not need additional  
5 resources to implement. If multidisciplinary teams are more aware of low mood and  
6 psychological trauma in people with a spinal injury, they may make more referrals for  
7 psychological support.

8 [Return to recommendations](#)

### 9 **General principles**

10 [Recommendations 1.16.1 to 1.16.3](#)

### 11 **Why the committee made the recommendations**

12 Nerve injuries may be hidden. For instance, when the person has multiple injuries, a  
13 cognitive impairment, a head injury, is in critical care or has a pre-existing  
14 neurological condition. These obvious injuries could distract clinicians from  
15 recognising subtler nerve injury, and neurological deficit caused by nerve injury can  
16 be mistakenly assumed to be due to a pre-existing neurological condition. In  
17 addition, diagnosis of nerve injury may not be possible if the person is unconscious,  
18 and nerve function cannot be assessed on limbs that are splinted. The committee  
19 highlighted the need to assess the peripheral nerves of the affected limb to identify  
20 the informed nerve and functional deficit.

21 The committee highlighted the importance of assessing the risks to tissue viability if  
22 there is sensory or motor loss secondary to peripheral nerve injury, so as to manage  
23 the risk and not jeopardise the person's functional recovery.

### 24 **How the recommendations might affect services**

25 The recommendations reflect current practice, but where there are regional  
26 variations, practice might need to be amended.

27 [Return to recommendations](#)

## 1 **Therapies and referral**

### 2 [Recommendations 1.16.4 to 1.16.9](#)

## 3 **Why the committee made the recommendations**

4 Based on the evidence and their experience, the committee emphasised the need to  
5 start rehabilitation therapy to maintain range of movement and regain function after  
6 nerve injury. This is because nerve injury can cause the joint to rest in an unnatural  
7 position and lead to fixed deformity from contracture of the capsule and muscle.

8 Providing vocational therapy while the recovery is ongoing can help the person  
9 return to normal activities such as work.

10 Nerve function should be assessed regularly for symptoms of recovery, which will  
11 affect the components and intensity of the nerve rehabilitation programme. It should  
12 not be a static programme. For people who have a poor prognosis, a referral to a  
13 specialist peripheral nerve injury service should be made because these services are  
14 better equipped to deal with the complex needs of peripheral nerve injury.

15 People recovering from nerve injury may experience low mood, anxiety and lack of  
16 motivation, because recovery may be a lengthy process. To ensure that specialist  
17 psychological support is available for people who may need it, the rehabilitation team  
18 should have access to a psychologist with trauma and rehabilitation experience.

## 19 **How the recommendations might affect practice**

20 Sensory interventions (including mirror therapy and hydrotherapy) are not widely  
21 available and this could have some resource implications. However, hydrotherapy  
22 would only be offered if pool facilities were available, and mirror therapy and other  
23 sensory interventions are relatively inexpensive and easy to implement. All of the  
24 above interventions can play a part in stimulating and aiding functional recovery, and  
25 can lead to a quicker recovery, help with pain management, and improve the  
26 person's health-related quality of life.

27 Healthcare professionals may need training to conduct nerve conduction studies  
28 reliably, but this will save costs further down the care pathway. There may be more  
29 referrals to specialist peripheral nerve injury services.

1 [Return to recommendations](#)

## 2 **Rehabilitation after chest injury**

3 [Recommendations 1.17.1 to 1.17.12](#)

### 4 **Why the committee made the recommendations**

5 There was no evidence. However, the committee discussed the importance of  
6 starting rehabilitation as soon as possible to avoid further complications. They also  
7 discussed the need for regular assessment of pain and highlighted pain  
8 management options, because pain is a contributing factor for much of the morbidity  
9 associated with chest injury, and the appropriateness of pain management options  
10 may vary between people with chest injury.

11 For people with chest trauma, the committee highlighted the need for movement in  
12 order to optimise their respiratory function and prevent deconditioning. They further  
13 highlighted a range of rehabilitation therapies to use in preventing respiratory  
14 difficulties because this is a key component of chest trauma rehabilitation. The  
15 committee are aware that the availability of these therapies may differ between  
16 services, and different therapies may be preferred by different people.

17 Because of the concerns over possible injury causes and underlying pathologies, the  
18 committee highlighted the need to assess people with rib fractures, in order to inform  
19 future treatment and prevent recurrence. The committee recognise stiffness of the  
20 upper limbs as a common complication and discussed preventive measures,  
21 because otherwise it can lead to compromised function.

22 The committee recommended referring people with complex chest injuries that affect  
23 communication and swallowing skills to speech and language therapy to prevent  
24 speech decline and swallowing difficulties.

25 The committee also recommended providing information that will help people to  
26 return to normal life and explain how to seek help for different problems that may  
27 arise because rehabilitation for chest injuries can take a long time, causing stress  
28 and worry.

1 **How the recommendations might affect services**

2 The recommendations reflect current practice, but where there are regional  
3 variations, practice will need to be amended.

4 [Return to recommendations](#)

5 **Finding more information and committee details**

6 To find NICE guidance on related topics, including guidance in development, see the  
7 [NICE webpage on injuries, accidents and wounds](#).

8 For details of the guideline committee, see the [committee member list](#).

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