

SUPPLEMENTARY DIGITAL MATERIAL 8

Supplementary Table VIII.—Summary from recommendations organized by areas of interest and linked with relevant ICF codes.

N°	Key message for people ageing with an SCI	SoR	LoE	(Health) issue(s) addressed	ICF codes	Source Rec. N° Guideline information
Organization of healthcare services						
1	When caring for an older person with a newly acquired SCI, consider the assistance of a geriatrician (or orthogeriatrician, surgical liaison, or perioperative physician)	Weak	Very low	Service organization	e355 Health professionals e580 Health services, systems and policies	Rec. N°:1 NICE_Rehabilitation, 2022 Chapter: 1.4 Developing a rehabilitation plan and making referrals Page: 27
2	It is recommended that Physical and Rehabilitation Medicine (PRM) physicians continue long-term follow-up of persons with SCI, also when ageing, aiming to meet the individualized needs of the person using diverse treatment strategies along the lifespan of these persons with a life-long disability.	Strong	Very low	Service organization	e355 Health professionals e580 Health services, systems and policies	Rec. N°:29 UEMS_PRM, 2018 Chapter: D. Recommendations on PRM management and process Page: 804
3	Referral to an endocrinologist or appropriate subspecialist should be considered if there are unexplained serum or urine calcium levels (hyper or hypo) and/or if the workup is suggestive of hyperthyroidism or hyperparathyroidism.	Strong	Low	Bone health	s7700 Bones b540 General metabolic functions	Rec. N°:9 Consortium_Bone health, 2022 Chapter: 2. Laboratory screening Page: 27
Falls risk						
4	When caring for an older person with a newly acquired SCI due to a traumatic injury, assess the person's fall risk according to national guidelines.	Strong	Very low	Falls risk assessment	N/A	Rec. N°:3 NICE_Rehabilitation, 2022 Chapter: 1.4 Developing a rehabilitation plan and making referrals Page: 27
Prevention of deep venous thrombosis						
5	In patients over 45 years of age, regularly ask about symptoms and assess for the presence of deep vein thrombosis.	Strong	Very low	Prevention of deep venous thrombosis	b415 Blood vessel functions	Rec. N°:15 German speaking society_Lifelong follow-up, 2022 Chapter: 3.3 Cardiovascular diseases Page: 17
6	Anticoagulant thromboprophylaxis should be continued for at least eight weeks after injury in SCI patients with limited mobility, although the specific duration should be individualized for each patient. Older age is a factor suggesting the need for a longer duration of thromboprophylaxis.	Strong	Low	Prevention of deep venous thrombosis	b415 Blood vessel functions e110 Products or substances for personal consumption	Rec. N°:33 Consortium_Venous thromboembolism, 2016 Chapter: Duration of Thromboprophylaxis Page: 16
Prevention of herpes zoster						
7	Recommend vaccination to prevent herpes zoster and post-zoster neuralgia at least for high-risk patients starting at age 50.	Strong	Very low	Prevention of herpes zoster and post-zoster neuralgia	b435 Immunological system functions	Rec. N°:17 German speaking society_Lifelong follow-up, 2022 Chapter: 3.6 Digestive system and neurogenic bowel dysfunction Paragraph: 1

Cardiovascular health						
8	Monitor patients regularly for the development of cardiometabolic syndrome	Strong	Very low	Prevention of cardiometabolic syndrome	b410 Heart functions b540 General metabolic functions b420 Blood pressure functions	Rec. N°:12 German speaking society_Lifelong follow-up, 2022 Chapter: 3.3 Cardiovascular diseases Page: 16
9	Assess nutritional status as part of lifelong follow-up for elevated cardiovascular risk factors	Weak	Very low	Assessment of cardiovascular risk factors	b410 Heart functions b530 Weight maintenance functions b540 General metabolic functions	Rec. N°:14 German speaking society_Lifelong follow-up, 2022 Chapter: 3.3 Cardiovascular diseases Page: 16
10	From 10 years after the onset of paralysis or if the patient is over 60 years of age performance an annual ECG or consider a long-term ECG	Weak	Very low	Prevention of cardiac infarction	b410 Heart functions e580 Health services, systems and policies	Rec. N°:13 German speaking society_Lifelong follow-up, 2022 Chapter: 3.3 Cardiovascular diseases Page: 16
11	During physical rehabilitation offer aerobic exercise to older people who are frail after a traumatic SCI injury	Strong	Very low	Aerobic exercises	b455 Exercise tolerance functions b410 Heart functions	Rec. N°:5 NICE_Rehabilitation, 2022 Chapter: 1.11 Physical rehabilitation Page: 60
12	Evidence-based guidelines for the treatment of hypertension in the general population should be used to treat individuals with SCI. In adults 60 years of age or older without diabetes or chronic kidney disease, initiate pharmacologic treatment to lower blood pressure if systolic blood pressure is 150 mm Hg or higher or diastolic blood pressure is 90 mm Hg or higher.	Strong	Low	Hypertension	b420 Blood pressure functions	Rec. N°:31 Consortium_Cardiometabolic risk, 2018 Chapter: Pharmacotherapy for Hypertension Page: 28
13	Use thiazide diuretics with caution in elderly patients. Evidence-based guidelines for the treatment of hypertension in the general population should be used to treat individuals with SCI. However, SCI-related factors should be considered when selecting an antihypertensive agent, such as the effect of thiazide diuretics on bladder management. Elderly patients may be particularly susceptible to renal electrolyte disturbances, gout, hyperglycemia and hypotension.	Strong	Very low	Hypertension	b420 Blood pressure functions b540 General metabolic functions e110 Products or substances for personal consumption	Rec. N°:32 Consortium_Cardiometabolic risk, 2018 Chapter: Pharmacotherapy for Hypertension Page: 28
Bone and metabolic health						
14	When caring for an older person with a newly acquired SCI due to a fragility fracture, assess bone health according to national guidelines for osteoporosis and refer as appropriate.	Strong	Very low	Bone health	s7700 Bones	Rec. N°:2 NICE_Rehabilitation, 2022 Chapter: 1.4 Developing a rehabilitation plan and making referrals Page: 27
15	Use the following criteria to diagnose sublesional osteoporosis: Males \geq 50 years of age or postmenopausal females: Hip (total or femoral neck), distal femur, or proximal tibia T-score \leq -2.5	Strong	Mode rate	Bone health	s7700 Bones	Rec. N°:10 Consortium_Bone health, 2022 Chapter: 3. Bone density testing with dual-energy X-ray absorptiometry Page: 36

16	When caring for an older person with a newly acquired SCI due to a fragility fracture, measure vitamin D levels (Low vitamin D = 25 hydroxyvitamin D below 25 nmol/litre (or 10 ng/ml).	Weak	Very low	Bone health	s7700 Bones b540 General functions	metabolic	Rec. N°:6 NICE_Rehabilitation, 2022 Chapter: 1.11 Physical rehabilitation Page: 60
17	Consider daily supplement of 10 micrograms (or 400 IU) of vitamin D.	Weak	Very low	Bone health	s7700 Bones b540 General functions	metabolic	Rec. N°:6 NICE_Rehabilitation, 2022 Chapter: 1.11 Physical rehabilitation Page: 60
18	As soon as possible after the patient establishes ongoing care with their physician, or if there is significant loss of bone mineral density, an incident fracture, or a change in a medical condition or medication that might be expected to influence osteoporosis risk: Measurements of serum 25-hydroxyvitamin D (25-(OH)D) done by a validated assay method; complete blood cell count; ionized calcium (or calcium adjusted for albumin), phosphate, intact parathyroid hormone, creatinine (and estimated glomerular filtration rate), bone-specific alkaline phosphatase and transaminases, hemoglobin A1C, and thyroid-stimulating hormone levels; and 24-hour urine collection for calcium and creatinine excretion.	Strong	Low	Bone health	s7700 Bones b540 General functions	metabolic	Rec. N°:9 Consortium_Bone health, 2022 Chapter: 2. Laboratory screening Page: 27
19	Referral to an endocrinologist or appropriate subspecialist should be considered if there are unexplained serum or urine calcium levels (hyper or hypo) and/or if the workup is suggestive of hyperthyroidism or hyperparathyroidism.	Strong	Low	Bone health	s7700 Bones b540 General functions	metabolic	Rec. N°:9 Consortium_Bone health, 2022 Chapter: 2. Laboratory screening Page: 27
20	Patients who are not hypercalcemic should have the following calcium intake as a combination of food and supplements (preference for dietary intake over supplements). Men 50-70 years: 1,000 mg/day Women 50-70 years: 1,000-1,200 mg/day Men and women 71+ years: 1,000-1,200 mg/day	Strong	Mode rate	Bone health	s7700 Bones b540 General functions	metabolic	Rec. N°:11 Consortium_Bone health, 2022 Chapter: 5. Calcium and vitamin D3: diet or supplements Page: 48
21	When caring for an frail person with a newly acquired SCI consider supplementation of dietary protein (0.8 to 1.5 g protein (0.13 to 0.24 g nitrogen)/kg/day)	Weak	Very low	Protein metabolism	b530 Weight functions b540 General functions	maintenance metabolic	Rec. N°:7 NICE_Rehabilitation, 2022 Chapter: 1.11 Physical rehabilitation Page: 60
22	If Orlistat is used for the treatment of obesity in older patients, provide multivitamin and mineral supplement	Weak	Very low	Obesity	b530 Weight functions b540 General functions e110 Products or substances for personal consumption	maintenance metabolic	Rec. N°:27 MASCIP_Weight management, 2019 Chapter: Medical and Surgical interventions Page: 12
23	Educate women with SCI about the effects of perimenopausal and menopausal changes on sexual function, bone health, accelerated metabolic aging, and metabolic syndrome after SCI.	Strong	Very low	Perimenopausal and menopausal changes	b640 Sexual functions b670 Sensations associated with genital and reproductive functions s7700 Bones b540 General functions d570 Looking after one's health	metabolic	Rec. N°:21 Can-SCIP, 2021 Chapter: R. Sexual health & relationships Section: R12.7

Bowel health						
24	If a high-fiber diet is considered necessary, the recommended daily amount for men and women over 50 is 21 g for women and 30 g for men. People with SCI should not automatically be placed on a high-fiber diet. Increases in dietary or supplemental fiber should be done gradually to assess tolerance.	Strong	Low	Constipation	b525 Defecation functions	Rec. N°:23 Consortium_Neurogenic bowel, 2020 Chapter: 4. Diet, supplements, fiber, fluids, and probiotics Page: 27
25	Oral medications may be used for bowel management; however, the evidence for their use is limited and there are no data to suggest the use of one medication over another. If prucalopride is used, the dose should be halved for people over 60 years of age (1 mg per day).	Strong	Low	Constipation	b525 Defecation functions e110 Products or substances for personal consumption	Rec. N°:24 Consortium_Neurogenic bowel, 2020 Chapter: 5. Oral medications Page: 30
26	In general, enema formulations such as sodium phosphate (phosphosoda), soapsuds, or milk and molasses are not recommended, but may be useful in selected individuals. Physicians should be consulted prior to the use of sodium phosphate enemas in individuals over the age of 55.	Strong	Very low	Constipation	b525 Defecation functions e110 Products or substances for personal consumption	Rec. N°:25 Consortium_Neurogenic bowel, 2020 Chapter: 6. Use of suppositories, enemas, and irrigation Page: 34
27	Postanal repair for fecal incontinence is particularly useful in the elderly or those with significant comorbidities.	Weak	Very low	Faecal incontinence	b525 Defecation functions d530 Toileting	Rec. N°:28 International Consultation on Incontinence, 2018 Chapter: Surgical treatment Page: 52
28	Undertake colonoscopy for colorectal cancer at the same screening recommendations as the general population from the age of 50 years, with follow-up every 10 years thereafter, or earlier depending on findings. Colonoscopy should be performed in a hospital setting for people with SCI higher than T6, flaccid SCI and those with severely restricted mobility. Bowel preparation begins on the day of admission and lasts three to four days. The patient should be observed for one night after the procedure.	Strong	Very low	Colorectal Cancer Screening	s540 Structure of intestine e580 Health services, systems and policies	Rec. N°:18 German speaking society_Lifelong follow-up, 2022 Chapter: 3.6 Digestive system and neurogenic bowel dysfunction Paragraph: 1 Page: 23
Bladder health						
29	Educate individuals with SCI and their families about the risk of bladder cancer, the symptoms to watch for (including recurrent infections, recurrent catheter blockages, or hematuria), and the need to seek medical care.	Weak/Strong ^a	Very low	Bladder cancer screening	s610 Structure of urinary system d570 Looking after one's health	Rec. N°:20 and 40 Can-SCIP, 2021 Chapter: K. Bladder function Section: K.16.1 AND NICE_Urinary incontinence, 2012 Chapter: 1.10 Page: 39
30	When using anticholinergics to improve detrusor overactivity and/or bladder compliance, consider the total anticholinergic load to avoid cognitive impairment. Anticholinergics are recommended for patients with risk factors for renal impairment and symptomatic urinary tract infection or urinary incontinence.	Strong	Mode rate	Detrusor overactivity and/or bladder compliance	b610 Urinary excretory functions s610 Structure of urinary system e110 Products or substances for personal consumption	Rec. N°:22 Sekido N_Urinary dysfunction, 2020 Chapter: 3. Pharmacological therapy Page: 283
31	Referral to a nephrologist should be considered in those with chronic kidney disease stage 4 (CKD 4) (glomerular filtration rate [GFR] 15-29	Strong	Low	Chronic Kidney Disease	b610 Urinary excretory functions	Rec. N°:9 Consortium_Bone health, 2022 Chapter: 2. Laboratory screening

	mL/min) and CKD 5 (GFR 15 mL/min or less) or unexplained renal impairment.				e580 Health services, systems and policies	Page: 27
32	Always monitor blood pressure during urodynamic. Special care should be taken of patients at risk for autonomic dysreflexia (mainly patients with SCI above T6), being aware of the clinical signs of the onset of the crisis (eg, head sweating, headache) and its management (stop the filling, tilting the table, nifedipine).	Strong	No classification possible ^b	Prevention of autonomic dysreflexia during urodynamic	s610 Structure of urinary system b420 Blood pressure functions	Rec. N°:30 International Continence Society_Urodynamics, 2018 Chapter: Urodynamics in SCI Paragraph: 3.3.2 Page: 586
33	When performing a urodynamic study in older men, especially those with a history of prostatic hypertrophy or transurethral resection of the prostate, use a Coudé catheter to reduce the risk of autonomic dysreflexia.	Strong	Very low	Prevention of autonomic dysreflexia during urodynamic	s610 Structure of urinary system b420 Blood pressure functions	Rec. N°:26 Consortium_Autonomic dysreflexia, 2020 Chapter: Autonomic Dysreflexia Page: 23
Skin health						
34	When assessing pressure ulcer risk, use both a validated risk assessment tool and clinical judgment to assess risk. Evidence suggests that the number and severity of pressure ulcers increase as people with SCI age, particularly after the age of 40.	Strong	High to low	Prevention of pressure injuries	b810 Protective functions of the skin b820 Repair functions of the skin b830 Other functions of the skin	Rec. N°:34 Consortium_Pressure ulcers, 2014 Chapter: Risk and Risk assessment Page: 11
35	Perform a comprehensive assessment of posture and positioning to evaluate pressure ulcer risk using the 24-hour approach. Physical changes that typically occur with increasing duration of spinal cord injury and with aging (changes in function, strength, and mobility) increase pressure ulcer risk and may require more intensive pressure ulcer management practices.	Not described	Very low	Prevention of pressure injuries	b810 Protective functions of the skin b820 Repair functions of the skin b830 Other functions of the skin	Rec. N°:35 Canadian_Pressure ulcers, 2013 Chapter: 24-hour approach to pressure ulcer risk management Page: 70
36	Reassess pressure management using a 24-hour approach every 2 years, or more often if a pressure ulcer develops or there is a significant change in health status. Reassessment of pressure management using a 24-hour approach is important to identify the impact of physical changes due to aging and increasing duration of spinal cord injury, including postural changes, muscle wasting, and spasticity.	Not described	Very low	Prevention of pressure injuries	b810 Protective functions of the skin b820 Repair functions of the skin b830 Other functions of the skin e580 Health services, systems and policies	Rec. N°:36 Canadian_Pressure ulcers, 2013 Chapter: Reassessment Page: 77
37	Schedule for periodic reassessment of performance of sitting support surfaces specific to pressure ulcer prevention and treatment at least every 2 years, or sooner if any of the following occur: changes in health status, including weight or medical changes, changes in functional status, equipment wear or deterioration, pressure ulcer development, changes in living situation. Changes in equipment, support surfaces, and pressure management strategies may be necessary to accommodate changes in physical status associated with aging and increasing duration of spinal cord injury.	Not described	Very low	Prevention of pressure injuries	b810 Protective functions of the skin b820 Repair functions of the skin b830 Other functions of the skin	Rec. N°:39 Canadian_Pressure ulcers, 2013 Chapter: Reassessment of seating systems Page: 127
38	Educate the person with SCI to regularly monitor the condition of the seating and support surfaces to ensure that the equipment remains effective for pressure management. Regular reassessment becomes even	Not described	Very low	Prevention of pressure injuries	b810 Protective functions of the skin	Rec. N°:37 Canadian_Pressure ulcers, 2013 Chapter: Reassessment of seating systems

	more important over time. Many physical changes, including long-term postural changes, aging, and new comorbidities, can affect pressure ulcer risk.				b820 Repair functions of the skin b830 Other functions of the skin d570 Looking after one's health	Page: 127
39	Educate the person with SCI and caregiver about cushion maintenance, including: care and maintenance of the wheelchair cushion; monitoring the cushion for signs of wear at appropriate intervals; proper positioning of the cushion, including orientation and monitoring for bottoming; replacing the cushion if it deteriorates; avoiding additional layers on top of the cushion unless deemed necessary. Skin changes associated with aging can increase susceptibility to pressure ulcer development, and routine reassessment can ensure that the cushion remains appropriate.	Not described	Very low	Prevention of pressure injuries	b810 Protective functions of the skin b820 Repair functions of the skin b830 Other functions of the skin d570 Looking after one's health	Rec. N°:38 Canadian_Pressure ulcers, 2013 Chapter: Wheelchair cushions Page: 120
Health of the upper extremities						
40	Perform annual examination of upper extremities (especially shoulder, elbow, wrist, and carpal tunnel syndrome)	Strong	Very low	Health of the upper extremities	s720 Structure of shoulder region s730 Structure of upper extremity e580 Health services, systems and policies	Rec. N°:19 German speaking society_Lifelong follow-up, 2022 Chapter: 3.10 Musculoskeletal system Page: 31
Respiratory sleep disorders						
41	Regularly assess the presence of symptoms of respiratory disorders during sleep and, if necessary, perform polygraphy/polysomnography.	Weak	Very low	Screening for sleep disorders	b440 Respiration functions b445 Respiratory muscle functions b450 Additional respiratory functions	Rec. N°:16 German speaking society_Lifelong follow-up, 2022 Chapter: 3.4 Respiratory system - respiration, ventilation, respiratory infections and sleep-related breathing disorders (b440-b449) Page: 17
Assistive Technologies						
42	Spinal orthoses (for example, cervical collar or thoraco-lumbar spinal orthosis) should be used with caution, as these devices may be poorly tolerated by older people.	Weak	Very low	Spinal orthoses	e115 Products and technology for personal use in daily living	Rec. N°:4 NICE_Rehabilitation, 2022 Chapter: 1.11 Physical rehabilitation Page: 57
43	If and older person is using an spinal orthosis (for example, cervical collar or thoraco-lumbar spinal orthosis), regularly assess them for complications such as pain, pressure sores, swallowing or breathing difficulties	Strong	Very low	Spinal orthoses	e115 Products and technology for personal use in daily living	Rec. N°:8 NICE_Rehabilitation, 2022 Chapter: 1.15 Rehabilitation after spinal cord injury Page: 77
44	Educate the person with SCI and caregiver about cushion maintenance, including: care and maintenance of the wheelchair cushion; monitoring the cushion for signs of wear at appropriate intervals; proper positioning of the cushion, including orientation and monitoring for bottoming; replacing the cushion if it deteriorates; avoiding additional layers on top of the cushion unless deemed necessary. Skin changes associated with	Not described	Very low	Prevention of pressure injuries	e115 Products and technology for personal use in daily living e120 Products and technology for personal indoor and outdoor mobility and transportation	Rec. N°:38 Canadian_Pressure ulcers, 2013 Chapter: Wheelchair cushions Page: 120

	aging can increase susceptibility to pressure ulcer development, and routine reassessment can ensure that the cushion remains appropriate.					
45	Schedule for periodic reassessment of performance of sitting support surfaces specific to pressure ulcer prevention and treatment at least every 2 years, or sooner if any of the following occur: changes in health status, including weight or medical changes, changes in functional status, equipment wear or deterioration, pressure ulcer development, changes in living situation. Changes in equipment, support surfaces, and pressure management strategies may be necessary to accommodate changes in physical status associated with aging and increasing duration of spinal cord injury.	Not described	Very low	Prevention of pressure injuries	e115 Products and technology for personal use in daily living e120 Products and technology for personal indoor and outdoor mobility and transportation e580 Health services, systems and policies	Rec. N°:39 Canadian_Pressure ulcers, 2013 Chapter: Reassessment of seating systems Page: 127
<p>^aThe same recommendation was found in two guidelines. The original recommendation was developed by the NICE guideline "Urinary incontinence in neurological disease: Assessment and management" and adapted with a different strength of recommendation by the Canadian Spinal Cord Injury Practice (Can-SCIP) guideline (2021).</p> <p>^bThe guideline states that recommendations are graded according to the European Association of Urology (EAU) classification system, modified from the Oxford Centre for Evidence-Based Medicine Levels of Evidence and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. However, the link provided in the guideline is no longer available. The current version (March 2022) of the Guidelines Office Development Handbook from the European Association of Urology is not consistent with the gradings given in the guideline. The strength of the recommendation in this guideline was inferred from the wording of the recommendation (e.g., we recommend = strong, we suggest = weak).</p>						