

Rural Spinal Cord Injury Project

A collaborative project between:

Prince Henry & Prince of Wales Hospital

Royal North Shore Hospital

Royal Rehabilitation Centre Sydney

Spinal Cord Injuries Australia

Paraplegic & Quadriplegic Association of NSW

JUNE 2002

Revised 2004

HEALTH MAINTENANCE

for adults with Spinal Cord Injuries



Targeting Health Professionals

© **Author:** Dr Stella Engel,

Director, NSW State Spinal Cord Injury Service,

Rehabilitation & Spinal Medicine, Prince of Wales Hospital



Project funded by the Motor Accidents Authority of NSW

**MOTOR ACCIDENTS
AUTHORITY**

HEALTH MAINTENANCE FOR ADULTS WITH SCI

Regular health and equipment review with early treatment is the cornerstone of health maintenance for individuals with SCI. Give pneumococcal vaccination at earliest opportunity if not vaccinated.

ANNUALLY:

1. **Influenza inoculation** for people with lesions above T8
2. Check resting **respiratory rate & vital capacity**
3. Check BP (SCI can develop essential hypertension when older, this must be distinguished from autonomic dysreflexia)
4. Review Cardiovascular risk factors, nutritional history, girth measurement at umbilicus, (weight if facilities available)
5. Fasting lipids, cholesterol & BSL for those over 40 years
6. **Neurological examination of sensation & strength** (refer to specialist clinic if any deterioration)
7. Check for **musculo-skeletal** problems e.g. arthritis, contractures, upper limb overuse or entrapment neuropathies
8. **Breast examination** for lumps
9. Digital **rectal examination** and fecal occult blood after the age of 40 years
10. **PSA** for men older than 50 years

BI-ANNUALLY:

1. Serum urea, creatinine, electrolytes & creatinine clearance estimation
2. Urinary tract imaging (**U.S. or IVP**)
3. **Mammography** for women older than 50
4. Gynaecological exam, **pap smear**

EVERY 3-5 YEARS::

1. **Multidisciplinary Review** for
 - Adequacy of equipment & home modification
 - Changes in life situation including social supports, attendant care, adjustment, community access and participation
2. Screening **Colonoscopy** for those with family history of bowel carcinoma
3. Consider screening **Cystoscopy** for patients with IDC or SPC for more than 20 years

URINARY TRACT

SCI disturbs voluntary control of bladder and bowel function by interrupting neuronal conduction from the brain to the sacral centres in the spinal cord, leading to Neuropathic Bladder and Bowel dysfunction, see Fact-sheet on Management of Neuropathic Bladder, note the following:

1. Micro-urine examination and culture should be done only if patient symptomatic (definition below). Sample should be taken only from a newly inserted catheter or from a clean urethral stream or a supra-pubic aspiration.

Antibiotics indicated if:

Microscopy showing WCC > 100 associated with a pure growth of organisms OR Leucocyte esterase of +++ to ++++ on urine dip stick AND at least one "Category 1" OR at least 2 "Category 2" symptoms

Category 1 Symptoms:

- Temperature (>38.0 core or 37.5.0 per axilla)
- New or worsening symptoms of Autonomic Dysreflexia as detected by:
Systolic or diastolic blood pressure elevated 25% over baseline together with one or more of the following; bradycardia (pulse < 50bpm), sweating, headache, flushing.

Category 2 Symptoms:

- Increased frequency or level of spasticity.
- Failure of usual urinary control e.g leaking around catheter or in between catheterization.
- New, unexplained abdominal discomfort.

2. Imaging (ultrasound or IVP), annual for first 3 years then biannual if no abnormality. Refer to spinal clinic if abnormal.

3. Annual Serum urea, creatinine, electrolytes & creatinine clearance estimation.

“RED FLAGS”

- Repeated episodes of symptomatic UTI** (more than 2-3 per 6 months) / autonomic dysreflexia/ catheter blockage/ urethral leakage
 - MSU/CSU (to exclude infection by stone forming organism eg. Proteus)
 - Ultrasound/IVP to exclude stones/ poor bladder emptying.
 - Patients managed by reflex voiding (Uridome) should be referred for urologic evaluation (urodynamics) as bladder function may have decompensated.
- Haematuria**, particularly in patients with SPC/IDC for >15 years should be referred for cystoscopy because of the significant incidence of Carcinoma of the bladder.

BOWEL

1. Check for history of poor results / hard or fluid stool / accidents in between programmed bowel activity.

“RED FLAGS”

- a. **PR blood** (repeated episodes not associated with trauma) refer for colonoscopy.
- b. Alternate episodes of watery diarrhoea & constipation? High impaction.
- c. Consider **reflux** or **peptic ulceration** when there are repeated complaints of abdominal bloating or nausea.

RESPIRATORY

1. ALL individuals with tetraplegia and high paraplegia would benefit from a **Pneumococcal** vaccination and:
 - a. Annual **Influenza** vaccination.
 - b. Check of resting respiratory rate and vital capacity every year. Consider respiratory insufficiency (particularly sleep apnoea) if VC trending downward or there are symptoms of tiredness and sleepiness during the day or elevated waking BP.
 - c. All symptoms of respiratory infection must be treated seriously with assisted coughing, physiotherapy & antibiotics if appropriate.

CARDIOVASCULAR

1. Lying and sitting BP should be checked in the relaxed, comfortable patient, as SCI individuals can develop hypertension as distinct from autonomic dysreflexia.
2. Check peripheral pulses and integrity of skin on feet

MUSCULOSKELETAL SYSTEM

Examine upper limb joints for signs of overuse (eg. bicipital tendonitis, rotator cuff tears). Check upper and lower limb joint ranges of motion and refer for further assessment if restricted or if this is interfering with function.

SKIN

Skin integrity should be checked and recurrent breakdown/ chronic ulceration investigated:

- Patient's FBC girth measurement and nutritional status checked
- Is there evidence of depression, change in social support or functional capacity (may require an OT assessment to determine)?
- Evidence of underlying osteomyelitis (radiological or bone scan changes, elevated ESR or CRP)?
- Occupational therapy assessment of adequacy of wheelchair, cushion and mattress must be part of complete treatment, which best done in specialised centre.

NEUROLOGICAL EXAMINATION

Review sensory level & motor strength as well as cranial nerves

“RED FLAGS”

- Deterioration in sensory or motor function
- Development of Horner’s syndrome
- Development of neuropathic pain (characterised by descriptors such as burning, stabbing, sharp shooting or electric quality at or diffusely below neurological level of lesion)
- Development of new muscle wasting

could signify development of **POST-TRAUMATIC SYRINGOMYELIA**, canal stenosis or nerve root/peripheral nerve compression and should be referred for investigation.

PSYCHOSOCIAL SITUATION

Multidisciplinary review of the patient every 3-5 years is the ideal, some of the issues to be canvassed include:

- Is equipment adequate for current needs.
- Have accommodation needs changed and are modifications now adequate.
- Has the domestic situation changed ie wife left or parents died and is personal care support adequate.
- Has the financial/ vocational situation changed.
- Have symptoms of depression/ other disabling illness developed.

CONTRIBUTORS

Dr Sue Rutkowski
(Director, Spinal Cord Injury Outpatient Services & Research,
Royal North Shore Hospital)

Dr James Middleton
(Medical Director, Moorong Spinal Unit, Royal Rehabilitation Centre, Sydney)

ACKNOWLEDGEMENTS

Dr Jane Watt (LMO, Armidale)

RURAL SPINAL CORD INJURY PROJECT

Should you require any further copies of this document go to www.paraquad.nsw.asn.au
and follow the links from information to publications or go to:

www.ciap.health.nsw.gov.au and follow the specialties link or contact,

NSW State Spinal Cord Injury Service (SSCIS)

Tel: 9382 5645 Fax: 9382 5620

This document was published as a fact sheet for the Rural Spinal Cord Injury Project (RSCIP), a pilot healthcare program for people with spinal cord injuries (SCI) conducted within New South Wales. It is not a stand alone resource but part of a series of eight fact sheets produced by specialists to fulfil the educational components of the project.

All recommendations are for spinal patients as a group. Individual therapeutic decisions must be made by combining the recommendations with clinical judgement, including a detailed knowledge of the individual patient's unique risks and medical history, as well as the resources available. This document is published as a guide only and does not take the place of advice from your regular health professional and /or medical practitioner.

