

Addressing Spasticity- Posture and positioning

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Features of spasticity

- Often occurs with weakness
- Resistance to / difficulty extending muscles
- Increased muscle tone and stiffness
- Spasms, extensor or flexor
- Tendon hyperreflexia (brisk tendon reflexes)
- Clonus
- Clasp-knife phenomenon
- Contractures
- Muscle atrophy (*Ward, 1999*)

Consequences

- Physical

- mobility; loss of dexterity; bladder problems; pain
- Movement restriction and altered posture leads to contractures & pain
- Fatigue may result from
 - Increased energy required to move stiff limbs
 - Sleep disturbances

Emotional

- frustration; embarrassment; depression; apathy; loss of self esteem

Social

- problems with access; work; relationships;
- decreased ease of self care, or of care by others

General aims

- Maximise abilities - maintain independence
- Ease caregiver burden
- Prevent secondary complications
 - joint contractures, skin breakdown
- Provide comfort by easing pain
- Ensure safety when transferring
 - improve seating and posture
- Improve hygiene

Assessment

- Should be multidisciplinary
 - Physiotherapist, occupational therapist, neurology / Rehab Consultant, MS nurse, Orthotist
- Holistic / individualised
- Goal orientated
 - ? Improve mobility / reduce pain/ improve seating/ improve self-care /reduce risk of complications/ correctly fitting orthoses as appropriate

Components of assessment

- Alignment / symmetry & proprioception
- Postural adaptation
- Muscle weakness / contractures
- Movement patterns & compensatory strategies
- Effort
- Transfers, standing & mobility
- Functional requirements & personal priorities
- Cognitive & perceptual function

Holistic components

- Impact on daily life
eg: sleep
- Seating and posture
- Gait
- Comfort
- Energy level
- Hygiene
- Patient, family and carer
- Care needs
- Work / Vocational activities
- Body Image
- Sexual activity

Spasm antagonists

Look for spasm antagonists

- Infections
 - prevent and treat
 - chest, UTI's, decubitus,
- Constipation
- Iatrogenic
 - S.S.R.I.'s & tramadol
- Simple noxious stimuli

Noxious stimuli

- Bladder problems
 - calculi, encrusted or blocked catheter, residual urine
- Equipment / clothing
 - Tight catheter leg bag
 - Ill fitting prostheses
- Pain
- In growing toenails
- Stress / anxiety
- Rough handling (needs to be firm but gentle)
- Broken skin / pressure ulcers

Oral medications

- baclofen (Lioresal®) (oral & intrathecal)
- diazepam (Valium®)
- tizanidine (Zanaflex®)
- dantrolene sodium (Dantrium®)
clonazepam
- gabapentin (Neurontin®)
- carbamazepine (Tegretol®)

Injectable medications

- Anaesthetic / Diagnostic Nerve Blocks
 - Procaine
 - Lignocaine
- Neurolytic Nerve Blocks
 - Ethanol
 - Phenol
- Botulinum Toxin
- Intrathecal Baclofen
- Intrathecal Phenol

Posture and seating

- Control of body posture within the context of the person's environment
- 'Effective function'
- Attention to posture and seating at all levels of spasticity management
- Extensor spasticity

Goals of 24 hour Postural Management

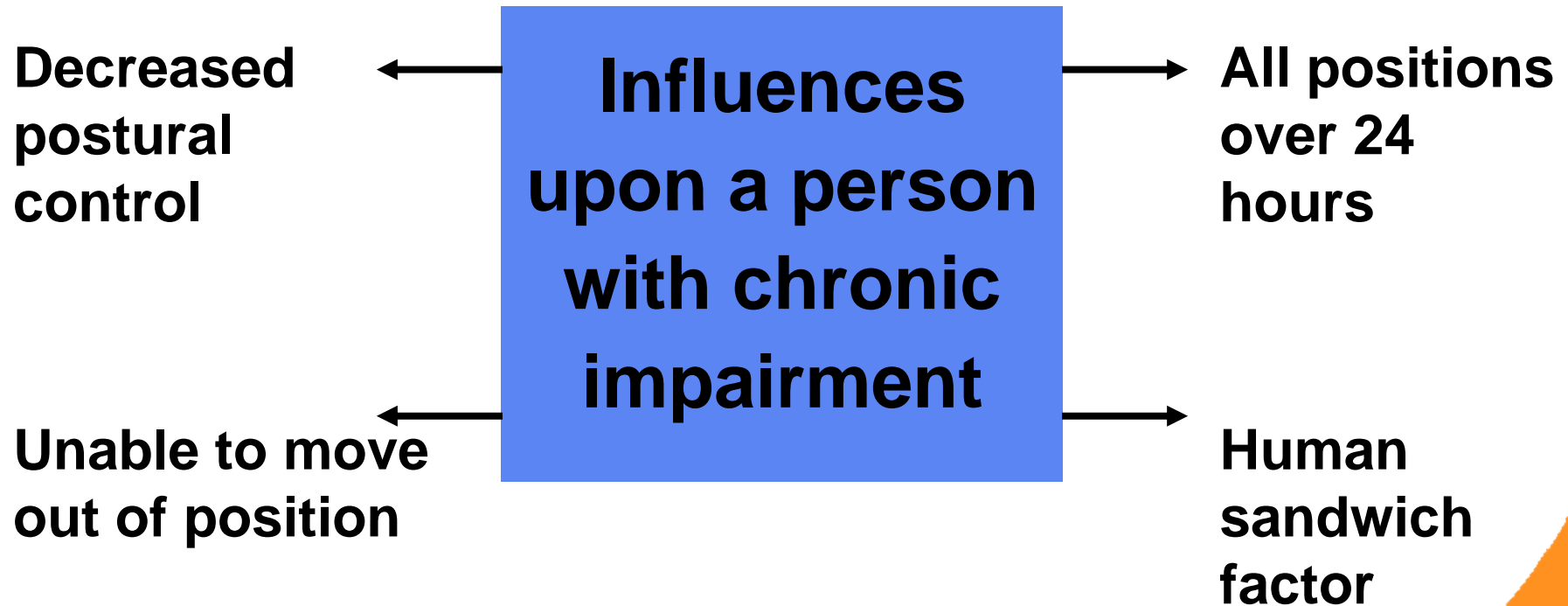
- Optimise remaining functional ability
- Maximise quality of life
- Minimise secondary complications
- Reduce effort and cost of care

Zones vulnerable to bending and distortion

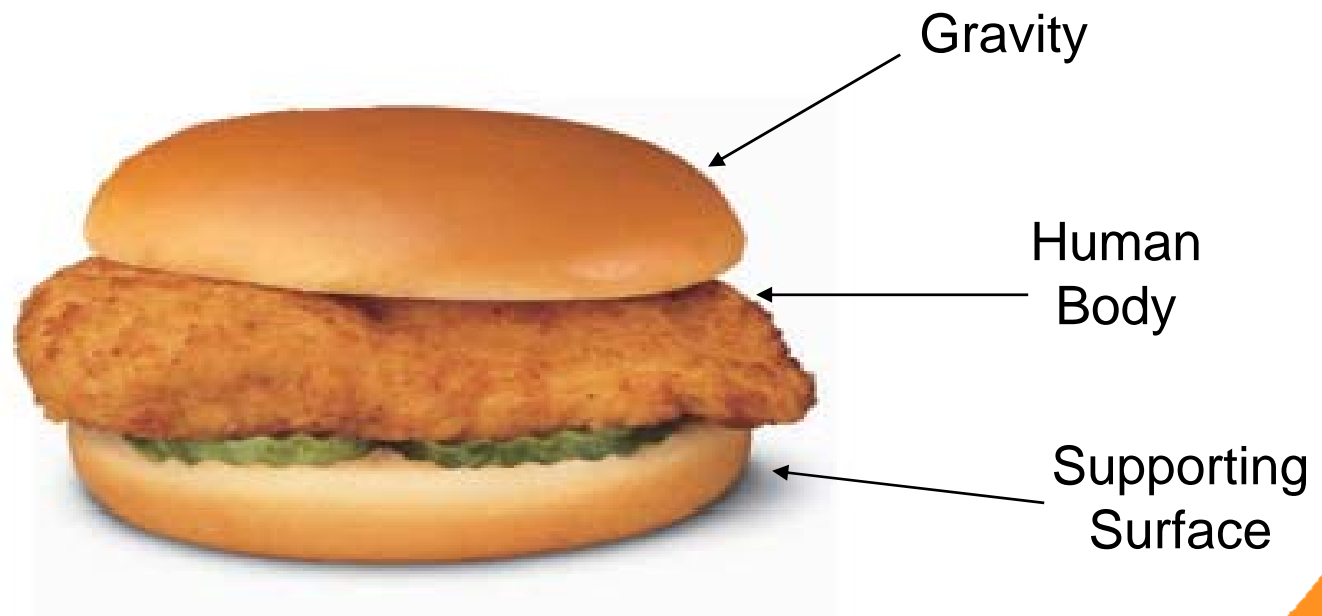
- Pelvis around the hip joint
- T6-9 mid thoracic spine
- Cervical spine
- Mid tarsal joint of the feet

Building a stable posture

The problem:



Human Sandwich factor (Noreen Hare 1990)



Objectives

- Align and stabilise body segments relative to each other and to the supporting surface
- Minimise forces likely to cause damage to the body
- Provide a functional posture
- Comfort
- Ease the care load

All Postures

- Identify what can and what cannot be corrected.
- Control and align by considering the body in segments.
- Start with the base.
- Support/offload the regions vulnerable to deviation.

Sitting

Start with base and proceed distally: -

Pelvis - mid position

Thighs - separated for wide base

Knees - mid position

Feet - mid position, support along the sole

Sitting continued

- Lower trunk - form and support the lumbar curve
- Thorax - allow for change of antero/posterior dimension and curvatures
- Upper limbs - support to relieve drag on the shoulder girdle
- Head - balanced over shoulder girdle, horizontal

Where the erect position is not a viable proposition

Stability of posture is gained by the organisation of body segments in relation to each other, ie arrangement of the components, into a more stable configuration