

The Challenge of Post Polio

Wellness Weekend 2013

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If you saw this list-what would you think??

- Has trouble organising daily routine
- Has difficulty responding to 2 or more things at the same time
- Does not always take medication on time, if at all
- Makes errors with finances
- Has difficulties completing everyday tasks
- Sleeping is disturbed
- So what is this??-----PD!!!!

Other features??

- tender points, cramps, weakness, pain above and below the waist, stress, sleep issues, - lowered pain thresholds, fatigue, altered pain processing, low muscle tone, short-term memory issues, distractible, autonomic signs-reaction to heat
- So what is it???-----MS!!!

Is it just ME?

- Persistent fatigue,
- Reduced activity
- Insomnia
- Muscle/joint pain
- Concentration issues
- Physical exertion makes things worse
- Headaches

Fatigue dimensions in others

- Lower voice volume
- Vision problems-e.g.-Di
- SOB
- Frequent sighing
- Irritability
- Crying episodes
- lack of enjoyment in prev. hobbies
- Deterioration in grooming?
- Increased forgetfulness and concentration

Post Polio Fatigue

- Types-central (RAS) global, aerobic, local joint, muscular or neural
- Case example-Nancy-late effects-FOF
- Depression, stress
- OT hints
- Transfer strategies
- Care with crutch or stick height
- Research on recovery time, metabolic changes, strength, O₂ uptake,

Case study

- Mick is now 65 years old
- Had polio at age 6, spent 3 weeks at Northfield, 1 year at ACH, 1 at home
- 2 scoliosis operations at aged 14-neither worked, in spite of regular bivalve of plaster jacket-stretching caused left arm nerve palsy
- Fusion of C7-T9

Now

- Major kypho-scoliosis
- BIPAP at night
- One leg shorter-partial build up
- Main concern-fatigue-is it safe to travel?

Recommendations and discussion

- Bipap on plane?
 - Carrying machine?
 - Ramps or stairs?
 - What exercise?
 - Build up on new shoes-?
 - Massage
 - Breathing exercises
-
- Late effects and/or residual?

Jules

- Polio at aged 2
- First new features 20 years ago
- Pain, fatigue, weakness
- Depression, stress
- Fibromyalgia elements

Fibromyalgia?

- Hip pain after gardening
- Initial diagnosis was L4 disc bulge
- spreading pain from initial in hip to arms and hands, ribs, headaches
- Bladder spasms
- Short sitting tolerance
- Central pain issues

Fibromyalgia

- pain, stress, sleep issues, central brain system problems,
- lowered pain thresholds, increased ratings for pain thresholds, altered pain processing (JAMA 2004)
- -treatment -medication, CBT, exercise-aerobic, strength, relaxation, pool work

Fay-66

- Polio at aged 4
- Slight left sided weakness
- Scoliosis
- Rotator cuff surgery-left
- Sub acromial bursitis-right
- C 4/5 retro-listhesis
- L 4/5 disc issues-in 06

Fay-cont

- New episode of prickling, tingling in R side of neck and arm
- Previous dizziness episodes—sinusitis?
- Causes of new pain?
- -fatigue, shingles, shoulder irritability?,
- Causes --/central processing?, wind up features?
- Treatment????—hydro----

Andy

- Polio at aged 18 months, now 45
- Crawled until aged 8
- Hip release operations
- Walked in long calipers and crutches
- Burn out of arms, major fatigue

Discussion with Andy

- Pacing, rest!!!
- Hydrotherapy-access issues
- Change of crutch handles
- Gentle arm exercise after time/ work re-organisation

Eileen

- Chronic neck problems
- Increasing limp (Trendelenberg)
- Sleep disruption
- Where is the weakness—how is it measured?

Facts and figures-

- Pain 86%
- Muscular weakness 83%,
- New atrophy 23%
- Fatigue 89%
- Outdoor walking impaired in 65%
- Other features-biomechanical dysfunction-(e.g.), falls risks, cervical, lumbar radiculopathies, degenerative joint disease, achieving personality,-not asking for help (Westbrook-etc)

Other issues

- Nocturia
- Falls risk
- Shortness of breath
- Weight—h/v example
- Bulbar concerns
- Coping styles
- Creatine kinase?

Pain in post polio syndrome

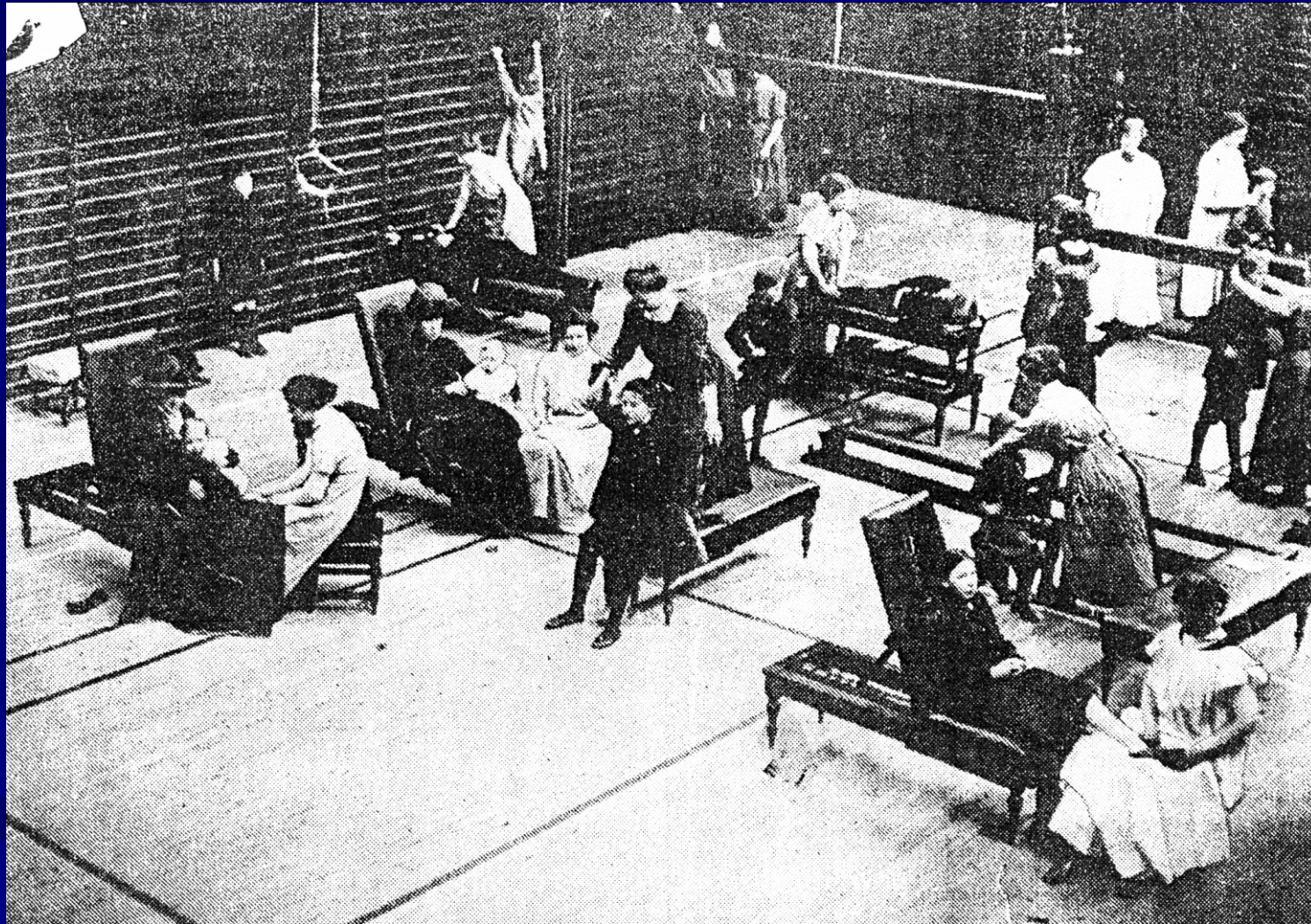
- Myalgia-overuse? Cramps-/prevention?
- Degenerative Changes-joint pain
- Tendinitis, bursitis, spinal stenosis?
- Multi-modal
- Multi-dimensional-not symmetrical
- Acute/chronic
- Osteopaenia
- Failing joint fusions?

Pain Treatment

- Local
- Pain education, counselling, pain diary
- Cramp care
- Anti-depressants
- Medication review-with pharmacist
- Tens, FES—evidence?
- Distraction, relaxation, stress management
cognitive restructuring
- Exercise, weight reduction
- Neuro-dynamics -
- Splinting--? Prevention?

The jeans of 2010

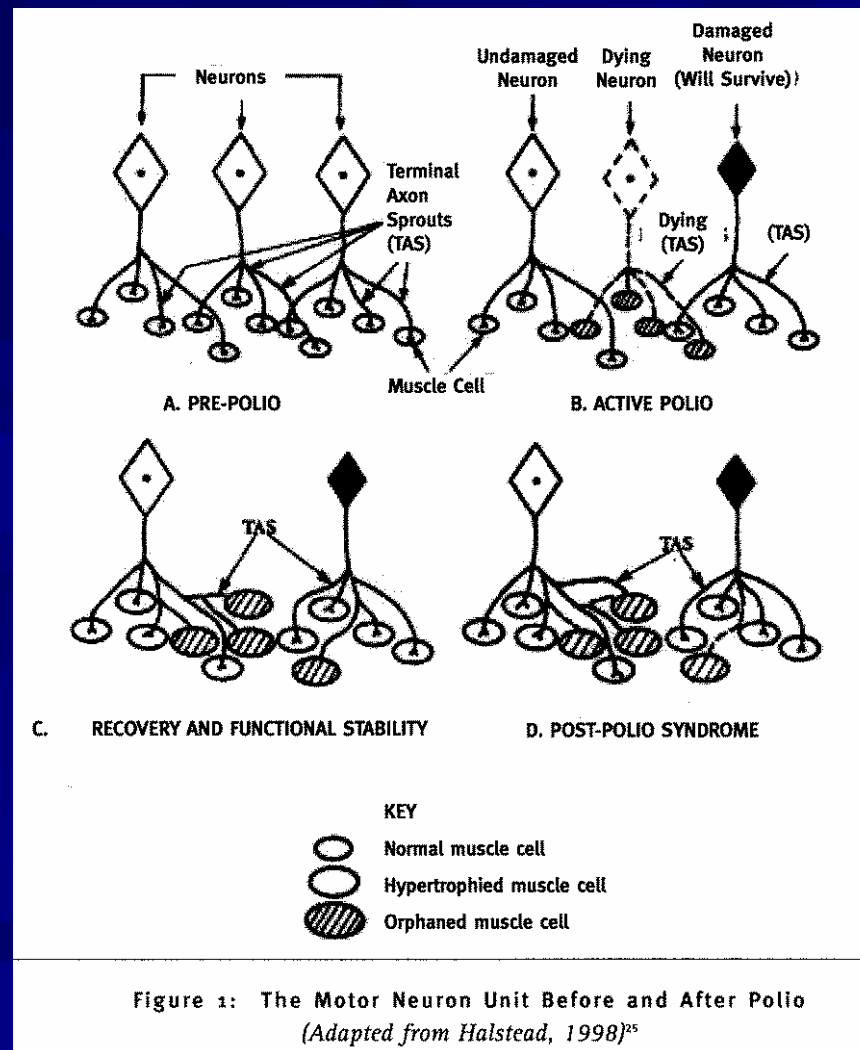
Dumfermline College of Hygiene and Physical Training



Background to new weakness

- The extent of recovery is determined by:-
- The number of neurones that recovered and resumed normal function
- The number of motor neurones that develop axon sprouts to reinnervate muscle fibres left orphaned by the death of their original motor neurones
- Muscle fibre hypertrophy

Motor neurones pre and post



Aspects of recovery

- Motor unit size can increase 7 to 8 fold
- A single motor neurone for quadriceps that originally innervated 5000 muscle fibres may eventually support 35,000 to 40,000
- A muscle can retain normal strength even after 50% of the original motor neurones have been lost

Exercise

- Supervised gentle aerobic and non-fatiguing strengthening exercise after lifestyle and orthotic modifications
- Arm ergometer/ vibra-gym?/ moto-med cycle?
- Balance and Postural work-BBT, sit to stand
- Increase gradually
- Increase CV fitness –walk, cycle or swim
- Beware boom and bust!!!—10 commandments!!

Management/exercise strategies

- Identify non-polio disorders
- Optimise balance between strength, endurance vs burden; Pacing; decrease energy expenditure
- Avoid over stretching
- Osteoporosis issues
- Lose weight
- Use orthotics and mobility aids
- Take care with contractures
- Learn to read and rate exertion levels

Respiration matters

- The system
- Presentation
- Complications
- Predictors of aspiration pneumonia
- Causes of respiratory problems
- Ventilation-sleep studies
- Physical Assessment
- Strategies

The respiratory system and PP issues

- Central drive
- Diaphragm
- Rib movement
- Abdominal muscles
- Accessory muscles

Strategies

- Breathing control
- Activity pacing
- Short of breath or just fatigued?
- Relaxation techniques
- Psychological support

Presentation

- Attacks of breathlessness
- Worse when supine (orthopnea)
- Morning headaches
- Excessive daytime sleepiness
- Nocturnal dyspnoea
- Poor nocturnal O₂
- Nightmares

Complications

- Aspiration
- Aspiration pneumonia
- Reduced coughing
- Persistent chest infections
- Trunk muscle weakness
- Decreased postural support

Causes of complications

- Decreased central drive
- Diaphragm insufficiency
- Chest infection
- Sleep apnoea

Dyspnoea

- Assessment
- V A Scale
- Numerical or verbal scale
- Exertion scale-/Borg?
- Worsens with pain decrease
- Similar mechanism to chronic pain-central enlargement of matrix

10 commandments of PPs

- Listen to yourself
- Activity is not exercise-conserve to preserve
- Break-don't brake
- A crutch is not a crutch
- Just say no to drugs-unless—
- Sleep right all night
- Some polio survivors like it hot
- Breakfast is the most important meal of the day
- Do unto yourself as you have been doing for others
- Make doctors cooperate before they operate!!

Research-examples

- PT examination and treatment of the polio survivor,
- Management of a patient with PPS
- The course of functional status and muscle strength in pts with late onset PPS-
- Current treatment options in PPS
- Fear of Falling, Balance confidence and QOL in individuals with PPS
- Disability in a 4-year follow up study of people with PPS
- Health and physical functioning -6 yr follow up,
- Effect of treatment and non-compliance on PPS
- Impact of PP related fatigue on QOL
- Effective intervention strategies for management of impaired posture and fatigue with PPS-A Case report,
- Predictive Factors for PPS