Pain Amplification Syndrome
Encouraging children and young people with pain amplification in physiotherapy

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Aims

• To explore the diagnosis of ‘Pain Amplification Syndrome’ and the possible implications.
• To discuss the use of the biomedical versus patient centred care for these patients.
• To use of case studies to explain the physiotherapy management of children and young people with pain amplification.
• To introduce a outcome measure to evaluate treatment outcome.
Pain- What is in a name?

‘A subjective interpretation of noxious or apparently noxious stimulus’

- PAIN AMPLIFICATION - A pain by any other name hurts just the same.
- ‘Real or not’ – Unhelpful discussions
- It is the effect of pain rather than the pain itself that needs to be addressed.
- Medical assessment excludes organic cause
Amplified Musculoskeletal Pain Syndrome (AMP)

- Incidence of AMP is unknown, the only figure published is that children with AMP represent 5-8% of new referrals to North American pediatric rheumatology clinics (Bowyer and Roettcher 1996 and Malleson et al. 1996).

- The general consensus is that AMP is being recognised with increasing frequency in children (Sherry 2011, Wilder et al. 1992).
Where?

Anywhere

- Orthopaedics (minor trauma/soft tissue injuries, fracture, elective operations)
- Rheumatology
- Neurology (movement disorders, sensory disturbances)
- Accident and emergency
- Paediatrics (Abdominal, headaches)
- Respiratory (dysfunctional breathing patterns and chest pain)
- Cardiac, Intensive care.
## The diagnosis

<table>
<thead>
<tr>
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<th>Definite Medical Diagnosis</th>
<th>Medically unexplained diagnosis</th>
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<tbody>
<tr>
<td>Sharing the diagnosis with others.</td>
<td>Child and families report to others about what is happening.</td>
<td>May be less willing to share the diagnosis</td>
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<tr>
<td>Experiences of the child</td>
<td>Are given legitimacy</td>
<td>If aetiology doesn’t match their beliefs further medical diagnoses can be pursued.</td>
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<td>Public (school) perception</td>
<td>If well-known, the public generate much understanding and sympathy.</td>
<td>Often needs explanation to the public</td>
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<tr>
<td>Predictability of disease course</td>
<td>Often known</td>
<td>Less predicable and if linked to psychological difficulties may have a stigma attached.</td>
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<tr>
<td>Treatment</td>
<td>Appropriate medical treatment provided.</td>
<td>No medical treatment Management of symptoms.</td>
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“I can’t see why they do it”
equation (Hackett 2003)

FRUSTRATION + HOPELESSNESS = PATHOLOGY

There must be something wrong with my child biologically, mentally or physically.
A Biomedical model

- The patients' reports of illness indicate the existence of a disease process.
- Those holding onto a strict biomedical model may struggle to guide families when there is no specific medication or treatment to prescribe (Powell and Brazier 2004).
- ‘nothing to find’ medically = relationships between health professionals and families can come under pressure.
Many illnesses cannot be assigned to a disease.

In some cases exclusion of medical pathology and reassurance compounds rather than relieves a patient's suffering.

Powell and Brazier (2004)
Mead and Bower (2000) explore the exact meaning of the term ‘patient-centred’ care through five key dimensions:

1. Bio psychosocial perspective
2. The ‘patient as a person’
3. Sharing power and responsibility
4. Therapeutic alliance
5. The doctor as a person
We should be willing to be involved in the full range of difficulties patients bring to us as health-professionals not just the biomedical problems.

Mead and Bower (2000)
Abdominal migraines

- Irritable bowel
- Low Mood
- Social isolation

Young Person

- Disability
- Joint pains
- Poor eating habits
- Poor self esteem
- Unsupportive siblings
- Difficulty sleeping
- Poor school attendance
'I know my body, I've lived in it all my life'

Bricher and Darbyshire (2005)
Spectrum of Patients

- Acute to chronic
- Psychological factors
- Sensation
- Function
- Parental and family influences
- School
- Outpatient or Inpatient
Case Study 1 - Acute

14 year old girl who fell on an outstretched hand at school.

A&E ?Scaphoid fracture right, POP

Fracture clinic 1/52 later, report – no fracture. POP removed and told to use as normal and given a splint for support.

Attended physiotherapy appointment 1/52 later in splint, unable to touch thumb or use hand.
Case Study 1 - Acute

Treatment

- Reassured by showing x-ray on PACs and explanation of report.
- Explanation of Pain Amplification and implications of disuse.
- Removed splint
- Active assisted movement using left.
- Used goniometer and compared to other side.
- Weight bearing
- Encouraged all function
Key Message

Explanation and reassurance.

High perception of threat = danger signals from central nervous system = PAIN

It is the implicit perception of threat that determines outputs not the state of the tissues nor the actual threat to the tissues (Moseley 2010).
Case Study 2 - Inpatient

- 12 year old boy
- **HPC:** 5 months ago was tackled playing football, injured left knee
- x-rays and MRI normal.
- Progressive worsening symptoms and reduction in ADL
- Private medical input included 5 nerve blocks, and physiotherapy (acupuncture and TENS on opposite leg)
- **PMH:** Severs treated with aircast boots and ECs
- **DH:** Paracetamol, Gabapentin, Dihydrocodeine
### Patient’s Mountain

<table>
<thead>
<tr>
<th>Level</th>
<th>Activity Description</th>
<th>Day</th>
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<tbody>
<tr>
<td>0</td>
<td>Wheelchair bound, unable to move left knee (held in extension) or foot, unable to touch or wear trousers on left side, help required for all ADL. Not washed left leg in 5 months. Unable to WB.</td>
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<tr>
<td>1</td>
<td>Hold own leg for 30 seconds, wiggle toes for 30 seconds</td>
<td>Day 6</td>
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<tr>
<td>2</td>
<td>Get self dressed, bend knee to 20, stand with foot in water 10sec</td>
<td>Day 8</td>
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<tr>
<td>3</td>
<td>Transfer supporting own leg, bend knee to 30, stand with foot on pillow 10sec</td>
<td>Day 9</td>
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<tr>
<td></td>
<td>Bend knee to 40 degrees, stand with foot to floor 30sec</td>
<td>Day 9</td>
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<tr>
<td>5</td>
<td>Walk with crutches foot to floor, bend 50 degrees</td>
<td>Day 10</td>
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<tr>
<td>6</td>
<td>Bend to 90 degrees, stand independently</td>
<td>Day 13</td>
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<tr>
<td>7</td>
<td>Bend knee equal to right, stairs with 2ECs, up to knee in water</td>
<td>Day 15</td>
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<tr>
<td>8</td>
<td>Walk with 2ECs and go to toilet independently, put whole leg in water</td>
<td>Day 19</td>
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<tr>
<td>9</td>
<td>Wear clothes and put sheet on leg, have foot normally on wheelchair footplate, stairs no Ecs, Walk with 1EC, walk across pool</td>
<td>Day 28</td>
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<tr>
<td>10</td>
<td>Playing crab football, swimming, running</td>
<td>Day 40</td>
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Key Points of Treatment

- Mum was an important role and needed to be part of his rehabilitation.
- Family felt unable to cope at home.
- Patient led each session himself.
- Ignoring abnormal noises from patient.
- Reward scheme for achieving goals.
- Walk to and from physiotherapy.
- Child like.
- Discharged at the end of his inpatient stay.
Video 2 – week 5
Case Study 3 - Inpatient

- 11 year old girl
- **PC:** Chronic Hypersensitivity and Back Pain
- **HPC:** Trampoline accident 12 months ago – mild back pain
  8 months later – back pain worsened limited in ADL’s
  MRI Normal
- **SH:** Previously active and enjoyed dancing and horse riding
  Lives with her parents and 7-year-old brother
- **DH:** Paracetemol 400mg Gabapentin 300mg
- **Inpatient stay:** Neurology team, Child Psychology, Physiotherapy Team
# Patient’s Mountain

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| **3** | Pain located between her shoulder blades, which extend down to the base of her spine, pain and constant verbalisation with any movement  
Using wheelchair to mobilise  
Dependent on Mum for all ADL’s (increase stress on mum)  
Took 16 attempts to stand |   |
| **4** | Walk Faster (10m timed walk)  
Stand in 3 attempts | Day 3 |
| **5** | Lift legs when walking  
Continue to increase walking speed  
No wobbles when walking in room | Day 4 |
| **6** | Get clothes out of cupboard and dress independently  
No wobbles when walking length of corridor | Day 7 |
| **7** | Stand on first attempt  
Lye to sit on first attempt | Day 10 |
| **8** | Cycle 5 minutes  
Walk a whole flight of stairs  
Balance on 1 leg for 1 second | Day 10 |
| **9** | Be able to swim  
Be able to go on rower for 5 minutes  
Balance on 1 leg for 5 seconds | Day 11 |
| **10** | Run, Jump, dance, get on and off the floor. Go home and back to school | Day 13 – Jump, on and off floor  
Day 17 - Run |
Video 3 – week 2
Key Points of Treatment

- Externalising Pain
- Functional hands-off treatment with daily scores
- Sessions without parents but writing all her achievements daily to show parents
- Bike to and from sessions
- Joint sessions with Psychology
- Ignoring abnormal behaviour
- Rewarding positive behaviour
Video 4 – week 4
Case Study 4 – Needing more psychology than physiotherapy

- 16 year old girl with back pain and spasms
- In year 11 and taking GCSEs
- Good school attendance and does dancing after school.
- Lives with mum and sister, has no contact with dad.
- Mum having treatment for breast cancer.
- Difficulties at school with friendships and unable to concentrate.
- Amitriptyline
Treatment

- TNS
- Massage
- Posture education
- Encouraged to continue dance
- General gym based exercise program.
Key Message

- Supporting the patient with any physical difficulties.
- Using pain relieving treatments where able even if they involve hands-on.
Each patient is an ‘experiencing individual rather than an object of some disease entity’ (Mead and Bower 2000 p1089).
Outcome Measures

- Very little research of outcome measures in the literature
- No gold standard outcome measure
- Childhood Health Assessment Questionnaire (CHAQ)
Southampton Pain Amplification, Disability and Functional Score (SPADF)

- Outcome measure developed at SGH to score treatment outcome
- Focuses on 8 areas of functional performance
  - Sitting
  - Balance
  - Upper limb
  - Transfers
  - Stairs
- Scores range from 0-48
Aims:
- To pilot the new outcome measure ‘Southampton Pain Amplification and Disability Functional Score’ (SPADF)
- To assess the clinical outcome of these patients

Methods:
- Patients admitted August 08 – May 2011 to SGH
- Twice daily physio/hydro, MDT working
- Assessed using SPADF (ordinal data – focuses on 8 areas of functional performance i.e. sitting, standing, gait)
- Scores range from 0-48
Pilot Study

- Results:
- 29 patients over 28 month period
- Median inpatient stay 10 days (range 2-92)
- 20 out of 29 patients received psychology/psychiatry input
- Statistical improvement in SPADF scores
- Mean improvement in score of 19 points (95% confidence interval 15 to 30; paired t-test \( p=0.0005 \)).
100% of children were discharged with ‘Good Outcome’

‘Good Outcome’ – major functional improvement, mobilising without an aid, return to school and sport where applicable.
Summary

Children and young people with Pain Amplification can present anywhere.

It’s not a ‘one treatment fits all approach’

These patients require a team approach with all individuals working towards the same patient goals.

To acknowledge and understand the unique patients experience of illness.

With the right approach good outcome can be achieved.
Rather than doing treatment ‘on a patient, one aims to work with and for a patient’ (McAllister 2002)
Any Questions?