



Musculoskeletal Health Questionnaire (MSK-HQ)

Final Report on Piloting Study

Musculoskeletal Health Questionnaire (MSK-HQ)

The opportunity

- Arthritis and musculoskeletal conditions very common
- Includes back pain, osteoarthritis, inflammatory disorders
- Largest cause of UK Years Lived with Disability (YLD)
- Fourth-largest area of health spend nationally
- Musculoskeletal health not captured by biomarkers
- Patient reported outcome measures ideally suited
- Build on early successes of pre-/post- surgery PROMs

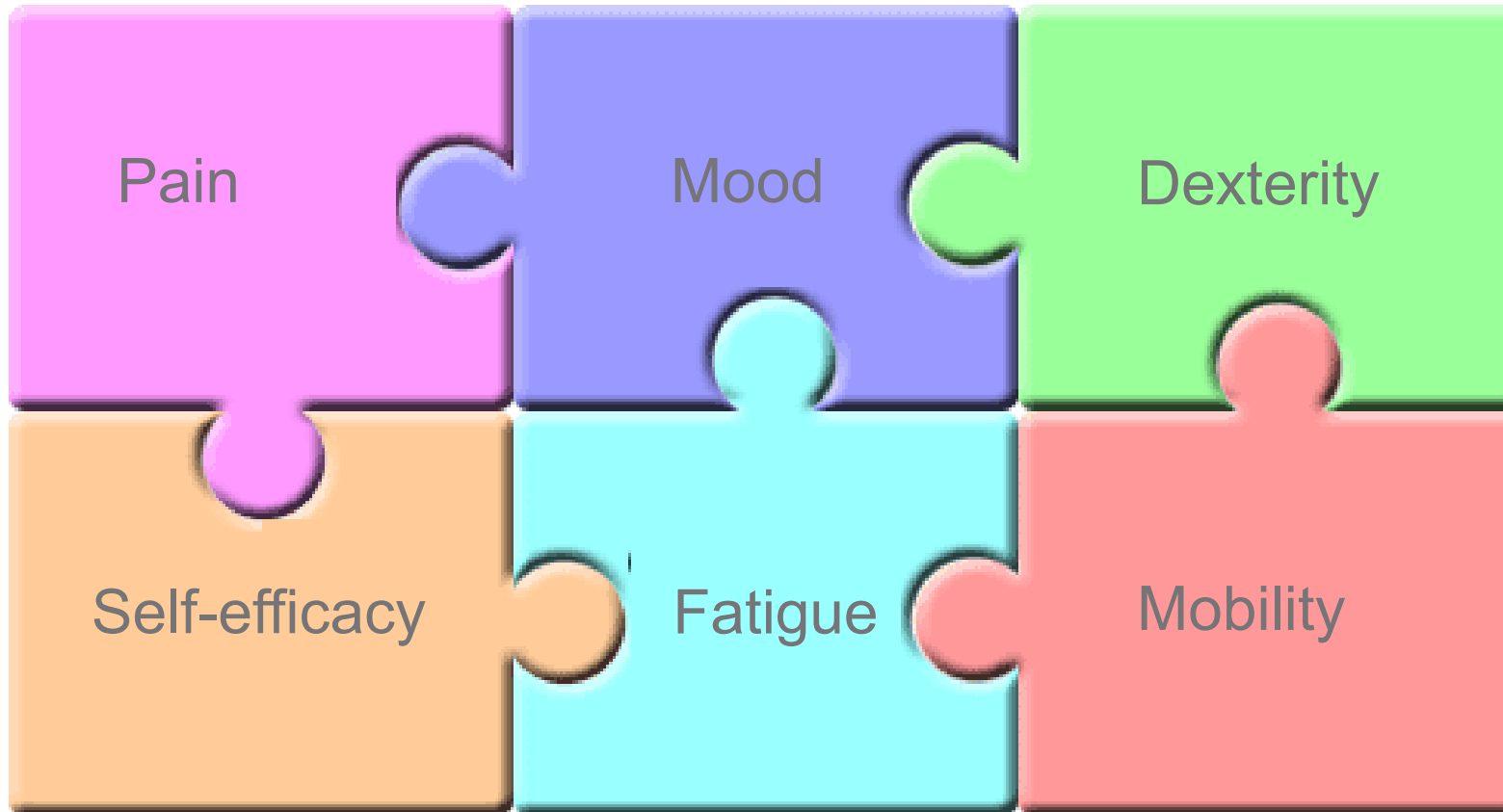
Musculoskeletal Health Questionnaire (MSK-HQ)

The vision

The routine and systematic use of outcome measures such as the MSK-HQ throughout musculoskeletal health services will *empower patients, support clinical decision making, drive forward quality improvement and ensure that the best services are rewarded for their achievements.*

Musculoskeletal Health Questionnaire (MSK-HQ)

Focus on aspects of health, not specific diseases



Musculoskeletal Health Questionnaire (MSK-HQ)

Overall aims of the project

- Standardised and simplified throughout NHS
- Across full range of health professionals
- Ensure no gaps in coverage
- Need balance between condition-specific and generic tools, while retaining sensitivity to change
- Holistic view of the impact on a person's health
- Longitudinal measurement throughout the pathway
- Benefits to people with arthritis, clinicians, commissioners
- People can track their own musculoskeletal health
- Opportunities in care planning

Musculoskeletal Health Questionnaire (MSK-HQ)

Development and piloting: the team

Arthritis Research UK

Benjamin Ellis

Keele (Phase 1 Lead)

Jonathan Hill (PI)

Elaine Hay

Oxford (Phase 2 Lead)

Andrew Price (PI)

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Kings College Hospital
(Rheumatology lead)

James Galloway

Musculoskeletal Health Questionnaire (MSK-HQ)

Candidate instrument (1)

1. Pain/stiffness during the day How severe was your usual joint or muscle pain and/or stiffness overall during the day in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Fairly severe <input type="checkbox"/>	Very severe <input type="checkbox"/>
2. Pain/stiffness at night How severe was your usual joint or muscle pain and/or stiffness overall at night in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Fairly severe <input type="checkbox"/>	Very severe <input type="checkbox"/>
3. Walking How much have your symptoms interfered with your ability to walk in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Unable to walk <input type="checkbox"/>
4. Washing/Dressing How much have your symptoms interfered with your ability to wash or dress yourself in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Unable to wash or dress myself <input type="checkbox"/>

Musculoskeletal Health Questionnaire (MSK-HQ)

Candidate instrument (2)

5. Physical activity levels How much has it been a problem for you to do physical activities (e.g. going for a walk or jogging) to the level you want because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Very much <input type="checkbox"/>	Unable to do physical activities <input type="checkbox"/>
6. Work/daily routine How much have your joint or muscle symptoms interfered with your work or daily routine in the last 2 weeks (including work & jobs around the house)?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Extremely <input type="checkbox"/>
7. Social activities and hobbies How much have your joint or muscle symptoms interfered with your social activities and hobbies in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Extremely <input type="checkbox"/>

Musculoskeletal Health Questionnaire (MSK-HQ)

Candidate instrument (3)

8. Needing help How often have you needed help from others (including family, friends or carers) because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Frequently <input type="checkbox"/>	All the time <input type="checkbox"/>
9. Sleep How often have you had trouble with either falling asleep or staying asleep because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Frequently <input type="checkbox"/>	Every night <input type="checkbox"/>
10. Fatigue or low energy How much fatigue or low energy have you felt in the last 2 weeks?	Not at all <input type="checkbox"/>	Slight <input type="checkbox"/>	Moderate <input type="checkbox"/>	Severe <input type="checkbox"/>	Extreme <input type="checkbox"/>
11. Emotional well-being How much have you felt anxious or low in your mood because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Extremely <input type="checkbox"/>

Musculoskeletal Health Questionnaire (MSK-HQ)

Candidate instrument (4)

<p>12. Understanding of your condition and any current treatment</p> <p>Thinking about your joint or muscle symptoms, how well do you feel you understand your condition and any current treatment (including your diagnosis and medication)?</p>	Completely <input type="checkbox"/>	Very well <input type="checkbox"/>	Moderately <input type="checkbox"/>	Slightly <input type="checkbox"/>	Not at all <input type="checkbox"/>
<p>13. Confidence in being able to manage your symptoms</p> <p>How confident have you felt in being able to manage your joint or muscle symptoms by yourself in the last 2 weeks (e.g. medication, changing lifestyle)?</p>	Extremely <input type="checkbox"/>	Very <input type="checkbox"/>	Moderately <input type="checkbox"/>	Slightly <input type="checkbox"/>	Not at all <input type="checkbox"/>

Musculoskeletal Health Questionnaire (MSK-HQ)

Candidate instrument (5)

14. Overall impact How much have your joint or muscle symptoms bothered you overall in the last 2 weeks?		Not at all	Slightly	Moderately	Very much	Extremely	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Physical activity levels In the past week , on how many days have you done a total of 30 minutes or more of physical activity, which was enough to raise your heart rate? <i>This may include sport, exercise and brisk walking or cycling for recreation or to get to and from places, but should not include housework or physical activity that is part of your job.</i>							
None	1 day	2 days	3 days	4 days	5 days	6 days	7 days
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Musculoskeletal Health Questionnaire (MSK-HQ)

Piloting and testing (1)

Candidate MSK-HQ needs assessing against a range of criteria:

1. Reliability
2. Validity
3. Responsiveness
4. Acceptability and feasibility
5. Usefulness (in supporting decisions)

Musculoskeletal Health Questionnaire (MSK-HQ)

Purpose of piloting and testing (2)

The candidate MSK-HQ may need refining:

1. Reduce number of questions (Rasch Analysis)
2. Modify format (Acceptability)

Musculoskeletal Health Questionnaire (MSK-HQ)

The pilot sites

Primary care physiotherapy cohort	Secondary care rheumatology cohort
<p>Primary care patients with MSK condition referred for physiotherapy</p> <p>Keele 200 patients Base-line, 3 month, (50 at 1 week test re-test) EQ-5D</p>	<p>Adults with an established diagnosis of inflammatory arthritis with active disease that requires the initiation of either a new synthetic or biologic Disease Modifying Anti-Rheumatic Drug (DMARD).</p> <p>5 centres Base-line, 3 months DAS28 & HAQ; PsAID9 & HAQ, BASDAI & ASQoL, EQ-5D</p>
Secondary care Orthopaedic Cohort	MSK Service Cohort
<p>Adults undergoing: Hip replacement, Knee replacement, Shoulder surgery</p> <p>Oxford 150 in each joint group Base-line, 6 month, (50 at 1 week test re-test) OKS, OHS, OSS, EQ-5D</p>	<p>Patients within a MSK service</p> <p>Bedford MSK services, Circle Qualitative data; usefulness Clinicians and managers</p>

Musculoskeletal Health Questionnaire (MSK-HQ)

How have we progressed?

1. Secondary care Orthopaedics
Data collection and analysis completed
2. Bedford MSK service
Data collection and analysis completed
3. Primary care patients undergoing physiotherapy
Data collection and analysis completed
4. Secondary care Rheumatology
Data collection and analysis on-going

Completion: June 2016

Musculoskeletal Health Questionnaire (MSK-HQ)

Recruitment: demographics

	Hip	Knee	Shoulder	Physio	Total
Number	148	143	59	208	558
Age Mean (SD)	55.6 (17.21)	65.7 (13.8)	51.5 (17.1)	53.5 (15.5)	56.9 (16.5)
Gender % female/male	39/61	38/62	60/40	46/54	44/56

Musculoskeletal Health Questionnaire (MSK-HQ)

Internal Consistency Reliability (Cronbach Alpha)

	Baseline	Retest
Hip (OHS)	0.87	0.90
Knee (OKS)	0.89	0.90
Shoulder (OSS)	0.90	0.85
Physio (EQ-5D)	0.89	0.93

Demonstrates positive consistency

Musculoskeletal Health Questionnaire (MSK-HQ)

Test-Retest Reliability (Spearman Correlation)

	Baseline and retest
Hip (OHS)	0.84 (CI 0.04)
Knee (OKS)	0.89 (CI 0.04)
Shoulder (OSS)	0.72 (CI 0.10)
Physio (EQ-5D)	0.89 (CI 0.06)

Demonstrates positive reliability

Musculoskeletal Health Questionnaire (MSK-HQ)

Construct Validity (Spearman Correlation)

Knee		Hip	
OKS	0.88 (CI 0.83-0.91)	OHS	0.83 (CI 0.77-0.88)
EQ-5D	0.78 (CI 0.70-0.84)	EQ-5D	0.76 (CI 0.68-0.82)
Rheumatology		Physio	
RAID (RA subgroup)	0.77 (CI 0.61-0.87)	EQ-5D	0.82 (CI 0.77-0.86)
EQ-5D (All)	0.30 (CI 0.04-0.52)		

Demonstrates good construct validity

Musculoskeletal Health Questionnaire (MSK-HQ)

Responsiveness (Change score Spearman Correlation)

Knee		Hip	
OKS	0.90 (CI 0.93-0.96)	OHS	0.82 (CI 0.82-0.88)
EQ-5D	0.64 (CI 0.50-0.75)	EQ-5D	0.75 (CI 0.64-0.83)
Shoulder		Physio	
OSS	0.57 (CI 0.18-0.81)	EQ-5D	0.69 (CI 0.58-0.77)
EQ-5D	0.53 (CI 0.15-0.77)		

Demonstrates good construct validity

Musculoskeletal Health Questionnaire (MSK-HQ)

Where is the final product?



ARTHRTIS RESEARCH UK MUSCULOSKELETAL HEALTH QUESTIONNAIRE (MSK-HQ)

This questionnaire is about your **joint, back, neck and muscle symptoms** such as aches, pains and/or stiffness.
Please focus on the particular health problem(s) for which you sought treatment from this service.

For each question tick (✓) **one** box to indicate which statement best describes you **over the last 2 weeks**.

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2. Pain/stiffness at night How severe was your usual joint or muscle pain and/or stiffness overall at night in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Fairly severe <input type="checkbox"/>	Very severe <input type="checkbox"/>
3. Walking How much have your symptoms interfered with your ability to walk in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Unable to walk <input type="checkbox"/>
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5. Physical activity levels How much has it been a problem for you to do physical activities (e.g. going for a walk or jogging) to the level you want because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Very much <input type="checkbox"/>	Unable to do physical activities <input type="checkbox"/>
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8. Needing help How often have you needed help from others (including family, friends or carers) because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Frequently <input type="checkbox"/>	All the time <input type="checkbox"/>
9. Sleep How often have you had trouble with either falling asleep or staying asleep because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Frequently <input type="checkbox"/>	Every night <input type="checkbox"/>
10. Fatigue or low energy How much fatigue or low energy have you felt in the last 2 weeks?	Not at all <input type="checkbox"/>	Slight <input type="checkbox"/>	Moderate <input type="checkbox"/>	Severe <input type="checkbox"/>	Extreme <input type="checkbox"/>
11. Emotional well-being How much have you felt anxious or low in your mood because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Severely <input type="checkbox"/>	Extremely <input type="checkbox"/>
12. Understanding of your condition and any current treatment Thinking about your joint or muscle symptoms, how well do you feel you understand your condition and any current treatment (including your diagnosis and medication)?	Completely <input type="checkbox"/>	Very well <input type="checkbox"/>	Moderately <input type="checkbox"/>	Slightly <input type="checkbox"/>	Not at all <input type="checkbox"/>
13. Confidence in being able to manage your symptoms How confident have you felt in being able to manage your joint or muscle symptoms by yourself in the last 2 weeks (e.g. medication, changing lifestyle)?	Extremely <input type="checkbox"/>	Very <input type="checkbox"/>	Moderately <input type="checkbox"/>	Slightly <input type="checkbox"/>	Not at all <input type="checkbox"/>
14. Overall impact How much have your joint or muscle symptoms bothered you overall in the last 2 weeks?	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Very much <input type="checkbox"/>	Extremely <input type="checkbox"/>
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A valid MSK-HQ

MSK-HQ = Questionnaire for joint, back, neck and muscle symptoms
Any and all copyrights © for the MSK-HQ vests in Keele University (May 2014). The authors acknowledge the kind support of Arthritis Research UK in the development of the MSK-HQ.

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Keele University



Musculoskeletal Health Questionnaire (MSK-HQ)

Bedford /Circle MSK service : methods

- CircleHealth approached as providing novel model of MSK service ('prime vendor') with strong focus on outcomes
- Invited to use MSK-HQ as they saw fit in developing service
- Data collection: interviews, access on confidential basis to records of meetings, summary anonymised patient data

Musculoskeletal Health Questionnaire (MSK-HQ)

Bedford/Circle MSK service: results

- CircleHealth decided to use MSK-HQ in prospective survey of shoulder patients
- Used in 146 patients presenting with shoulder problems attending triage assessment
- MSK-HQ showed substantial improvement after 3 months
- MSK-HQ considered valuable tool in providing relevant feedback about services
- Could be more widely used to monitor MSK patients
- Summary aggregate results could be presented to CCG but not yet directly used in commissioning process

Musculoskeletal Health Questionnaire (MSK-HQ)

Phase 3: piloting partners

- Unprompted approaches from multiple sites
- Keen to start using MSK-HQ to meet local measurement needs
- Several now signed up to start using MSK-HQ as part of pilot
- Will provide aggregate data and take part in qualitative feedback
 - *Sandwell and West Birmingham* - physiotherapy and physio-led triage
 - *Sussex MSK partnership (Central)* - spinal pathways initially, then others
 - *Sussex MSK partnership east* - elective orthopaedics
 - *British School of Osteopathy* - across pathways
 - *Evesham Community Hospital* - physiotherapy
 - *Boroughs Partnership Trust* - physiotherapy

Musculoskeletal Health Questionnaire (MSK-HQ)

Summary of the process so far and next step

Phase 1:	Creation	Complete
Phase 2:	Testing and piloting	Complete
Phase 3:	Wider piloting and uptake	On going

- Great enthusiasm for uptake if the MSK-HQ
- Testing of electronic delivery is underway

Next step: Launch