

The rheumatological examination

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Abstract

Musculoskeletal disorders are the most common cause of disability in the UK. They are associated with significant morbidity and polypharmacy, particularly in an ageing population with multiple comorbidities. Two programmes of examination that have been developed include a screening assessment (Gait, Arms, Legs, Spine (GALS)) and a more in-depth Regional Examination of the Musculoskeletal System (REMS). These programmes provide a structured assessment, which enables competent and confident examination skills, ensuring an accurate diagnosis.

Keywords Arthritis; clinical; education; examination; musculoskeletal

Introduction

Musculoskeletal disorders can present to a variety of specialties. They account for up to 25% of a general practitioner's workload.¹ Presenting symptoms can be non-specific, including fatigue, joint pain and stiffness. Competent history-taking and examination skills are therefore key to making an accurate diagnosis.

The examiner should consider the anatomy involved (e.g. joint, muscle, tendon), whether the condition is acute or chronic, and inflammatory or non-inflammatory, the pattern of involvement (e.g. mono-, oligo- or polyarticular or axial) and the impact of the condition on the patient.

Gait, Arms, Legs, Spine (GALS) screening examination²

This rapid screening examination aims to identify a problem (Table 1). It should be incorporated into the routine systematic enquiry of every patient. It is not intended to be diagnostic but guides further examination and investigation. It is important to document the presence or absence of any changes. An adapted version for paediatrics has also been developed for the systemic enquiry (pGALS).³

Screening questions for musculoskeletal disorders include:

- Do you suffer from any pain or stiffness in your muscles or back?
- Do you have any difficulty dressing yourself?
- Do you have any difficulty walking up and down stairs?

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Key points

- Musculoskeletal disorders are common and cause significant morbidity
- Gait, Arms, Legs, Spine (GALS) and Regional Examination of the Musculoskeletal System (REMS) provide a structure to enable a thorough and focused examination
- Experience and practice using GALS and REMS will improve diagnostic acumen

Regional Examination of the Musculoskeletal System (REMS)

This core set of examination skills (Table 2) enables the examiner to localize and describe any abnormality detected by GALS. It was developed by a robust consensus study of UK clinicians across a number of specialties.⁴

A standardized programme of examination is essential for teaching and assessment focused on specific learning outcomes.⁵ Medical students are expected to be competent in GALS and REMS at graduation. With experience, the examination can be further tailored to the history. The full examination is available to view on line, download or order at www.arthritisresearchuk.org/health-professionals-and-students/student-handbook.aspx.

The examiner must be mindful of the fact that many musculoskeletal conditions are multisystem diseases, and therefore respiratory, cardiovascular, gastrointestinal and neurological examination should be considered where appropriate. Malignancy screening should also be considered, particularly in patients presenting with bony pain, weight loss, night sweats, paraneoplastic phenomena or raised inflammatory markers. Table 3 documents disease-specific features of the musculoskeletal examination.

Examination of the hand and wrist

With the patient resting their hands on a pillow, palms down, observe any skin thinning, bruising (signs of long-term corticosteroid use) or rashes. Look at the nails for any psoriatic changes or nail fold vasculitis. Look for any swelling. What is the distribution of involvement – distal interphalangeal (DIP), proximal interphalangeal (PIP) or metacarpophalangeal (MCP) joints, or wrists?

With the patient's palms upwards, look for palmar erythema and muscle wasting of the thenar and hypothenar eminences. If wasting is present only at the thenar eminence, this suggests carpal tunnel syndrome. Look for a carpal tunnel release scar and consider Phalen's test.

Feel the peripheral pulses. Feel for the muscle bulk of the thenar and hypothenar eminences, and tendon thickening. Assess median nerve sensation over the thenar eminence, and ulnar nerve sensation over the hypothenar eminence. With the patient's palms down, assess radial nerve sensation by touching lightly over the thumb and index finger web space. Feel the skin temperature with the back of your hand over the forearm, wrist and MCP joints, comparing right and left.

Squeeze the MCP joints, observing the patient for any discomfort. Bimanually palpate the MCP joints and any PIP or

GALS

	Appearance	Movement
Gait	<p>Assess from behind, the side and in front:</p> <ul style="list-style-type: none"> • Muscle bulk and symmetry • Limb alignment • Straight spine • Level iliac crests • Ability to fully extend the elbows and knees 	<ul style="list-style-type: none"> • Symmetry and smoothness • Ability to turn quickly
Arms	<ul style="list-style-type: none"> • Joint swelling and deformity in the hands and wrists • Observe the palms for muscle bulk 	<ul style="list-style-type: none"> • Ask the patient to place their hands behind their head (assesses external rotation and abduction of the shoulder, and elbow flexion) • Assess the power grip by asking the patient to make a fist • Assess grip strength by asking the patient to squeeze the examiner's fingers • Fine precision pinch (functional importance, e.g. fastening/unfastening buttons) • Squeeze the MCP joints for tenderness – observe the patient's face when doing this
Legs (patient lying on couch)	<ul style="list-style-type: none"> • Inspect the feet for swelling and deformity, and callosities on the soles • Squeeze the metatarsophalangeal (MTP) joints to assess for tenderness 	<ul style="list-style-type: none"> • Assess full flexion and extension of both knees – feeling for crepitus • Assess internal rotation of the hips with the hip and knee flexed to 90° • Patellar tap to look for effusion at the knee
Spine	<ul style="list-style-type: none"> • Inspect from behind for scoliosis • Inspect from the side for abnormal lordosis/kyphosis 	<ul style="list-style-type: none"> • Assess lateral flexion of the neck (ask the patient to touch each ear to their shoulder in turn) • Ask the patient to touch their toes, <i>looking</i> and <i>feeling</i> for normal vertebral movement

Table 1

DIP joints that look swollen. Active synovitis is suggested by the presence of warmth, tenderness, 'boggy' swelling, and occasionally effusions. Feel the ulnar border of the elbow for the presence of rheumatoid nodules or psoriatic plaques.

Ask the patient to fully straighten their fingers against gravity. This may be limited by joint disease, extensor tendon rupture or neurological damage – moving the patient's fingers passively can assess this. Ask the patient to make a fist. Assess wrist flexion and extension actively and passively.

Phalen's test requires forced flexion at the wrists for 60 seconds. A positive test reproduces the patient's symptoms (sensitivity 85%, specificity 90%).

For assessment of function, see Table 2.

Examination of the elbow

Observe the carrying angle from the front, and any fixed flexion deformity at the side. Look for scars, rashes, muscle wasting, rheumatoid nodules, psoriatic plaques and swelling, such as olecranon bursitis.

Feel for temperature changes and swelling over the joint. Synovitis may be felt between the olecranon and lateral epicondyle. Palpate for an olecranon bursa. Palpate the medial and lateral epicondyles for golfer's and tennis elbow, respectively.

Actively and passively flex and extend the elbow, comparing one side with the other. Feel for crepitus on active and passive pronation and supination.

Examination of the shoulder

Look from the front, the side and behind for asymmetry, abnormal posture, muscle wasting and scars.

Feel for temperature over the front of the shoulder. Palpate bony landmarks, beginning at the sternoclavicular joint and working around to the clavicle, acromioclavicular joint, coracoid process and spine of the scapula. Palpate the anterior and posterior joint lines. Palpate the muscle bulk of the supraspinatus, infraspinatus and deltoid muscles.

Ask the patient to place their hands behind their head (assessing external rotation and abduction), and then behind their back (internal rotation, adduction). Assess external rotation of the shoulder by flexing the patient's elbow to 90°, tucking it into their side and then externally rotating it. Loss of external rotation can indicate a frozen shoulder. Assess flexion and extension at the shoulder, remembering both passive and active movement.

To assess for a painful arc (between 10° and 120°), stand behind the patient and ask them to actively abduct the arm. Look for smooth scapular movement.

Examination of the hip

With the patient standing, look for gluteal muscle wasting and scars. With the patient lying flat, look for flexion deformity. Measure the true leg length if there is a suggestion of disparity. Measurement is taken from the anterior superior iliac crest to the

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