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## How to investigate: Chronic pain

### Matthew Hague <sup>a, 1</sup>, Nicholas Shenker <sup>b, \*</sup>

<sup>a</sup> University of Cambridge Clinical School, Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ, UK
<sup>b</sup> Box 204, Rheumatology Research Unit, Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ, UK

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#### ABSTRACT

Chronic pain is defined as an unpleasant sensory and emotional experience persisting longer than the normal process of healing, usually longer than 3 months. About a fifth of the world's population is believed to suffer from chronic pain. In Europe, chronic pain accounts for nearly 500 m lost working days, and it costs the European economy  $> \in 34$  billion (£28 billion) every year.

Establishing a reliable diagnosis is the primary challenge in evaluating a patient with chronic pain. Common diagnoses not to miss include seronegative spondyloarthritides, endocrine abnormalities including severe vitamin D deficiency and polymyalgia rheumatica.

Once important or treatable diagnoses have been ruled out, the history can be used as a tool to establish a therapeutic plan for shared decision-making using the biopsychosocial model. Onward referral to pain clinics can be helpful for more involved patient management, but often good outcomes are achieved with the support of primary care.

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Rheumatology

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Pain is defined by the International Association for the Study of Pain (IASP) as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage'. Chronic pain has been defined as 'pain which persists longer than the process of normal healing' [1]. It is now practically defined by pain that lasts longer than 3 months [2]. There are many different chronic pain syndromes, the most common being fibromyalgia, low back pain and pain

\* Corresponding author. Tel.: +44 01223 256883; fax: +44 01223 256941.

*E-mail addresses:* mh623@cam.ac.uk (M. Hague), Nicholas.shenker@addenbrookes.nhs.uk (N. Shenker). <sup>1</sup> Tel.: +44 01223 245151.

http://dx.doi.org/10.1016/j.berh.2015.04.005 1521-6942/© 2015 Elsevier Ltd. All rights reserved. associated with degenerative conditions. In this article, we will discuss the clinical approach one should take when evaluating a patient who has chronic pain, and evaluate the evidence base around different techniques of assessment and investigation.

#### Story of chronic pain

'You slip on ice and land heavily on your hand. The pain is instant. Soon, your wrist reddens and swells. It becomes painful to the touch. You rush to the A&E department of the nearest hospital and get an X-ray. Luckily, you haven't broken anything — merely sprained your wrist. It should get better in a few days. In the meantime, your wrist hurts and you wear a wrist guard to protect it from further strain. A week later, your wrist is back to normal. You soon forget that you were ever in pain.

What if the pain doesn't go away, though? Months pass. Your wrist gets worse. Now your whole hand hurts. Washing up and getting dressed become difficult. You start to worry and can't sleep properly. Doctors and painkillers become a part of your life. The pain is always there, but your doctor can't find anything wrong. No one quite understands. You feel depressed. People seem to think you're making a big fuss. Maybe the pain is all "in your head".

The initial injury might have been different, but this story will be familiar to many chronic pain patients. Their pain persists long after the injury is healed. Without any injury to protect, such pain serves no purpose, and becomes crippling. Chronic pain is more common than we think. About a fifth of the world's population is believed to suffer from chronic pain. In Europe, chronic pain accounts for nearly 500 m lost working days and costs the European economy more than  $\in$ 34bn (£28bn) every year'.

Dr Michael Lee, Winner MRC Public Engagement series, Guardian, 29 July 2008

#### Epidemiology

Chronic pain and its effects on the quality of life and upon the productivity of the workforce are hugely significant. About one-fifth (20%) of all people within a population will be suffering from chronic pain, a figure validated repeatedly in large-scale validated epidemiological studies.

Breivik et al. found that 19% of 46,394 respondents had suffered pain for >6 months. In-depth interviews with 4839 respondents with chronic pain (about 300 per country) showed the following: 66% had moderate pain (numerical rating scale (NRS) = 5–7), 34% had severe pain (NRS = 8–10), 46% had constant pain and 54% had intermittent pain [3]. Fifty-nine per cent had suffered with pain for 2–15 years, 21% had been diagnosed with depression because of their pain, 61% were less able or unable to work outside the home, 19% had lost their job and 13% had changed jobs because of their pain. Sixty per cent visited their doctor about their pain two to nine times in the last 6 months. The average number of lost days over the preceding 6 months was 8. Over the year, this would account for >3 working weeks from each individual lost due to chronic pain. Only 2% were currently treated by a pain management specialist.

In a computer-assisted telephone survey of 17,543 individuals in the Australian general adult population, which defined chronic pain as pain every day for 3 months in the 6 months before the interview, the prevalence was 18.5% [4]. In a survey of 12,333 respondents aged over 16 years in the general population of Denmark, the overall prevalence of chronic pain lasting at least 6 months was 19% [5]. A similar picture is seen in the USA where chronic pain has been estimated to have a prevalence of 30%, affecting 100 million people, and costing the US economy between US\$550 and 626 billion each year [6].

Understanding chronic pain is very important for the rheumatologist. The most common reason to seek consultation with a rheumatologist is to seek a cause, and hopefully treatment and cure, for troubling pain. Patients with chronic pain are responsible for 40% of the workload of clinical rheumatologists in the UK. Being able to provide a rapid, thorough and sensitive assessment of a patient who presents with chronic pain is an essential skill for any rheumatologist.

#### Physiology of nociception

Nociception is the neural process of encoding and processing noxious stimuli [2]. These are 'stimuli' that are damaging, or threaten damage to normal tissues, and they can be thermal, mechanical or

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