

RESEARCH

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RESEARCH NEWS All you need to read in the other general medical journals Alison Tonks, associate editor, *BMJ* atonks@bmj.com

What does pain look like?

Researchers from the US have identified a potential cerebral signature for physical pain—a pattern of brain activity that seems to discriminate reliably between physical pain and other experiences such as warmth, the anticipation of pain, remembering pain, or even the emotional pain triggered by a photograph of an ex-lover.

The researchers used functional brain imaging to map the cerebral responses of 114 volunteers to increasing thermal stimuli applied to the forearm. A pattern emerged in response to acute thermal pain that was more than 90% sensitive and more than 90% specific. It was bilateral and included multiple cerebral regions including the thalamus, insulae, secondary somatosensory cortex, anterior cingulate cortex, and periaqueductal grey matter. Cerebral responses diminished substantially in response to infusions of a powerful opioid analgesic.

Can we use this signature to confirm self reported pain or to identify pain in people who can't communicate? Not yet, says a linked editorial (p 1447). This preliminary work paves the way for future research on the cerebral responses to clinical pain or chronic pain, which may be different. We may eventually need a whole suite of signature patterns for different types of pain, caused by different diseases, in different parts of the body, say the authors. All will need testing in bigger, more diverse populations.

N Engl J Med 2013;368:1388-97

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Computer aided mammography gets ahead of the evidence

Many radiologists in developed countries use computer algorithms to help interpret screening mammograms. Such algorithms may be contributing to overdiagnosis, according to a large cohort study from the US. In adjusted analyses, use of the technology in women aged 65 or over was associated with a higher incidence of ductal carcinoma in situ (adjusted odds ratio, 1.17, 95% CI 1.11 to 1.23) but not invasive breast cancer. Computer aided detection also increased the odds of further investigations, including biopsies (1.10, 1.08 to 1.12), in women without cancer.

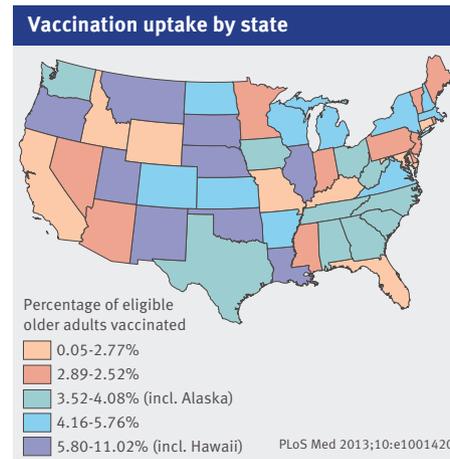
Researchers linked three US administrative databases to examine the balance of benefits and

risks in 163 099 older women screened between 2001 and 2006. Computer aided detection spread rapidly during that time, and by 2006 more than 60% of screening mammograms were reported this way. Cancers detected using computer algorithms were at an earlier stage than those detected without them (adjusted odds of stage I v stages II-IV: 1.15, 1.09 to 1.22), but secondary analyses failed to find a longer term reduction in late stage cancers. It's much too early to say whether computer aided detection can prolong the lives of women screened at age 65 or over, write the researchers. Their cohort excluded younger women.

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Zoster vaccine protects against shingles



A large cohort study has confirmed that vaccinating older adults against shingles (herpes zoster) is a reasonably effective defence against the acute disease and also against post-herpetic neuralgia. In fully adjusted analyses of more than 700 000 people over 65 years, vaccination was associated with a 48% (95% CI 39% to 56%) reduction in incidence of shingles (10.0 per 1000 person years in unvaccinated people v 5.4 per 1000 person years in vaccinated people) and a 59% (21% to 79%) reduction in incidence of post-herpetic neuralgia. The vaccine also looked effective in immunosuppressed people, although these analyses were smaller, weaker, and less secure.

The authors analysed data from Medicare, government funded health insurance for US adults aged 65 or over. Vaccination of older adults is

already recommended in the US, but only 4% of eligible adults were vaccinated in this study. The authors hope their findings will help boost uptake and inform vaccine policies internationally. Herpes zoster is common, incurable, and can be associated with lingering neuralgia that seriously threatens quality of life, they write. Trials in selected populations have already shown that vaccination offers substantial protection. The new study adds power and a real world element missing from clinical trials. It also suggests that the live vaccine should not be withheld from older people who are immunocompromised by drugs or disease.

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Outcomes improve when doctors are alert to social and cultural context

Patients do better when doctors notice—then deal with—problems caused by social and cultural factors outside the consulting room, according to an analysis of covertly recorded consultations. Researchers identified 208 recorded consultations at two medical outpatient clinics that included a “contextual red flag,” such as missed appointments or tests, poor adherence, or deteriorating control of chronic diseases. Doctors noticed the red flag, identified the wider problem, and adapted the patient’s care plan in 59% of these consultations. Patients with contextualised care plans were significantly more likely to have a positive outcome than others (71% (68/96) v 46% (28/61); adjusted odds ratio 3.7, 95% CI 1.2 to 11.4).

Definition of a positive outcome depended on the nature of the contextual red flag; for example, researchers looked for improved diabetic control in patients with deteriorating control and better adherence in those with poor adherence. Some red flags triggered more attention and action from doctors than others. The doctors who agreed to take part seemed particularly poor at picking up signals from increasing visits to emergency departments and particularly good at noticing and exploring the wider context of poor adherence to care plans.

Patient centred or contextualised care has always been a good idea, says a linked editorial (p 628). Now evidence is beginning to emerge that it really makes a difference to clinical outcomes.

Ann Intern Med 2013;158:573-9

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