# National Institute for Health and Care Excellence

### **Public Health and Social Care Centre**

# Surveillance programme

# **Report for Guidance Executive March 2016**

Physical activity: brief advice for adults in primary care (PH44)

GE Paper

### 1 Surveillance recommendation

Guidance Executive is asked to:

- consider the surveillance proposal no update
- note that this proposal was not consulted on (following the 2 year process as stated in the manual)
- approve the surveillance report for publication

#### Checklist

Consideration	Impact on guidance
Evidence identified from literature	no
Feedback from topic experts	no
Feedback from stakeholder consultation	[Yes/No]
Feedback from implementation	no
Anti-discrimination and equalities considerations	no
Surveillance decision	Refresh; No update

# 2 Background information

Guideline issue date: May 2013 First review date: March 2016

This guideline aims to support the routine provision of brief advice on physical activity in primary care practice. Increasing physical activity has the potential to significantly improve both physical and mental wellbeing, reduce all-cause mortality and improve life expectancy. PH44 contains 5 recommendations that cover:

- · identifying adults who are inactive
- delivering and following up on brief advice
- incorporating brief advice in commissioning
- systems to support brief advice
- information and training to support brief advice.

Related quality standard library topics:

QS84 Physical activity: encouraging activity in all people in contact with the NHS

# 3 Process for the surveillance of guidelines

The process to decide whether guidance needs updating follows <u>Developing NICE</u> <u>guidelines: the manual</u>.

#### Current Year 2 surveillance review on PH44

- Initial intelligence gathering and qualitative feedback from other NICE departments was obtained and assessed for impact on PH44.
- Expert feedback was sought via a questionnaire from topic specific members on the committee who originally developed PH44 or Physical activity: exercise referral schemes (PH54) (n=8), NICE fellows and the Royal Collage of General Practitioners (RCGP). Responses were provided by members of the committee (2), and the RCGP. Many of those who did not complete the questionnaire felt that they did not have the background knowledge in primary care or physical exercise to provide input. There was a mix of opinions concerning whether or not the guideline should be updated with 2 respondents indicating no update was required. The feedback from the questionnaires was used to inform the surveillance process and was incorporated into the decision making.

• A forward literature citation search was undertaken on all studies included in the effectiveness review that informed PH44 using citation search. Systematic reviews and RCTs from 1<sup>st</sup> March 2012 (the end of the search period for the guideline) to 4<sup>th</sup> November 2015 were identified and relevant abstracts were assessed for their impact on the recommendations within PH44.

• Implementation feedback was obtained from the Quality and Outcomes Framework (QOF) indicators developed by NICE that relate to PH44 and from the Health Improvement Network (THIN) database which contains data from a currently active set of 265 GP practices (England only).

#### 4 Consideration of the evidence

This surveillance report provides an overview (see <u>Appendix 1</u> for further details of evidence identified) of the 37 studies identified from the surveillance process.

No new evidence that impacts on recommendations was identified (for further details see appendix 1).

# 5 Ongoing research

Ongoing research was identified through experts and the initial intelligence gathering (NIHR research in progress). If this was within the scope/Department of health referral for PH44 it has been included;

- <u>'Help me do it!' a web and text based intervention to facilitate social support to</u>
   <u>achieve and maintain health-related change in physical activity and dietary behaviour</u>
   currently recruiting participants. Trial end date: 30 Jun 2017
- A randomised controlled trial of the efficacy and cost-effectiveness of a very brief intervention to increase physical activity when delivered in a primary care setting currently recruiting participants. Trial end date: 31 Dec 2016
- Fun and Fit Norfolk: Evaluating different methods of recruiting and engaging inactive individuals into sport currently recruiting participants. Trial end date: 1 Dec 2016

Potential efficacy, fidelity, feasibility and acceptability of techniques to promote
 physical activity for use in very brief interventions in primary care
 . This feasibility study stage was completed October 2013 but forms part of a larger programme of on-going (and inter-related) research, funded by an NIHR programme Grant, which aims to develop and evaluate very brief interventions to increase physical activity in primary care.

### 6 Implementation

The QOF indicators HYP004 and HYP005 were developed by NICE and were utilised for 1 year in the incentive scheme (2013/2014) for a sub group of the population, patients with hypertension aged 16-74 years.

- HYP004. The percentage of patients with hypertension aged 16 or over and who
  have not attained the age of 75 in whom there is an assessment of physical activity,
  using GPPAQ, in the preceding 12 months (NM36).
- HYP005. The percentage of patients with hypertension aged 16 or over and who
  have not attained the age of 75 who score 'less than active' on GPPAQ in the
  preceding 12 months, who also have a record of a brief intervention in the preceding
  12 months (NM37).

The indicators both showed high rates of intervention delivery at 76% for HYP004 (General Practice Physical Activity Questionnaire) (GPPAQ) physical activity assessment) and 86% for HYP005 (brief intervention if less than active following GPPAQ assessment) in England.

NICE is currently piloting an indicator for the potential inclusion in the 2017/18 QOF:

The percentage of patients with a 10% or greater 10-year CVD risk, identified in the
last 15 months, given lifestyle advice in relation to smoking, diet, physical activity,
alcohol consumption and weight management, within 90 days of the date of the
elevated risk score.

Data from the Health Improvement Network (THIN) database\* shows that the in-year prevalence for adult patients (>18yrs) in England classed as inactive and who received exercise advise was 24.6% in 2014 (post publication of PH44) compared to 7.6% in 2012 (pre-publication of PH44) with a slight increase in the total number and percentage of those

PH41 GE paper April 2016

<sup>\*</sup>Copyright © 2015, Re-used with the permission of The Health and Social Care Information Centre. All rights reserved.

identified as inactive (0.7% to 0.8%). Similar results were seen for adult patients classed as moderately inactive with 15.2% in 2014 compared to 4% in 2012 receiving exercise advice. Recommendation 1 and 2 of PH44 both recommend that read codes should be utilised for recording patient assessment and exercise outcomes\*.

## 7 Anti-discrimination and equalities considerations

None identified.

## 8 Implications for other NICE programmes

This guideline relates to a Quality Standard on QS84 Physical activity: encouraging activity in all people in contact with the NHS (2015). As the current surveillance review recommendation is to not update the guideline, there should be no impact on the Quality Standard.

#### 9 Discussion

The PHSCC Surveillance and Methodology team recommend that <a href="Physical activity: brief">Physical activity: brief</a> advice for adults in primary care (PH44) does not require an update at this time, but should be refreshed with references to relevant NICE guidelines published since May 2013 (Behaviour change: individual approaches, Maintaining a healthy weight and preventing excess weight gain among adults and children)

 Evidence from the literature searches, topic experts' feedback (published and ongoing research) and the initial intelligence gathering (recently published and on-going trials, related NICE guidelines and policy) indicates that none of the recommendations could be described as incorrect or necessarily requiring updating at this point in time.

#### 10 Surveillance Recommendation

GE is asked to consider the proposal to not update the recommendations in the guideline. GE is asked to note that this 'no update' proposal will not be consulted on.

Gillian Leng, Director, Health & Social Care
Fiona Glen, Programme Director, Public Health & Social Care Centre

Beth Shaw, Associate Director, Surveillance and Methods Peter O'Neill, Senior Technical Advisor, Surveillance and Methods Katy Harrison, Senior Technical Analyst, Surveillance and Methods

### Appendix 1

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
Recommendation 1 Identifying adults who are inactive evidence statements PA8, PA9, PA12, PA16, PA20; IDE		
A RCT <sup>1</sup> which assessed whether the use of electronic tablets to provide patients (n=173) with immediate, personalised, guideline-based feedback regarding tobacco use, physical activity (PA), and health-related quality of life (HRQoL) prior to the clinical encounter would encourage patients to initiate discussions regarding these topics with their primary care physician was identified. Compared to controls there was no difference in patient reports of initiating discussions regarding smoking, physical activity or physical HRQoL.	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	New evidence was identified that does not have an impact on the recommendation.  Recommendation 1 highlights how to identify adults who are not currently meeting the UK physical activity (PA) guidelines, suggests which validated tools to use, recording outcomes and encouraging active individuals to maintain their PA levels  The new evidence <sup>1</sup> indicates that the use of tablets did not aid patients in initiating discussions with their primary care physician. This intervention is currently not recommended within PH44.
Recommendation 2 Delivering and following up on brief advice		

# evidence statements PA1, PA8, PA9, PA16, PA18, PA19, PA20; IDE

Seven studies including 3 systematic reviews<sup>2-4</sup> and 4 RCTs<sup>5-8</sup> that have addressed the effectiveness of brief advice for physical activity (PA) in primary care settings were identified.

#### **Effectiveness**

A Cochrane review<sup>3</sup> including 10 studies (n=6292) compare the effectiveness of face-to-face interventions for PA promotion in community dwelling adults (aged 16 years and above) with a control exposed to placebo or no or minimal intervention. Interventions were effectivities at increasing self-reported PA at 1 year.

A number of studies were highlighted by the experts that | New evidence was identified that does not have an have not been included in this surveillance review as they are either outside the scope of PH44: referral for exercise <sup>9-12</sup>, exercise programmes <sup>13-15</sup>, not primary care based<sup>16</sup>, epidemiological studies<sup>17-22</sup>, designed for specific conditions (tertiary prevention)<sup>23-25</sup>, not related to physical activity<sup>2è-34</sup>, or where protocols for on-going studies with no results<sup>35</sup>.

Additionally, experts highlighted 2 interventions that had shown potential cost savings. These included the STarT Back Tool for back pain and getting people back to work

impact on the recommendation.

The findings from the 3 systematic reviews<sup>2-4</sup> support the content of recommendation 2, as they highlight the effectiveness of providing brief advice/counselling for physical activity, and that this should be tailored to meet the individual's needs. However, 2 RCTs<sup>7,36</sup> indicated that delivery of PA brief advice by community nursing and practice nurses did not result in behavioural change and increased PA.

#### Summary of new evidence from 2-year surveillance Summary of new intelligence from 2-year **Impact** surveillance There was some indication that most effective and the implementation of the Mosaics study for interventions were those that offered both individual and Osteoarthritis. However both of these are interventions With regards to delivery of the brief advice 1 systematic group support for changing PA levels using a tailored are based on referral for exercise hence outside scope review<sup>4</sup> (including 1 study) indicates that face-to-face of PH44. approach. versus remote or web are equally effective. No defined mode of delivery is specified within PH44 and as such Likewise a systematic review <sup>4</sup> of 21 trials which this one study provides limited evidence that either face Initial intelligence gathering indicated that a number of to face or remote advice may be used. evaluated the evidence for the effect of interventions to guidelines have published recommendations since the promote PA in adults (55 to 70 years), focusing on publication of PH44 that could be cross referred to studies that reported long-term effectiveness (> 12 PH44 indicates that brief advice can be delivered either when the guideline is next refreshed: months) was identified. The majority of interventions opportunistically or as part of a planned session. Maintaining a healthy weight and preventing were multimodal and provided physical activity and Evidence from one study<sup>8</sup> that utilised a vaccination excess weight gain among adults and children lifestyle counselling. The study reported that many programme to offer lifestyle support (including PA) Recommendation 3 Encourage physical activity interventions (not specified) were effective at 12 months supports this recommendation as this been an effective habits that increase energy expenditure but not at 24 months. approach. Behaviour change: individual approaches which makes recommendations on individual-Web v face to face A number of studies 9-35 were highlighted and references level interventions aimed at changing health-A second Cochrane review<sup>2</sup> which included 1 study provided by topic experts however none directly damaging behaviours among people aged 16 (n=225) assessed the effectiveness of face-to-face impacted the recommendations and the majority where or over. It includes a range of approaches, from versus remote and web 2.0 interventions for PA outside of the scope (exercise/physiotherapy referral single interventions delivered as the promotion in community dwelling adults (aged 16 years interventions). opportunity arises to planned, high-intensity and above) was identified. This study indicated that interventions that may take place over a there was no difference between the remote and web A RCT<sup>5</sup> which examined the addition of extra sessions number of sessions. The behaviours covered 2.0 versus face-to-face intervention on cardio-respiratory to sustain increases in PA following brief advice include physical activity. The recommendations fitness after the PA intervention. indicates that this is not effective or cost effective. This cover policy and strategy, commissioning, is in line with the evidence used within PH44 and planning, delivery, training and evaluation of Opportunistic delivery supports the recommendations to only follow up with individual-level behaviour change interventions. A cluster RCT<sup>8</sup> which assessed opportunistic individuals when there is another appointment or They also cover behaviour change techniques,

the maintenance of change and organisational

and national support.

opportunity.

Behaviour change: individual approaches (2014) NICE

change techniques that should be used in the design of

quideline PH49 provides guidance on the behaviour

individualised (20 minute) counselling with longer term

support for healthy lifestyle approaches including PA in young women (n = 3,059) was identified. The study

found that the solution-focused brief therapy

intervention, made a small (7%), long-term overall

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
improvements in behaviours concerning physical activity.  Delivery by nurses  A quasi-RCT <sup>6</sup> which investigated the impact of providing a brief lifestyle intervention in routine community nursing practice to 30-80 years old referred to the nursing service (n=804). The intervention showed no difference in reported PA or other lifestyle behaviours compared to control at 6 months. Although the study indicated that there was a shift towards greater readiness to change in those who were physically inactive and received the intervention compared to the comparison group.  A cluster RCT <sup>7</sup> of general practice patients (n=315) found that an intervention delivered by practice nurses to increase walking based on Theory of Planned Behavior (TPB) constructs did not increase: perceived behavioural control, intention, attitude or walking behaviour compared to control.  Additional booster sessions  A RCT <sup>5</sup> and cost-effectiveness evaluation of 'booster' interventions (motivational interviewing style, either face to face 'full' or by telephone 'mini') to sustain increases in PA in middle-aged adults (n=282) following brief advice was identified. The study which was conducted in deprived urban areas of UK found that the additional booster sessions did not alter objective physical active measured levels compared to control. Two alternative		<ul> <li>Impact</li> <li>physical activity interventions. PH44 could benefit from cross referral to recommendation7-10 within PH49 when PH44 is refreshed.</li> <li>Recommendation 7 <u>Use proven behaviour change techniques when designing interventions</u></li> <li>Recommendation 8 <u>Ensure interventions meet individual needs</u></li> <li>Recommendation 9 <u>Deliver very brief, brief, extended brief and high intensity behaviour change interventions and programmes</u></li> <li>Recommendation 10 <u>Ensure behaviour change is maintained for at least a year</u></li> </ul>
modelling approaches both suggested that the interventions were not likely to be cost-effective.		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
Recommendation 3 Incorporating brief advice in comevidence statements PA12, PA15, PA16, PA23, PA	_	
No evidence identified	Initial intelligence gathering identified the following:  Behaviour change: individual approaches ( 2014) NICE guideline PH49 specifically recommends in recommendation 9 (Deliver very brief, brief, extended brief and high intensity behaviour change interventions and programmes ) that commissioners and providers of behaviour change services should:  Encourage health, wellbeing and social care staff in direct contact with the general public to use a very brief intervention to motivate people to change behaviours that may damage their health. The interventions should also be used to inform people about services or interventions that can help them improve their general health and wellbeing.  Encourage staff who regularly come into contact with people whose health and wellbeing could be at risk to provide them with a brief intervention.	No new evidence was identified which may change current recommendations  Behaviour change: individual approaches (2014) NICE guideline PH49 was published after PH44 and makes specific recommendations relating to the provision of behavioural change interventions (including physical activity interventions), it is recommended that PH44 should be refreshed with the addition of a cross-reference to recommendation 9 of PH49.
Recommendation 4 Systems to support brief advice evidence statements PA11, PA16, PA23, PA27, PA	A30; IDE	
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	No new evidence was identified which may change current recommendations
Recommendation 5 Providing information and training evidence statements PA8, PA9, PA10, PA12, PA1		
No evidence identified	No committee feedback was provided by the expert	No new evidence was identified which may change

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
	questionnaire that related to this area. No additional intelligence indicated that this area required updating.	current recommendations
Research recommendations		
How does the duration and frequency of brief advice influence its effectiveness and cost effectiveness? For example, do 'micro interventions' of less than 1–2 minutes have an impact on physical activity?		
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None
What impact does brief advice to promote physical activity have on mental wellbeing?		
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None
What impact does the delivery of brief advice by different primary care practitioners – for example, GPs and practice nurses – have on physical activity? For example, is the perceived value of the information greater when provided by a particular primary care practitioner?		
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None
How do different types of training help primary care professionals identify people who are inactive and deliver brief advice? What type of training is most effective?		
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
How can brief advice be tailored to have the greatest gender, socioeconomic status or with a pa	impact on specific groups? For example, can it be taile articular disability?	ored to meet the needs of people of a particular
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None
Do primary care practitioners use NICE guidance who	en encouraging people to be physically active?	
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None
Are the Department of Health's 'Let's get moving' physical activity care pathway and the general practice physical activity questionnaire (GPPAQ) both commonly used in primary care? How do primary care practitioners view GPPAQ and, if they do not use it, why not?		
A qualitative study <sup>37</sup> on the use of the General Practice Physical Activity Questionnaire (GPPAQ) in 4 general practices, within socio-economically disadvantaged areas of Northern Ireland suggests that GPs and nurses found the GPPAQ itself an easy tool with which to assess PA levels in general practice and feasible to use in a range of electronic record systems but integration within routine practice is constrained by time and complex consultations.	Initial intelligence gathering identified the following:  Department of Health (2012) Let's get moving: commissioning guidance – a physical activity care pathway. The Lets Get Moving approach is based on the recommendations NICE public health guidance Four commonly used methods to increase physical activity 2006 (PH2), which endorses the delivery of brief interventions for physical activity in primary care as being both clinically effective and cost-effective in the long term. This has since been update by:  • Walking and cycling (2012) PH41  • Physical activity: brief advice for adults in primary care (2013) PH44  • Exercise referral schemes to promote physical activity (2014) PH54	No new evidence was identified which may change current recommendations  The study by Heron et al which was conducted before the publication of PH44 and supports the use of a tool to assess PA in primary care as recommended within PH44. The initial intelligence gathering has identified a commissioning guide. The implementation team will be notified of this resource.

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance	Impact
What infrastructures and systems help increase the number of assessments of physical activity undertaken and the delivery of brief advice? (Examples studied could include integration of brief advice into long-term disease management strategies, or the use of incentive strategies.)		
No evidence identified	No committee feedback was provided by the expert questionnaire that related to this area. No additional intelligence indicated that this area required updating.	None

- 1. Hess R, Tindle H, Conroy MB et al. (2014) A Randomized Controlled Pilot Trial of the Functional Assessment Screening Tablet to Engage Patients at the Point of Care. Journal of General Internal Medicine 29:1641-1649.
- 2. Richards J, Thorogood M, Hillsdon M et al. (2013) Face-to-face versus remote and web 2.0 interventions for promoting physical activity. Cochrane Database of Systematic Reviews.
- 3. Richards J, Hillsdon M, Thorogood M et al. (2013) Face-to-face interventions for promoting physical activity. Cochrane Database of Systematic Reviews .
- 4. Hobbs N, Godfrey A, Lara J et al. (2013) Are behavioral interventions effective in increasing physical activity at 12 to 36 months in adults aged 55 to 70 years? A systematic review and meta-analysis. BMC Medicine 11.
- 5. Goyder E, Hind D, Breckon J et al. (2014) A randomised controlled trial and cost-effectiveness evaluation of 'booster' interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods. Health Technology Assessment 18:1-+.
- 6. Harris MF, Chan BC, Laws RA et al. (2013) The impact of a brief lifestyle intervention delivered by generalist community nurses (CN SNAP trial). Bmc Public Health 13.
- 7. Williams SL, Michie S, Dale J et al. (2015) The effects of a brief intervention to promote walking on Theory of Planned Behavior constructs: a cluster randomized controlled trial in general practice 253. Patient Education & Counseling 98:651-659.
- 8. Valve P, Lehtinen-Jacks S, Eriksson T et al. (2013) LINDA a solution-focused low-intensity intervention aimed at improving health behaviors of young females: a cluster-randomized controlled trial95. Bmc Public Health 13:1044.
- 9. Hill J et al. (2011) A randomised controlled trial and economic evaluation of stratified primary care management for low back pain compared with current best practice: The STarT Back trial. Lancet 378:1560-1571.
- 10. Foster NE et al and IMPaCT Back Study team. (2014) Effect of stratified care for low back pain in family practice (IMPaCT Back): a prospective population-based sequential comparison. Ann Fam Med 12:102-111.

- 11. Foster NE et al. (2016) A multicentre, pragmatic, parallel group, randomised controlled trial to compare the clinical and cost-effectiveness of three physiotherapy-led exercise interventions for knee osteoarthritis in older adults: the BEEP trial protocol. BMC Musculoskeletal Disorders 15:254.
- 12. Roddy E et al. (2016) Subacromial impingement syndrome and pain: protocol for a randomised controlled trial of exercise and corticosteroid injection (the SUPPORT trial). BMC Musculoskeletal Disorders 15:81.
- 13. Baker Pet al. (2015) Community wide interventions for increasing physical activity. Cochrane Database of Systematic Reviews CD008366.
- 14. Richards J FC. (2016) Sport-for-development interventions: who do they reach and what is their potential for impact on physical and mental health in low-income countries? Journal of Physical Activity and Health, 10:929-31.
- 15. Foster C, Richards J, Thorogood M et al. (2013) Remote and web 2.0 interventions for promoting physical activity. Cochrane Database of Systematic Reviews .
- 16. Wynne-Jones G C et al. (2014) Absence from work and return to work in people with back pain: a systematic review and meta-analysis. Occup Environ Med 71:448-456.
- 17. SheikhL et al. (2014) Osteoarthritis and the rule of halves. Osteoarthritis Cartilage 22:535-539.
- 18. Kuo CFet al. (2014) Comorbidities in patients withgoutprior to and following diagnosis: case-control study. Ann Rheum Dis 14.
- 19. Roughley MJ et al. (2015) Gout and risk of chronic kidney disease and nephrolithiasis: meta-analysis of observational studies. Arthritis Research & Therapy 17.
- 20. Prior JA et al. (2015) Gout, anxiety, and depression in primary care: a matched retrospective cohort study. Scandinavian Journal of Rheumatology 44:257-258.
- 21. Thomas MJ et al. (2015) The epidemiology of symptomatic midfoot osteoarthritis in community-dwelling older adults: cross-sectional findings from the Clinical Assessment Study of the Foot. Arthritis Research & Therapy 17.

- 22. Jordan KP. (2014) International comparisons of the prevalence of health care for musculoskeletal disorders using population-based health care data from England and Sweden. Ann Rheum Dis 73:212-218.
- 23. Stack RJ et al. (2012) Delays in help seeking at the onset of the symptoms of rheumatoid arthritis: a systematic synthesis of qualitative literature. Ann Rheum Dis 71:493-497.
- 24. Edwards JJ et al. (2014) Quality of Care for Osteoarthritis: the effect of a point-of-care consultation recording template. Rheumatology 411.
- 25. Simons G et al. (12015) A qualitative investigation of the barriers to help-seeking among members of the public presented with symptoms of new-onset rheumatoid arthritis. J Rheumatol 42:585-592.
- 26. Stack RJet al. (2014) The development and initial validation of a questionnaire to measure help-seeking behaviour in patients with new onset rheumatoid arthritis. Health Expect. 10.
- 27. PStack RJ et al. (2014) Symptom complexes in patients with seropositive arthralgia and in patients newly diagnosed with rheumatoid arthritis: a qualitative exploration of symptom development. Rheumatology 53.
- 28. Stack RJ et al. (2014) General practitioners' perspectives on campaigns to promote rapid help-seeking behaviour at the onset of rheumatoid arthritis. Scand J Prim Health Care 32:37-43.
- 29. Stack RJ et al. (2013) Symptom complexes at the earliest phases of rheumatoid arthritis: a synthesis of the qualitative literature. Arthritis Care Res 65:1916-1926.
- 30. Yu D et al. (2015) Annual consultation incidence of osteoarthritis estimated from population-based health care data in England. Rheumatlogy 54:2051-2060.
- 31. Croft P. (2015) The science of clinical practice: disease diagnosis or patient prognosis? Evidence about "what is likely to happen" should shape clinical practice. Bmc Medicine 13.
- 32. Hancock AT. (2014) Risk of vascular events in patients with polymyalgia rheumatica. Can Med Asso Journal 186:495-501.

- 33. Clarson LE. (2015) Increased risk of vascular disease associated with gout: a retrospective, matched cohort study in the UK Clinical Practice Research Datalink. Annals of the Rheumatic Diseases 74:642-647.
- 34. Bedson J. (2013) The effectiveness of national guidance in changing analgesic prescribing in primary care from 2002 to 2009: an observational database study. Eur J Pain 17:434-443.
- 35. Bishop A W-J. (2014) Rationale, design and methods of the Study of Work and Pain (SWAP): a cluster randomized controlled trial testing the addition of a vocational advice service to best current primary care for patients with musculoskeletal pain. BMC Musculoskeletal Disorders, 15:232.
- 36. Harris MF, Fanaian M, Jayasinghe UW et al. (1-10-2012) A cluster randomised controlled trial of vascular risk factor management in general practice Medical Journal of Australia 197:387-393.
- 37. Heron N, Tully MA, McKinley MC et al. (2014) Physical activity assessment in practice: a mixed methods study of GPPAQ use in primary care. Bmc Family Practice 15.