Additional abstracts from the *e_Musk* meeting

1. Conservative treatment options for carpal tunnel syndrome: a systematic review of randomised controlled trials

Annette A M Gerritsen[1], Marc C T F M de Krom[2], Margaretha A Struijs[3], Rob J P M Scholten[4], Henrica C W de Vet[1], Lex M Bouter[1]

[1] Institute for Research in Extramural Medicine, Vrije Universiteit, Amsterdam, Depts of Neurology, [2] Maastricht University Hospital, Maastricht and 3 BovenIJ Hospital, Amsterdam, [4] Dutch Cochrane Center / Dept of Clinical Epidemiology and Biostatistics, Academic Medical Center, University of Amsterdam, The Netherlands

Correspondence: Annette Gerritsen, MSc, Institute for Research in Extramural Medicine, Vrije Universiteit, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands. Tel: +31 20 4448088. Fax: +31 20 4448181. E-mail: aam.gerritsen.emgo@med.vu.nl

Carpal tunnel syndrome (CTS) is a common disorder, for which various conservative treatment options are available.

Objectives: To determine the efficacy of the various conservative treatment options for relieving the symptoms of CTS.

Study design: Systematic review of randomised controlled trials.

Methods: Computer-aided searches of MEDLINE (1/1966 to 3/2000), EMBASE (1/1988 to 2/2000) and the Cochrane Controlled Trials Register (2000, issue 1) were conducted, together with reference checking. Included were randomised controlled trials evaluating the efficacy of conservative treatment options in a study population of CTS patients, with a full report published in English, German, French or Dutch. Two reviewers independently selected the studies. 14 randomised controlled trials were included in the review. Assessment of methodological quality and data-extraction was independently performed by two reviewers. A rating system, based on the number of studies and their methodological quality and findings, was used to determine the strength of the available evidence for the efficacy of the treatment.

Results: Diuretics, pyridoxine, NSAIDs, yoga and laser-acupuncture seem to be ineffective in providing short-term symptom relief (varying levels of evidence) and steroid injections seem to be effective (limited evidence). There is conflicting evidence for the efficacy of ultrasound and oral steroids. For providing long-term relief from symptoms there is limited evidence that ultrasound is effective, and that splinting is less effective than surgery.

Conclusions: There is still little known about the efficacy of most conservative treatment options for CTS. To establish strong evidence more high-quality trials are needed.

2. Surgical treatment options for carpal tunnel syndrome: a systematic review of randomised controlled trials

Annette A M Gerritsen[1], Bernard M J Uitdehaag[2], Dick van Geldere[3], Rob J P M Scholten[4], Henrica C W de Vet[1], Lex M Bouter[1]

[1] Institute for Research in Extramural Medicine, Vrije Universiteit, Amsterdam, 2 Dept of Neurology, Academic Hospital Vrije Universiteit, Amsterdam, [3] Dept of Surgery, Amstelveen Hospital, Amstelveen, [4] Dutch Cochrane Centre / Dept of Clinical Epidemiology and Biostatistics, Academic Medical Centre, University of Amsterdam, The Netherlands

Correspondence: Annette Gerritsen, MSc, Institute for Research in Extramural Medicine, Vrije Universiteit, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands. Tel: +31 20 4448088. Fax: +31 20 4448181. E-mail: aam.gerritsen.emgo@med.vu.nl

Carpal tunnel syndrome (CTS) is a common disorder, for which several surgical treatment options are available. However, there is no consensus on the most effective method of treatment.

Objectives: To compare the efficacy of the various surgical treatment options in relieving CTS symptoms and promoting return to work and/or activities of daily living (ADL).

Study design: Systematic review of randomised controlled trials.

Methods: Computer-aided searches of MEDLINE (1/1966 to 3/2000), EMBASE (1/1988 to 2/2000) and the Cochrane Controlled Trials Register (2000, issue 1) were conducted, together with reference checking. Included were randomised controlled trials evaluating the efficacy of surgical treatment options in a study population of CTS patients. Two reviewers independently selected the studies. 14 studies were included in the review. Assessment of methodological quality and data-extraction was independently performed by two reviewers. A rating system, based on the number of studies and their methodological quality and find-

ings, was used to determine the strength of the available evidence for the efficacy of the treatment.

Results: None of the alternatives to standard open carpal tunnel release (OCTR) seem to offer better relief from CTS symptoms. There is conflicting evidence that endoscopic carpal tunnel release results in earlier return to work/ADL than OCTR.

Conclusions: Standard OCTR still seems to be the preferred method of treatment for CTS, because it is just as effective as the alternatives, but technically less demanding, and therefore incurs a lower risk of complications and costs.

3. Randomised controlled trial of cementless and cemented Press-Fit Condylar total knee arthroplasty—a ten-year survival analysis

F M Khaw[1], L M G Kirk[2], P J Gregg[3]

[1] Dept of Trauma and Orthopaedic Surgery, University of Newcastle upon Tyne, Depts of Orthopaedic Surgery, [2] Freeman Hospital, Newcastle upon Tyne, and 3 South Tees Acute Hospitals NHS Trust Middlesbrough General Hospital, UK

Correspondence: F M Khaw, Dept of Trauma and Orthopaedic Surgery, University of Newcastle upon Tyne, The Medical School,Framlington Place, Newcastle upon Tyne NE2 4HH, United Kingdom

Cementless fixation for total knee replacement (TKR) has been proposed as an alternative to cemented for several reasons, the most important being the possibility of increased survival.

Objectives and study design: The purpose of this unique prospective randomised controlled trial was to compare the long-term survival rates of cementless versus cemented TKR.

Methods: A consecutive series of patients was randomised to receive either cemented (219 patients with 277 TKR) or cementless (177 patients with 224 TKR) Press-Fit Condylar (PFC®) TKR. There were no significant differences in age, gender and diagnosis between the two groups. The prosthesis used was the posterior-cruciate-retaining PFC® TKR and the patella was never resurfaced primarily. Independent clinical review was performed at regular intervals after surgery. For survival analysis, the endpoint was defined as revision of any implant component. Logrank analysis was used to compare ten-year survival rates.

Results: Patients were reviewed at 2 to 11.7 years (mean 6.31). All patients were contacted and no patient was lost to follow-up. There were seven revisions in the cemented group (ten-year survival 96.5% (95%CI 90.9%–98.7%)) and six in the cementless group (ten-year survival of 96.6% (95%CI 89.6%–98.9%)). There was no significant difference in the survival between the two groups.

Conclusions: We have shown that long-term survival of the PFC® TKR is equally good irrespective of method of fixation. As cementless implants are more expensive than their cemented counterparts, the use of cemented implants can significantly influence health resource planning.

4. Age-related changes in quality of life induced by anterior cruciate ligament lesions: Preoperative evaluation with the MOS 36-item short-form health survey (SF-36)

L Lucania, S Lupparelli, A Beccarini, C Fedeli, S De Marco, S Cecconi

Centro Ortopedico Umbro, Via Solatia 3, 06121 Perugia, Italy.
E-mail: centrortopedicoumbro@libero.it

Purpose: Evaluating general health status in patients over and under 35 years affected by anterior cruciate ligament (ACL) lesion using the MOS 36-item short-form health survey (SF-36).

Materials and methods: There were 69 patients under 35 years (group 1: 48 men and 21 women, mean age 26 ± 5 SD years) and 21 patients over 35 years (group 2: 14 men and 7 women, mean age 43 ± 6 SD years), affected by ACL lesion as confirmed by arthroscopy. All patients were treated with arthroscopically assisted ACL reconstruction. The SF-36 were administered preoperatively. The SF-36 preoperative scores were compared with an Italian age-matched healthy control group (n = 367 for group 1 and n = 373 for group 2) as published in the literature (1). A comparison among each SF-36 domain between group 1 and group 2 was also performed. One-sample t-test was used for statistics ($P < 0.05$).

Results: The mean pre-operative SF-36 domain scores for group 1 were: PF 80.1 ± 17.6; RF 44.0 ± 41.3; BP 61.2 ± 22.0; GH 76.9 ± 17.2; VT 63.2 ± 16.8; SF 70.0 ± 23.3; RE 56.0 ± 42.6; MH 66.0 ± 19.9. All domain scores but GH ($P < 0.6$) significantly differed from an age-matched healthy control group ($P < 0.05$). The mean pre-operative SF-36 domain scores for group 2 were: PF 62.1 ± 25.8; RF 40.5 ± 39.9; BP 53.5 ± 21.1; GH 70.8 ± 14.4; VT 55.7 ± 16.2; SF 63.4 ± 23.2; RE 52.8 ± 44.9; MH 64.2 ± 15.7. All domain scores but GH ($P < 0.9$) and MH ($P < 0.4$) significantly differed from an age-matched healthy control group ($P < 0.05$). No significant differences among domains between group 1 and group 2 were noted except for PF, which was lower in group 2 ($P < 0.000$).

Conclusion: Patients with ACL lesion, whether they are under or over 35 years, exhibit a significant worsening of their general health status in the absence

of any other comorbidity factor when compared to age-matched healthy individuals. Patients over 35, however, would show a significant worse perception of their physical functioning following ACL rupture. These preliminary results might suggest we should exploit SF-36 when evaluating indications for ACL reconstruction in patients over 35. These results and latest reports indicating good clinical results in this age range (2–4) would not set age itself as a limiting factor contraindicating ACL reconstruction in middle-aged patients.

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5. The trent regional arthroplasty study—experiences with a hip register

D Fender[1], WM Harper[2], PJ Gregg[3]

[1] Northumbria Healthcare NHS Trust, [2] Leicester Royal Infirmary, Leicester, and [3] South Tees Acute Hospitals NHS Trust, Middlesbrough General Hospital, U.K.

Correspondence: P J Gregg, Consultant Orthopaedic Surgeon, South Tees Acute Hospitals NHS Trust, Middlesbrough General Hospital, Ayresome Green Lane, Middlesbrough, Cleveland TS5 5AZ U.K.

The Trent Regional Arthroplasty Register was established in 1990 and is the only Register of its kind in the United Kingdom. The purpose of this study was to perform a five-year assessment of the workings of the registry and the results of Charnley total hip replacement (THR) carried out in the Trent Region.

Methods: All primary THRs performed in the Trent region were recruited to the Register following completion of a simple single–page form at the time of operation. Operating-theatre records were checked for inaccuracies. A five-year assessment of the workings of this registry and the results of Charnley THRs, in this cohort, is reported.

Results: Over 97% of THRs performed in the Trent Region in 1990 were registered. Inaccuracies were found in less than 1.8%. On requesting a five-year review, 85.9% of 2,111 patients responded and 66.8% agreed to an assessment. Outcome data was available for 1,080 hips (90%) and 499 had an independent clinical and radiological assessment.

By 5 years, the rate of aseptic loosening was 2.3%, deep infection 1.4%, dislocation 5% and revision 3.2%. Radiological assessment of 499 THRs revealed gross failure in 5.2%. The combined failure-rate of nearly 9% is higher than those published from specialist centres but it is probably more representative of the norm.

Conclusions: Our study supports the need for a National Register of THRs and emphasises that all implants should be monitored. It also suggests that the results of such surgery, in a general setting, may not be as good as expected.

6. Anglian audit of hip fracture II

C Freeman[1], C Todd[1], C Camilleri-Ferrante[2], C Laxton[3], P Murrell[1], C Palmer[1], M Parker[4], B Payne[5] and N Rushton[6]

[1] Dept Public Health and Primary Care, University of Cambridge, [2] Anglia Clinical Audit and Effectiveness Team, Institute of Public Health, Cambridge, [3] General Practice, Lewes, East Sussex, [4] Peterborough Hospital NHS Trust, Peterborough, [5] Norfolk and Norwich Health Care NHS Trust, Norwich, and [6] Orthopaedic Research Unit, Addenbrookes Hospital and University of Cambridge, U.K.

In 1992, an Anglian audit of hip fracture demonstrated significant differences between hospitals in mortality, pressure sores and length of stay.

Objective: Anglian Audit of Hip Fracture II investigates attainment of standards, differences in care between hospitals and changes in quality of services between 1992 and 1997.

Study design: An prospective audit of processes and outcomes of care with 90-day follow up.

Methods: Re-audit involved 9 hospitals and recruited 898 consecutive patients. Patients were interviewed in hospital and at 90 days to assess functional and residential status. In-hospital data on care and outcome were obtained from clinical records. General practitioners reported 4 month post-discharge complications.

Results: Patients admitted to each hospital were similar in age (mean: 82 years) and sex (79% female). 96% patients were treated surgically. There was substantial increase in the use of pharmaceutical thromboembolic-prophylaxis (45% to 81%); three hospitals had changed their routine practice. Mobilisation within 48 hours of surgery, which was associated with a halving in risk of death (OR 0.56), had also increased (56–70%). There were reduced levels

of pneumonia, wound infection, pressure sores and fatal pulmonary embolism. There was no change in the three-month mortality rate (19%) and wide inter-hospital differences were no longer evident. At 90 days 54% of survivors needed more help with daily activities.

Conclusions: Despite changes in processes of care between audits, we no longer observe any difference in mortality between hospitals and this could not easily be explained. Nonetheless, audit is demonstrably useful in the care of elderly orthopaedic patients, but must be continuous if standards are to be maintained or improved.

7. Bed rest or staying active for low back pain

Kåre B Hagen, Gunvor Hilde, Gro Jamtvedt and Michael Winnem

Correspondence: Dr Kåre Birger Hagen, Health Services Research Unit, National Institute of Public Health, P.O. Box 4404 Torshov, N-0403 Oslo, Norway. Tel: +4722042371. Fax: +4722042595. E-mail: k.b.hagen@labmed.uio.no

Low back pain is a common reason for consulting a health care provider, and advice on daily activities constitutes an important part in the primary care management of low back pain.

Objectives: To assess the effects of advice to rest in bed for patients with acute low back pain (LBP) or sciatica.

Study design: Two systematic reviews within the framework of the Cochrane Collaboration Back Review Group. All randomized studies available in systematic searches (electronic databases, contact with authors, reference lists) were included. Two reviewers independently selected trials for inclusion, assessed the validity of included trials and extracted data. Investigators were contacted to obtain missing information.

Results: Four trials with a total of 491 patients compared bed rest with advice to stay active, and overall the results were heterogeneous. Overall results from two high quality studies indicate no difference in pain intensity at three weeks follow-up [Standardized Mean Difference 0.0 (95%CI: -0.3, 0.2)], and a small difference in functional status in favour of staying active [Weighted Mean Difference 3.2 (on a 0–100 scale) (95%CI 0.6, 5.8)]. One of the high quality trials reported no differences in length of sick leave, while the other found a significant difference in favor of staying active.

Conclusion: Bed rest compared to advice to stay active will at best have small effects, and at worst might have small harmful effects on acute LBP. Overall, the best empirical evidence shows that differences in effects of advice to stay in bed compared with advice to stay active are small for patients with low back pain with or without sciatica. This conclusion is not concordant with other 'evidence' (i.e. basic sciences, most clinical guidelines in the Western world and expert opinions), and might be a problem for the credibility of the Cochrane Review process in this field.

8. A randomised controlled trial of two strategies to improve the use of active sick leave for patients with low back pain

Inger B Scheel, Kare Birger Hagen, Jeph Herrin, Andrew D Oxman

National Institute of Public Health, Oslo, Norway
Correspondence: Inger B Scheel, Health Services Research Unit, National Institute of Public Health, Post Box 4404 Torshov, 0403 Oslo, Norway. Fax: +47 22 04 25 95. Tel: +47 22 04 23 69. Email: i.b.scheel@labmed.uio.no

Active Sick Leave (ASL) is a health insurance policy introduced in 1993 to encourage people on sick leave to return to modified work.. The employee's wages are paid by the National Insurance Agency, allowing the employer to hire a full time replacement. However, by 1995 the ASL was used in less than 1% of the eligible sick leave cases.

Objectives: To evaluate the effectiveness of two strategies to improve the use of active sick leave for low back pain (LBP) patients.

Study design: Cluster-randomised controlled trial

Methods: 65 municipalities in three counties in Norway, were randomly assigned to a passive intervention, a pro-active intervention or a control group. The interventions were targeted at patients on sick leave for LBP for more than 16 days (n=5006), their general practitioners (GPs), employers and local insurance officers. The passive intervention included a reminder to GPs about ASL on the obligatory sick leave form, a standardised agreement/plan about ASL, targeted information, and a desktop summary of clinical practice guidelines emphasising the importance of advising LBP patients to stay active. The pro-active intervention included these elements plus a continuing education workshop for GPs and a resource person to facilitate the use of ASL. Outcome measure was the proportion of eligible patients that used ASL

Results: ASL was used significantly more in the pro-active intervention municipalities (16.9%) compared to the passive intervention (9.6%) and control municipalities (10.8%, p=0.026)

Conclusions: A passive intervention that addressed identified barriers to the use of ASL did not increase its use. Pro-active follow-up of patients by the resource people did.

9. Comorbidity-related outcome in surgically treated patients with symptomatic lumbar disc herniation—a preliminary study

S Lupparelli, L Lucania, A Beccarini A, G Marchetti, A Valassina, S Cecconi

Centro Ortopedico Umbro, Via Solatia 3, 06121 Perugia, Italy. E-mail: s.lupparelli@caltanet.it

A prospective non-randomised patient-oriented study using the MOS 36-Item Short-Form questionnaire (SF-36).was performed to assess whether comorbidities may affect surgical outcome in patients with symptomatic lumbar disc herniation undergoing standard discectomy

Materials and methods: 27 consecutive patients were enrolled for the study. Inclusion criteria were a symptomatic disc herniation as confirmed with CT and/or MR with indications to surgical treatment. The exclusion criterion was prior spine surgery. Mean duration of symptoms was 5 months. Patients were divided into two groups. Group 1 (15 patients, 10 men and 5 women) mean age 46 years) included those with no comorbidities other than back pain. Group 2 (12 patients, 8 men and 4 women, mean age 48 years) comprised patients with additional comorbidities. The validated Italian version of the SF-36 was administered the day before surgery and at 12 months postoperatively. The Comorbidity Index (CI) was assessed in all patients before surgery and at 12 months post-operatively. Statistics used paired t-test to analyse pre- and post-operative SF-36 domain score variations. Pre- and post-operative SF-36 domain scores were compared with those of a healthy age-matched normative group (n = 351) as published in the Literature using one-sample t-test. Differences between Group1 and Group 2 were assessed with one-sample t-test. Significance level was pre-set at $P < 0.05$.

Results: The CI in Group 1 before surgery was 5.6 ± 2.9 SD. The SF-36 domain score variations from the time before surgery to 12 months after surgery were: PFpre 40.3 ± 26.3 SD, PFpost 85.3 ± 14.6 SD ($P < 0.000$); RPpre 10.0 ± 26.4 SD, RPpost 76.7 ± 37.2 SD ($P < 0.000$); BPpre 17.4 ± 18.2 SD, BPpost 81.3 ± 20.1 SD ($P < 0.000$); GHpre 63.6 ± 13.8 SD, GHpost 70.6 ± 13.1 SD ($P < 0.01$); VTpre 33.3 ± 14.1 SD, VTpost 75.3 ± 12.3 SD ($P < 0.000$); SFpre 37.6 ± 19.9 SD, SFpost 89.3 ± 12.3 SD ($P < 0.000$); REpre 15.5 ± 30.5 SD, REpost 82.2 ± 33.1 SD ($P < 0.000$); MHpre 38.4 ± 17.3 SD, MHpost 81.9 ± 10.2 ($P < 0.000$).

All domain scores before surgery but for GH (n.s.)were significantly lower in Group 1 than in the normative group. Post-operatively no significant difference was observed for PF, RP, BP, GH and RE compared to the normative group, whereas VT ($P < 0.01$) SF ($P < 0.04$) and MH ($P < 0.003$) were significantly higher than the normative group. The CI in Group 2 before surgery was 13.3 ± 6.1 SD. The SF-36 domain score variations from the time before surgery to 12 months after surgery were: PFpre 38.9 ± 24.2 SD, PFpost 87.9 ± 9.4 SD ($P < 0.000$); RPpre 2.1 ± 7.2 SD, RP post 60.4 ± 41.9 SD ($P < 0.000$); BPpre 18.7 ± 12.7 SD, BP post 75.3 ± 22.0 SD ($P < 0.000$); GHpre 59.2 ± 16.8 SD, GH post 73.8 ± 17.8 SD ($P < 0.01$); VTpre 37.6 ± 21.5 SD, VT post 68.8 ± 19.8 SD ($P < 0.000$); SFpre 36.7 ± 22.2 SD, SF post 81.4 ± 18.8 SD ($P < 0.000$); REpre 19.4 ± 38.8 SD, RE post 66.7 ± 40.3 SD ($P < 0.000$); MHpre 45.7 ± 25.2 SD, MH post 74.7 ± 21.3 ($P < 0.000$). All domain scores before surgery were significantly lower in Group 2 than in the normative group. No significant difference was observed post-operatively compared to the normative group except for the RP, which was significantly lower ($P < 0.009$).

No significant difference was observed pre- and postoperatively between Group 1 and Group 2 in any of the SF-36 domains.

Conclusions: The present study did not show any significant difference of surgical outcome related to the pre-operative CI. However, raw data would suggest lower domain scores in patients with a higher CI than in those with back-pain as the only comorbidity. Further analysis in a larger sample is therefore needed to test the hypothesis that a higher preoperative CI may affect the surgical outcome.

10. Cross-cultural adaption: How to do! The Roland-Morris Questionnaire for German speaking low back pain patients

Günther F. Wiesinger, Martin Nuhr, Michael Quittan, Gerold Ebenbichler, Richard Crevenna, Veronika Fialka-Moser

Dept of Physical Medicine and Rehabilitation, University of Vienna, Vienna General Hospital, Vienna, Austria

Correspondence: Dr. G. F. Wiesinger, Department of Physical Medicine and Rehabilitation, University of Vienna, Vienna General Hospital, Waehringer Guertel 18-20, A-1090 Vienna, Austria.
Tel: +43-1-40400-4330. Fax: +43-1-40400-5281.
E-mail: guenther.wiesinger@akh-wien.ac.at

Study design: Review of cross cultural adaption and cross-sectional psychometric testing and the procedure for the RMQ for German speaking low back pain patients

Objectives: To develop and validate a cross cultural version of the Roland-Morris Questionnaire (RMQ) for use in German speaking low back pain patients.

Summary of the background data: Clinical research related to the treatment of back pain would be enormously facilitated if a small number of patient-ori-

ented questionnaires became widely used. If the transposition of a questionnaire from its original cultural context is done by simple translation it is unlikely to be successful because of language and cultural differences. Therefore, a simple direct translation of a questionnaire from one language to another does not permit its use in clinical trials.

Methods: The instrument was translated and back translated, pre-tested and reviewed by a committee. The German version of the RMQ was tested in 125 patients with low back pain. The study was conducted at the Spa resort Senftenberg, Austria, which is visited by patients from all countries of German-speaking Europe. Reliability, concurrent and construct validity was assessed.

Results: Pearson's correlation coefficient for test-retest reliability of the German version was r = 0.82 (p = 0.0001); Cronbach's alpha was 0.81. The concurrent validity was r = 0.81 (RMQ/ pain rating; p = 0.0001), r = 0.48 (RMQ/ forward bending; p = 0.0001), and r = -0.47 (RMQ/ lateral bending; p = 0.0001). Correlation between the functional scales of the MOS SF-36 with the RMQ sum scores ranged from r = -0.29 (ROLEM; p = 0.0011) to r = -0.71 (PFI; p = 0.0001).

Conclusion: Since the German version of the RMQ seems to be reliable and valid for the assessment of the functional status in German speaking low back pain patients, the use of this translated instrument can be recommended in future clinical trials.

11. Teaching evidence-based practice in musculo-skeletal disorders

G Jamtvedt, K B Hagen

National Institute of Public Health, Oslo, Norway
Correspondence: Health Services Research Unit, National, Institute of Public Health, P.O. Box 4404 Nydalen , N-0403 Oslo, Norway.
Tel: +4722042347. Fax: +4722042595.
E-mail: gro.jamtvedt@folkehelsa.no

To bridge research and practice in the area of musculo-skeletal disorders students, health professionals and decision makers need attitudes and skills related to the five steps of Evidence-Based Practice; framing questions, finding evidence, critical appraisal, implementing and evaluation. These attitudes and skills can be achieved by educational programmes, workshops, web-based activity or by journal clubs. The first step in the teaching process should raise awareness of the importance of research findings. Teaching should be based on practice-related problems focusing on participant-directed methods. The model of the three- or four parted question is useful when teaching how to formulate answerable questions. Development of confidence and competence in using computer-based search procedures to identify relevant literature is also necessary. Teaching critical appraisal include assessing the validity and relevance of published papers by appraisal techniques. Useful checklists and teaching tools are developed by Critical Appraisal Skills Programme (CASP) in Oxford. Changing professional practice is a complex process where local practice pattern, habit and culture often may be stronger determinants of practice than evidence. Any attempt to bring about change should involve a discussion of barriers and motivators likely to influence a change. At The National Institute of Public Health in Norway a multidisciplinary team is set up to teach Evidence-Based Health Care. Workshops and courses lasting from ½ day up to one week are run regularly. During Nordic Workshop on How to Practice Evidence-Based Healthcare one group focusing on musculo-skeletal disorders are organised every year. Experiences from these workshops will be discussed.

12. The unbearable lightness of healthcare policy making: a description of a process aimed at giving it some weight

Inger B Scheel, Kare Birger Hagen, Andrew D Oxman

National Institute of Public Health, Health Services Research Unit, Oslo, Norway
Correspondence: Inger B Scheel, Health Services Research Unit, National Institute of Public Health, Post Box 4404 Torshov, 0403 Oslo, Norway. Fax: +47 22 04 25 95. Tel: +47 22 04 23 69. E-mail: i.b.scheel@labmed.uio.no

Active Sick Leave (ASL) is a health insurance policy aimed at encouraging activity and work instead of passive use of social insurance resources. Upon introduction in 1993, it had broad appeal among stakeholders and decision-makers, but the adoption-rate in the communities was minute. We were to design an implementation strategy to improve the use of ASL for back pain patients and to evaluate the implementation efforts.

Objectives: To ensure that the research we were undertaking would be valid, useful and likely to be used in policy decisions.

Study design: A structured process involving four important stakeholder organisation representatives (The National Insurance Administration, the National Confederation of Trade Unions, the Confederation of Norwegian Business and Industry and the Norwegian Medical Association) and two researchers.

Methods: Group meetings from January 1997 to September 1998 where following research questions were discussed: 1) What are the most important potential effects of ASL? 2) How can these potential effects be measured? 3) What are the best options for improving the use of ASL? 4) How can we evaluate

whether those options are effective? 5) How should the potential results of an evaluation be interpreted?

Results: The main process outcome was a study design the process participants agreed were likely to yield results meaningful to decision-makers. However, towards the closing of the trial all but one stakeholder organisation considered possible negative outcomes of the RCT to be of little importance to organisational policy decisions about ASL.

Conclusions: The research results, as well as the group process, were useful mainly to the stakeholder organisation that is the formal "policy owner", the National Insurance Agency. Stakeholder organisations with interest groups' values at stake may have less advantage of committing to unexpected or unwanted research results.