**Kliiniline küsimus nr 3**

Kas patsiendi valu regulaarne hindamine ja dokumenteerimine vs mittehindamine alates preoperatiivsest perioodist parandab perioperatiivse ägeda valu ravi tulemust?

Tulemusnäitajad: *valu tugevus, valu vähenemine, lisavaluvaigisti vajadus, patsiendi (eestkostja) rahulolu valuraviga*

**Kokkuvõte:**

Vaatamata erinevatele otsingusõnadele *(regular perioperative pain assessment/ pain evaluation, perioperative pain measurement, pain scoring, pain measurement, perioperative pain, postoperative pain measurement, postoperative complications, perioperative pain measurement/assessment and documentation, perioperative pain management*) ja nende kombineerimisele ei olnud võimalik leida teemakohaseid süstemaatilisi ülevaateid. Neid ei leidnud ka medinfo töötaja. Medinfo poolt saadeti üks süstemaatiline ülevaade, mis kahjuks ei andnud samuti antud kolmandale kliinilisele küsimusel vastust. Crowe,L, Chang, A, Fraser,JA, Gaskill, D, Nash, R., Wallace, K. (2008) „Systematic review of the effectiveness of nursing interventions in reducing or relieving post-operative pain.“ International Journal of Evidence-Based Healthcare. Dec; 6(4):396-430. Küll oli nimetatud süstemaatilises ülevaates tehtud ettepanek edaspidi uurida, kas regulaarne valu hindamine parandab patsiendi valu skoori. Ning ülevaates on ka öeldud, et kuigi puuduvad kontrollotud uuringud mis tõestaksid valu hindamise ja dokumenteerimise efektiivsust, on juriidiliselt ja professioonalselt vajalik valu dokumenteerimine.

Mitmetes õdedele mõeldud praktilistes juhistes tõdetakse, et valu hindamise ja dokumenteerimse kohta puuduvad tõenduspõhised uuringud kuid vaatamata sellele peaks valu hindamist alustama preoperatiivselt, see peaks olema regulaarne ja süstemaatiline ning toimuma patsiendi kogu haiglasoleku vältel. Ägeda postoperatiivse valu hindamine peaks olema 5 eluline näitaja.

 *Postoperative pain 2: patient education, assessment and management. Sharon Wood MSc*

**Süstemaatilised ülevaated**

**Crowe et al (2008)** study considered any randomised controlled trials (RCTs) that compare between subjects one nursing intervention with another intervention or standard care published between 1985 and 2004 inclusive. The objective was to assess the effectiveness of nursing interventions for the relief of post-operative pain when compared with either standard care or ohter nursing interventions. Participants were adults(18 years or above), experiencing acute pain following surge. Acute pain was defined in this review as pain experienced within the first 72h postoperatively.

Most of the included studies showed that there was no difference between the interventions and the usual care.

No studies were included that investigated assessment and documentation of pain or protocols as no RSTs or experimental studies were found that investigated these interventions.

Topics for furthre primary research or systematic review: Whether regular assessment and documentation is associated with reduced pain scores.

**Viited**

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| **Kokkuvõtte (abstract või kokkuvõtlikum info)** | **Viide kirjandusallikale** |
| Abstract**Objective**s The primary objective of this systematic review was to assess the effectiveness of nursing interventions for the relief/reduction of post-operative pain when compared with either standard care or other nursing interventions.**Inclusion criteria** Types of studies This review included randomised controlled trials (RCTs) and ohter quasirandomised experimental research designs. Types of participants Adults treated for post-operative pain in an acute care hospital. **Types of interventions** Interventions included in the review were only those directly administered by nursing staff such as: (i) administration of analgesia: including oral, intramuscular injection, patient controlled analgesia, epidural; (ii) pre-operative patient education; (iii) assessment and documentation of intensity of pain at regular intervals; (iv) protocols, clinical pathways or flow-sheets used in the management of pain; and (v) nonpharmacological interventions such as massage and relaxation.  **The primary outcome** was the relief or reduction of post-operative pain. Other measures included analgesia consumption, patient satisfaction and length of hospital stay.**Search strategy** Search terms were chosen after reviewing text words and MeSH terms in relevant articles and databases. A search for published and unpublished research covering the period 1985–2004 (inclusive) was conducted, using 11 major electronic databases. Reference lists of retrieved articles were hand searched. The search was restricted to reports published in English.**Assessment of quality:** The methodological quality of eligible studies was appraised by two independent reviewers, using a standardised critical appraisal tool. Differences in opinion were decided by consensus arter discussion with a third investigator.**Data extraction and analysis:** Data were extracted from the studies that met the criteria for methodological quality. Two reviewers independently extracted data for each study, using a standardised extraction tool. Results from homogeneous RCTs where possible were pooled in meta-analysis using RevMan4.2 software program. If the studies were clinically or statistically heterogeneous, the results are discussed in a narrative form. Non-randomised studies are also discussed in narrative form.**Results**: Overall, there is no strong evidence to support the use of any intervention even though a few interventions showed some benefits. However, evidence for these benefits was often based on single studies. Most of the included studies showed that there was no difference between the interventions and the usual care with both being foundequally effective.**Implications for practice**:  There was no strong evidence to support a particular practice. No intervention was found to be harmful; however, this does not presume to be evidence of safety. When there are two similarly effective interventions nurses need to weigh the possible positive and negative of the intervention including side effects, risk of adverse events, cost and patient preference. Other considerations include variations in patients' past pain experiences, type of surgery, many different analgesics. Although there were no controlled trials to support assessment and documentation, professionally and legally, documentation is required.  | Crowe,L, Chang, A, Fraser,JA, Gaskill, D, Nash, R., Wallace, K. (2008) „**Systematic review of the effectiveness of nursing interventions in reducing or relieving post-operative pain**.“ International journal of evidence-based healthcare. Dec; 6(4):396-430. |

**Ravijuhendid**

Kokkuvõte ravijuhendites leiduvast

1. Acute Pain Management: Scientific Evidence 2010 ( AU-10)

2. ” Behandlung acuter perioperativer und posttraumatischer Schmertzen ” 2009” ( DE-09)

Kummaski hinnatud ravijuhendis ei ole ära toodu uuringuid mis võrdleksid just valu hindamise alustamist vs mittealustamist preoperatiivses perioodis ja selle mõju postoperatiivsele valule. Kuid mõlemad ravijuhised mainivad, et valu tuleb hinnata ka enne protseduuri või operatsiooni ( nt anamneesi võtmise käigus)

Valu hindamine peab olema regulaarne, piisava sagedusega sõltuvalt patsiendi seisundist ja operatsiooni raskusest, valu hindamiseks tuleks kasutada standardiseeritud meetodeid (valuskaalasid ) ja valu tugevus peab olema dokumenteeritud kui „viies eluline näitaja“

Ainult järjekindel dokumenteerimine tagab multiprofessionaalse meeskonna kõikide liikmete piisava informeerituse ja võimaldab seeläbi valuravi juhtida.

Soovitused:

**AU-10**

1.Regular assessment of pain leads to improve acute pain management

2.Multiple outcome measure are requaired to adequately capture the complexity of the pain experience and how may be modified by plain management inteventions

**DE-09**

1.Valu tugevust tuleb regulaarselt hinnata lihtsa ühemõõtmelise valu tugevuse skaala abil. Soovituse tase A.

2.Hindab patsient ise. Soovituse tase A.

3.Valu tuleb hinnata kõikide valu põhjustavate protseduuride ja valulike ravimeetmete korral.Soovituse tase B.

4.Samuti peab valule reageerimine ja valuga seotud funktsioonihäirete ulatus olema kindlaks määratud. Soovituse tase B.

5.Kõik valu mõõtmise tulemused ja kasutatud ravivõtted peavad olema kajastatud haigusloos. Soovituse tase A.

Soovitused põhinevad enamasti erinevatel käsiraamatutel ja ravijuhenditel:

*1. Breivik H, Borchgrevink PC, Allen SM et al (2008) Assessment of pain. Br J Anaesth 101(1): 17–24.*

*2.Gould TH, Crosby DL, Harmer M et al (1992) Policy for controlling pain after surgery: effect of sequential changes in management. BMJ 305(6863): 1187–93.*

 *3.Gordon DB, Dahl JL, Miaskowski C et al (2005) American pain society recommendations for improving the quality of acute and cancer pain management: American Pain Society Quality of Care Task Force. Arch Intern Med 165(14): 1574–80.*

*4.JCAHO & NPC (2001) Pain: Current Understanding of Assessment, Management and Treatments. www.jcaho.org/news+room/health+care+issues/pm+monographs.htm Joint Commission on Accreditation of Healthcare Organisations and the National Pharmaceutical Council, Inc.*

*5.Moore A, Edwards J, Barden J et al (2003) Bandolier’s Little Book of Pain. Oxford, Oxford University Press*

*6.American Society of Anesthesiologists Task Force on Acute Pain Management. Practice guidelines for acute pain management in the perioperative setting: an update report by the American Society of Anesthesiologists Task Force on Acute Pain Management. Anesthesiology 2004 Jun;100(6):1573-81.*

[*http://www.ncbi.nlm.nih.gov/pubmed/15166580*](http://www.ncbi.nlm.nih.gov/pubmed/15166580)

**Kliiniline küsimus nr 3**

Kas patsiendi valu regulaarne hindamine ja dokumenteerimine vs mittehindamine alates preoperatiivsest perioodist parandab perioperatiivse ägeda valu ravi tulemust?

***Critical outcomes:*** *pain intensity, pain relief, anxiety* rescue mediaction (incl opioid consumption), patient ( caregiver) satisfaction with pain treatment.

**Valu hindamine ja dokumenteerimine ( täiskasvanute skaalad)**

 **Ravijuhendid**

**Kokkuvõte ravijuhendites leiduvast.**

1. Acute Pain Management: Scientific Evidence 2010 ( AU-10)

2. ” Behandlung acuter perioperativer und posttraumatischer Schmertzen ” 2009” ( DE-09)

Valu hindamine peab olema regulaarne, piisava sagedusega sõltuvalt patsiendi seisundist ja operatsiooni raskusest, valu hindamiseks tuleks kasutada standardiseeritud meetodeid (valuskaalasid) ja valu tugevus peab olema dokumenteeritud kui „viies eluline näitaja“. Ainult järjekindel dokumenteerimine tagab multiprofessionaalse meeskonna kõikide liikmete piisava informeerituse ja võimaldab seeläbi valuravi juhtida.

Mõlemas ravijuhendis on rõhutatud, et valu tuleb hinnata ka enne protseduuri või operatsiooni.

AU-10 ravijuhendis soovitatakse eakate patsientide (sh kerge kuni mõõduka kognitiivse häirega) puhul enesehindamisskaaladest eelistada kas VDS või NRS skaalat. Raske kognitiivse häire puhul ei ole ravijuhendis konkreetse skaala kasutamise soovitus välja toodud.

Soovitused:

**AU-10**

1.Regular assessment of pain leads to improve acute pain management

2.Multiple outcome measure are requaired to adequately capture the complexity of the pain experience and how may be modified by plain management inteventions

3. Common unidimensional self-report measures of pain can be used in the older patient in the acute pain setting; in the clinical setting the verbal descriptor and numerical rating scales may be prefferred. (S) Level III-2

4. In a comparision of five pain scales- VAS VNRS, NRS; VDS and FPS- in an experimental setting, all the scales could effectively discriminate different levels of pain sensation all the in older people. However the VDS was the most sensitive and reliable and considered to be he best choice in the older adult, including those with mild-to-moderate cognitive impairement, although it ranked second to the NRS for patient preference (Herr et al, 2004 **Level III-2**).

5. In a comparison of VAS, VDS and NRS, in younger and older patients using PCA after surgery, the NRS was also the preferred pain scale in both patient groups, with high reliability and validity, although the VDS also had a favourable and similar profile; use of the VAS in the older patients resulted in high rates of unscorable data and low validity (Gagliese et al, 2005 **Level III-2).**

Similarly, after a comparison of the Faces Pain Scale and Red Wedge Scale (RWS) in older patients (65 years or older) after cardiac surgery, when VAS and VDS were also measured in each patient, the VDS was shown to be the most reliable, followed by the RWS; the VAS was the least suitable (Pesonen et al, 2008 **Level III-1**). Using the same comparisons in patients aged 76 to 96 years with non-surgical pain that included an acute component, it was shown that those with normal cognitive function were able to use all fours scales well, while only the VDS (using familiar words such as none, slight, moderate, severe and unbearable) could be used with reasonable success in patients with mild, moderate and severe cognitive impairement (Pesonen et al, 2009 **Level III-2**). Assessment of pain in non-communicative patients is more difficult.

More than 20 different observational pain assessment scales have been developed and used in patients with varying degrees of dementia.

Faces Pain Scales (Herr et al, 2004); Abbey Pain Scale (Abbey et al, 2004), Pain Assessment in Advanced Dementia (PAINAD, a simple, reliable and validated five-item observational tool) (Warden et al, 2003; Leong et al, 2006), Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) (Fuchs-Lacelle & Hadjistavropoulos, 2004) and Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (MOBID) (Husebo et al, 2007).

**DE-09**

1.Valu tugevust tuleb regulaarselt hinnata lihtsa ühemõõtmelise valu tugevuse skaala abil. Soovituse tase A.

2.Patsient hindab valu ise. Soovituse tase A.

3.Valu tuleb hinnata kõikide valu põhjustavate protseduuride ja valulike ravimeetmete korral.Soovituse tase B.

4.Samuti peab valule reageerimine ja valuga seotud funktsioonihäirete ulatus olema kindlaks määratud. Soovituse tase B.

5.Kõik valu mõõtmise tulemused ja kasutatud ravivõtted peavad olema kajastatud haigusloos. Soovituse tase A.

**Süstemaatilised ülevaated ja muud uuringud**

**Kokkuvõte**

Kirjanduse otsingu tulemusel leiti üks süstemaatiline kirjanduse ülevaade - Hjelmstad (2011), kus võrreldakse NRS, VRS ja VAS skaalasid täiskasvanute valu hindamisel. Uurimistulemustest selgub, et VAS skaala on kõige sagedamini kasutatud valuskaala. Kaasatud uuringutest 29 uuringu puhul skaalade osas eelistusi ei antud. Samas võrreldes VAS/VRS on NRS paremas vastavuses (19 uuringust 15), samuti on 11 uuringu põhjal NRS soovitatud tööriist suurema vastavuse, parema tundlikkuse, ja kasutamise lihtsuse tõttu, samuti hea rakendatavuse pärast võrreldes VAS/VRS. NRS skaala puhul on leitud, et sellega mõõtmisel tekkis kõige vähem vigu ning on valu hindamisel kõige täpsem, seda eriti eakatel ja kognitiivse häirega patsientidel. Üldiselt olid NRSi ja VASi valuskoor vastavuses, kuid VAS skaalaga kiputakse valu natuke ülehindama. Uurijad tõdevad, et kõik kolm skaalat on sobilikud valu hindamiseks, kuid kokkuvõtteks soovitavad autorid kliini-lises praktikas kasutada siiski pigem NRS skaalat. Sarnasele tulemusele on varem jõudnud ka Williamson jt (2005), kes samuti võrdlesid eeltoodud kolme skaalat. Nad leidsid, et kõik kolm skaalat on sobilikud instrumendid valu mõõtmiseks, kuid VAS skaala praktikasse rakendamine on mõnikord raskem, kui VRS või NRS. Rauh jt (2013), väidavd, et igapäevases kliinilises praktikas on lihtsam kasutada NRS skaalat, VAS sobib eriti hästi uuringute läbiviimiseks.

Loos jt (2008), võrdlesid VAS ja VRS skaalaga valu mõõtmist songa operatsiooni järgselt ning leidsid, et eelistada võiks VRS skaalat. Ka Bech jt (2015) leidsid oma uurimistöös, et VRS skaala on sobiv instrument hindamaks puusaluu murruga patsientide postoperatiivset valu

Tuginedes leitud kirjandusele sooviatakse **eakate** patsientide puhul **enesehindamise skaaladest** kasutada NRS (Helmstad jt. 2011; Herr jt 2006, Gagliese jt. 2005 geriatricpain.org 17.09.2015) ; VDS (Herr jt.2006, Gagliese et al, 2005 ) ja VRS ( Bech jt. 2015; Pesonen jt 2009, Pesonen jt. 2008)

Leiti kaks süstemaatilist kirjanduse ülevaadet, mis käsitlevad valu hindamist eakatel ja kognitiivse häirega patsientidel. Zwakhalen jt (2006) võrdlesid oma uurimuses enam kui kümmet skaalat, mis mõeldud kognitiivse häirega eakate patsientide valu hindamiseks. Töö tulemusena soovitavad autorid kasutada PACSLAC või DOLOPLUS2 skaalat, sest need skaalad on kliiniliselt sobivad, neil on head psühhomeetrilised omadused ja hea tundlikkus. [Lichtner, V](http://www.ncbi.nlm.nih.gov/pubmed/?term=Lichtner%20V%5BAuthor%5D&cauthor=true&cauthor_uid=25519741) jt (2014) konkreetset eelistust skaalade kasutamise osas ei anna, kuid annab ülevaate uuritud skaalade kasutusvõimalustest, tugevustest ja nõrkustest. Lukas jt (2012) soovitavad kasutada kas PAINAD skaalat, mis sobib igapäevaseks kasutuseks lühikese perioodi jooksul või PACSLAC skaalat, mis sobib kasutada pikema aja jooksul. Ka [Fuchs-Lacelle, S](http://www.ncbi.nlm.nih.gov/pubmed/?term=Fuchs-Lacelle%20S%5BAuthor%5D&cauthor=true&cauthor_uid=18806535). (2008) pikaajalise uuringu tulemusena leiti, PACSLAC skaala on sobiv instrument, hindamaks kognitiivse häirega eaka patsiendi valu. Käitumuslikest skaaladest soovitatakse kasutada PASCLAC või PAINAID, viimast küll pigem kroonilise valu puhul (geriatricpain.org 17.09.2015)

**Süstemaatilised ülevaated**

# [Hjermstad, M.J](http://www.ncbi.nlm.nih.gov/pubmed/?term=Hjermstad%20MJ%5BAuthor%5D&cauthor=true&cauthor_uid=21621130)., et al. (2011). „Studies comparing Numerical Rating Scales, Verbal Rating Scales, and Visual Analogue Scales for assessment of pain intensity in adults: a systematic literature review.“ Journal of pain and symptom management 41(6):1073-1093

#### Context: The use of unidimensional pain scales such as the Numerical Rating Scale (NRS), Verbal Rating Scale (VRS), or Visual Analogue Scale (VAS) is recommended for assessment of pain intensity (PI). A literature review of studies specifically comparing the NRS, VRS, and/or VAS for unidimensional self-report of PI was performed as part of the work of the European Palliative Care Research Collaborative on pain assessment.

#### Objectives: To investigate the use and performance of unidimensional pain scales, with specific emphasis on the NRSs.

#### Methods: A systematic search was performed, including citations through April 2010. All abstracts were evaluated by two persons according to specified criteria.

#### Results: Fifty-four of 239 papers were included. Postoperative PI was most frequently studied; six studies were in cancer. Eight versions of the NRS (NRS-6 to NRS-101) were used in 37 studies; a total of 41 NRSs were tested. Twenty-four different descriptors (15 for the NRSs) were used to anchor the extremes. When compared with the VAS and VRS, NRSs had better compliance in 15 of 19 studies reporting this, and were the recommended tool in 11 studies on the basis of higher compliance rates, better responsiveness and ease of use, and good applicability relative to VAS/VRS. Twenty-nine studies gave no preference. Many studies showed wide distributions of NRS scores within each category of the VRSs. Overall, NRS and VAS scores corresponded, with a few exceptions of systematically higher VAS scores.

#### Conclusion: NRSs are applicable for unidimensional assessment of PI in most settings. Whether the variability in anchors and response options directly influences the numerical scores needs to be empirically tested. This will aid in the work toward a consensus-based, standardized measure

# [Lichtner V](http://www.ncbi.nlm.nih.gov/pubmed/?term=Lichtner%20V%5BAuthor%5D&cauthor=true&cauthor_uid=25519741)., (2014).“Pain assessment for people with dementia: a systematic review of systematic reviews of pain assessment tools.“ [BMC Geriatr.](http://www.ncbi.nlm.nih.gov/pubmed/25519741) 2014 Dec 17;14:138

#### Background:

There is evidence of under-detection and poor management of pain in patients with dementia, in both long-term and acute care. Accurate assessment of pain in people with dementia is challenging and pain assessment tools have received considerable attention over the years, with an increasing number of tools made available. Systematic reviews on the evidence of their validity and utility mostly compare different sets of tools. This review of systematic reviews analyses and summarises evidence concerning the psychometric properties and clinical utility of pain assessment tools in adults with dementia or cognitive impairment.

#### Methods:

We searched for systematic reviews of pain assessment tools providing evidence of reliability, validity and clinical utility. Two reviewers independently assessed each review and extracted data from them, with a third reviewer mediating when consensus was not reached. Analysis of the data was carried out collaboratively. The reviews were synthesised using a narrative synthesis approach.

#### Results:

We retrieved 441 potentially eligible reviews, 23 met the criteria for inclusion and 8 provided data for extraction. Each review evaluated between 8 and 13 tools, in aggregate providing evidence on a total of 28 tools. The quality of the reviews varied and the reporting often lacked sufficient methodological detail for quality assessment. The 28 tools appear to have been studied in a variety of settings and with varied types of patients. The reviews identified several methodological limitations across the original studies. The lack of a 'gold standard' significantly hinders the evaluation of tools' validity. Most importantly, the samples were small providing limited evidence for use of any of the tools across settings or populations.

#### Conclusions:

There are a considerable number of pain assessment tools available for use with the elderly cognitive impaired population. However there is limited evidence about their reliability, validity and clinical utility. On the basis of this review no one tool can be recommended given the existing evidence.

[**Zwakhalen, S.M**](http://www.ncbi.nlm.nih.gov/pubmed/?term=Zwakhalen%20SM%5BAuthor%5D&cauthor=true&cauthor_uid=16441889)**., et al (2006).**„Pain in elderly people with severe dementia: a systematic review of behavioural pain assessment tools.“ [BMC Geriatr.](http://www.ncbi.nlm.nih.gov/pubmed/16441889) 2006 Jan 27;6:3.

#### Background:

Pain is a common and major problem among nursing home residents. The prevalence of pain in elderly nursing home people is 40-80%, showing that they are at great risk of experiencing pain. Since assessment of pain is an important step towards the treatment of pain, there is a need for manageable, valid and reliable tools to assess pain in elderly people with dementia.

#### Methods:

#### This systematic review identifies pain assessment scales for elderly people with severe dementia and evaluates the psychometric properties and clinical utility of these instruments. Relevant publications in English, German, French or Dutch, from 1988 to 2005, were identified by means of an extensive search strategy in Medline, Psychinfo and CINAHL, supplemented by screening citations and references. Quality judgement criteria were formulated and used to evaluate the psychometric aspects of the scales.

#### Results:

Twenty-nine publications reporting on behavioural pain assessment instruments were selected for this review. Twelve observational pain assessment scales (DOLOPLUS2; ECPA; ECS; Observational Pain Behavior Tool; CNPI; PACSLAC; PAINAD; PADE; RaPID; Abbey Pain Scale; NOPPAIN; Pain assessment scale for use with cognitively impaired adults) were identified. Findings indicate that most observational scales are under development and show moderate psychometric qualities.

#### Conclusion:

Based on the psychometric qualities and criteria regarding sensitivity and clinical utility, we conclude that PACSLAC and DOLOPLUS2 are the most appropriate scales currently available. Further research should focus on improving these scales by further testing their validity, reliability and clinical utility.

MUUD UURINGUD

# Bech, R.D., et al (2015). „The Verbal Rating Scale Is Reliable for Assessment of Postoperative Pain in Hip Fracture Patients“ Pain Res Treat. 2015

Abstract[Go to:](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4452862/)

Background. Hip fracture patients represent a challenge to pain rating due to the high prevalence of cognitive impairment. Methods. Patients prospectively rated pain on the VRS. Furthermore, patients described the changes in pain after raising their leg, with one of five descriptors. Agreement between paired measures on the VRS at rest and by passive straight leg raise with a one-minute interval between ratings at rest and three-minute interval for straight leg raise was expressed by kappa coefficients. Reliability of this assessment of pain using the VRS was compared to the validity of assessing possible change in pain from the selected descriptors. Cognitive status was quantified by the short Orientation-Memory-Concentration Test. Results. 110 patients were included. Paired scores with maximum disagreement of one scale point reached 97% at rest and 95% at straight leg raise. Linear weighted kappa coefficients ranged from 0.68 (95% CI = 0.59–0.77) at leg raise to 0.75 (95% CI = 0.65–0.85) at rest. Unweighted kappa coefficients of agreement in recalled pain compared to agreement of paired VRS scores ranged from 0.57 (95% CI = 0.49–0.65) to 0.36 (95% CI = 0.31–0.41). Interpretation. The VRS is reliable for assessment of pain after hip fracture. The validity of intermittent questioning about possible change in pain intensity is poor.

Background. Hip fracture patients represent a challenge to pain rating due to the high prevalence of cognitive impairment.

Methods. Patients prospectively rated pain on the VRS. Furthermore, patients described the changes in pain after raising their leg, with one of five descriptors. Agreement between paired measures on the VRS at rest and by passive straight leg raise with a one-minute interval between ratings at rest and three-minute interval for straight leg raise was expressed by kappa coefficients. Reliability of this assessment of pain using the VRS was compared to the validity of assessing possible change in pain from the selected descriptors. Cognitive status was quantified by the short Orientation-Memory-Concentration Test.

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Interpretation. The VRS is reliable for assessment of pain after hip fracture. The validity of intermittent questioning about possible change in pain intensity is poor.

**Rauh., K.H., et al (2013).„**Visual analogue scale for measuring post-operative pain.“ [Ugeskr Laeger.](http://www.ncbi.nlm.nih.gov/pubmed/23763932) Jun 10;175(24):1712-6.

### Abstract

All patients with pain who are admitted to hospitals in Denmark must be assessed for levels of pain. However, it is not certain how pain should be measured. One way to measure pain is to use a visual analogue scale (VAS). This article focuses on how the VAS should be used in clinical practice in the assessment of post-operative pain. Furthermore, other suitable methods are compared with VAS. VAS is particularly useful for clinical research, but for daily clinical practice it may be easier to use a numeric rating scale.

# van Dijk J.K., et al. (2012).“Postoperative pain assessment based on numeric ratings is not the same for patients and professionals: a cross-sectional study. [Int J Nurs Stud.](http://www.ncbi.nlm.nih.gov/pubmed/21840522)49(1):65-71.

### Abstract

#### Background:

Numeric pain scores have become important in clinical practice to assess postoperative pain and to help develop guidelines for treating pain. Professionals need the patients' pain scores to administer analgesic medication. However, do professionals interpret the pain scores in line with the actual perception of pain by the patients?

#### Objective:

The study aim was to assess which Numerical Rating Scale (NRS) pain score was considered bearable on a Verbal Rating Scale (VRS) by patients and professionals.

#### Methods:

This prospective study examined the relationship between the Numerical Rating Scale and a Verbal Rating Scale. The patients (n=10,434) rated their pain the day after surgery on the 11-point NRS (0=no pain and 10=worst imaginable pain) and a VRS comprising five descriptors: "no pain"; "little pain"; "painful but bearable"; "considerable pain"; and "terrible pain". The first three categories together ("no pain", "little pain" and "painful but bearable") were considered "bearable" and the last two categories ("considerable pain" and "terrible pain") were deemed as "unbearable" pain. The professionals (n=303) were asked to relate the numbers of the NRS to the words of the VRS.

#### Results:

Most patients considered NRS 4-6 as "bearable" pain. Among professionals, anesthesiologists, Post Anaesthesia Care nurses, and ward nurses interpreted NRS scores in the same way as the patients. Only the Acute Pain Nurses interpreted the scores differently; they considered NRS of 5 and higher to be not bearable.

#### Conclusions:

Some care providers and patients differ in their interpretation of the postoperative NRS scores. A risk of overtreatment might arise when health care providers rigidly follow guidelines that prescribe strong analgesics for pain scores above 3 or 4 without probing the patient's preference for pharmacological treatment.

# [Lukas, A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Lukas%20A%5BAuthor%5D&cauthor=true&cauthor_uid=22278006)., et al (2012). „Pain and dementia: a diagnostic challenge.“ [Z Gerontol Geriatr.](http://www.ncbi.nlm.nih.gov/pubmed/22278006) Jan;45(1):45-9

Purpose: The aim was to present current knowledge about pain assessment in people with dementia and to discuss special challenges and possible solutions.

Methods: A literature search in MEDLINE® was performed.

Results: Due to the changing demographics of an aging population, an increasing number of people with dementia is expected. Many of these people will simultaneously suffer pain. Under-detection and under-treatment of pain in persons suffering from dementia is often described. As dementia progresses, the ability of the sufferer to verbally communicate his/her pain is often compromised, complicating the task of recognizing and treating pain. To improve pain recognition in dementia, many pain assessment tools have been developed. However, psychometric properties have to date been insufficiently examined.

Implications: Self-report ratings should be performed as long as justifiable. Behavioural pain assessment tools should be used in advanced dementia despite their current imperfections: in particular, the PAINAD for daily use and the PACSLAC at longer intervals. All available additional information about pain should be considered.

# [Pesonen A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Pesonen%20A%5BAuthor%5D&cauthor=true&cauthor_uid=19419361)., et al (2009). „Evaluation of easily applicable pain measurement tools for the assessment of pain in demented patients.“ [Acta Anaesthesiol Scand.](http://www.ncbi.nlm.nih.gov/pubmed/19419361) 2009 May;53(5):657-64.

#### Background and objectives:

Difficulties in communication and lack of suitable pain scales may lead to undertreatment of pain in cognitively impaired patients. We performed a study in this type of patients and evaluated the usefulness of four simple pain scales.

#### Patients and methods:

We studied 41 hospitalized elderly (76-95 years) who suffered from pain with an acute component. Cognitive function was assessed with the mini-mental state examination (MMSE) and the degree of depression was assessed on the geriatric depression scale (GDS). Pain intensity was assessed at rest and after a pain-provoking movement three times at 2-week intervals by repeating the test at a 10-min interval at each test session. The pain scales were the 50 cm red wedge scale (RWS), the seven-point faces pain scale (FPS), the 10 cm visual analogue scale (VAS) and the five-point verbal rating scale (VRS).

#### Results:

In group MMSE> or =24, patients were able to use all four scales rather successfully. In the other groups (MMSE 17-23, 11-16 and < or =10), only the use of VRS was successful to a reasonable degree (64-85% on average). GDS scores did not correlate with the pain scores, with the exception of pain scores on FPS during movement (P<0.01). The estimations of intensity and frequency of pain performed by nurses failed to correlate with the patient's own pain intensity estimations.

#### Conclusion:

Scoring of pain with RWS, FPS and VAS seems to be feasible in elderly patients with a normal cognitive dysfunction. In our study VRS appeared to be applicable in the elderly with a clear cognitive dysfunction, i.e., with MMSE<17.

[**Pesonen A**](http://www.ncbi.nlm.nih.gov/pubmed/?term=Pesonen%20A%5BAuthor%5D&cauthor=true&cauthor_uid=17976221)**., et al (2008)**. „Applicability of tools to assess pain in elderly patients after cardiac surgery.“ [Acta Anaesthesiol Scand.](http://www.ncbi.nlm.nih.gov/pubmed/?term=Pesonen+A%2C+Suojaranta-Ylinen+R%2C+Tarkkila+P+et+al+%282008%29+Applicability+of+tools+to+assess+pain+in+elderly+patients+after+cardiac+surgery.+Acta+Anaesthesiol+Scand+52%282%29%3A+267%E2%80%9373.) 2008 Feb;52(2):267-73

#### Background:

Post-operatively, elderly patients with impaired vision and cognitive dysfunction may experience difficulties understanding standard pain assessment tools such as the 10-cm Visual Analogue Scale (VAS) and the Verbal Rating Scale (VRS). Thus, there is a need to identify more feasible post-operative pain assessments for elderly patients. With this goal in mind, we compared the VAS and VRS with two more expressive tools: the 50-cm Red Wedge Scale (RWS) and the Facial Pain Scale (FPS).

#### Methods:

Cardiac surgery patients (73 +/- 5 years, mean +/- SD) were allocated to an RWS (n=80) or an FPS (n=80) group. Pain was assessed at rest and after movement during the first 4 days after tracheal extubation. The RWS or FPS assessments were repeated after 10 min. All patients completed the VRS and VAS.

#### Results:

The rates of successful pain measurement on study day 1 were: VRS 86%, VAS 62%, RWS 78%, and FPS 60%. Pain measurements with the RWS correlated with the VAS (r=0.758, P<0.001) and weaker with the VRS (r=0.666, P<0.001) measurements. Pain measurements with the FPS correlated well with the VAS (r=0.873, P<0.001) and weaker with the VRS (r=0.583, P<0.001) measurements. With all scales, success rates improved during the study period.

#### Conclusion:

In elderly patients, immediately after cardiac surgery, the VRS is the most feasible pain scale, followed by the RWS. The traditional 10-cm VAS is unsuitable for pain measurement in this population.

**Breivik H., et al. (2008)** Assessment of pain. Br J Anaesth 101(1): 17–24.

### Abstract

Valid and reliable assessment of pain is essential for both clinical trials and effective pain management. The nature of pain makes objective measurement impossible. Acute pain can be reliably assessed, both at rest (important for comfort) and during movement (important for function and risk of postoperative complications), with one-dimensional tools such as numeric rating scales or visual analogue scales. Both these are more powerful in detecting changes in pain intensity than a verbal categorical rating scale. In acute pain trials, assessment of baseline pain must ensure sufficient pain intensity for the trial to detect meaningful treatment effects. Chronic pain assessment and its impact on physical, emotional, and social functions require multidimensional qualitative tools and health-related quality of life instruments. Several disease- and patient-specific functional scales are useful, such as the Western Ontario and MacMaster Universities for osteoarthritis, and several neuropathic pain screening tools. The Initiative on

#### Methods:

Measurement, and Pain Assessment in Clinical Trials recommendations for outcome measurements of chronic pain trials are also useful for routine assessment. Cancer pain assessment is complicated by a number of other bodily and mental symptoms such as fatigue and depression, all affecting quality of life. It is noteworthy that quality of life reported by chronic pain patients can be as much affected as that of terminal cancer patients. Any assessment of pain must take into account other factors, such as cognitive impairment or dementia, and assessment tools validated in the specific patient groups being studied.

# Loos, M.J. jt. (2008). Evaluating postherniorrhaphy groin pain: visual analogue or verbal rating scale?“ [Hernia.](http://www.ncbi.nlm.nih.gov/pubmed/18004502) 2008 apr;12(2):147-51.

### Abstract

#### Introduction:

Several tools for pain measurement including a visual analogue scale (VAS) and a verbal rating scale (VRS) are currently used in patients with chronic pain. The aim of the present study was to determine which of these two paintests performs optimally in patients following groin hernia repair.

#### Patients and methods:

A questionnaire identified pain level in a cohort of patients that had previously undergone corrective groin hernia surgery. Current pain intensity was graded on a four-point VRS scale (no pain, mild, moderate or severepain) and on a 100-mm VAS scale (0=no pain, 100=unbearable). "scale failure" (one or both tests not completed correctly) was determined, and cut-off points for the vas test were calculated by creating the optimum kappa coefficient between both tools.

#### Results:

The response rate was 78.2% (706/903). Scale failure was present in vas tests more than VRS (VAS: 12.5%, 88/706 vs. VRS: 2.8%, 20/706; p<0.001). Advanced age was a risk factor for scale failure (p<0.001). The four categories of VRS corresponded to mean vas scores of 1, 20, 42, and 78 mm, respectively. VAS categories associated with the highest kappa coefficient (k=0.78) were as follows: 0-8=no pain, 9-32=mild, 33-71=moderate, >71=severe pain. VAS scores grouped per VRS category showed considerable overlap. Age and sex did not significantly influence cut-off points.

#### Conclusions:

Because of lower scale failure rates and overlapping VAS scores per VRS category, the VRS should be favored over the VAS in future postherniorrhaphy pain assessment. If vas is preferred, the presented cut-off points should be utilized.

# [Fuchs-Lacelle, S](http://www.ncbi.nlm.nih.gov/pubmed/?term=Fuchs-Lacelle%20S%5BAuthor%5D&cauthor=true&cauthor_uid=18806535). (2008). „Pain assessment as intervention: a study of older adults with severe dementia.“ [Clin J Pain.](http://www.ncbi.nlm.nih.gov/pubmed/18806535) Oct;24(8):697-707

#### Objectives:

The communication impairments that characterize severe dementia make pain assessment challenging. As such, pain problems often go undetected. Our goal was to determine whether systematic pain assessment leads to improved pain management practices and decreases nursing stress in comparison with a control condition.

#### Methods:

We adopted a 3-month comparative longitudinal design. Nursing staff regularly assessed dementia patients' pain through the use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC). A second group of nurses completed an attention-control measure for a control group of patients. In addition, nursing staff regularly completed measures of work stress to investigate the effects of the workload associated with systematic pain assessment on nurse stress.

#### Results:

Regular use of the PACSLAC improved pain management practices over time as reflected in increased usage of analgesic medications (prescribed on "as needed" basis) in comparison with the control group. As pain interventions increased, a corresponding decrease in observable pain behaviors (as reflected on the PACSLAC assessments that were completed by the nurses) was observed. In addition, nurses who used the PACSLAC reported decreased distress and burnout over time.

#### Discussion:

This investigation provides strong support for both the importance of systematic pain assessment in long-term care and for the clinical utility of the PACSLAC in improving pain management practices and decreasing caregiver distress.

**Herr, K., et al (2006).** „Tools for assessment of pain in nonverbal older adults with dementia: a state-of-the-science review.“ [J Pain Symptom Manage.](http://www.ncbi.nlm.nih.gov/pubmed/16488350) Feb;31(2):170-92.

Abstract

To improve assessment and management of pain in nonverbal older adults with dementia, an effective means of recognizing and evaluating pain in this vulnerable population is needed. The purpose of this review is to critically evaluate the existing tools used for pain assessment in this population to provide recommendations to clinicians. Ten pain assessment tools based on observation of behavioral indicators for use with nonverbal older adults with dementia were evaluated according to criteria and indicators in five areas: conceptualization, subjects, administration, reliability, and validity. Results indicate that although a number of tools demonstrate potential, existing tools are still in the early stages of development and testing. Currently, there is no standardized tool based on nonverbal behavioral pain indicators in English that may be recommended for broad adoption in clinical practice.

**Williamson, A., et al (2005).** „ Pain: a review of three commonly used pain rating scales“ Journal of Clinical Nursing 14, 798–804

Aims and objectives. This review aims to explore the research available relating to three commonly used pain rating scales, the Visual Analogue Scale, the Verbal Rating Scale and the Numerical Rating Scale. The review provides information needed to understand the main properties of the scales.

Background. Data generated from pain-rating scales can be easily misunderstood. This review can help clinicians to understand the main features of these tools and thus use them effectively.

Method. A MedLine review via PubMed was carried out with no restriction of age of papers retrieved. Papers were examined for methodological soundness before being included. The search terms initially included pain rating scales, pain measurement, Visual Analogue Scale, VAS, Verbal Rating Scale, VRS, Numerical/ numeric Rating Scale, NRS. The reference lists of retrieved articles were used to generate more papers and search terms. Only English Language papers were examined.

Conclusions. All three pain-rating scales are valid, reliable and appropriate for use in clinical practice, although the Visual Analogue Scale has more practical difficulties than the Verbal Rating Scale or the Numerical Rating Scale. For generalpurposes the Numerical Rating Scale has good sensitivity and generates data that can be statistically analysed for audit purposes. Patients who seek a sensitive painrating scale would probably choose this one. For simplicity patients prefer the Verbal Rating Scale, but it lacks sensitivity and the data it produces can be misunderstood.

Relevance to clinical practice. In order to use pain-rating scales well clinicians need to appreciate the potential for error within the tools, and the potential they have to provide the required information. Interpretation of the data from a pain-rating scale is not as straightforward as it might first appear.

WILLIAMSON A & HOGGART B (2005)

Journal of Clinical Nursing 14, 798–804

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**Gagliese, L., et al (2005)** „The measurement of postoperative pain: a comparison of intensity scales in younger and older surgical patients.“ [Pain.](http://www.ncbi.nlm.nih.gov/pubmed/16153776)117(3):412-20.

Abstract

The psychometric properties of pain intensity scales for the assessment of postoperative pain across the adult lifespan have not been reported. The objective of this study was to compare the feasibility and validity of the Numeric Rating Scale (NRS), Verbal Descriptor Scale (VDS), and Visual Analog Scale (horizontal (VAS-H) and vertical (VAS-V) line orientation) for the assessment of pain intensity in younger and older surgical patients. At 24h following surgery, 504 patients, who were receiving i.v. morphine via patient-controlled analgesia, completed the pain intensity measures and the McGill Pain Questionnaire (MPQ) in a randomized order. They were asked which scale was easiest to complete, the most accurate measure, and which they would most prefer to complete in the future, as an index of face validity. The amount of opioid self-administered was recorded. Age differences in postoperative pain intensity were not found. However, elderly patients obtained lower MPQ scores and self-administered less morphine than younger people. Psychometric analyses suggested that the NRS was the preferred pain intensity scale. It had low error rates, and higher face, convergent, divergent and criterion validity than the other scales. Most importantly, its properties were not age-related. The VDS also had a favourable profile with low error rates and good face, convergent and criterion validity. Finally, difficulties with VAS use among the elderly were identified, including high rates of unscorable data and low face validity. Its use with elderly postoperative patients should be discouraged.