

# Persistent Pain



THE UNIVERSITY OF IOWA  
COLLEGE OF NURSING

## *Persistent Pain Management in Older Adults*

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**CSOMAY Center**  
*for*  
**Gerontological Excellence**

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# *Persistent Pain Management in Older Adults*

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**Scheme for Grading the Strength & Consistency of Evidence in the Guideline**

This guideline was developed from an exhaustive literature review and synthesis of current evidence on assessing and managing persistent pain in older adults. Research and other evidence, such as guidelines and standards from professional organizations, were critiqued, analyzed, and used as supporting evidence.

The practice recommendations are assigned an evidence grade based upon the type and strength of evidence from research and other literature.

*The grading schema used to make recommendations in this Evidence-Based practice guideline is:*

- A1** = Evidence from well-designed meta-analysis or well-done systematic review with results that consistently support a specific action (e.g., assessment, intervention, or treatment)
- A2** = Evidence from one or more randomized controlled trials with consistent result
- B1** = Evidence from high quality Evidence-Based practice guideline
- B2** = Evidence from one or more quasi experimental studies with consistent results
- C1** = Evidence from observational studies with consistent results (e.g., correlational, descriptive studies)
- C2** = Inconsistent evidence from observational studies or controlled trials
- D** = Evidence from expert opinion, multiple case reports, or national consensus reports

## INTRODUCTION

People living in the developed world can now expect to live longer than at any time in history. Although evidence-based practices in modern healthcare routinely promote longevity and save people from the brink of death (Kotter, Blozik, & Scherer, 2012; Wilke, Grube, & Bodmann, 2011); the practices believed to prevent pain, and effectively manage pain in a safe manner, are not routinely implemented (American Geriatrics Society, 2012; Herr, Titler et al., 2010; Jinks et al., 2011; Titler et al., 2009). Approximately half of older adults living in the community have persistently painful conditions (MacFarlane et al., 2011; Patel, Guralnik, Dansie, & Turk, 2013; Tsai, Liu, & Chung, 2010) with more frequently encountered pain during the final months of life (Smith et al., 2010). An even greater proportion of older adults living in institutions face this nemesis on a daily basis (Tse, Leung & Ho, 2012).

Older adults should not live or die with needless pain because of the negative effects it has on health, longevity and quality of life (O'Mahony, Goulet, & Payne, 2010). Persistent intense pain can harm the person's mind, body, spirit and social interactions; resulting in disability, despair and medical frailty (American Geriatrics Society Panel on Persistent Pain in Older Persons, 2002; Griffin, Harmon, & Kennedy, 2012; Institute of Medicine (IOM), 2011; Jakobsson, Rahm-Hallberg, & Westergren, 2004; James, Miller, Brown, & Weaver, 2005; Johansen, Romundstad, Nielsen, Schirmer, & Stubhaug, 2012; Sheiga, Dale, Andrew, Paice, Rockwood, & Weiner, 2012; Tsai, Tak, Moore, & Palencia, 2003). Chronic pain changes the structure and function of nerves throughout the nervous system, often with widespread degenerative alterations in brain functioning (Baliki, Geha, Apkarian, & Chialvo, 2008; Berliocchi, Russo, Tassorelli, Morrone, Bagetta, & Corasaniti, 2012; Kuchinad et al., 2007; Seminowicz et al., 2010; Tracey & Bushnell, 2009; Zimmerman et al., 2009). The loss of the brain's gray matter in those with persistent pain greatly outpaces that seen with normal aging and can explain some of the learning, memory and emotional difficulties experienced (Apkarian et al., 2004; Kuchinad et al., 2007; Mutso et al., 2012). These changes are at least partially reversible with effective treatment (Davis & Moayed, 2012; Seminowicz et al., 2011), but even with treatment significant physical, emotional and financial problems often persist (Griffin et al., 2012; Saastamoinen, Laaksonen, Kääriä, Lallukka, & Leino-Arjas, 2012; Schofield et al., 2012). Reports that the pain of many older adults goes untreated (Barber & Gibson, 2009) despite these known harms are unconscionable, and demand significant changes in our current system of providing care (IOM, 2011).

Although some older adults may be less sensitive to thermal, ischemic and mechanical stimuli; aging does not predictably decrease sensitivity to pain (Cole, Farrell, Gibson, & Egan, 2010). The variations noted may be more related to the research methods and populations studied rather than clinically meaningful difference in pain transduction, transmission, modulation and perception (Gagliese, 2009; Neziri et al., 2011). However, some older adults are more vulnerable to having undetected visceral pathology, such as "silent" heart attacks (Mehta, Rathmore, Radford, Wang, & Krumholz, 2001). Older adults are also more likely to develop prolonged hyperalgesia or neuropathic pain syndromes, such as post-herpetic neuralgia (Schmader, Gnnann, & Watson, 2008; Smith, Davis, Stano, & Whedon, 2013).

Nurses have an important role in the management of persistent pain given their professional responsibility to alleviate suffering and protect patients from developing or advancing health problems (American Society for Pain Management Nursing (ASPMN), 2011). Nurses often have more frequent, longer duration contact with patients than other professionals, observing them both at rest and with movement and thus may identify pain related problems that escape detection by others. They share these insights with the interprofessional team to sort out multiple simultaneous, sometimes competing priorities, and develop a thoughtfully tailored treatment plan.

Historically, much of the pain management literature regarding the assessment and treatment of persistent pain has been based on clinical experience and expert opinion, without empirical support. However in the last two decades, the scientific literature on pain has greatly expanded our knowledge about pain, its assessment and treatments to effectively prevent and treat pain.

Systematic reviews and clinical guidelines have now been developed to the point where they can aid in clinical decision-making. To best tailor therapy, nurses should select the guideline that is best aligned with patient (e.g., age, diagnosis) and setting characteristics. Very helpful approaches to treating pain may be abandoned because of what some guidelines exclude, therefore, options should not be limited to their recommendations (Carr, 2008). Additionally, because of different measurement tools used, it is hard to synthesize the conclusions in many guidelines. To resolve these concerns, international groups are in the process of synthesizing existing guidelines while standardizing the way researchers study pain (Dworkin, Turk, McDermott et al., 2010; Dworkin, Turk, Peirce-Sandner et al., 2010). The conclusions of this IMMPACT (Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials) group are that when addressing pain; researchers and clinicians should attend to the physical, cognitive, and emotional aspects of pain, as well as the extent that it interferes with daily functioning. Therefore, this evidence-based guideline recommends using validated tools to assess pain and its impact while selecting treatment options that address different aspects of the pain experience to help older adults think, feel, and do better.

## PURPOSE

The purpose of this evidence-based guideline is to assist nurses and other health care providers in the management of persistent pain in older adults by synthesizing knowledge about the best current assessment and treatment strategies as well as offer strategies for implementation and evaluation across practice settings. It is the belief of the authors that when evidence-based approaches are used when caring for those with persistent pain, desired outcomes such as less pain, improved (physical and psychosocial) functioning, enhanced healing and a better quality of life can be achieved more readily.

## INDIVIDUALS AT RISK FOR PERSISTENT PAIN

Older adults who are at risk for persistent pain and are most likely to benefit from this guideline include:

- ◆ Aging adults over age 65, especially those with increasing frailty (Marshall, Peat, Nicholls, van der Windt, Myers, & Dziedzic, 2013; Patel et al., 2013) [*Evidence Grade = C1*].
- ◆ Women (Marshall et al., 2013; Patel et al., 2013) [*Evidence Grade = C1*].
- ◆ Those with multiple co-morbid conditions (Patel et al., 2013) [*Evidence Grade = C1*].
  - Present of cognitive-impairment, particularly those who are non-verbal (Monroe et al., 2013; Oosterman, de Vries, Dijkerman, de Haan, & Scherder, 2009; Patel et al., 2013) [*Evidence Grade = C1*].
  - Present of arthritis and musculoskeletal disease (Mänty, Thinggaard, Christensen, & Avlund, 2013; Patel et al., 2013) [*Evidence Grade = C1*].
  - Present of depression (Agüera-Ortiz, Failde, Cervilla, & Mico, 2013; Patel et al., 2013). [*Evidence Grade = C1*].



- ◆ Obese person (Marshall et al., 2013; McCarthy, Bigal, Katz, Derby, & Lipton, 2009; Patel et al., 2013). [Evidence Grade = C1].
- ◆ African Americans and Hispanics (Green & Hart-Johnson, 2012; Jordan et al., 2007; Parmelee, Harralson, McPherron, DeCoster, & Schumacher, 2012) [Evidence Grade = C1].
- ◆ Nursing home residents (Lapane, Quilliam, Chow, & Kim, 2012; Zanochi et al., 2008) [Evidence Grade = C1].

## DESCRIPTION OF THE PRACTICE

Given the high prevalence of pain in older adults, regardless of setting, this Persistent Pain Evidence-based Practice Guideline recommends that *all* older adults be screened for the presence of persistent pain at initial encounter with a health care professional. If pain is identified or suspected, assessment should follow. The proposed recommended practices for management of persistent pain in older adults are comprised of:

### *I. Assessment: Pain and Functioning*

- ◆ Presence of Pain
- ◆ Severity of Pain: Pain Intensity Scales
- ◆ Pain Impact on Biopsychosocial Function

### *II. Assessment in Cognitively Impaired Older Adults Unable to Self Report the Intensity of Pain*

- ◆ Hierarchy of Pain Assessment Techniques
  - Self-reports
  - Potential painful conditions/diagnoses
  - Behavior observation
  - Surrogate/Proxy Reports
  - Analgesic Trial
- ◆ Algorithm for Assessment in Cognitively Impaired

### *III. Management Strategies*

- ◆ Non-pharmacologic: physical and cognitive-behavioral strategies
- ◆ Pharmacologic
- ◆ Education to promote self-management with or without the aid of a caregiver

### *Assessment: Pain and Functioning*

A comprehensive assessment is needed to determine disruption of function and activities caused by persistent pain. Gathering information on key quality of life indicators from various sources, including the older adult, significant others, and other health care workers, can help determine impact of pain on older adults' life.

Older adults with persistent pain commonly experience an increase in pain intensity with movement and, as a result, will limit the activities or movements that exacerbate the pain (e.g., stair climbing or walking). Given the unpleasant nature of pain and its interference with important, meaningful and/or pleasurable activities; psychosocial functioning is also affected. Thus, a key outcome factor, other than reduced pain intensity, is improvement in physical and psychosocial functioning (AGS, 2009; Hadjistavropoulos et al., 2007; Herr, Bursch et al., 2010; Herr et al., 2011; Royal College of Physicians, British Geriatrics Society and British Pain Society, 2007).

As with younger adults, the self-report of pain is the gold standard for measuring the presence, intensity, and impact of pain, including for those with cognitive impairment (AGS, 2009; Hadjistavropoulos et al., 2007; Herr et al., 2011).

Specific approaches to pain assessment in older adults should be modified to address sensory, motor, perceptual, and cognitive changes that often occur with aging. For example:

- ◆ Accommodate hearing impairments through proper positioning, lighting, tone, pacing and speed, reduction of extraneous noises and use of written tools and instructions.
- ◆ Use assessment tools with large, simple bold lettering and adequate line spacing, and non-glare paper and lighting to adjust for visual impairment (Bruckenthal, 2010; Herr, 2010).
- ◆ Cognitive impairment can be a serious barrier to accurate pain assessment (Kelley, Siegler, & Reid, 2008). However, self-report can often be obtained in those with mild to moderate cognitive impairment (Lukas, Niederecker, Günther, Mayer, & Nikolaus, 2013; Pesonen et al., 2009).
  - Use of a brief cognitive screen, such as the 3 minute Mini-Cog that includes a clock drawing and a three-item recall, can establish difficulty obtaining reliable self-report regarding pain (Borson, Scanlan, Brush, Vitaliano, & Dokmak, 2000; Lessig, Scanlan, Nazemi, & Borson, 2008).
  - Helpful strategies include keeping content simple, providing clear explanations using examples and demonstration of the assessment task, repeat instructions, and providing time to understand the question and respond.
  - One strategy to increase reliability of self-report is to ask about pain in the present, that is “right now,” rather than reports dependent on memory, such as worst pain, least pain, or pain the past week (Kelley et al., 2008).
- Ask about pain presence and related factors. Initial step in assessing for persistent pain is to ask about the presence of pain.
  - Older adults will often not verbalize pain, so anticipating barriers to pain report and explore any concerns or beliefs that affect open communication about information regarding pain. (Clarke et al., 2012; Hadjistavropoulos et al., 2007; Zwakhalen et al., 2006).

- Some older adults may identify with words other than pain, such as discomfort, hurt, soreness, or ache, so use open-ended questions, then follow-up using these terms patients use to describe their discomfort (McDonald & Fedo, 2009).
- Limit interruptions when talking with the older adult, as they impede communication.
- ◆ Assess for other factors such as attitudes and beliefs about pain and its treatment that could affect pain reporting and management.
  - For example, patients may believe that pain is a normal part of aging, fear that pain means disease progression, and fear medication addiction or adverse side effects (Allcock, McGarry, & Elkan, 2002; Basler, Luckmann, Wolf, & Quint, 2008; Cook, Brawer, & Vowles, 2006).
- ◆ If pain is present, ask about its pattern over time. When did it start, how has it changed since then, is it constant or intermittent. Determine if it is acute pain, persistent pain (lasting more than a month beyond expected healing time) or recurrent persistent pain with intermittent exacerbations. When patients have persistent pain and an unrelated acute pain condition, the term acute-on-chronic pain is sometimes used (American Geriatrics Society Panel on Persistent Pain in Older Persons, 2002; Harkins, 2002).
- ◆ Ask about the nature or quality of pain that may reveal the underlying mechanism of pain. For example, sharp or aching pain may reveal nociceptive pain involving the musculoskeletal system. Visceral pain is often described as pressure, cramping, or sickening in nature; whereas, neuropathic pain may be described as having a burning, pins and needles electrical or stabbing quality (Jensen et al., 2009).
- ◆ Identify the location of the pain. This may be combined with the physical examination portion of the assessment or done with the use of a body map drawing such as the one provided on the BPI tool found in [Appendix A.2](#).
- ◆ Determine the impact pain has had on physical and psychosocial functioning, including any fear, anxiety, anger, or depression related to the pain and its impact (AGS, 2009; Hadjistavropoulos et al., 2007; Royal College of Physicians, British Geriatrics Society & British Pain Society, 2007).
- ◆ Use a validated scale to measure the pain intensity and its impact on functioning, at baseline and for follow-up reassessments to establish the efficacy of therapeutic interventions across providers and settings.
  - There is not one optimal pain intensity instrument appropriate for all older adults. Instead, an individualized approach has been recommended based on the older adults abilities and preferences. Tools with strong validity and reliability and clinical usefulness (e.g., Numeric Rating Scale, Pain Thermometer, revised Faces Pain Scale, etc.) are recommended (AGS, 2009; American Medical Directors Association (AMDA), 2012; British Pain Society/British Geriatrics Society, 2007; Hadjistavropoulos et al., 2007) [*Evidence Grade = D*].
  - The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) (JCAHO, 2012) requires that nurses and other health care providers in hospitals, long-term care, and other health care facilities assess pain intensity routinely and periodically reassess the pain at appropriate intervals [*Evidence Grade = D*].

## *Assessment in Cognitively Impaired Older Adults*

For cognitively impaired older adults, additional strategies often are needed to determine presence of pain. A hierarchical approach to assessing pain has been recommended as a guide for persons unable to self-report (Herr et al., 2011). The steps in this approach are described below:

### *I. Determine ability to self-report*

- ◆ Cognitively impaired older adults report less pain than elders who are cognitively intact, although evidence suggests that cognitive impairment does not change pain intensity experienced (Kunz, Scharmann, Hemmeter, Schepelmann, & Lautenbacher, 2007; Kunz, Mylius, Scharmann, Schepelman, & Lautenbacher, 2009; Lautenbacher et al., 2007). However, interpretation of the pain stimulus may be altered in dementia and impact self-report and behavioral presentation (Scherder et al., 2005). Therefore, assessing pain via self-report in this group is challenging [Evidence Grade = B2].
- ◆ Cognitive impairment can affect the ability to self-report pain accurately. However, many older adults who are mild to moderately impaired (and some with severe impairment) can self-report their pain intensity if the tools selected is properly administered and easily understood. The recommended tool for cognitively impaired is the Verbal Descriptor Scale (VDS) because it is the most sensitive and reliable in this group, although other options may be needed.

### *II. Investigate for possible pathologies and procedures that might cause pain*

- ◆ It is important to identify the underlying cause of the pain because management is more successful if directed toward the specific causative condition (AGS, 2009; Herr et al., 2011). Thus, a thorough review of the medical history, physical examination, and any pertinent laboratory studies or diagnostic tests is important in determining the cause (Hadjistavropoulos, MacNab, Lints-Martindale, Martin, & Hadjistavropoulos, 2009; Herr et al., 2011) [Evidence Grade = D].

### *III. Observe for possible behaviors that may signal pain*

- ◆ Behavioral observation is a key strategy for recognizing pain in cognitively impaired older adults. For the noncommunicative older adults, deviations from normal patterns can be key to recognizing pain problems (Herr et al., 2011). The American Geriatrics Society developed a list of common pain indicators that offer guidance to the assessment process (AGS, 2002). Directly observable behaviors, such as grimacing, moaning, guarding, bracing, posturing, as well as those less common such as agitation, aggression, restlessness, resisting care, and changes in usual behavior patterns may be an indicator of pain and should be monitored (Ahn & Horgas, 2013; Hadjistavropoulos et al., 2009; Shega et al., 2008; Sheu, Versloot, Nader, Kerr, & Craig, 2012) [Evidence Grade = C1].
- ◆ Over 20 observational tools have been developed for assessing pain in those with dementia with varying levels of validity and reliability. Systematic reviews have documented strengths and limitations and reached similar conclusions that no tool can be recommended for use across all care settings. (Cohen-Mansfield, 2008; Corbett et al., 2012; Herr, Bursch et al., 2010). Behavior tools can improve recognition of pain in older adults with cognitive impairment (Lukas, Barber et al., 2013) [Evidence Grade = B2].

- ◆ Because many pain conditions may not cause pain and associated behaviors at rest, observations should occur during movement, such as transferring, dressing, bathing (AGS, 2009; AMDA, 2012; British Pain Society/British Geriatrics Society, 2007; Hadjistavropoulos et al., 2007) [*Evidence Grade = D*].
- ◆ Herr and colleagues (2010) provided consensus recommendations for tools to use in the nursing home setting in the United States; however ongoing research and tool revision may change recommendations for best practice tools. Considering tool reliability and validity is important, but clinical utility and appropriateness to the setting and population are other key factors when selecting a tool. Two tools recommended from recent research are included in Appendix A.3a (PAINAD) and A.3b (PACSLAC-II) (Herr, Bursch et al., 2010; Lints-Martindale et al., 2012) [*Evidence Grade = C1*].

#### IV. Incorporate surrogate report

- ◆ Caregivers, nurses, and other health care providers commonly estimate pain ratings for those who are unable to communicate pain for themselves. However, this method can be problematic in that nursing staff and others may underestimate pain in cognitively impaired nursing home residents and family caregivers may overestimate pain severity (Cohen-Mansfield, 2005; van Herk et al., 2009). They often are unaware of the role behaviors play in identifying pain in persons with dementia (Eritz & Hadjistavropoulos, 2011) [*Evidence Grade = C1*].
- ◆ In spite of these difficulties, caregivers and nonlicensed health care providers can play an important role in identifying potential pain problems (Liu, 2013). Informal caregivers should be educated and guided to increase attention to specific pain cues and input should be solicited (van Herk et al., 2009) [*Evidence Grade = C1*].

#### V. Attempt an analgesic trial if suspicious of pain to evaluate whether pain is the underlying etiology (Herr et al., 2011)

- ◆ Use of an analgesic trial can be important in determining if behaviors suggestive of pain, when there is no clear pain etiology, are indeed related to pain. Several studies have evaluated use of an analgesic trial with the population of older adults with agitated or disruptive behaviors. Evidence is accumulating that this approach is, indeed, useful in validating presence of pain and response to analgesic intervention (Buffum, Sands, Miakowski, Brod, & Washburn, 2004; Chibnall, Tait, Harman, & Luebbert, 2005; Husebo, Ballard, Sandvik, Nilsen, & Aarsland, 2011; Kovach, Noonan, Schlidt, Reynolds, & Wells, 2006; Manfredi, Breuer, Meier, & Libow, 2003) [*Evidence Grade = B1*].

In addition, to self-reports, proxy reports, and observational methods, the algorithm in [Appendix A.4](#) (Reuben et al., 2013) may be used as a guide to pain assessment in this group. The algorithm begins with assessing for pain behaviors during movement. If noted, consider pre-medicating the patient prior to movement, strategies to reduce pain, and reassurance while continuing to watch for pain-indicating behaviors. If no pain behaviors are noted during movement, but the patient exhibits other behaviors that suggest pain, then assess for basic comfort measures such as toileting, thirst, and hunger or underlying pathologies such as infection or constipation. The final step is to treat the identified cause or consider an empiric analgesic trial to verify if pain is likely the cause of the behaviors observed.

## ASSESSMENT TOOLS & FORMS

### *Pain Intensity Tools* (Appendix A.1)

There is not one optimal persistent pain intensity instrument appropriate for all older adults. Instead, an individualized approach has been recommended (American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons, 2009; Herr, Coyne, McCaffery, Manworren, & Merkel, 2011). The Numeric Rating Scale (NRS) is commonly accepted as an organizational standard for measuring pain and is often appropriate for older adults. However, not all older persons can rate their pain using NRS. Therefore, this guideline includes a variety of pain measurement tools to select from based on the patients' ability and preferences. In addition to the numeric scale (NRS), other valid and reliable choices include the Verbal Descriptor Scale (VDS), Pain Thermometer, Functional Pain Scale, and the revised Faces Pain Scale. These tools are some of the many reliable and valid choices for use in older adults.

#### **Numeric Rating Scale (NRS)** (Appendix A.1a)

The NRS is commonly used in clinical settings and works well for many older adults (Lukas, Barber, Johnson, & Gibson, 2013; van Dijk, Kappen, van Wijck, Kalkman, & Schuurmans, 2012; Wood, Nicholas, Blyth, Asghari, & Gibson, 2010a), however, some elders may have difficulty comprehending and responding to this rating scale (Hadjistavropoulos et al., 2007; Herr, Spratt, Garand, & Li, 2007) [*Evidence Grade = B1*].

- ◆ The older adult is asked to look at the scale and rate their pain by choosing the one number from 0 – 10 that best describes their pain ranging from 0 = “none” or “no pain or discomfort” to 10 = “pain as bad as you can imagine”.
- ◆ Vertical presentation may be easier for persons with alteration in abstract thinking to comprehend and is often preferred by older adults (Herr et al., 2007).
- ◆ Individuals with mild to moderate cognitive impairment may have difficulty with the NRS and the BPI. If that occurs, the Verbal Descriptor Scale is recommended.

#### **Verbal Descriptor Scale (VDS)** (Appendix A.1b)

The Verbal Descriptor Scale is generally regarded as the most reliable and valid pain measure in older adults, including those with mild to moderate cognitive impairment (Herr et al., 2007; Herr, Spratt, Mobily, & Richardson, 2004; Lukas, Barber et al., 2013; Pesonen et al., 2009) [*Evidence Grade = B1*].

- ◆ With the Verbal Descriptor Scale (VDS) the participants choose words that best describe their pain intensity (e.g., none, slight, mild, moderate, severe, extreme, most intense pain possible).
- ◆ A 6-point scale (e.g., none [0], mild [2], moderate [4], severe [6], extreme [8], most intense pain possible [10]) has been described to allow for fixed computerized documentation that uses a 0-10 scale.
- ◆ A simpler version of the VDS, including a 4-point scale (none, mild, moderate, severe), has been validated with older adults (Closs, Barr, Briggs, Cash, & Seers, 2004; Lukas, Barber et al., 2013). Although this shorter scale is less sensitive in detecting changes in pain, a scale with fewer options is desired over no self-report and can be helpful in guiding treatment choices.



### **Pain Thermometer (PT) (Appendix A.1c)**

A Pain Thermometer (PT) is an adaptation of the VDS that combines word choices with a thermometer to assist with abstract thinking and has been demonstrated to have low failure to use rates and is preferred by many older patients (Herr et al., 2007; Li, Herr, & Chen, 2009; Ware, Epps, Herr, & Packard, 2006) [*Evidence Grade = B2*].

- ◆ In tool comparison studies, the Iowa Pain Thermometer is preferred by majority of older African Americans, Hispanics and Asians (Li et al., 2009; Ware et al., 2006).

### **Faces Pain Scale-Revised (FPS-R) (Appendix A.1d)**

The Faces Pain Scale (Bieri, Reeve, Champion, Addicoat, & Ziegler, 1990) was originally developed to assess pain intensity in children has demonstrated reliability and validity in older adults, although it may measure more than pain severity (Herr et al., 2004; Herr et al., 2007; Li, Liu, & Herr, 2007; Ware et al., 2006) [*Evidence Grade = C1*].

- ◆ The FPS is preferred by cognitively impaired older African-Americans, Hispanics and Chinese elders (Li et al., 2007; Ware et al., 2006). The comparability of the FPS and FPS-R in children and validity established in minority elders suggests it would be appropriate in the general older adult population [*Evidence Grade = C1*].

### *Impact of Pain on Function Tools (Appendix A.2)*

The Brief Pain Inventory (BPI) (Cleeland & Ryan, 1994) was selected for use in this guideline because it is reliable and valid for use in older adults. It incorporates pain intensity ratings in the form of a Numeric Rating Scale (NRS) (**Appendix A.1a**) as well as pain presence, location, treatment and interference with physical and psychosocial functioning. In addition, the short-form is brief enough for practical clinical use.

- ◆ The **Brief Pain Inventory (Appendix A.2a)** has been validated in a variety of research and clinical settings including persistent non-cancer pain (Kroenke, Theobald, Wu, Tu, & Krebs, 2012). The BPI demonstrated responsiveness over time for detecting improvement in pain. The BPI (and a modified short form (Mendoza, Mayne, Rublee, & Cleeland, 2006) is recommended for use to evaluate impact of pain on function and has been validated for use with older adults (Auret et al., 2008; Kemp, Ersek, & Turner, 2005; McDonald et al., 2008) [*Evidence Grade = C1*].
- ◆ Another shorter tool, the **Functional Pain Scale (FPS) (Appendix A.2.b)**, evaluates pain severity and its impact on activities and was developed and validated for use with older adults. Preliminary validity and reliability were established, although adaptations may be necessary to include pain impact on activities relevant to the circumstances of the older adult. A modified version is provided (Gloth et al., 2001) [*Evidence Grade = C2*].

### *Pain Behavior Assessment Tools (Appendix A.3)*

For older adults with moderate to severe cognitive impairment, a behavioral pain scale may be needed. Based on recent best evidence and clinical utility in English speaking samples, the Pain Assessment in Advanced Dementia (PAINAD) and the Pain Assessment Checklist for Seniors with Limited Ability to Communicate-Revised (PACSLAC-II) are recommended, although others may be considered and ongoing development is in process for many.

- ◆ The **Pain Assessment in Advanced Dementia (PAINAD) (Appendix A.3a)** is a short scale including five items (breathing, negative vocalizations, facial expression, body language and consolability). It has established reliability and validity for use in persons with dementia and can discriminate response to treatment and changes related to painful activity (Lints-Martindale, Hadjistavropoulos, Lix, & Thorpe, 2012; Lukas, Barber et al., 2013; Paulson-Conger, Leske, Maidl, Hanson, & Dziadulewicz, 2011; Warden, Hurley, & Volicer, 2003; Zwakhalen, Hamers, & Berger, 2006). It has been tested in different settings and, although issues have been noted related to two items (breathing, consolability), it is a recommended tool (Herr, Bursch, Ersek, Miller, & Swafford, 2010) [*Evidence Grade = C1*].
- ◆ The original **Pain Assessment Checklist for Seniors with Limited Ability to Communicate-Revised (PACSLAC-II) (Appendix A.3b)** has 60 items rated as present or absent and is a psychometrically sound tool for recognizing and discriminating pain from non-pain conditions. Most recently, the PACSLAC-II was created in a revision of the original. The revised tool is shorter (31 items) and able to discriminate pain and non-painful states and recommended as a strong tool (Chan, Hadjistavropoulos, Williams, & Lints-Martindale, 2013; Fuchs-Lacelle & Hadjistavropoulos, 2004; Herr, Bursch et al., 2010; Kaasaleinen, Akhtar-Danesh, Hadjistavropoulos, Zwakhalen, & Verreault, 2013; Lukas Barber et al., 2013) (**Appendix A.3b**) [*Evidence Grade = B2*].



## MANAGEMENT STRATEGIES

### *Pain Management Strategies*

Managing pain in older adult patients requires consideration of its etiology and a variety of age-related factors affecting the safety and efficacy of treatment. As with treatment planning for younger patients, the development and refinement of therapy for older persons is based on a thorough pain assessment, balancing risks and benefits of treatment options, selecting medications appropriate for the reported nature and intensity of pain with the timing of doses determined by expected pharmacological effects, and using the least invasive (e.g., not intramuscular) route (AGS, 2009). With continuing pain, refinement of therapy is based on individual responses with primary emphasis on improvement in function and quality of life.

Pharmacologic management is the foundation of pain treatment in most settings; however, medication(s) alone often fall short of providing optimal pain reduction and functional improvement. In addition to medical management, there are many other approaches to pain relief that add benefit to the treatment plan. In conventional medicine, there are physical or psychosocial (cognitive/behavioral) modalities often provided by a physical therapist, psychiatrist, or psychologist. Additional complementary and alternative medicine (CAM) approaches are also utilized for the prevention and control of pain. Integrated, multidisciplinary pain treatment programs are likely the most beneficial in optimizing the outcomes when pain is complex and refractory to initial treatment attempts, but related financial, transportation and/or physical capacity requirements may limit the older adults' access to this form of therapy.

The potential for drug-drug interactions with the older person's current medications, past responses to therapies, and psychosocial circumstances must be taken into account. Economic factors also frequently influence treatment decisions in this population, which may be strongly influenced by payer policies. While tailoring a therapeutic plan the patient's comfort-function goals and the treatment team's goals are part of a shared decision-making process. With older adults in particular, their caregiver and living situation may contribute to treatment success or failure. For example, short-acting medications may not be best where supervised administration is needed if caregivers are only able to help administer medications once or twice daily. Components of a comprehensive assessment have been described in detail elsewhere and the readers are referred to these sources to guide the initial and subsequent reassessment processes that guide pharmacological treatment decisions (Hadjistavropoulos et al., 2007; Herr, 2011).

An individualized approach to pain management strategies is best when it yields optimal pain reduction and functional improvement with minimum drug-related adverse effects. A multi-method approach, termed "multimodal therapy" has been shown to effectively reduce pain in older adults. Sometimes the use of two or more drugs that target different mechanisms are considered multimodal therapy, however, in older adults this approach may contribute to polypharmacy, a common problem faced by many older adults with pain. To reduce the number and dose of medications needed, professionals should target factors in the mind body, spirit and social interactions that are known to amplify, spread and prolong pain while limiting exposure to potentially dangerous medications (Abdulla et al., 2013; AGS, 2009).

Appropriate education about pain management assessment and treatment should be considered part of a comprehensive plan for persistent pain management. The plan for managing persistent pain should be discussed with the patient and family so that individualized care based on preferences can be instituted.

### *Nondrug Pain Management Strategies*

Nondrug therapies can be useful to help patients with mild to moderate pain and negate the need for analgesics that may put the older adult at risk for drug-related interactions or adverse effects. While analgesic medications are considered necessary for severe pain, alone they are often not sufficient when the pain persists. Thus in situations of persistent severe pain, nondrug therapies are used as an adjunct in addition to analgesics. Although these therapies should not be used as a substitute for analgesics, many older adults do not receive medically necessary analgesics (AGS, 2009; Caltagirone, Spoletini, Gianni, & Spalletta, 2010; Hwang, Richardson, Harris, & Morrison, 2010) and could benefit from non-drug pain relieving methods if they are unwilling or unable to take medications [*Evidence Grade = C1*].

In reference to methods of pain control, the term nondrug has been used interchangeably with the words non-pharmacologic, alternative, complementary and integrative. This catch-all phrase can refer to highly technical and invasive approaches like implanted spinal cord stimulators; as well as interventions that nurses can independently administer or teach patients to use on their own. The focus of this section will be interventions that are noninvasive and require little, if any, technology.

Combined nondrug methods have an additive, if not synergistic affect; and thus nurses are encouraged to integrate a variety of methods targeting the mind body, spirit and social interactions that are known to affect pain. From an “empirical evidence” perspective; significant methodological concerns have been raised about the way many of these nondrug interventions have been studied which may limit the conclusion that can be made about their efficacy for persistent pain in the older adult (Park & Hughes, 2012). In part this is related to the fact that these techniques are not as easy to study using blinded randomized controlled trials methods developed to determine the safety and efficacy of medications. Some clinicians or educators are too quick to discount their effectiveness for this reason (Carr, 2008). However, a considerable research base exists to support the use of most nondrug methods of relieving pain. Additionally, the benefits of integrating nondrug approaches are an important element of multimodal therapy given that they can lower the number and/or dose of medications needed to control persistent pain (AGS, 2009).

Older adults should be encouraged to use supplemental nondrug therapies whenever analgesics are used to cut the dose of medication required (ASA, 2012). In general, older adults are receptive to using nondrug methods of pain control and have learned a variety of methods that worked for them earlier in their life. The nurse should explore those experiences as well as the patient’s personal preferences, and their beliefs about which nondrug measures could best be used in the current situation to alleviate their pain (Engers et al., 2008; Good et al., 2010; Tracy, 2010) [*Evidence Grade = B2*].

Conventional medicine generally categorizes nondrug methods as either physical or cognitive-behavioral modalities (Park & Hughes, 2012). Complementary and Alternative Medicine (CAM) methods are sometimes classified according to whether they fit into one or more broad categories such as: natural products, mind-body medicine, manipulative and body-based practices or other CAM practices (National Center for Complementary and Alternative Medicines (NCCAM), 2011). Chronic pain is the most common condition for which CAM approaches are sought and several of these approaches have similar efficacy to medical therapy for back pain or headaches (Wells, Phillips, Schachter & McCarthy, 2010).

Many people turn to CAM methods for chronic pain because to give them a greater sense of control so they no longer feel dependent on a doctor, a pill or a procedure. Pain is the most common reason why people use CAM approaches (Wells et al., 2010), often because they failed to benefit from conventional medicine (Kanodia, Legedza, Davis, Eisenberg & Phillips, 2010). Patients may also choose CAM therapy if they receive more attentive, personalized, unhurried care than what is provided by their conventional healthcare services (NCCAM, 2011).

Nurses may be in the best position to discuss these matters with patients, as many have embraced selected CAM therapies that are aligned with valued concepts of holism and humanism. Nurses should become knowledgeable about CAM therapies because of their prevalent use and their potential to cut pain or anxiety, while improving coping, sleep and quality of life. Nurses should also understand CAM therapy because their use may be counterproductive or contraindicated in combination with particular medicines or diagnoses. Occasionally, CAM providers may further distance patients from mainstream medicine by reinforcing inaccurate notions about the potential harm and ineffectiveness of conventional therapies; while touting the safety of their therapy. Conversely, not all CAM therapies are cheap or completely harmless. Injury, illnesses and even deaths have resulted directly from CAM treatments (Saper et al., 2008; Tanriover, Guven, & Topeli, 2009).

Just as multimodal drug therapy targets different receptors and organs (ASA, 2012), a comprehensive approach for the nurse uses different techniques to quiet potential amplifiers of pain signals at the level of the body, mind, spirit or social interactions. Some of these approaches are simple and can be utilized by nurses in many settings with available knowledge skills and resources; whereas others require more advanced skills or resources. Both are summarized as follows:

### Simple, Non-invasive body-focused techniques:

- ◆ Positioning for optimal comfort and function (Gordon, Grimmer-Somers, & Trott, 2009) [*Evidence Grade = C2*].
- ◆ Massage decreases pain in inpatients, community based and nursing home residents. It works better for acute pain, and in chronic pain when combined with other interventions. Used primarily for musculoskeletal pain; may not be tolerated with allodynia (Reid et al., 2008) [*Evidence Grade = A1*].
- ◆ Thermotherapy (heat/cold treatments) is helpful, especially for musculoskeletal forms of pain. Protection must be in place to prevent tissue damage. In general icing is better than heating, but responses vary (Hochberg et al., 2012; Oosterveld et al., 2009) [*Evidence Grade = C2*].
- ◆ Therapeutic or general exercise programs have the strongest evidence supporting their effectiveness to reduce pain, improve mood and functioning among physical nondrug methods (Dubin & King-Van Vlack, 2010; Hochberg et al., 2012; Jenkinson et al., 2009; Kolanowski, Resnick, Beck, & Grady, 2013; Park & Hughes, 2012; Tse, Wan, & Ho, 2011; Williams, Brand, Hill, Hunt, & Moran, 2010; Yip, Sit, Wong, Chong, & Chung, 2008) [*Evidence Grade = B1*].
- ◆ Exercising in water (aquatic exercise) helps patients whose ability to perform land-based exercises is limited (Gill, McBurney, & Schulz, 2009; Hall, Swinkels, Briddon, & McCabe, 2008; Hochberg et al., 2012) [*Evidence Grade = C1*].

- ◆ Orthotics may reduce pain and increase functioning for back, knee and foot musculoskeletal sourced of pain (Hawke, Burns, Radford, du Toit, 2008; Hochberg et al., 2012; Pagani, Böhle, Potthast, Brüggemann, 2010; Roelofs et al., 2010) [*Evidence Grade = C1*].
- ◆ Yoga has good evidence that certain forms work for certain types of pain, although specific studies have not focused consistently on older adults (Cox et al., 2010; Evans et al., 2010; Reid, et al., 2008; Tekur, Singhphow, Nagendra, & Raghuram, 2008) [*Evidence Grade = A2*].
- ◆ Tai Chi involves smooth graceful movements and some forms are very well tolerated by older adults with persistent pain (Hochberg et al., 2012; Liu & Frank, 2010; Wang et al., 2009; Wang et al., 2010) [*Evidence Grade = B2*].
- ◆ Diet (including weight loss for the obese) and nutritional supplements may help reduce the underlying physiology that contributes to pain, inflammation, or neuropathic functioning (Alpay et al., 2010; Belcaro et al., 2010; Biesiekierski et al., 2011; Ciappuccini, Ansemant, Maillefert, Tavernier, & Ornetti, 2010; Farid et al., 2010; Hochberg et al., 2012; Jacquet et al., 2009; McCarthy et al., 2009; Riecke et al., 2010; Smedslund, Byfuglien, Olsen, & Hagen, 2010; van Tonder, Herselman, & Visser, 2009) [*Evidence Grade = B1*].
- ◆ Improved quantity and quality of sleep improves pain and functioning levels (Edwards, Almieda, Klick, Haythornthwaite, & Smith, 2008; Jungquist et al., 2010; Kelly, Blake, Power, O’Keefe & Fullen, 2010; Kwekkeboom, Abbott-Anderson & Wanta, 2010; Vitiello, Rybarczyk, Von Korff, & Stepanski, 2009) [*Evidence Grade = A1*].
- ◆ Basic relaxation techniques (e.g., progressive muscle) are believed to be helpful, with better support for advanced (see **imagery and meditation below**) techniques see below (Good et al., 2010; Kwekkeboom, Wanta, & Bumpus, 2008) [*Evidence Grade = C1*].

### Advanced non-invasive body-focused techniques:

- ◆ Acupuncture is helpful for reducing persistent pain and disability for many people. Although research consistently supports its pain-relieving benefits compared to other methods; discrediting studies with placebo/sham controls raise questions about its mechanism of action. Rare complications may occur (Ernst, Lee, & Choi, 2011; Hochberg et al., 2012; Park & Hughes, 2012) [*Evidence Grade = A1*].
- ◆ Applying pressure to acupuncture points (acupressure) holds promise as a technique to alleviate pain without the use of needles (Chen & Wang, 2013) [*Evidence Grade = C1*].
- ◆ Transcutaneous electrical nerve stimulation (TENS) reduced pain in knee osteoarthritis and in chronic back pain. In other studies there are variable and weak results in different types of pain (Hochberg et al., 2012; Khadikar, Odebiyi, Brosseau, & Wells, 2008; Park & Hughes, 2012) [*Evidence Grade = A2*].
- ◆ Biofeedback helps with certain forms of pain with the best evidence for treating headaches (Bendaña et al., 2009; Ehrenborg & Archenholtz, 2010; Huis 't Veld et al., 2010; Jensen et al., 2009; Magnusson, Chow, Diamandopoulos, & Pope, 2008; Mullally, Hall, & Goldstein, 2009; Neblett, Mayer, Brede, & Gatchel, 2010; Walker, French, Grant, & Green, 2010; Yilmaz et al., 2010) [*Evidence Grade = C2*].

- ◆ Low-level laser therapy has emerging evidence of effectiveness for certain conditions (Chow, Johnson, Lopes-Martins, & Bjordal, 2009; Fulop et al., 2010) [*Evidence Grade = A2*].
- ◆ Manual Therapies provided by chiropractors or Physical Therapists have strong evidence for effectiveness in reducing pain and improving functioning for certain types of pain. Evidence is better for acute pain than for persistent pain (Cecchi et al., 2010; Chou & Huffman, 2007; Evans et al., 2010; Hayden, van Tulder, Malmivaara, & Koes, 2005; Hochberg et al., 2012; Walker et al., 2010) [*Evidence Grade = A1*].

### Simple, techniques focusing on the mind:

- ◆ Music eases pain for many people with partial temporary improvements in persistent pain. Works best when combined with relaxation techniques (Allred et al., 2010; Cepeda et al., 2006; Good et al., 2010; Madson & Silverman, 2010; Nilsson, 2008; Park & Hughes, 2012; Reid et al., 2008; Sand-Jecklin & Emerson, 2010; Skingley & Vella-Burrows, 2010) [*Evidence Grade = B2*].
- ◆ Distraction helps decrease awareness of pain, but not to the same extent as is does for acute pain (Hoffman et al., 2007; Snijders, Ramsey, Koerselman, & van Gijn, 2010) [*Evidence Grade = C2*].
- ◆ Reduced stress, fear, anger and anxiety (Basler et al., 2008; Bruehl, Chung, Burns, & Biridepalli, 2003; Burns & Bruehl, 2005; Carleton & Asmundson, 2009; Carson et al., 2007; Feeney, 2004; Hochberg et al., 2012; Martin, Hadjistavropoulos, & McCreary, 2005; McCarthy et al., 2009; Muñoz Sastre, Albaret, Maria Raich Escursell, & Mullet, 2006; Paquet, Kergoat, & Dubé, 2005; Wegener, Castillo, Haythornthwaite, Mackenzie, & Bosse, 2011; Wood, Nicholas, Blyth, Asghari & Gibson, 2010b) [*Evidence Grade = C1*].
- ◆ Reminiscence can be used as a distraction technique to decrease awareness of pain. Nurses promote patient comfort and dignity by allowing patients to tell their stories, which can relieve pain and strengthen their therapeutic alliance (Dawood & Gallini, 2010; MacDonald, Linton, & Jansson-Fröjmark 2009; Skott, 2001) [*Evidence Grade = C1*].

### Advanced techniques focusing on the mind:

- ◆ Cognitive behavioral strategies are effective in managing persistent pain in adults with a variety of conditions (Beissner et al., 2009; Berman, Iris, Bode, & Drengenber, 2009; Broderick et al., 2014; Chou & Huffman, 2007; Eccleston, Williams, & Morley, 2009; Green, Hadjistavropoulos, Hadjistavropoulos, Martin, & Sharpe, 2009; Jensen, Turner, & Romano, 2007; Jungquist et al., 2010; Kwেকেboom et al., 2010; Lamb et al., 2010; Morley, Eccleston, & Williams, 1999; Morley, Williams, & Hussain, 2008; Reid, Otis, Barry, & Kerns, 2003; Rybarczyk, Lopez, Schelble, & Stepanski, 2005; Rybarczyk, DeMarco, DeLaCruz, Lapidus, & Fortner, 2001; Vitiello et al., 2009; Wells-Federman, Arnstein & Caudill, 2002; Wells-Federman, Arnstein & Caudill, 2003) [*Evidence Grade = A1*].
- ◆ Motivational interviewing helps people make meaningful changes in their life despite the persistence of pain (Ang et al., 2011; Baker et al., 2010) [*Evidence Grade = C1*].
- ◆ Relaxation with imagery or hypnosis (Baird, Murawski, & Wu, 2010; Bardia, Barton, Prokop, Bauer, & Moynihan, 2006; Chen & Francis, 2010; Gustin, Wrigley, Henderson, & Siddall, 2010; Kwেকেboom & Gretarsdottir, 2006; Kwেকেboom et al., 2008; Morone & Greco, 2007) [*Evidence Grade = A2*].



- ◆ Virtual reality techniques are being developed and hold promise for patients with pain. Studies have focused more on a younger cohort with acute pain (Carrouger et al., 2009; Hoffman, Patterson, Carrouger, Sharar, 2001; Hoffman et al., 2008; Hoffman et al., 2007; Wright, Hoffman, & Sweet, 2005) [*Evidence Grade = C1*].
- ◆ Acceptance and Commitment Therapy moves beyond cognitive behavioral therapy and integrates mindfulness meditation, values-based motivational therapy to help patients set, commit to and achieve realistic goals (Johnston, Foster, Shennan, Starkey, & Johnson, 2010; McCracken & Vowles, 2008; Teixeira, 2010; Veehof, Oskam, Schreurs, & Bohlmeijer, 2011) [*Evidence Grade = C2*].

### Techniques focusing on the spirit and/or energy field:

- ◆ Prayer and other religious rituals can reduce patient-reported pain levels (Delgado-Guay et al., 2011; Dezutter, Luyckx, Schaap-Jonker, Büssing, Corveleyn & Hutsebaut, 2010; Dezutter, Robertson, Luyckx & Hutsebaut, 2010; Keefe et al., 2001; Matthews, Marlowe, & MacNutt, 2000; Morone & Greco, 2007) [*Evidence Grade = B2*].
- ◆ Meditation (including mindfulness meditation has been found to reduce persistent pain, with some conflicting findings (National Institutes of Health Technology Assessment Panel, 1996; Park & Hughes, 2012; Szanton, Wenzel, Connolly & Piferi, 2011; Teixeira, 2010) [*Evidence Grade = D*].
- ◆ Electromagnetic therapy reduced pain in musculoskeletal and neuropathic conditions (Cepeda et al., 2007; Eccles, 2005; Khoromi et al., 2007; Lipton et al., 2010; Weintraub et al., 2003; Wolsko et al., 2004) [*Evidence Grade = C*].
- ◆ Interpersonal energy field therapy (Healing Touch, Therapeutic Touch, Reiki) had reduced pain and other uncomfortable symptoms (Bardia et al., 2006; Coakley & Duffy, 2010; Engebutsen & Wardell, 2007; McCormack, 2009; Meland, 2009; Richeson, Spross, Lutz, & Peng, 2010; Smith, Arnstein, Rosa, & Wells-Federman, 2002); Vitale, 2007) [*Evidence Grade = B2*].

### Techniques focusing on simple social interactions:

- ◆ Patient education helps lower pain in a more consistent and effective manner if tailored for the individual (Baker et al., 2010; Engers et al., 2008; Good et al., 2010; Hopman-Rock & Westhoff, 2000) [*Evidence Grade = C2*].

### Advanced techniques focusing on social interactions:

- ◆ Engaging the treatment teach the patient and significant others in coping skills training is helpful in managing persistent pain in older adults (Broderick et al, 2014; Dobscha et al., 2009; Ersek, Turner, Cain, & Kemp, 2008; Haythornthwaite, Clark, Pappagallo, & Raja, 2003; Keefe et al., 2004; Martire et al., 2006; Nuñez, Keller, & Ananian, 2009; Sheinfeld et al., 2012) [*Evidence Grade = A2*].
- ◆ Interactive technologies are being developed through the use of websites and electronic forms of communication (Bertsche et al., 2009; McDonald, Gifford, & Walsh, 2011; Naylor, Keefe, Brigidi, Naud, & Helzer, 2008; West et al., 2003) [*Evidence Grade = C1*].

### *Recommendation*

There is a large body of mixed evidence that a variety of nondrug strategies may help the older adult think, feel and do better when pain persists. These can target the mind, body, spirit and/or social interactions; but generally have a small to moderate overall effect on pain intensity. The techniques tested specifically in the older adult population include massage, and therapeutic exercise; with wellness behaviors including diet and sleep as also helping older adults with pain. Research also supports the benefits of interventions directed at the mind, with certain forms of distraction, cognitive behavioral therapy and patient education strategies having been shown beneficial with older adults when the content and methods are tailored to their limitations and unique needs. Although fewer studies have been done on older adults, especially using methods that would permit higher evidence rankings, intervention targeting the spirit and social interactions are worth considering to reduce the distress that can drive pain levels up; especially for those who are unwilling or unable to take medications. Nondrug methods are most frequently used in combination with medications to find the optimum balance of pain reduction, functional improvement and enhanced quality of life. Since most of these studies have not included older adults who are very frail, or have cognitive impairments, clinical judgement must be applied in their selection, use, and inclusion in treatment plans based on the evaluation of how the method affects the patient's pain, distress, behaviors and functioning.

## **PHARMACOLOGIC APPROACHES**

Pharmacological approaches are considered the cornerstone of treatments for chronic pain. When pain persists, no single drug is identified by research to be completely safe, effective and affordable for all older adults. The three general categories of drugs used to control persistent pain are non-opioids, opioids, and adjuvant analgesics. Even drugs like aspirin or ibuprofen that are widely considered to be the safest, carry a Food and Drug Administration warning of serious harm and potential death if used for a long period of time. These warnings are justified as in 2008 more than 1 million older adults sought emergency care for adverse drug reactions, with 9% of these visits involving opioids and 8% for NSAIDs (Bronstein et al., 2010; SAMHSA, 2011). These warnings are not intended to discourage use, rather urge the cautious and skilled use of necessary analgesics. The modified adage, “start low, go slow... but go” ... reflects the urgent need to safely and effectively treat older adult's pain with appropriate medications.

Aging changes the intestinal surface area, motility, secretions and blood flow in a way that can alter drug absorption, bioavailability, and transit time. Reductions in blood/tissue protein and water can affect drug distribution, while slowing of hepatic and renal function diminishes the capacity to metabolize and excrete water soluble drugs. A higher ratio of bodily fat enhances the ability to store lipid soluble drugs like fentanyl and methadone. Analgesics are highly effective in the older adult population, who conversely tend to be more vulnerable to side effects and drug interactions than their younger counterparts (Arnstein, 2010; Arnstein & Herr, 2010).

Although many analgesics are safe and effective for short-term use; persistent pain requires treatments for long periods of time. Thus, care must be taken to select, monitor and periodically re-evaluate the regimen to avoid exposing the older adult to potentially life-threatening toxicities, overdoses, and/or drug interactions. Educating patients and their caregivers about proper medication storage and use; including interactions with common foods, drugs or herbal products is equally important (Arnstein & St. Marie, 2010; Nieminen et al., 2010).

Besides age, other factors such as genetic differences, comorbidities, concurrent medications, psychosocial, economic and environmental issues can all play a role in the selection of an analgesic regimen that is safest and most effective for the older adult (Arnstein & Herr, 2010; Stamer & Stuber, 2007). Given variable responses to specific therapies, even within the same drug class; a long trial and error process may be needed to find the best tolerated and most effective treatment. To avoid prolonging the process chose agents with a good safety profile and low side effect burden; taking into account the individual's responses, comorbidities, diet and other medications. Available guidelines help, but can't accurately predict the most advantageous drug and dose for a given individual (AGS, 2002; AGS, 2009; Carr, 2008; Chou et al., 2009; Hochberg et al., 2012; Manchikanti et al., 2012; VHA/DoD, 2010). Additionally, the limitations and preferences of the prescriber or the payer may further impede the process of creating a safe, effective individualized regimen (Arnstein & St. Marie 2010; Webster & Fine, 2012).

Developing the ideal treatment plan is built on the solid foundation of a comprehensive assessment, with vigilant reassessments. The reassessments should include evaluation of pain reduction, functional improvements and the presence of side effects. Nearly a quarter of older adults abandon analgesic therapy because the perceived benefits of relief obtained do not outweigh the side effect burden (Makris, Kohler, & Fraenkel, 2010; Noble et al., 2010; Saarto & Wiffen, 2007; Strassels, McNicol, & Suleman, 2008; Yu, Tang, Yeh, Kuo, & Yu, 2011). Yet many of these treatment failures could be avoided with a low starting dose, slow titration and implementing strategies to prevent and relieve side effects proactively.

Often, potentially beneficial treatments are abandoned prematurely. Adequate trials of some medications can take weeks at a stable dose for the full effects to become known (Bril et al., 2011; Dworkin et al., 2007; Lin, Zhang, Jones, & Doherty, 2004). The efficacy of most nonopioid and opioid drugs was established in single dose trials on young adults with experimentally induced or mild (e.g. dental) pain (McQuay, Derry, Eccleston, Wiffen, & Andrew Moore, 2012). Thus the effect on older adults who need them for chronic pain remains largely unknown.

The effectiveness of adjuvant medications used for older adults with persistent pain has been established while they remain on their usual analgesic regimen. Although the research may report the drug is effective, it may in fact be the synergistic effect of multimodal therapy that worked (Elia, Lysakowski, & Tramèr, 2005; Hochberg et al., 2012; Roth & Fuller, 2011; Turk, 2001). To prevent problems related to polypharmacy, both pharmacologic and nondrug therapies should be integrated. From a medication perspective, the combination of the simplest regimen, using the lowest possible pill burden and fewest prescribers is considered best.

## **GENERAL PHARMACOLOGICAL CONSIDERATIONS**

- ◆ Potentially harmful effects of pain; including the impact it has on physical, mental and social functioning can be reduced by appropriate analgesia (AGS, 1998; AGS, 2002; Arnstein, 2010).
- ◆ Older adults are at increased risk for adverse effects, and medication-related toxicity due to age-related declines in drug metabolism and elimination, and the vulnerability of end-organs to damage over time (AGS, 2009; AGS-Beers 2012; Rogers, Nafziger, & Bertino, 2002; Schmucker, 2001) [*Evidence Grade = B1*].
- ◆ Inappropriate prescribing for older adults is common (AGS-Beers, 2012; Manchikanti et al., 2012; Won et al., 2004).
- ◆ Analgesics should be started at the lowest dose known to be effective using the product anticipated to have the fewest side effects and toxicities based on the older person's identified risk factors (AGS, 2009; Bril et al., 2011; Plante & VanItallie, 2010; Wright et al., 2011) [*Evidence Grade = A1*].



- ◆ Pain and anxiety from procedures known to be uncomfortable should be managed preemptively to prevent foreseeable discomforts (Czarnecki et al., 2011; Feeney, 2004) [Evidence Grade = B1].
- ◆ In Nursing Homes, pain management can be improved by using a systematic, interdisciplinary care with guidance from decision-support algorithms and ongoing evaluation of outcomes using on-site consultants (Swafford, Miller, Tsai, Herr, & Ersek, 2009; Tse, Leung, et al., 2012; Tse, Vong, & Ho, 2012 [Evidence Grade = B2]).
- ◆ Use the least invasive route based on convenience and tolerability such as topical or oral agents (AGS, 2009; Arnstein, 2012; Makris et al., 2010; Massey, Derry, Moore, & McQuay, 2010) [Evidence Grade = B1].
- ◆ Avoid using intramuscular injections because of the tissue damage, pain, and unpredictable effects compared with other routes (AGS, 2009; APS, 2008) [Evidence Grade = B1].
- ◆ Avoid using analgesics with a very high risk of adverse effects in older adults (e.g., meperidine, pentazocine, indomethacin, amitriptyline, ketorolac (AGS, 2009; AGS-Beers, 2012) [Evidence Grade = B1].
- ◆ With constant severe, persistent pain; use scheduled dosing with longer acting medications instead of “as-needed” (prn) dosing, to improve pain control, lower pill burden, reduce side effects and enhance adherence (AGS, 2002; AGS, 2009; APS, 2008; Buffum et al., 2004).
- ◆ Despite doing better physically, many patients taking scheduled opioids may have more psychosocial concerns than those taking medications on a prn basis (Von Korff et al., 2011) [Evidence Grade = B2].
- ◆ For patients prescribed opioid therapy, professionals need to have a system in place to screen for and monitor psychosocial concerns; including education and counseling regarding proper opioid use, as well as the warning signs of misuse or addiction (Cheatle & Savage, 2012; Chou et al., 2009; Manchikanti et al., 2012).
- ◆ When the opioid is either ineffective or has an unacceptable side effect burden, switch cautiously from one opioid to another (Fine & Portenoy, 2009; Webster & Fine, 2012). Prescribing of higher risk opioids (e.g. methadone) should be limited to prescribers experienced in the selection criteria, dosing, and monitoring of patients unique to the specific drug (AGS, 2009; CDC, 2012a; Webster et al., 2011).
- ◆ Monitor patients taking pain medicines closely because analgesics are a leading cause of poisonings among older adults (Bronstein et al., 2010; SAMHSA, 2011) [Evidence Grade = B2].

### *Acetaminophen*

- ◆ Acetaminophen 500mg four times a day is considered the first-line, first choice medication for older adults because of the low incidence of side effects with this drug. Those who do not have hepatic disease or chronic alcoholism can take higher safely titrate up to a maximum dose in the range of 3,000 or 4,000 mg per day if adequately hydrated (AGS, 2009; Gloth III, 2011; Wright et al., 2011) [Evidence Grade = B1].
- ◆ Acetaminophen may reduce the need for opioids with acute pain, but it is not opioid sparing for patients with severe, persistent cancer pain (Buffum et al., 2004; Cattabriga et al., 2007; Israel, Parker, Charles, & Reymond, 2010; Maund, McDaid, Rice, Wright, Jenkins, & Woolacott, 2011) [Evidence Grade = B2].
- ◆ Hepatic and renal toxicity can occur with high-dose long-term use, thus periodic monitoring for these effects is warranted. Many cases of hepatic toxicity result from inadvertent exposure to some of the many drugs that contain acetaminophen, therefore the total dose of acetaminophen from all sources should be limited to no more than 4,000mg per 24 hours from all sources (AGS, 2009; Koppert et al., 2006; USFDA, 2014) [Evidence Grade = B1].
- ◆ Educate patients about inadvertent exposure to acetaminophen in numerous medications available with or without prescriptions as a common cause of poisoning deaths (Bronstein et al., 2010; SAMHSA, 2011) [Evidence Grade = B2].

## Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

- ◆ Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) are not first-line analgesics for persistent pain. Although helpful for occasional pain, long term use is avoided or used only when necessary in the lowest dose for the shortest time possible to reduce the risk of potentially fatal gastrointestinal bleeding, cardiovascular events, and nephrotoxicity (Aftab, Donnellan, & Zeb, 2010; AGS, 2009; Bhala et al., 2013; Lai & Chan, 2009; Rostom et al., 2009; Strassels, McNicol, & 2008; Wright et al., 2011) [*Evidence Grade = B1*].
- ◆ Drowsiness, confusion, and dizziness are often unrecognized effects of NSAIDs in older individuals, which may increase their risk of falls (AGS, 2009) [*Evidence Grade = B1*].
- ◆ For persistent cardiac-related pain, avoid NSAID use (except cardio-protective aspirin) because of the increased risks of dysrhythmias, mortality, reinfarction, hypertension, heart failure, and myocardial rupture associated with their use (Schmidt et al., 2011; Wright et al., 2011) [*Evidence Grade = B1*].
- ◆ Cardiovascular safety of NSAIDs varies based on drug. Naproxen appears to have no added risk, while diclofenac and other drugs in the class can double the risk of serious cardiovascular events (Fosbøl, Køber, Torp-Pedersen, & Gislason, 2010; Wright et al., 2011) [*Evidence Grade = B1*].
- ◆ Patients taking cardioprotective aspirin should not take NSAIDs like ibuprofen that inhibit the desired platelet effects and increases the risk of GI bleeding (Bhala et al., 2013; Catella-Lawson et al., 2001; Gladding et al., 2008) [*Evidence Grade = B2*].
- ◆ When used for severe or persistent pain, NSAIDs may be opioid sparing but those benefits are often outweighed by the increased risk of bleeding, gastrointestinal and cardiovascular complications (AGS, 2009; Elia et al., 2005) [*Evidence Grade = B1*].
- ◆ Proton Pump Inhibitors (e.g. omeprazole) should be used to prevent and treat NSAID-induced gastropathy for patients at risk for GI bleeding, but those drugs may also add problems of their own (Fiorucci, 2009; Gray et al., 2010; Lim, Lee, Ku, & Hahm, 2009; Rostom et al., 2009; van der Maarel-Wierink, Vanobbergen, Bronkhorst, Schols, & de Baat, 2011) [*Evidence Grade = B2*].

## Opioid

- ◆ If moderate to severe pain persists after acetaminophen and/or adjuvant drugs are tried, opioids are appropriate to control pain and improve functioning (AGS, 2009; Chou et al., 2009; Manchikanti et al., 2012). For persistent cancer pain, opioids are first-line therapy (National Comprehensive Cancer Network [NCCN], 2013) [*Evidence Grade = B1*].
- ◆ With daily constant pain, a sufficient trial with scheduled (not prn) dosing that achieves steady state (repeated dosing through 5 half-lives) is needed to evaluate the pain reduction, functional improvement and tolerability of side effects. Those are the primary components of a sustainable therapy (Manchikanti et al., 2012; Noble, et al., 2010) [*Evidence Grade = B1*].
- ◆ Although no particular opioid stands out as having superior effectiveness, familiarity of the prescriber with the pharmacology, starting doses, adjustments of therapies with vigilant monitoring is needed. This is especially true with certain medications (e.g. methadone, transdermal fentanyl, oxymorphone) (CDC, 2012a; Duehmkke, Hollingshead, & Cornblath, 2006; Manchikanti et al., 2012; Mayyas, Fayers P, Kaasa, & Dale, 2010; Quigley, 2002; Webster & Fine, 2012) [*Evidence Grade = B2*].
- ◆ Short acting analgesics last on average 4 hours that can increase the pill burden and reduce adherence rates while creating analgesic gaps and disrupting sleep. Therefore, people living with persistent pain may require longer acting opioids (AGS, 2002; AGS, 2009; Chou et al., 2009; Eisenberg, McNicol, & Carr, 2006; Green et al., 2010; Noble et al., 2010) [*Evidence Grade = A1*].

- ◆ For opioid naïve older adults, start at a 25% - 50% lower dose than standard adult doses and adjust doses slowly to balance concerns for safety and efficacy (AGS, 2002; Gloth III, 2011) [*Evidence Grade = B1*]. No consensus definition of opioid naïve has been established, however the patients are not opioid tolerant, which is defined by the USFDA as having daily exposure to 60mg oral morphine equivalent for at least one week.
- ◆ Newer weak opioids (e.g. tramadol, tapentadol, buprenorphine) may be safer and better tolerated by older adults for long term use than traditional first line (e.g. codeine, hydrocodone, or oxycodone) opioids used for moderate intensity pain (Cepeda, Sutton, & Weinstein, 2012; Gianni et al., 2011; Nüesch, Rutjes, Husni, Welch, & Jüni, 2009; Pergolizzi et al., 2008; Pergolizzi et al., 2011; Solomon et al., 2010; Whittle, Richards, Husni, & Buchbinder, 2011) [*Evidence Grade = B2*].
- ◆ After starting opioids, older adults may be at greater risk for accident-related injuries, (Borgeat, 2010; Cherrier, Amory, Ersek, Risler, & Shen, 2009; Leipzig, Cumming, & Tinetti, 1999; Miller et al., 2011; Nilsen et al., 2011), however the risk may not be significantly more than being distracted by unrelieved persistent pain (Borgeat, 2010; Leveille et al., 2009) [*Evidence Grade = C2*].
- ◆ Screen for, anticipate, monitor and treat opioid-related adverse effects; especially taking into account comorbidities, concurrent drugs, patient preferences, cost and convenience. (AGS, 2009; Chou et al., 2009; Green et al., 2010; Manchikanti et al., 2012; Noble et al., 2010).
- ◆ Methadone should be prescribed only by those with considerable familiarity with the drug, after an ECG is obtained. Periodic reassessments including the ECG are needed to identify QTc prolongation, a predecessor to torsade de pointes; especially if the dose is titrated above 100 mg/day and when new medications (e.g. ketoconazole) are added (AGS, 2009; APS, 2008; CDC, 2012b; Inturrisi, 2005; NCCN, 2013) [*Evidence Grade = D*].
- ◆ Periodic reassessments of chronic opioid therapy patients should include assessing for aberrant behaviors, disordered sleep, endocrinopathy and bone mass density regardless of gender (Angst & Clark, 2006; Daniell, 2008; Fortin, Bailey, & Vilnsky, 2008; Jungquist, Flannery, Perlis, & Grace, 2012; Kelly et al., 2010; Lunde, Pallesen, Krangnes, & Nordhus, 2010; Onen et al., 2010; Smith & Elliot 2012) [*Evidence Grade = C1*].
- ◆ The misuse of prescription opioids is an important public health problem that must be assessed and addressed simultaneously, if present while treating the pain (Arnstein & St. Marie, 2010; Cheatle & Savage, 2012; Chou, et al, 2014; Jamison et al., 2010; Kalapatapu & Sullivan, 2010; Morasco et al., 2011; Oliver et al., 2012; Simoni-Wastila & Yang, 2006) [*Evidence Grade = C1*].
- ◆ In those lacking a history of substance abuse or addiction; less than 5% will developed an addiction to prescription opioids; but close to half of some populations have an existing substance use disorder when the present for chronic pain treatment and require heightened monitoring during therapy (Chou et al., 2014; Morasco et al., 2011; Noble et al., 2010; Skurtveit, Furu, Borchgrevink, Handal, & Fredheim, 2011) [*Evidence Grade = A1*].
- ◆ Persistent pain patients with a concurrent addiction disorder can have their pain treated without worsening their addiction if proper supports and constraints are put in place (Jamison et al., 2010; Oliver et al., 2012) [*Evidence Grade = B1*].
- ◆ Baseline and periodic reassessments for substance use disorders, including addiction, should be done routinely on all patients prescribed opioids regardless of age, race and socioeconomic factors (AGS, 2009; Gourley., Heit, & Almahrezi, 2005; Manchikanti et al., 2012; Turk, Swanson, & Gatchel, 2008) [*Evidence Grade = B1*].

### Adjuvant Analgesics

- ◆ Adjuvant analgesics include drugs from a variety of classes found to help persons with pain regardless of pain etiology. Some within this class have analgesic properties (e.g. antidepressants, anticonvulsants, etc.), while other may relieve pain indirectly (e.g. muscle relaxants, benzodiazepines; corticosteroids, botulinum toxin, etc.) by targeting the underlying pain generators (AGS, 2009; Carroll, Younger, & Mackey, 2010; Pasero & McCaffery, 2011) [*Evidence Grade = C1*].
- ◆ Among the anticonvulsant drug class, those that bind to the alpha-2-delta subunits of voltage-gated calcium channels (e.g. gabapentin and pregabalin) appear to have analgesic activity that may prevent and/or effectively reduce persistent pain. Despite the slow titration needed to minimize bothersome side effects and delayed onset of action; these are generally considered first line for neuropathic pain (Bril et al., 2011; Buvanendran et al., 2010; Gray et al., 2011; Moore, Straube, Wiffen, Derry, & McQuay, 2009; Wiffen, McQuay, Edwards, & Moore, 2005; Zhang, Ho, & Wang, 2011) and are being used for a growing variety of persistent musculoskeletal and visceral pains [*Evidence Grade = B1*].
- ◆ Carbamazepine and other anticonvulsants may also help with certain neuropathic pain states, however are potentially more toxicity than the alpha-2-delta ligand drugs and require periodic blood testing (AGS, 2009; Wiffen, Derry, Moore, & McQuay, 2011) [*Evidence Grade = B2*].
- ◆ Anticonvulsants often work synergistically to lower the required dose, rather than replace the opioid (Gilron et al., 2005; Zhang et al., 2011) [*Evidence Grade = A1*].
- ◆ Tricyclic and selective serotonin-norepinephrine reuptake inhibitor antidepressants may effectively alleviate neuropathic pain or widespread musculoskeletal pain in some patients, however the side effect burden limits therapy in a quarter of patients (Ho et al., 2010; Saarto & Wiffen, 2007). Tertiary tricyclic antidepressants (amitriptyline, imipramine, doxepin) have the most side effects and are avoided in older adults [*Evidence Grade = C1*].
- ◆ Cannabinoids, botulinum toxin, alpha-2 adrenergic agonists, ketamine and a variety of other medications appear to have analgesic properties for some forms of pain and merit further study in older adults (Conte et al., 2009; Frank, Serpell, Hughes, Matthews, & Kapur, 2008; Narang et al., 2008; Nurmikko et al., 2007) [*Evidence Grade = C2*].

### Topical Analgesics

- ◆ Throughout history people have rubbed medicines on hurt body parts. Topical analgesics may be a more acceptable option for patients and prescribers who worry about side effects of systemic analgesics. Nonopioid, opioid and adjuvant pain relievers are available in topical preparations (Arnstein, 2012; Derry, Lloyd, Moore, & McQuay, 2009; Pasero & McCaffery, 2011).
- ◆ Topical opioids alone are believed to have been limited benefits for moderately severe persistent pain (Leppert, Krajnik, & Wordliczek, 2013; Pasero & McCaffery, 2011).
- ◆ Topical NSAIDs have been as effective as oral NSAIDs for certain types of localized mild-moderate pain with few gastrointestinal side effects and no serious adverse events other than dry irritated skin at the application site. (Lin et al., 2004; Makris et al., 2010; Massey, Derry, Moore, & McQuay, 2010; Roth & Fuller, 2011) [*Evidence Grade = C1*].
- ◆ For certain forms of arthritis, topical NSAIDs are first or second line analgesic (Arnstein, 2012; Hochberg et al., 2012).
- ◆ Topical capsaicin has varying degrees of effectiveness depending on its concentration, the pain type and distribution, and individual responses (Derry et al., 2009; Vorobeychik, Gordin, Mao, & Chen, 2011) [*Evidence Grade = C1*].

- ◆ Topical Lidocaine 5% patches are a useful therapy for some people with neuropathic pain in combination with other medications (Attal et al., 2010; Khaliq, Alam, & Puri, 2007; Smith & Argoff, 2011; Vorobeychik et al., 2011) [*Evidence Grade = A2*].
- ◆ Topical salicylate is classified as a rubefacient, and is not as safe or effective as topical NSAIDs (e.g. diclofenac, ibuprofen). These over the counter products have the potential for serious end-organ damage with prolonged use (Mason et al., 2004; Matthews, Derry, Moore, McQuay, 2009; O'Malley, 2008) [*Evidence Grade = B1*].
- ◆ A variety of other topical agents have been used for persistent pain (e.g., amitriptyline, ketamine, clonazepam, clonidine, etc.) when compounded by specialty pharmacies, but lack strong evidence for safety and efficacy in the older adult population (Arnstein, 2012; Pasero & McCaffery, 2011) [*Evidence Grade = D*].

## SUMMARY

Pharmacological therapy for persistent pain in the older adult is often necessary, but requires a delicate balance of multiple factors to prevent under-treatment of pain, the unnecessary abandonment of therapy, or exposure to potentially life-threatening adverse effects. Models for safe, effective approaches to treating pain in older adults do exist, however, therapy must be tailored to the individual's pain type, risk profile, personal preferences and external factors. A growing array of targeted therapies are available for managing pain. Yet given variability in responses, even within the same drug class (Arnstein & Herr, 2010), individuals may need to undergo multiple therapeutic trials to find the best treatment for them.

The first-line analgesic for older adults with mild-moderate pain is acetaminophen, with care taken to limit the daily consumption from all sources (AGS, 2009; Wright et al., 2011).

Perhaps one of the most hotly debated issues in medicine today is what should be used when acetaminophen fails. It is clear that an alternative to the World Health Organization stepped approach of analgesics (Figure 1) is needed for older adults. However, there is a failure to reach consensus that opioids be used before a trial of NSAIDs is the best approach to treating pain (see Figure 2), as suggested by the American Geriatrics Society (2009). It is unclear whether or not the acetaminophen should be stopped when taking the next step; or if monotherapy with an adjuvant such as pregabalin is best (Bril et al., 2011). When the decision is made to start an opioid, tramadol, buprenorphine, and possibly tapentadol (van Dijk et al., 2012) may be the safest options to try first for the older population (Duehmkke et al., 2006; Gianni et al., 2011; Pergolizzi et al., 2008; Solomon et al., 2010). What is generally agreed on, is the need to individualize therapy so that no patient endures debilitating pain needlessly because of a failure to use available therapies.



Table 1: Pharmacologic Pain Treatment Guidelines in Older Adults

Indication	Type	Medication	Initial Dose/Dose Interval (hours)	Maximum Daily Dose	Special Considerations
<b>Mild Pain</b> Useful with musculoskeletal conditions (e.g., Osteoarthritis)	<i>Nonopioids</i>	Acetaminophen (Tylenol)	325-650 mg PO/ 6h	4000mg from all sources	Monitor liver function. Educate about hidden sources.
		Salicylates: Salsalate (Disalcid)	500mg PO/ 12	3000mg	Monitor for gastrointestinal bleeding, liver and renal function.
		NSAID's: Ibuprofen (Advil, Motrin) Naproxen (Naprosyn, Aleve)	200-400 mg PO/ 8 200mg/ 12	3200mg 1500mg	Gastroprotection needed. Not 1 <sup>st</sup> or 2 <sup>nd</sup> line for older adults. Monitor for sedation, gastrointestinal bleeding, liver and renal function, hypertension.
<b>Moderate Pain</b> 2 <sup>nd</sup> line for musculoskeletal conditions	<i>Opioids</i>	Tramadol (Ultram) Tapentadol	25mg PO/ 6h 50mg PO/ 6h	400mg (300mg if age >75)	Monitor for renal, liver function. Seizure threshold may be reduced. May interact with certain drugs or cause nausea, constipation, sedation. Less sedating than codeine.
		Acetaminophen with codeine (Tylenol #3)	300mg/30mg, 1-2 tabs PO/ 4-6	12 tabs	Monitor liver & renal function, risk for sedation, constipation, nausea, dizziness, hypotension. Prodrug with variable effect.
		Acetaminophen with hydrocodone (Vicodin, Lortab)	500mg/5mg, 1-2 tabs PO/ 4-6	8 tabs	Monitor liver function. Risk for sedation, constipation, nausea.
<b>Severe Pain</b> 3 <sup>rd</sup> line for nociceptive or neuropathic pain		Oxycodone IR	2.5-5mg, 1-2 tabs PO/ 4-6	Titrate to effect	Monitor liver function. Risk for sedation, constipation, nausea.
		Oxycodone, sustained release (Oxycontin)	10mg PO/ 12	160mg	Risk for sedation, sleep apnea, respiratory depression, constipation, nausea. Urinary retention and risk of falling may increase. Monitor for aberrant behaviors.
		Morphine sulfate (MS Contin)	15mg PO/ 12	none	See oxycodone. Added risk of neurotoxicity with renal dysfunction.
	Fentanyl (Duragesic patch)	Base dose on equianalgesic table 25µg/hr/ 72	100µg	See oxycodone. May have fewer GI side effects. Do not cut patch, rotate sites. Use only in opioid tolerant patients.	

Continued on next page

<i>Indication</i>	<i>Type</i>	<i>Medication</i>	<i>Initial Dose/Dose Interval (hours)</i>	<i>Maximum Daily Dose</i>	<i>Special Considerations</i>
2 <sup>nd</sup> line with neuropathic pain (e.g., Diabetic neuropathy) 3 <sup>rd</sup> line with severe nociceptive pain	<i>Adjuvants</i>	Anticonvulsants: Gabapentin (Neurontin) Pregabalin (Lyrica)	100mg PO/ 8 50-75mg/day	3600mg 600 mg	Monitor renal function, seizure risk with sudden withdrawal.
		Carbamazapine (Tegretol)	100mg PO/ 12	1600mg	Monitor liver function, drug levels, pancytopenia, and hyponatremia. Use lowest effective dose for pain control.
2 <sup>nd</sup> line with neuropathic pain	<i>Antidepressants</i>	Tricyclics: Nortriptylene (Pamelor)	10mg PO at bedtime	150mg	Risk for anticholinergic side effects.
		SNRI: Duloxetine, vanlafaxine	60mg daily 75mg daily	See product-specific information	May be drug interactions, or undesirable psychologic effects including suicidality. See black box warnings.
Useful with inflammatory conditions (e.g., RA, SLE)		Corticosteroids: Prednisone (Deltasone, Steripred)	5mg PO/ day	60mg	Gastrointestinal side effects, glucose intolerance, edema, behavior and mood changes. Short-term use recommended.
Useful with neuropathic pain (e.g., Post-herpetic neuralgia)	<i>Other</i>	Topicals: Capsaicin (Zostrix)	0.025-0.075% cream to affected area 3 times per day	4 times per day	Risk for skin burning, erythema, thermal hyperalgesia. Wash hands after use – do not touch mucous membranes. Test on small skin area first (higher concentration available for post-herpetic neuralgia).
		Lidocaine transdermal (Lidoderm)	5% patch to affected area, up to 12 hours per day	3 patches at one time	May cut to size. Do not apply to broken or inflamed skin. Caution with impaired liver function. May increase risk of cardiac arrhythmias with Class I antiarrhythmic drugs.

This table is a compilation of information from the following resources: Pasero, C., & McCaffery, M. (2011). *Pain assessment and pharmacologic management* (pp. 301-367). St. Louis: Elsevier Mosby; Lussier, D., & Pickering, G. (2010). Pharmacological considerations in older patients. In P. Beaulieu, D. Lussier, F. Porreca, & A. H. Dickenson (Eds.), *Pharmacology of pain* (pp. 547-550). Seattle: IASP Press; van Ojik, A. L., Jansen, P. A., Brouwers, J. R., & van Roon, E. N. (2012). Treatment of chronic pain in older people: Evidence-based choice of strongacting opioids. *Drugs Aging*, 29(8), 615-625.

## *Nursing Interventions Classifications (NIC)*

The **Nursing Interventions Classification (NIC)** is a comprehensive, standardized classification of interventions that nurses perform (Bulechek, Butcher, Docterman, & Wagner, 2013). The Classification includes the interventions that nurses do on behalf of patients, both independent and collaborative interventions, both direct and indirect care. *An intervention is any treatment, based upon clinical judgment and knowledge that a nurse performs to enhance patient/client outcomes.* NIC can be used in all settings (from acute care intensive care units, to home care, to hospice, to primary care) and all specialties (from critical care to ambulatory care and long term care). Details related to pain interventions and associated activities can be obtained from the most recent issue of NIC.

Selected interventions from the NIC and outcomes from the **Nursing Outcome Classification (NOC)** system are listed below to illustrate the process and clinical reasoning used when assessing elders at risk for persistent pain. The listed interventions are intended to serve as examples, and are not an exhaustive list. Appropriate intervention selection must be individualized to the unique circumstances and risk/benefit analysis for each older adult.

**4410 Mutual Goal Setting** – Collaborating with patient to identify and prioritize care goals, then developing a plan for achieving those goals

**1400 Pain Management** - Alleviation of pain or a reduction in pain to a level of comfort that is acceptable to the patient

**2380 Medication Management** - Facilitation of safe and effective use of prescription and over-the-counter drugs

**2300 Medication Administration** - Preparing, giving, and evaluating the effectiveness of prescription and nonprescription drugs

**2210 Analgesic Administration** - Use of pharmacologic agents to reduce or eliminate pain

**1340 Cutaneous Stimulation** – Stimulation of the skin and underlying tissues for the purpose of decreasing undesirable signs and symptoms such as pain, muscle spasm, or inflammation

**0200 Exercise Promotion** - Facilitation of regular physical activity to maintain or advance to a higher level of fitness and health

**6040 Relaxation Therapy** - Use of techniques to encourage and elicit relaxation for the purpose of decreasing undesirable signs and symptoms such as pain, muscle tension, or anxiety

## Outcome Indicators

Outcome indicators are those expected to change or improve from consistent use of the guideline. The major patient outcome indicators that should be monitored over time are:

- ◆ Persistent Pain Intensity
- ◆ Impact of Pain on Functional Status



### *Nursing Outcomes Classification (NOC)*

The **Nursing Outcomes Classification (NOC)** is a standardized classification of patient/client outcomes developed to evaluate the effects of nursing interventions. “A nursing-sensitive patient outcome is an individual, family, or community state, behavior or perception that is measured along a continuum in response to nursing intervention(s). The outcomes are variable concepts that can be measured along a continuum using a measurement scale(s). The outcomes are stated as concepts that reflect a patient, caregiver, family, or community state, behavior, or perception rather than as expected goals.” (Moorhead, Johnson, Maas, & Swanson, 2013, p. 2).

#### Suggested Outcomes

These outcomes are closely related to the guideline and may be useful in measuring effectiveness for individual patients:

**Comfort Status (2100)** - physical ease related to bodily sensations and homeostatic mechanisms

**2301 Medication Response** - Therapeutic and adverse effects of prescribed medication

**1306 Pain: Adverse Psychological Response** - Severity of observed or reported adverse cognitive and emotional responses to physical pain

**1605 Pain Control** - Personal actions to control pain

**2101 Pain: Disruptive Effects** - Severity of observed or reported disruptive effects of chronic pain on daily functioning

**2102 Pain Level** - Severity of observed or reported pain

### EVALUATION OF PROCESS

#### *Process Indicators*

Process Indicators are those interpersonal and environmental factors that can facilitate the use of a guideline. One process factor that can be assessed with a sample of nurses, certified nursing assistants, and/or physicians is knowledge about Persistent Pain. The **Persistent Pain Management Knowledge Assessment Test (Appendix B)** should be assessed before and after the education of staff regarding use of this guideline.

The same sample of nurses, certified nursing assistants, and physicians should also be given the **Process Evaluation Monitor (Appendix C)** approximately one month following use of the guideline. The purpose of this monitor is to determine understanding of the guideline and to assess the support for carrying out the guideline.

The **Persistent Pain Management Outcomes Monitor** described in **Appendix D** is to be used for monitoring and evaluating the usefulness of the Persistent Pain Management guideline in improving outcomes of older adults with musculoskeletal and neuropathic persistent pain. Please adapt this outcome monitor to your organization or unit and add outcomes you believe are important.

# Appendix A

## PERSISTENT PAIN ASSESSMENT TOOLS

Appendix A contains examples of assessment tools and forms to use in patient assessment of persistent pain. The purpose of the tool and instructions for use accompany each tool or form.

Tools and forms in Appendix A include those to gather information on the severity or intensity of pain and its impact. Also included are approaches to assessing pain in those who are cognitively impaired and tools that can be used to objectively assess and monitor pain in this population.

Appendix A is organized as follows:

### ***Appendix A.1: Pain Intensity Scales:***

***Appendix A.1a:*** Numeric Rating Scale

***Appendix A.1b:*** Verbal Descriptor Scale

***Appendix A.1c:*** Pain Thermometer

***Appendix A.1d:*** Faces Pain Scale

### ***Appendix A.2: Pain Impact Tools***

***Appendix A.2a:*** Brief Pain Inventory-Short Form

***Appendix A.2b:*** Functional Pain Scale (modified)

### ***Appendix A.3: Pain Behavior Assessment Tools***

***Appendix A.3a:*** PAINAD

***Appendix A.3b:*** PACSLAC-II

### ***Appendix A.4: Algorithm for Cognitively Impaired Older Adults***

# Appendix A.1

## PAIN INTENSITY TOOLS

**Introduction:** Tools appropriate for use with older adults are provided in this Appendix. They are all valid and reliable for use with older adults. The NRS is most commonly seen in clinical settings, although it is not appropriate for all older adults. Alternative tools are provided for people who have difficulty understanding or completing the NRS section, or prefer an alternate tool to communicate their pain intensity.

**Instructions:** The nurse or health care provider who is primarily responsible for providing care should assess for persistent pain intensity at baseline and at regular follow up intervals. The nurse should select one pain intensity tool most easily understood and preferred by the older adult with persistent pain, document the preferred tool in the record, and use the same tool(s) at each follow up interval by all providers.

### **Pain Intensity Scales:**

**Appendix A.1a:** Numeric Rating Scale

**Appendix A.1b:** Verbal Descriptor Rating Scale

**Appendix A.1c:** Pain Thermometer

**Appendix A.1d:** Faces Pain Scale-Revised

**Permission has been obtained for copying the tools if used for clinical purposes of improving pain care in your organization.**

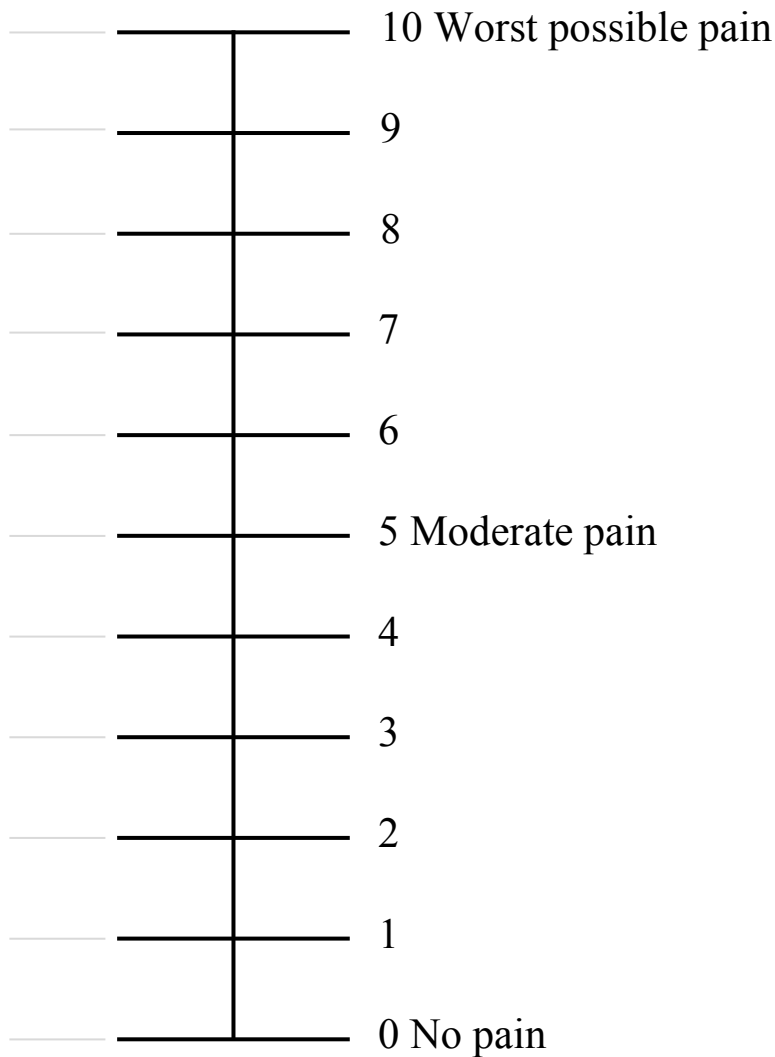
# Appendix A.1a

## NUMERIC RATING SCALE

**Introduction:** To assess pain intensity in persons who are able to self report

**Instructions:** Ask individual to point to the number on the NRS that best represents the intensity of their pain NOW

**Documentation:** Document/record all scores in a location that is readily accessible to others on the health care team. Evaluate intensity over time and in response to treatment.



[Print](#)

[Reset Form](#)

# Appendix A.1b

## VERBAL DESCRIPTOR SCALE (VDS)

**Introduction:** An option for obtaining self-report on pain intensity in both cognitively intact and cognitively impaired older adults. When compared to other tools, the VDS is the recommended tool for use in older adults (Hjermstad et al., 2011; Lukas, Barber et al., 2013).

**Instructions:** Participants should choose which words best describe their **current pain intensity**. Place a check mark by the selected phrase.

**Scoring:** Assign a number to each phrase beginning with zero for “no pain” and ending with 10 for “most intense pain imaginable”. The participant should not be shown the corresponding, numerical value. For clinical purposes, record the number at baseline and each follow up interval for tracking response to intervention.

\_\_\_\_\_ **Most intense pain imaginable**

\_\_\_\_\_ **Very severe pain**

\_\_\_\_\_ **Severe pain**

\_\_\_\_\_ **Moderate pain**

\_\_\_\_\_ **Mild pain**

\_\_\_\_\_ **No pain**

*Print*

*Reset Form*

# Appendix A.1c

## PAIN THERMOMETER

**Introduction:** The Pain Thermometer (PT) (Herr & Mobily, 1993) is a valid and reliable tool that combines a thermometer with a verbal descriptor scale to enhance ability to use. Good for any older adult, including those with moderate to severe cognitive impairment or who have difficulty communicating verbally.

**Instructions:** Ask the individual to point to the words on the thermometer that show how bad or severe their pain is right NOW.

**Scoring:** Compare the words chosen after each use to the previous words to evaluate if pain has increased or decreased. Document the words that the elder points to on this tool. Evaluate the change in pain words selected by the elder over time to determine the effectiveness of pain

\_\_\_ Pain As Bad As  
Could Be

\_\_\_ Extreme Pain

\_\_\_ Severe Pain

\_\_\_ Moderate pain

\_\_\_ Mild Pain

\_\_\_ No pain

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# Appendix A.1d

## FACES PAIN SCALE (FPS-R)

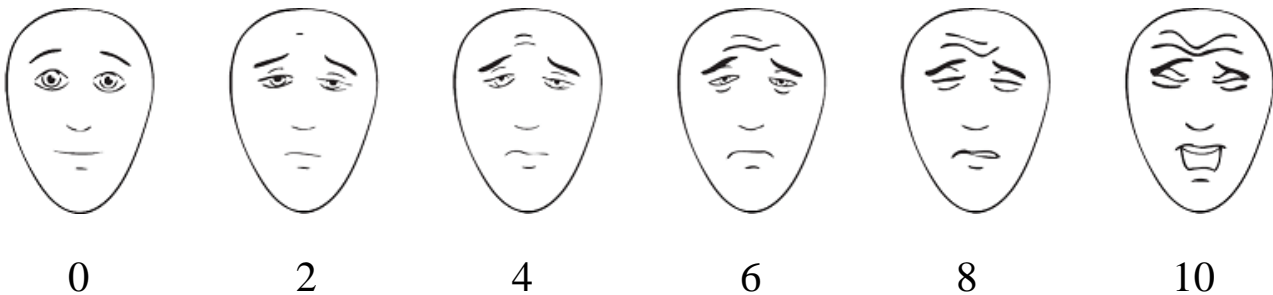
(Hicks, von Baeyer, Spafford, van Korlaar, & Goodenough, 2001)

**Introduction:** To assess pain intensity in individuals who are able to self report. The FPS-R tool was developed for use in assessing pain intensity in children but has demonstrated reliability and validity for use with older adults (Herr et al., 2007; Taylor et al., 2005). It is the tool most preferred by African Americans, Chinese and Hispanics (Li et al., 2009; Ware et al., 2006).

**Instructions:** Instruct the individual that “The faces show how much pain or discomfort one is feeling. The face on the left shows no pain. Each face shows more and more pain up to the last face that shows the worst pain possible. Point to the face that shows how bad your pain is right NOW.”

NOTE: This tool is not to be used by the health care provider to look at the resident’s facial expression and pick a face.

**Scoring:** Then score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so '0' = 'no pain' and '10' = 'very much pain.'



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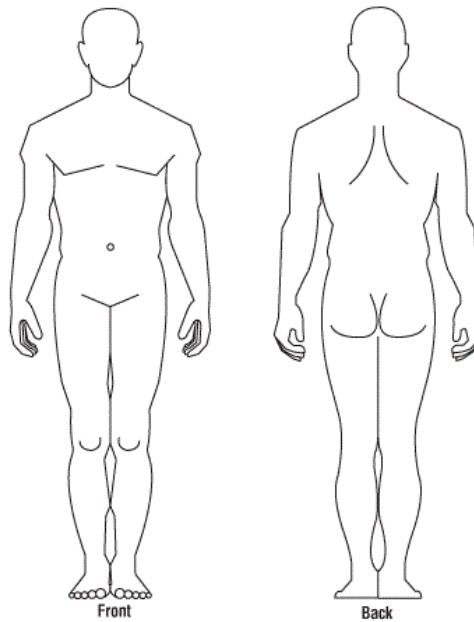
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This Faces Pain Scal-Revised has been reproduced with permission of the International Association for the Study of Pain® (IASP®)

# Appendix A.2a

## BRIEF PAIN INVENTORY – SHORT FORM

- 1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?
  
- 2. On the diagram, put an X on the area that hurts most.



**Directions:** Answer questions 3-6 based on the following scale.

**0**    **1**    **2**    **3**    **4**    **5**    **6**    **7**    **8**    **9**    **10**  
 No Pain Pain as bad as you can imagine

- 3. Please rate your pain by selecting the one number that best describes your pain at its WORST in the last 24 hours.
  
- 4. Please rate your pain by selecting the one number that best describes your pain at its LEAST in the last 24 hours.



5. Please rate your pain by selecting the one number that best describes your pain on the AVERAGE.
  
6. Please rate your pain by selecting the one number that tells how much pain you have RIGHT NOW.
  
7. What treatments or medications are you receiving for your pain?

**Use the following scale for question 8:**

**0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%**  
Relief Complete Relief

8. In the last 24 hours, how much relief have pain treatments or medications provided? Please select the one percentage that most shows how much RELIEF you have received.

**Use the following scale for questions 9A – 9G:**

**0    1    2    3    4    5    6    7    8    9    10**  
Does not Interfere Completely Interferes

9. Select the one number that describes how, during the past 24 hours, pain has interfered with your:

- |   |  |
|---|--|
| <p>A. General Activity</p><br><br><p>C. Walking Ability</p><br><br><p>E. Relations with other people</p><br><br><p>G. Enjoyment of life</p> | <p>B. Mood</p><br><br><p>D. Normal Walk (includes both work outside the home and housework)</p><br><br><p>F. Sleep</p> |
|---|--|



# Appendix A.2b

## FUNCTIONAL PAIN SCALE (MODIFIED)

**Introduction:** The Functional Pain Scale (Gloth III, 2001) is a reliable and valid assessment tool that has been validated in community and acute care settings for assessing pain severity and its impact in a short single item self-report scale. It may be preferred in settings where completion of the more thorough BPI is not feasible. A modified version was developed by Massachusetts General Hospital presented below and used with permission of Paul Arnstein, PhD, RN, FAAN.

**Instructions:** The frequency of the follow up intervals may vary depending on the setting and should be determined by the initiating nurse or primary caregiver. For example, in an office or clinic setting, the follow up assessment may be done at the next office visit (e.g., 2 weeks, 2 months). In the hospital or nursing home, follow up may be more frequent (e.g., 1- 2 days, 1 week) depending on the date of anticipated reduction of pain. This may be influenced by the expected onset of action of the medication or non-pharmacologic method(s).

**Scoring:** Assign a number to each phrase beginning with zero for “no pain” and ending with 10 for “Intolerable, Incapacitated by pain”. For clinical purposes, record the number at baseline and each follow up interval for tracking response to intervention.

### Functional Pain Scale (FPS)

Chart	Tolerable			Intolerable		
	(0)	(2)	(4)	(6)	(8)	(10)
<b>No Pain</b>		<b>Tolerable activities not prevented</b>	<b>Tolerable prevents some active activities</b>	<b>Intolerable prevents many active, (not passive) activities</b>	<b>Intolerable prevents all active and many passive activities</b>	<b>Intolerable incapacitated, unable to do anything or speak due to pain</b>

Active activities : usual activities or those requiring effort (turning, walking, etc)  
 Passive activities: talking on phone, watching TV, reading

Used with permission of Paul Arnstein, PhD, RN, FNP-C, ACNS-BC, FAAN, Massachusetts General Hospital Psychiatry Academy



# Appendix A.3

## PAIN BEHAVIOR ASSESSMENT TOOLS

**Introduction:** To identify pain or potential pain in older adults unable to self report their pain.

**Instructions:** The nurse or health care provider who is primarily responsible for providing care should assess for pain at baseline and at regular follow up intervals. The nurse should consider the hierarchy of pain assessment approaches (Herr et al., 2011) and include a pain behavior assessment tool in the assessment process. Although a number of tools are available, two are provided because of their demonstrated reliability and validity and clinical utility (Chan et al., 2014; Herr et al., 2010).

*Appendix A.3a:* Pain Behavior Assessment Tool: PAINAD

*Appendix A.3b:* Pain Behavior Assessment Tool: PACSLAC-II

**Permission has been obtained for copying the tools if used for clinical purposes of improving pain care in your organization.**

# Appendix A.3a

## PAIN ASSESSMENT IN ADVANCED DEMENTIA – PAINAD

(Warden, Hurley, Volicer, 2003)

**Introduction:** This pain behavior tool is used to assess pain in older adults who have dementia or other cognitive impairment and are unable to reliably communicate their pain. It can be used by a nurse or by a CNA to screen for pain-related behaviors.

**Instructions:** Observe the older adult for 3-5 minutes during activity/with movement (such as bathing, turning, transferring).

For each item included in the PAINAD, select the score (0, 1, 2) that reflects the current state of the behavior.

**Scoring:** Add the score for each item to achieve a total score. **Total scores range from 0 to 10 (based on a scale of 0 to 2 for five items), with a higher score suggesting more severe pain (0= “no pain” to 10= “severe pain”).**

**After each use, compare the total score to the previous score received.** An increased score suggests an increase in pain, while a lower score suggests pain is decreased.

**NOTE:** Behavior observation scores should be considered alongside knowledge of existing painful conditions and reports from someone who knows the older adult (like a family member or nursing assistant) and their pain behaviors. Remember some older adults may not demonstrate obvious pain behaviors or cues.

Permission has been obtained for copying the tools if used for clinical purposes of improving pain care in your organization.

Reference: Warden, V, Hurley AC, Volicer, V. (2003). Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) Scale. *J Am Med Dir Assoc*, 4:9-15. Developed at the New England Geriatric Research Education & Clinical Center, Bedford VAMC, MA.

## PAIN ASSESSMENT IN ADVANCED DEMENTIA - PAINAD

(Warden, Hurley, Volicer, 2003)

<i>Items</i>	<i>0</i>	<i>1</i>	<i>2</i>	<i>Score</i>
<i>Breathing</i> Independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long period of hyperventilation. Cheyne-stokes respirations.	
<i>Negative vocalization</i>	None	Occasional moan or groan. Low-level of speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying	
<i>Facial expression</i>	Smiling or inexpressive	Sad, frightened, frown	Facial grimacing	
<i>Body language</i>	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out	
<i>Consolability</i>	No need to console	Distracted or reassured by voice or touch	Unable to console, distract or reassure	

**Total Score:** \_\_\_\_\_

**\* Total scores range from 0 to 10 (based on a scale of 0 to 2 for five items), with a higher score indicating more severe pain (0 = “no pain” to 10 = “severe pain”).**

Permission has been obtained for copying the tools if used for clinical purposes of improving pain care in your organization.

Reference: Warden, V, Hurley AC, Volicer, V. (2003). Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) Scale. *J Am Med Dir Assoc*, 4:9-15. Developed at the New England Geriatric Research Education & Clinical Center, Bedford VAMC, MA.

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## Appendix A.3b

### PAIN ASSESSMENT CHECKLIST FOR SENIORS WITH LIMITED ABILITY TO COMMUNICATE – II (PACSLAC-II®)

**Purpose:** This checklist is used to assess pain in older persons who have dementia or a cognitive impairment and a limited ability to communicate.

**Instructions:** Complete the PACSLAC-II checklist based on observations of the resident at rest and during activity. Determine presence or absence of each behavior on the checklist.

**Scoring:** Determine the total score at each use. Compare the total score after each use to the previous score received. An increased score indicates that an increase in pain is likely. A lower score conversely indicates that pain is likely to have decreased.

The PACSLAC-II is copyrighted by Sarah Chan, Thomas Hadjistavropoulos and Shannon Fuchs-Lacelle. For permission to reproduce the PACSLAC contact [thomas.hadjistavropoulos@uregina.ca](mailto:thomas.hadjistavropoulos@uregina.ca) who is authorised to provide permission on behalf of all copyright holders. The developers of the PACSLAC-II specifically disclaim any liability arising directly or indirectly from use of application of the PACSLAC-II. Use of the PACSLAC-II may not be appropriate for some patients and the PACSLAC-II is not a substitute for a thorough assessment by a qualified health professional. The PACSLAC-II (like other observational pain assessment tools) is a screening tool and not a definitive indicator of pain. As such, sometimes it may fail to identify pain and other times it may incorrectly signal the presence of pain. The PACSALC-II should be used by qualified health care staff within the context of their broader knowledge and examination of the patient.

\*\*\*\*You DO NOT have permission to modify the PACSLAC-II in any way without Sarah Chan's approval.\*\*\*\*

It would be best to adopt an individualized approach using the PACSLAC-II regularly (under similar conditions) with each patient and then examining significant changes or fluctuations in the patient's pattern of scores. Also note that the research on the validation and evaluation of the PACSLAC-II is not complete. As such, if you choose to use it, you must do so with caution. Many underlying pain problems are easier to identify during periods of movement than during rest.



## PAIN ASSESSMENT CHECKLIST FOR SENIORS WITH LIMITED ABILITY TO COMMUNICATE – II (PACSLAC-II®)

Date of Assessment: \_\_\_\_\_

Time: \_\_\_\_\_

<i><b>Facial Expressions (Check if present)</b></i>			
1. Grimacing		7. Creasing forehead	
2. Tighter Face		8. Lowered eyebrows or frowning	
3. Pain expression		9. Raised cheeks, narrowing of eyes or squinting	
4. Increased eye movement		10. Wrinkled nose and raised upper lip	
5. Wincing		11. Eyes closing	
6. Opening mouth			
<i><b>Verbalization and Vocalizations (Check if present)</b></i>			
12. Crying		15. Grunting	
13. A specific sound for pain (e.g. ‘ow’, ‘ouch’)		16. Grasping or breathing loudly	
14. Moaning and groaning			
<i><b>Body Movements (Check if present)</b></i>			
17. Flinching or pulling away		23. Limping	
18. Thrashing		24. Clenched fist	
19. Refusing to move		25. Going into foetal position	
20. Moving slow		26. Stiff or rigid	
21. Guarding sore area		27. Shaking or trembling	
22. Rubbing or holding sore area			
<i><b>Changes in Interpersonal Interactions (Check if present)</b></i>			
28. Not wanting to be touched		29. Not allowing people near	
<i><b>Changes in Activity Patterns or Routines (Check if present)</b></i>			
30. Decreased activity			
<i><b>Mental Status Changes (Check if present)</b></i>			
31. Are there mental status changes that are due to pain and are not explained by another condition (e.g., delirium due to medications, etc.)?			

**Total Score** (Add up checkmarks): \_\_\_\_\_

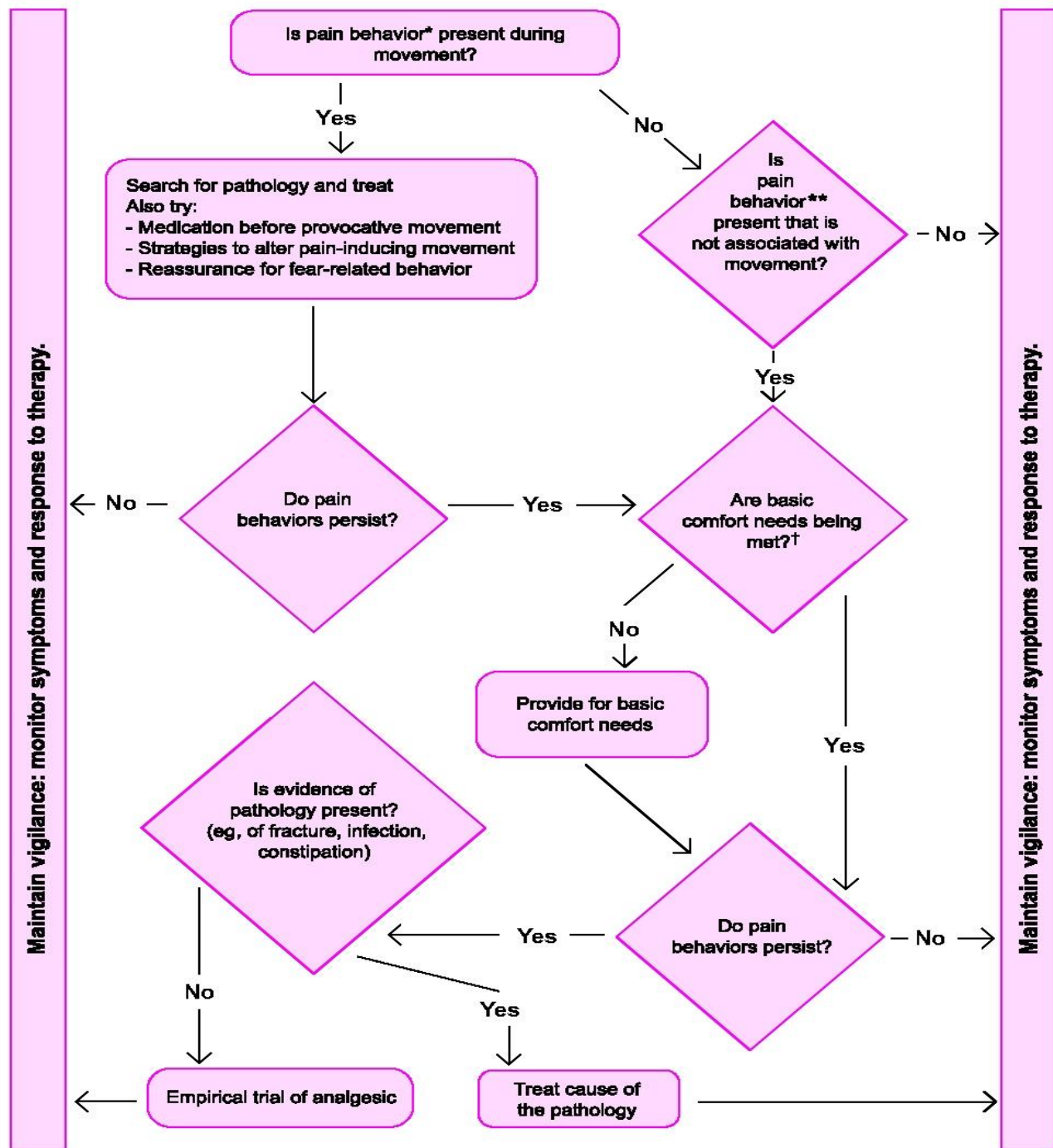


# *Appendix A.4*

## ALGORITHM FOR COGNITIVELY IMPAIRED OLDER ADULTS

◆-----◆  
The algorithm on the next page may be helpful in determining presence of pain in cognitively impaired individuals with impaired communication.

**Figure 8. Pain Assessment in Elders with Severe Cognitive Impairment**



\* Eg, grimacing, guarding, combativeness, groaning with movement, resisting care.

\*\* Eg, agitation, fidgeting, sleep disturbance, diminished appetite, irritability, reclusiveness, disruptive behavior, rigidity, rapid blinking.

† Eg, toileting, thirst, hunger, visual or hearing impairment.

Sources: Data from American Geriatrics Society. The management of persistent pain in older persons. *J Amer Geriatr Soc* 2002; 50 (6, Suppl: S205–S240); and Weiner D, Herr K, Rudy T, eds. *Persistent Pain in Older Adults: An Interdisciplinary Guide for Treatment*, 2002, Copyright Springer Publishing Company, Inc., New York 10036.

# *Appendix B*

## PERSISTENT PAIN MANAGEMENT KNOWLEDGE ASSESSMENT TEST

The individual who will be managing use of this evidence-based guideline and coordinating education of staff should be the only one who has access to this test key. Following proper education with regard to the persistent pain management guideline, each health care provider should be given an opportunity to take this test. Use this test as a learning tool only. Please have each health care provider take this test without the key present and, once he/she is done let them code how many questions they answered correctly and incorrectly. Guidance in determining why he/she answered as they did can also be part of the learning process.

### *Knowledge Assessment Test Key*

1. B
2. A
3. A
4. E
5. A
6. D
7. D
8. C
9. C
10. B

## PERSISTENT PAIN MANAGEMENT KNOWLEDGE ASSESSMENT TEST

1. Research has clearly shown that older adults feel painful sensations less intensely than younger adults.
  
2. People with mild to moderate cognitive impairment can provide a self-report of pain intensity.
  
3. Research demonstrates that persistent pain in cognitively impaired individuals may be one underlying cause for behavior symptoms such as aggression, withdrawal, and loud verbalizations.
  
4. Unrelieved persistent pain has been demonstrated to result in which of the following in the elderly:
  
5. Combining nonpharmacologic pain management strategies with pharmacologic therapy may result in reduced medication doses and less risk for side effects.
  
6. For which of the following physical pain relief strategies is the research evidence the strongest?
  
7. Strategies for developing an effective pain management plan with the patient include:

## PERSISTENT PAIN MANAGEMENT KNOWLEDGE ASSESSMENT TEST

7. An older adult with *mild* knee pain due to osteoarthritis rates the severity of their pain, most of the time, as a 2 on the Verbal Rating Scale. A medication that may be appropriate to use as an initial pain medication for this person would be:
  
  
  
  
  
  
  
  
  
  
8. Cognitive behavioral therapies for managing persistent pain do not include:
  
  
  
  
  
  
  
  
  
  
9. Older people who use opioid medications regularly will eventually become addicted to them.

**Total Score:** \_\_\_\_\_

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# Appendix C

## PERSISTENT PAIN MANAGEMENT PROCESS EVALUATION MONITOR

**Introduction:** The purpose of this monitor is to evaluate perceived understanding and support of each care provider in carrying out the Persistent Pain Management guideline.

**Instructions:** Once the care providers who are using the guideline complete this Process Evaluation Monitor, the individual in charge of implementing the guideline should provide feedback to each nurse who completed a form and offer further education or support as needed.

For the six questions, please tally up the responses provided by adding up the numbers circled. For example, if Question 1 is answered '2' and Question 2 is answered '3' and Question 3 is answered '4' the nurse's score for those three questions (2+3+4) equals 9. The total score possible on this monitor is 36, while the lowest score possible is 9. Those who have higher scores on this monitor are indicating that they are well-equipped to implement the guideline, and understand its use and purpose. On the other hand, those who have relatively low scores are in need of more education and organizational support to use the guideline. Assessment items with lower scores may reveal areas where more education, root cause analysis or process improvement activities should be focused.



## PERSISTENT PAIN MANAGEMENT PROCESS EVALUATION MONITOR

**Instructions:** Please circle the number that best communicates your perception about your use of the Persistent Pain Management guideline.

		<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
<b>1</b>	I feel knowledgeable to carry out the Persistent Pain Management guideline.				
<b>2</b>	Implementing the Persistent Pain Management guideline enhances the quality of nursing care.				
<b>3</b>	I feel supported in my efforts to implement the Persistent Pain Management guideline.				
<b>4</b>	I feel well prepared to carry out the Persistent Pain Management guideline.				
<b>5</b>	I am able to identify persistent pain behaviors in patients who are unwilling or unable to report pain.				
<b>6</b>	I am able to identify and carry out the essential activities of the Persistent Pain Assessment Guideline.				
<b>7</b>	I had enough time to learn about the Persistent Pain Management guideline before it was implemented.				
<b>8</b>	We are managing persistent pain better with the use of the guideline.				
<b>9</b>	The guideline enables me to meet the persistent pain needs of most patients.				

**Total Score:** \_\_\_\_\_

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# Appendix D

## PERSISTENT PAIN MANAGEMENT OUTCOMES MONITOR

**Instructions:** Assist the patient in determining the acceptable level of pain and functioning according to the scales provided. A realistic goal for some patients may be pain that is tolerable, and that allows them an optimal level of functioning, while minimizing medication side effects (Vallerand, 2003). Therefore, if it is not realistic to expect total elimination of pain, it may be advisable to discuss with the patient their acceptable level of pain and functioning according to the scales provided. For example, a patient may use the verbal descriptor scale and indicate that slight or mild pain is acceptable and prefer no extra medication at this level. They may also indicate that mild limitations of activity (as indicated by the score on question 9 of the Brief Pain Inventory) may be acceptable. This should be indicated on the outcome monitor on the next page. Pain management measures should be instituted for any rating above the acceptable level.

Place the appropriate criteria key next to each separate outcome for each patient assessment. We have provided a total of 5 boxes, which represent the first 5 intervals between assessments.

## PERSISTENT PAIN MANAGEMENT OUTCOMES MONITOR

### Criteria Key

**Y=Yes/met criteria   N=No/criteria not met   J=Justified Variation.**  
 (Justified Variation e.g. patient not included in the monitor; note *why* patient is not included)

Please place the appropriate criteria key next to each outcome for each assessment period.

	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5
<b>Outcome 1<sup>1</sup>: Acceptable pain level for this patient</b>					
<ul style="list-style-type: none"> <li>♦ Pain intensity is maintained at acceptable levels or below. (Yes/No)</li> </ul>					
Pain intensity is monitored and recorded. <b>Record score</b> from preferred pain scale (BPI Question #5, VDS, VNS, or FPS) in each box					
<ul style="list-style-type: none"> <li>♦ For pain intensity score greater than patient’s acceptable level, measures are instituted to reassess, treat &amp; monitor pain. (Yes/No)</li> </ul>					
<b>Outcome 2<sup>2</sup>: Acceptable level of function for this patient</b>					
<ul style="list-style-type: none"> <li>♦ Pain impact on functioning is maintained at acceptable levels. (Yes/No)</li> </ul>					
Pain impact score is monitored and recorded. <b>Record average score</b> from BPI Question #9 A-G in each box.					
<ul style="list-style-type: none"> <li>♦ For pain impact score greater than patient’s acceptable level, measures are instituted to refine pain treatment and improve functioning (Yes/No)</li> </ul>					

<sup>1</sup>Acceptable levels of pain maybe determined by asking the patient to verbalize an acceptable rating according to the preferred pain rating scale.

<sup>2</sup>Acceptable levels of impact on function may be determined by asking the patient to verbalize an acceptable rating according to question 9 of the BPI.



# Appendix E

## DEFINITION OF KEY TERMS<sup>1</sup>

*Pain:* According to McCaffery (1972, p. 8), “pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does.” Pain is also widely defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” by the International Association for the Study of Pain.<sup>1</sup>

*Acute Pain:* Acute pain may co-exist with persistent pain. Although not the focus of this guideline, acute pain occurs secondary to a time-limited illness such as surgery, medical procedures, or injury/trauma and typically resolves once the tissue damage is repaired (Chekka, Benzon, & Jabri, 2011).

*Persistent Pain:* The terms persistent pain and chronic pain have been used interchangeably in the literature (AGS, 2002). Chronic pain is pain that has continued for 3 or 6 months past the expected duration for healing. However, according to Harkins et al. (1990), persistent pain has lasted one month longer than the expected healing time, or has been associated with a chronic, continuous pain-causing condition, or has intervals of recurrence over time. Failure to intervene successfully within one month has been associated with a greater likelihood of pain becoming intractable (Harkins, 2002). The term persistent pain may be associated with less negative connotations than chronic pain (AGS, 2002) and is the preferred term (Weiner, Herr, & Rudy, 2002).

*Nociceptive Pain:* Pain that arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors.

*Neuropathic Pain:* Pain caused by a lesion or disease of the somatosensory nervous system.

*Allodynia:* Pain due to a stimulus that does not normally provoke pain.

*Hyperalgesia:* Increased pain from a stimulus that normally provokes pain.

# Appendix F

## ADDITIONAL RESOURCES

Additional materials that may be useful in implementing the Persistent Pain Management Guideline are:

American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons. (2009). Pharmacological management of persistent pain in older persons. *Journal of the American Geriatrics Society*, 57(8), 1331-1346.

American Pain Society (APS) (2008) *Principles of Analgesic Use in the Treatment of Acute Pain and Cancer Pain, Sixth Edition* Glenview, IL APS Press

American Medical Directors Association (2012) Clinical Practice Guideline: Pain Management in long term care settings. Columbia, MD 21044.

Hochberg MC, Altman RD, April K, et al. American College of Rheumatology 2012 recommendations for the use of non-pharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care Res* 2012 Apr; 64 (4): 465-474.

American Chronic Pain Association (2014). ACPA Resource Guide To Chronic Pain Medication & Treatment 2014 editions accessed on line 3/6/14 at [http://www.theacpa.org/uploads/ACPA\\_Resource\\_Guide\\_2014\\_FINAL.pdf](http://www.theacpa.org/uploads/ACPA_Resource_Guide_2014_FINAL.pdf)

American Society of Anesthesiologists (ASA) Task Force on Acute Pain Management. (2012). Practice guidelines for acute pain management in the perioperative setting: an updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management. *Anesthesiology*, 116 (2):248-73.  
American Geriatrics Society Beers Criteria Update Expert Panel (AGS-Beers) (2012) American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. *J Am Geriatr Soc*, 60(4): 616-31 Get Related Pocket Guide

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### Acknowledgments

The University of Iowa Barbara and Richard Csomay Center for Gerontological Excellence wishes to acknowledge the following for their contribution as content experts:

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Arnstein, P., Herr, K. (2014). *Persistent Pain Management in Older Adults*. In H. K. Butcher (Series Ed.), *Series on Evidence-Based Practice Guidelines*, Iowa City, IA: The University of Iowa College of Nursing Barbara and Richard Csomay Center for Gerontological Excellence

For information on how to obtain additional evidence-based guidelines, you may contact the Csomay Center.

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