



## General principles

- Pain needs to be considered in older people as they may not complain of any symptoms.
- Pain symptoms cannot to be ignored in older people in residential aged care facilities or those in the community.
- A full assessment of pain is important prior to management.
- Consider non-pharmacological treatment options for pain management first.
- Assess the risks and benefits prior to prescribing medications for pain.
- Paracetamol is first-line pharmacological management.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) should be used with caution.
- Start opiates at a low dose and up-titrate to symptoms.

## Practice points

Practice points	References	Grade
Consider assessment of pain on admission to the residential aged care facility, after a change in medical or physical condition, and as symptoms arise	4	Consensus-based recommendation
Ask about present pain (rather than in the past) as this is a reliable method of assessment for patients whose communication skills are compromised	4	Consensus-based recommendation
Consider using the Abbey Pain Scale for patients with dementia who cannot verbalise their pain; it may also be useful for cognitively intact patients who are unable to verbalise, are not willing or cannot talk about their pain	5	Consensus-based recommendation

Consider using the Modified Resident's Verbal Brief Pain Inventory for residents who are able to verbalise their pain	6	Consensus-based recommendation
Establish treatment goals with the patient and/or representative, taking into account their culture, beliefs and preferences	7	Consensus-based recommendation
Non-pharmacological and complementary therapies may be used as standalone therapies, or in conjunction with pharmacological treatments	18	Consensus-based recommendation
Choose pain medication based on pain severity by beginning with a mild analgesic (eg paracetamol) and build up stepwise to opioids for unrelieved pain only after first-line, non-pharmacological management fails	19	Consensus-based recommendation
Paracetamol is the preferred analgesic for older people, and is effective for musculoskeletal pain and mild forms of neuropathic pain	20	Consensus-based recommendation
Nonsteroidal anti-inflammatory drugs (NSAIDs) and cyclooxygenase-2 (COX-2) inhibitors should only be used at the lowest possible dose and for a short period (ie five to seven days), as the risk of side effects is high in the older person	21	Consensus-based recommendation
Codeine has a short half-life, and is suitable for incident pain or predictable mild-to-moderate, short-lasting pain	22	Consensus-based recommendation
Opioids should not be withheld if pain is moderate to severe, and if the pain is unresponsive to other interventions	17	Consensus-based recommendation
Morphine is suitable for the treatment of severe pain in older people, and is available in forms for most routes of administration	18	Consensus-based recommendation
Transdermal fentanyl can be used for ongoing severe pain; however, it is potent and long-acting, and the risk for delirium and respiratory depression is high	27	Consensus-based recommendation

## Introduction

Acute pain has a prevalence of approximately 5% across all age groups, whereas the prevalence of chronic pain increases with age. Specifically, the prevalence of chronic pain in residential aged care facility (RACF) residents is challenging to measure but estimated to be around 80%.<sup>1,2</sup> As the population ages, the number of people with chronic pain is expected to increase. The consequences of chronic pain include increased confusion, sleep disturbance, nutritional alterations, impaired mobility, depression, social isolation, worsening pain, slowed rehabilitation and increased risk of falls.<sup>3</sup>

## Clinical context

Pain can be acute or chronic. The difference between the two is defined not only by the length of time the patient is experiencing the pain, but also the nature of the pain. Acute pain can last for a long time if there is ongoing inflammation. Similarly, chronic pain is pain that persists after the inflammation from tissue damage resolves. The significant clinical issue is therefore the sensitisation of the central nervous system, not just the passage of time.

Acute pain may occur concurrently with chronic pain, and should be investigated and treated accordingly. For chronic pain, identification of pain patterns can help to establish a treatment regimen. Baseline pain is experienced constantly for longer than 12 hours per day. Flare-up (intermittent) pain is transient periods of increased pain, and incident pain flares up during an activity (eg turning in bed).

Diagnosis of the cause of pain affects treatment and choice of analgesia. Nociceptive pain results from somatic and visceral stimulation or injury, while neuropathic pain results from injury to the nervous system. A common type of pain seen in older people is nociceptive pain, often resulting from pathologies related to ageing (eg arthritis, osteoporosis, vascular disease). Table 1 shows the different types of nociceptive and neuropathic pain.

It is important to note that chronic pain is a condition in its own right and does not need to be secondary to a cause. It is important to seek a cause; however, due to sensitisation, chronic pain can exist on its own.

**Table 1. Types of pain and their causes<sup>4</sup>**

Characteristic of pain	Nociceptive superficial	Nociceptive deep somatic	Nociceptive visceral	Neuropathic
Origin of stimulus	Skin, subcutaneous tissue; mucosa-mouth, nose, sinuses, urethra, anus	Bone joints, muscles, tendons, ligaments; superficial lymph nodes; organs and capsules, mesothelial membranes	Solid or hollow organs, deep organs, deep lymph nodes	Damage to nociceptive pathways
Examples	Pressure ulcers, stomatitis	Arthritis, liver capsule distension or inflammation	Deep abdominal or chest masses, intestinal, biliary ureteric colic	Tumour-related: brachial, lumbosacral plexus or chest wall invasion, spinal cord compression. Non-tumour related: postherpetic neuralgia, postthoracotomy syndrome, phantom pain
Description	Hot, burning, stinging	Dull, aching	Dull, deep	Dysesthesia (pins and needles, tingling, burning, lancinating, shooting), allodynia, phantom pain, pain in numb area
Localisation to site of stimulus	Very well defined	Well defined	Poorly defined	Nerve or dermatome distribution
Movement	No effect	Worsening pain – patient prefers to be still	May improve pain	Nerve traction provokes pain, eg sciatic stretch test
Referral	No	Yes	Yes	Yes
Local tenderness	Yes	Yes	Maybe	Yes
Autonomic effects	No	No	Nausea, vomiting, sweating, blood pressure and heart rate changes	Autonomic instability: warmth, sweating, pallor, cold, cyanosis (localised to nerve pathway)

Reproduced with permission from Department of Health and Ageing. Guidelines for a palliative approach in residential aged care. Canberra: DoHA, 2004.

## Attitudes to pain

Older people may not express their pain because of cognitive impairment and their attitudes and beliefs surrounding pain. They may have a perception that 'pain is part of being old', and that there is little that can be improved. Fear of addiction needs to be addressed as this can be a barrier to patients reporting pain to their general practitioner (GP). Asking about discomfort, soreness or aching can lead to admissions of pain.

Pain is often expressed through behavioural symptoms, even in patients whose verbal communication skills are intact. Symptoms include:

- aggression, resistance, withdrawal, restlessness
- facial expression – grimacing, fear, sadness, disgust
- verbalisations – self-reports of pain, requests for analgesia, requests for help, sighing, groaning, moaning, crying, unusual silence.

Physiological changes with pain include:

- raised heart rate, pulse, temperature, respiratory rate, blood pressure, sweating
- abnormal skin colour
- discharge from eyes, nose, vagina or rectum

- lesions to oral or rectal mucosa, skin
- distension of the abdomen, and swelling of limbs or body joints
- abnormal results on testing urine (eg presence of blood, leucocytes, glucose)
- functional decrease in mobility, range of movement, activity, endurance, and increase in fatigue
- changes in posture – standing, sitting, reclining.

## *In practice*

### Assessment

Consider assessment of pain:

- on admission to the RACF
- opportunistically in the community
- after a change in medical or physical condition
- as symptoms arise.

Assessment includes input from the patient, family, RACF staff, carers, other specialist medical practitioners and/or allied health professionals. Regular reassessment is required to determine changes and the effect of interventions.

Self-reported pain is the usual method of assessing location, duration and intensity; however, the subjective nature of pain makes quantification difficult. Asking about pain in the present (rather than in the past) is a reliable method of assessment for patients whose communication skills are compromised by illness or cognitive impairment.

Multidimensional pain assessment scales have been developed for use in older people. The [Abbey Pain Scale](#) is suitable for patients with dementia who cannot verbalise their pain, and may also be useful for cognitively intact patients who are not willing or cannot talk about their pain.<sup>5</sup> The [Modified Resident's Verbal Brief Pain Inventory](#) is suitable for residents who are able to verbalise their pain. The same scale/s selected for the individual resident should be used for reassessment.<sup>6</sup>

A number of pain assessment tools are appropriate for use in RACFs, and can be divided into self-report tools, observational behavioural tools and sensory testing tools (refer to Box 1 for more information).

## Box 1. Pain assessment tools

---

### Self-reported tools

Despite potential attitudinal barriers to patients accurately reporting their pain, self-reporting is still the gold standard. Self-reporting scales incorporate words, pictures or numbers. The most effective scales are simply worded and easily understood, and include the [Numeric Rating Scale](#) (with pain rated from 0 to 10) and the [Verbal Descriptor Scale](#) (rating pain as either 'no pain', 'slight pain', 'mild pain', 'moderate pain', 'severe pain', 'extreme pain' or 'the most intense pain imaginable'). Multidimensional scales, such as the [Brief Pain Inventory](#),<sup>7</sup> are more complex but can monitor pain intensity and pain-related interference in the patient's life.

### Observational tools

Patients with cognitive impairment can often self-report pain in a reliable and valid manner,<sup>8</sup> although as dementia worsens, proxy scales may have increasing usage. Generally, these tools detect the presence or absence of pain in those with dementia when self-reporting is insufficient. The tools typically measure behaviours that may be manifestations of pain, but cannot differentiate from similar behaviours that are unrelated to pain (eg exertion), resulting in high false-positive rates of 25–30%.<sup>9</sup> There is no consensus on which tool is best, so any of those developed for geriatric settings are suitable; for example:

- [Abbey Pain Scale](#)<sup>10</sup>
- [Pain Assessment in Advanced Dementia Scale \[PAINAD\]](#)<sup>11</sup>
- [Doloplus-2](#)<sup>12</sup>
- [Non-Communicative Patient's Pain Assessment Instrument \[NOPPAIN\]](#)<sup>13</sup>
- [Pain Assessment Checklist for Seniors with Limited Ability to Communicate \[PACSLAC\]](#).<sup>14</sup>

These tools differ in the items that describe pain, ease of use and time to administer. Recently, some of these scales have also been found to be sensitive measures of pain severity.<sup>9</sup>

Although there are several observational scales, key behaviours indicative of pain are common to all. The top three behaviours are negative:

- facial expressions (eg frowning, sadness, grimacing)
- body language (eg guarding, rigidity, fidgeting, pacing, altered gait)
- vocalisations (eg crying, pain noises, verbal aggression, moaning, groaning).

These three elements are validated in all non-verbal behaviour pain assessment scales for dementia. Other additional behavioural indicators reflect the nuances of the various scales and may include items such as consolability, behavioural changes (eg aggression), physiological changes (eg quickened pulse), physical changes (eg bruises, lacerations), sudden changes in daily routines (eg eating habits, sleeping patterns) and altered breathing. Wandering has recently been shown to be an unreliable indicator of pain and is predictive of lessened pain.<sup>15</sup>

### Sensory testing tools

Identification of neuropathic pain often requires the use of sensory testing tools; these tests are non-invasive procedures that can evaluate peripheral nerve function. Comprehensive testing is lengthy. For the physician visiting an RACF, simple brush and pinprick tests are more practical:

- Brush tests are appropriate in identifying allodynia, a condition associated with neuropathic pain where normally non-painful stimuli are perceived as painful.
- Pinprick tests are suitable in diagnosing hyperalgesia that is associated with neuropathic pain.

Hyperalgesia relates to increased sensitivity to a painful stimulus. Common causes (eg diabetes, cancer, stroke) or patients' reports of tingling, numbness, shooting or burning pain are flags for neuropathic pain, in which case these tests may be illuminative. However, the utility of such testing in patients with advanced dementia is unclear.

## Management

Establish treatment goals with the patient and/or representative, taking into account their culture, beliefs and preferences. The aim may be to eradicate the pain and/or reduce it to tolerable levels so that mobility and independence can be restored or maintained. For example, chronic nociceptive pain due to degenerative arthritis requires a balance between pain relief and maintenance of function; however, older people in the terminal stage of a disease may require complete pain relief, even though mental and physical function is compromised.

Effective pain management relies on care planning to manage baseline pain and future pain episodes. Regularly reassess pain, and review management if pain scores are repeatedly high and flare-up strategies are used more than twice in 24 hours or regularly (ie every day).

### Non-pharmacological management

The first-line management of pain in older people should focus on the use of non-pharmacological management plans. Non-pharmacological management of pain works best on a multidisciplinary, interdisciplinary management plan for chronic pain, with a focus on ensuring patient-centred, self-management approaches.

Evidence to support the importance of interdisciplinary approaches is growing. Patient outcomes of 60 pain services in Australia and New Zealand that applied interdisciplinary approaches are showing significant reductions in medication use. Additionally, 75% of patients reported improved mental health or reduced interference in the quality of life caused by their pain.<sup>16</sup>

An multidisciplinary team is likely to include the GP, other specialist medical practitioner, clinical psychologist or psychiatrist, physiotherapist or other allied health professionals (eg occupational therapists, pharmacist), and may include a dietitian and social worker or counsellor.<sup>17</sup> Nurses are also an important part of the multidisciplinary team.

Non-pharmacological and complementary therapies (eg aromatherapy,<sup>18</sup> guided imagery [not usually suitable for people who are cognitively impaired], acupuncture, music<sup>19</sup>) may be used as standalone therapies, or in conjunction with medication.<sup>20</sup> Emotional support for patients in pain can be therapeutic when offered by their GP, RACF staff and relatives/carers. Diversional therapies may help, as well as offering nutrition and fluids, ensuring the resident is warm and comfortable, and reducing lighting and surrounding noise.

Physiotherapists who are trained to evaluate nociceptive and neuropathic pain can assist choosing non-pharmacological therapies to enhance medication. Physical therapies include transcutaneous electrical nerve stimulation (TENS), walking programs, strengthening exercises and massage. Heat or cold packs need to be used with care to avoid burns or hyperalgesia. Cognitive behavioural therapies (CBTs) are beneficial for older patients, including residents who have mild dementia. Patients will often benefit from a clear explanation about the cause of their pain, as well as behaviours and positive thoughts to enhance their own capacity to manage pain.

Refer to Table 2 for more information on non-pharmacological approaches.

**Table 2. Pain management strategies: Non-pharmacological approaches<sup>20</sup>**

Approach	Considerations
<b>Physical therapy</b>	
Exercise	<ul style="list-style-type: none"> <li>Recommended pain management strategy</li> <li>Inconsistent evidence whether one type of exercise is better than another</li> <li>Patient preference is the primary consideration</li> <li>Focus on strengthening, flexibility, endurance, and balance</li> <li>Individual capacity limits options</li> </ul>
Foot orthotics, patellar taping	<ul style="list-style-type: none"> <li>Foot orthotics may change gait pattern/muscle activation and reduce joint loading</li> </ul>
Manual therapy	<ul style="list-style-type: none"> <li>Requires significant levels of skill and care</li> </ul>
Transcutaneous electrical nerve stimulation (TENS)	<ul style="list-style-type: none"> <li>Consider for persistent pain when patient can provide accurate feedback</li> </ul>

Physical modalities (eg heat)	<ul style="list-style-type: none"> <li>• Beneficial for acute pain as effects are transient</li> <li>• Monitor for safety if used for patients with dementia</li> </ul>
<b>Occupational therapies</b>	
Assistive devices (eg walking frames)	<ul style="list-style-type: none"> <li>• Some evidence of reducing functional decline and pain intensity</li> <li>• Can increase pain if used incorrectly</li> </ul>
<b>Psychological approaches</b>	
Cognitive behavioural therapy (CBT)	<ul style="list-style-type: none"> <li>• Demonstrated benefit for patients in aged care</li> <li>• Recommended if delivered by a professional</li> </ul>
<b>Complementary and alternative medicine</b>	
Acupuncture	<ul style="list-style-type: none"> <li>• Consider for older people as adjunctive therapy</li> <li>• May improve function and pain relief</li> <li>• Duration of long-term effects are uncertain</li> </ul>
Massage, Tai Chi, yoga	<ul style="list-style-type: none"> <li>• Consider for older people as adjunctive therapy</li> <li>• Massage may have some benefit for non-specific lower back pain</li> </ul>
Nutritional supplements	<ul style="list-style-type: none"> <li>• Some evidence that chondroitin and glucosamine improve pain and function in osteoarthritis</li> </ul>

## Pharmacological management

The choice of medication is based on pain severity and should only begin after non-pharmacological management plans have failed. Begin with a mild analgesic (eg paracetamol), and build up stepwise to opioids for unrelieved pain.<sup>21</sup> Consideration must be given to the risk of using a stepwise approach (eg use of opioids on falls risk). Consideration must also be given to balancing the effect of opiate-based analgesia against common side effects (eg confusion, sedation, constipation, anorexia).

Regular medication for baseline pain, that maintains a therapeutic blood level, is more beneficial than administering analgesia when the patient asks for it or as staff consider it necessary. Treat flare-up and incident pain with additional analgesia. Analgesia can be given 30 minutes before activities such as pressure area care, dressings, physiotherapy and hygiene procedures.

Tailoring analgesic medications to effect is good practice. Once any of the medications below are initiated, a follow-up appointment to monitor the effect or lack of effect is warranted.

### Paracetamol

Paracetamol is the preferred analgesic for older people,<sup>22</sup> and is effective for musculoskeletal pain and mild forms of neuropathic pain. Lower doses should be used in patients with hepatic or renal impairment. Paracetamol is relatively safe at moderate doses but poses a pill burden on older patients. The tablets are generally large and at moderate doses consist of six tablets per day. Monitoring for effect and possibly ceasing paracetamol is an option if the effect is minimal.

### Nonsteroidal anti-inflammatory drugs

Nonsteroidal anti-inflammatory drugs (NSAIDs) and cyclooxygenase-2 (COX-2) inhibitors should only be used at the lowest possible dose for a short period (ie five to seven days), as the risk of side effects is high in the older person.<sup>23</sup> Common side effects to monitor include gastrointestinal bleeding, cardiovascular side effects and NSAID-induced nephrotoxicity.<sup>23</sup>



## Opioids

Codeine has a short half-life, and is suitable for incident pain or predictable mild-to-moderate, short-lasting pain. About 10% of people lack the enzyme that converts codeine to the active opioid form; therefore, they will have no analgesic benefit. There is also a high incidence of constipation associated with the use of codeine; monitoring bowel actions and co-prescribing aperients is advisable.<sup>24</sup>

Tramadol is a centrally acting analgesic that also weakly acts on opioid receptor, and as an inhibitor to noradrenaline and serotonin reuptake. It is a useful medication in a significant minority of older people with chronic non-cancer pain, but should be used with caution because of the high incidence of side effects (up to one-third experience nausea, vomiting, sweating, dizziness or hallucinations) and medication interactions (eg with selective serotonin reuptake inhibitors [SSRIs]). Tramadol should not be used with other drugs that can affect serotonin. Low doses are recommended initially (ie 25–50 mg per day for the first three days), with careful titration and monitoring. Patients aged  $\geq 75$  years should not have more than 300 mg per day.<sup>25</sup>

Opioids should not be withheld for fear of inappropriate use if pain is moderate to severe, and if the pain is unresponsive to other interventions. In general, commence with low doses of short-acting opioids, and titrate the dosage slowly. More rapid dosage escalation is appropriate in very severe pain, cancer pain and palliative care. In these situations, increase titration by 25% of the prescribed dose until pain ratings are 50% less, or the patient reports satisfactory relief.<sup>25</sup>

To change the type of opioid medication or route of administration, it is prudent to use an online opioid conversion calculator (eg [eviQ](#)).

When changing the route of administration of opioids, adjust the new dose accordingly. Tolerance to opioids may develop, which will necessitate an increase in dose or decreased interval of administration to achieve the same pain relief. Long-acting opioid agents can be used in conjunction with short-acting opioids to treat incident pain. In moderate-to-severe, non-cancer pain, dosage increments are usually less frequent; the target degree of pain relief may need to be modified, maintaining function and other patient-defined goals. Apart from codeine, the main opioids are morphine, oxycodone and fentanyl.<sup>26</sup>

Morphine is suitable for the treatment of severe pain in older people, and is available in forms for most routes of administration. Starting doses for severe, acute pain are:

- 10–30 mg, 3–4 hourly orally
- 2.5–5.0 mg, 4–6 hourly intramuscularly
- 2.5–10.0 mg, 2–6 hourly intravenously
- 2.5–10.0 mg, 2–6 hourly subcutaneously.

In chronic severe pain that is unresponsive to other interventions, after 24-hour dosage needs are established, long-acting morphine can be introduced.<sup>26</sup>

Oxycodone is available in immediate-release and sustained-release form for oral administration. Immediate-release oxycodone may be used for the initial establishment of tolerance and dosage needs, and later for flare-up pain. Oxycontin (sustained release) is recommended for chronic pain with the recommended dose of 5–20 mg twice per day.<sup>27</sup>

The combination drug oxycodone/naloxene provides equivalent analgesia to oxycodone. The benefit of the combination is that the incidence of constipation was 7% less than in the oxycodone alone; however, the long-term effect on constipation is uncertain. Oxycodone/naloxene should not be used in those with moderate or severe hepatic impairment.<sup>28</sup>

Transdermal buprenorphine is an alternate option for chronic pain. The advantage is the formulation as a patch rather than as an oral medication, where the absorption is as a slow release, which is beneficial. It is safe in renal failure and recommended in older people. The initial dose is 10 mg per day and can increase up to 40 mg per day.<sup>29</sup>

Transdermal fentanyl is used for ongoing severe pain; however, it is potent and long acting, and the risk for delirium and respiratory depression is high. It should be used only when the patient has had opioids previously, and high dosage needs are established. Fentanyl is metabolised in the liver and is suitable for patients with renal failure. Its adverse effects are similar to those of morphine, but with a lower incidence of constipation and confusion.<sup>30</sup>

Adjuvant medications used in pain management are medications not primarily used for pain treatment but that have analgesic properties, for indications that include cancer pain management<sup>31</sup> and acute pain<sup>32</sup> where traditional, conventional medications have failed. They may be given alone or in conjunction with analgesics, and include:

- low-dose tricyclic antidepressants – these are suitable for use in the relief of neuropathic pain (eg painful diabetic neuropathy, postherpetic neuralgia, central post-stroke pain) or fibromyalgia syndromes. Start with 10 mg nocte,



and titrate over three to seven days to between 30 mg and 50 mg. Amitriptyline is the best-researched agent, and nortriptyline may be better tolerated. Side effects include anticholinergic properties, postural hypotension, sedation, constipation, urinary retention, and exacerbation of cardiac conditions,<sup>27</sup> which are all prevalent in the older population.

- anticonvulsants (eg carbamazepine) – these are suitable for trigeminal neuralgia, but require careful titration over one month to reduce adverse effects<sup>27</sup>
- pregabalin – this is effective for neuropathic pain that does not respond to tricyclic medication. The dose should be reduced in patients with renal failure. Side effects include dizziness and drowsiness. Stopping the medication suddenly can lead to anxiety, insomnia, headache, nausea and diarrhoea<sup>33,34</sup>
- corticosteroids – these are suitable for inflammatory conditions (eg rheumatoid arthritis).

## References

1. Takai Y, Yamamoto-Mitani N, Okamoto Y, Koyama K, Honda A. Literature review of pain prevalence among older residents of nursing homes. *Pain Manag Nurs* 2010;11(4):209–23.
2. Zwakhalen S. Pain in elderly people with severe dementia: A systematic review of behavioural pain assessment tools. *BMC Geriatr* 2006;6:3.
3. Ruth D, Wong R, Haesler E. General practice in residential aged care: Clinical information sheet: Urinary tract infections. In: Residential Aged Care Kit. Melbourne, Vic: North West Melbourne Division of General Practice, 2004.
4. Department of Health and Ageing. Guidelines for a palliative approach in residential aged care. Canberra: DoHA, 2004.
5. Lichtner V, Dowding D, Esterhuizen P, et al. Pain assessment for people with dementia: A systematic review of systematic reviews of pain assessment tools. *BMC Geriatr* 2014;14:138.
6. Auret KA, Toye C, Goucke R, Kristjanson LJ, Bruce D, Schug S. Development and testing of a modified version of the brief pain inventory for use in residential aged care facilities. *J Am Geriatr Soc* 2008;56(2):301–06.
7. Cleeland CS, Ryan KM. Pain assessment: global use of the Brief Pain Inventory. *Ann Acad Med Singapore* 1994;23:129–38.
8. Ferrell BA, Ferrell BR, Rivera L. Pain in cognitively impaired nursing home patients. *J Pain Symptom Manage* 1995;10:591–98.
9. Lukas A, Barber JB, Johnson P, Gibson SJ. Observer-rated pain assessment instruments improve both the detection of pain and the evaluation of pain intensity in people with dementia. *Eur J Pain* 2013;17:1558–68.
10. Abbey J, Piller N, De Bellis A, et al. The Abbey pain scale: A 1-minute numerical indicator for people with end-stage dementia. *Int J Palliat Nurs* 2004;10:6–13.
11. Warden V, Hurley AC, Volicer L. Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. *J Am Med Dir Assoc* 2003;4:9–15.
12. Lefebvre-Chapiro S. The DOLOPLUS 2 scale – Evaluating pain in the elderly. *Eur J Palliat Care* 2001;8:191–94.
13. Snow AL, Weber JB, O'Malley KJ, et al. NOPPAIN: A nursing assistant-administered pain assessment instrument for use in dementia. *Dement Geriatr Cogn Disord* 2004;17:240–46.
14. Fuchs-Lacelle S, Hadjistavropoulos T. Development and preliminary validation of the pain assessment checklist for seniors with limited ability to communicate (PACSLAC). *Pain Manag Nurs* 2004;5:37–49.
15. Tosato M, Lukas A, van der Roest HG, et al. Association of pain with behavioral and psychiatric symptoms among nursing home residents with cognitive impairment: Results from the SHELTER study. *Pain* 2012;153:305–10.
16. Blanchard M, Tardif H, Fenwick N, Blissett C, Eagar K. Electronic persistent pain outcomes collaboration annual data report 2016. Wollongong, NSW: Australian Health Services Research Institute, University of Wollongong, 2017.
17. Cousins MJ, Gallagher RM. Fast facts: Chronic and cancer pain. Abingdon, UK: Health Press, 2011.
18. Lakhani SE, Sheaffer H, Tepper D. The effectiveness of aromatherapy in reducing pain: A systematic review and meta-analysis. *Pain Res Treat* 2016;8158693.
19. Garza-Villarreal EA, Pando V, Vuust P, Parsons C. Music-induced analgesia in chronic pain conditions: A systematic review and meta-analysis. *Pain Physician* 2017;20(7):597–610.
20. Keilman L. Compendium of evidence-based nonpharmacologic interventions for pain in older adults. East Lansing, MI: Michigan State University, 2015.
21. Savvas S, Gibson S. Pain management in residential aged care facilities. *Aust Fam Physician* 2015;44(4):198–203. Available at [www.racgp.org.au/afp/2015/april/pain-management-in-residential-aged-care-facilities](http://www.racgp.org.au/afp/2015/april/pain-management-in-residential-aged-care-facilities) [Accessed 13 August 2019].
22. American Geriatrics Society Panel on Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. *J Am Geriatr Soc* 2009; 57(8):1331–46.
23. Wongrakpanich S, Wongrakpanich A, Melhado K, Rangaswami J. A comprehensive review of non-steroidal anti-inflammatory drug use in the elderly. *Aging Dis* 2018;9(1):143–50.

24. Iedema J. Cautions with codeine. *Aust Prescriber* 2011;34:133–35. Available at [www.nps.org.au/australian-prescriber/articles/cautions-with-codeine](http://www.nps.org.au/australian-prescriber/articles/cautions-with-codeine) [Accessed 13 August 2019].
25. Cavalieri TA. Managing pain in geriatric patients. *J Am Osteopath Assoc* 2007;107:ES10–16.
26. Ginsburg M, Silver S, Berman H. Prescribing opioids to older adults: A guide to choosing and switching among them. *Geriatr Aging* 2009;12(1):48–52. Available at [www.medscape.com/viewarticle/705282\\_1](http://www.medscape.com/viewarticle/705282_1) [Accessed 13 August 2019].
27. Galicia-Castillo MC, Weiner DK. Treatment of persistent pain in older adults. Waltham, MA: UpToDate, 2018. Available at [www.uptodate.com/contents/treatment-of-persistent-pain-in-older-adults](http://www.uptodate.com/contents/treatment-of-persistent-pain-in-older-adults) [Accessed 13 August 2019].
28. NPS MedicineWise. Oxycodone-with-naloxone controlled-release tablets (Targin) for chronic severe pain. Canberra: NPS MedicineWise, 2011. Available at [www.nps.org.au/radar/articles/oxycodone-with-naloxone-controlled-release-tablets-targin-for-chronic-severe-pain](http://www.nps.org.au/radar/articles/oxycodone-with-naloxone-controlled-release-tablets-targin-for-chronic-severe-pain) [Accessed 13 August 2019].
29. Vadivelu N, Hines RL. Management of chronic pain in the elderly: Focus on transdermal buprenorphine. *Clin Interv Aging* 2008;3(3):421–30.
30. NPS MedicineWise. Fentanyl patches (Durogesic) for chronic pain. Canberra: NPS MedicineWise, 2006. Available at [www.nps.org.au/radar/articles/fentanyl-patches-durogesic-for-chronic-pain](http://www.nps.org.au/radar/articles/fentanyl-patches-durogesic-for-chronic-pain) [Accessed 13 August 2019].
31. Lussier D, Huskey AG, Portenoy RK. Adjuvant analgesics in cancer pain management. *Oncologist* 2004;9(5):571–91. Available at <https://theoncologist.alphamedpress.org/content/9/5/571.full> [Accessed 13 August 2019].
32. Liu F, Ng KF. Adjuvant analgesics in acute pain. *Expert Opin Pharmacother* 2011;12(3):363–85.
33. NPS MedicineWise. Pregabalin (Lyrica) for neuropathic pain. Canberra: NPS MedicineWise, 2013. Available at [www.nps.org.au/radar/articles/pregabalin-lyrica-for-neuropathic-pain](http://www.nps.org.au/radar/articles/pregabalin-lyrica-for-neuropathic-pain) [Accessed 13 August 2019].
34. Australian Pain Management Association. Pregabalin. Woolloongabba, Qld: APMA, 2018. Available at [www.painmanagement.org.au/2014-09-11-13-35-53/2014-09-11-13-36-47/175-pregabalin.html](http://www.painmanagement.org.au/2014-09-11-13-35-53/2014-09-11-13-36-47/175-pregabalin.html) [Accessed 13 August 2019].